

# Financial Stability Report

April 2010  
Volume 9 | Number 1



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Volume 9 | Number 1



ISSN 2179-5398  
CNPJ 00.038.166/0001-05

Financial Stability Report	Brasília	v. 9	n. 1	April	2010	p. 1-81
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# Financial Stability Report

Half-year Banco Central do Brasil publication.

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# Summary

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# Presentantion

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The Financial Stability Report (REF) is a semiannual publication of the Central Bank of Brazil (BCB) which describes the recent National Financial System (SFN) dynamics, presents the conclusion of the analysis of its resilience to eventual shocks, as well as analyzes the perspectives of its evolution. This edition pertains to data of the second semester of 2009, and, in some instances, to the first months of 2010<sup>1</sup>.

In the first chapter – Financial markets evolution –, the behavior of the national financial market and of the main international markets is analyzed, considering the measures taken by the most important economies related to the international financial crisis.

The second chapter – Banking system – gives an overview of the risk exposure, of the earnings and the solvency of the institutions and conglomerates that comprise the banking system. The stress tests are an integral part of this chapter and evaluate the capacity of each financial institution or conglomerate to withstand adverse situations, especially with respect to solvency and liquidity.

Chapter three – Brazilian Payment System (SPB) – describes BCB's evaluation regarding the adequate functioning of the SPB and the performance of the settlement systems, the main events of the period concerned, the results of the intraday liquidity and of the stress tests of the clearings which settles securities, derivatives and interbank exchange.

Chapter four – Organization of the National Financial System – lists the changes in shareholders' control over financial institutions and analyzes the concentration level within the SFN.

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1/ This report used data as of December 31, 2009. Eventual discrepancies in relation to the previous editions and other BCB publications result from data substitution by the financial institutions.

In the fifth chapter – Regulation of the National Financial System – the main prudential regulation published in the second semester of 2009 by National Monetary Council (CMN) and BCB to regulate the functioning of the SFN are analyzed, with emphasis on the implementation of the New Basel Capital Agreement (Basel II) and on the adherence of the national financial regulation to the accounting and auditing rules applicable to financial institutions established by the International Accounting Standards Board (IASB) and the International Federation of Accountants (IFAC).

This document is available in PDF format at: [www.bcb.gov.br](http://www.bcb.gov.br).

## Executive Summary

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The second semester of 2009 strengthened the consolidation of the Brazilian economy recovery, with positive impact on credit, liquidity, solvency, and earnings of the domestic banking system. In the international arena, especially in Europe, the deterioration of the sovereign risk indexes of some economies became the focal point to condition the financial markets behavior.

Between September 2009 and February 2010, the concerns with risks resulting from the fragility of banking institutions gave way to the increasing concern with the deterioration of the fiscal status of several economies around the world. Since December 2009, this scenario prompted an increase in risk aversion within the financial markets, which caused a raise in sovereign debt risk premiums, especially of certain European economies, and the increase in the US dollar exchange rate.

Notwithstanding the improved corporate results in the major European and American financial institutions in 2009 vis-à-vis 2008, the regulation changes proposed and the fear over the outcome of the end of liquidity supply programs added uncertainty to the banking sector, that along with the increase in sovereign risk, caused a raise in Credit Default Swaps (CDS) premiums of banks and pressure on price of their shares.

In Brazil, anti-cycle measures implemented by the Government led to economic recovery, but prompted a reduction in the primary surplus of the public sector to 2.06% of the Gross Domestic Product (GDP). Notwithstanding the 0.2% GDP reduction, there was an acceleration in the growth in the second quarter of 2009. Interest rates showed low volatility in the second semester and the Selic rate<sup>2</sup> target closed the year at 8.75%. The restart on the economic activity, and the increase in inflation expectations consolidated the perception of a reversion in the monetary

---

2/ Selic rate corresponds to the weighted average of rates set on repurchase agreement operations with Federal government bonds..

easing cycle, already in the first semester of 2010, which caused the reduction of the yield curve inclination. The rapid recovery of the Brazilian economy improved the capital flow into the country, resulting in appreciation of the Real against the US dollar up to mid October. In the eight months prior to February 2010, São Paulo stock exchange index (Ibovespa) accumulated a 40% US dollar valorization.

The economic recovery in the second semester of 2009 also contributed to the 8% increase in the loans and leases portfolio of the banking system. This increase occurred mainly in lower risk categories and contributed to reduction of concentration in the credit portfolio, thus improving the system's credit portfolio overall quality. Funding should not represent a barrier to this growth in the coming years, given that Brazilian banking system has an expressive volume of high quality liquid assets and little dependence on external funds. Liquidity analysis demonstrates that there are sufficient liquid assets to face an eventual increase in withdrawals, even under stress situations.

In December 2009, the delinquency rate of credit operations was slightly lower than in the previous semester. Concerning loss provisions, the coverage index remained at an adequate level, and there was a significant improvement on provisions of institutions that showed a worse index in the previous semester.

Banking institutions solvency level remained high. New capital issues and profit accumulation contributed to a 0.2 p.p. increase in the Total Capital Ratio (TCR), and 0.4 p.p. leverage reduction. The results of scenario analysis, through stress over macroeconomic variables, indicated that the Brazilian banking system solvency would not be relevantly impacted. Within this scenario, system's aggregate TCR would reach 15,0% (15.2%) in June 2011, well above the 11% minimum required.

Banking system earnings was satisfactory and resulted mainly from the increase in volume of business, and from diversification of income sources. The quality of such result is improving, given that non-operational results contribution to net income was even smaller than that of the prior semester.

The Brazilian Payment System (SPB) worked adequately, considering the risk and efficiency factors. Backtestings periodically performed by the clearing and settlement systems for securities, derivatives and interbank foreign exchange confirmed the system effectiveness along the semester.

Aggregate intraday liquidity, even after the reduction on reserve requirements as of last quarter of 2008, continued superior to the needs of the financial institutions that participate in the clearing and settlement systems.

Concerning prudential financial regulation, two strategic projects were carried on, namely: "Basel II"; and "Convergence", both aiming at incorporating into the National Financial System (SFN), prudential regulatory procedures according to the recommendation of the international organizations. The first project aims at implementing in Brazil the recommendations issued by the Basel Committee on Banking Supervision (BCBS) regarding capital structure duly adjusted to risks associated to transactions carried out by the financial institutions, especially capital management and allocation criteria. The second project aims at incorporating to the national regulatory framework recommendations issued by the International Accounting Standards Board (IASB) and by the International Federation of Accountants (IFAC) regarding accounting and auditing procedures applicable to financial institutions.

## 1.1 Introduction

This section describes the impact of the main events in the international scene over the national financial market, as well as the Brazilian economy reply to internal recovery factors.

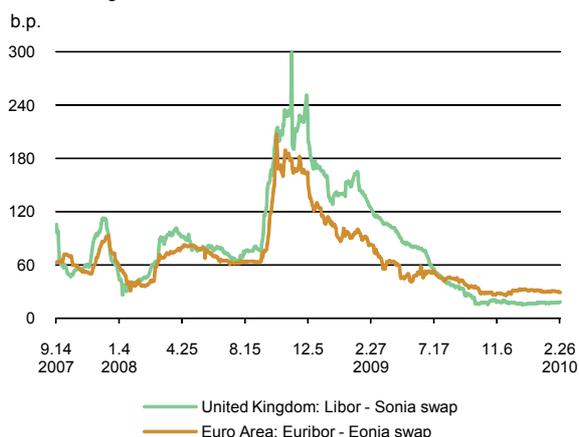
Regardless the improved results shown by major European and American corporate institutions in 2009 vis-à-vis 2008, regulatory changes proposed and fears over the effects that might arise from the withdrawal of exceptional liquidity programs added new uncertainty within the banking system, which, along with the increase in sovereign risk, caused a raise in Credit Default Swaps (CDS) premiums of banks, and pressure on price of their shares.

The main monetary policy initiatives by the BCB, the behavior of long and short term interest rates, country risk, main inflation indexes, as well as of foreign exchange are presented. Lastly, the text depicts the recent evolution of Gross Domestic Product (GDP), fiscal policy results as well as that of financial markets, including private securities, derivatives and domestic public securities.

## 1.2 International financial markets

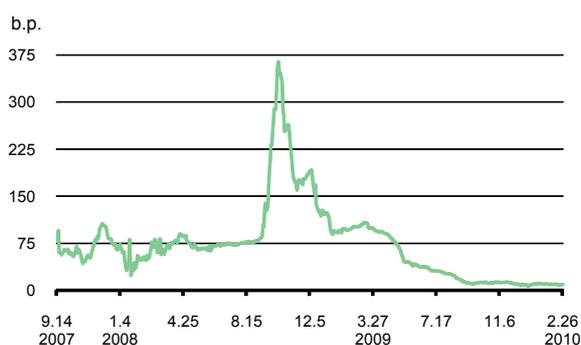
Although macroeconomic indicators showed improvement in the semester ending on February 2010, sovereign risk deterioration in European economies became the focal factor conditioning financial markets behavior, precipitating, as of mid December, a rise in risk aversion, which resulted in an increase in the US dollar exchange rate, a decline in stock markets and increased uncertainties over a sustainable economic recovery within the Euro Area.

**Chart 1.1 – Spread interbank rate (3m) vs OIS (3m)  
United Kingdom and Euro Area**



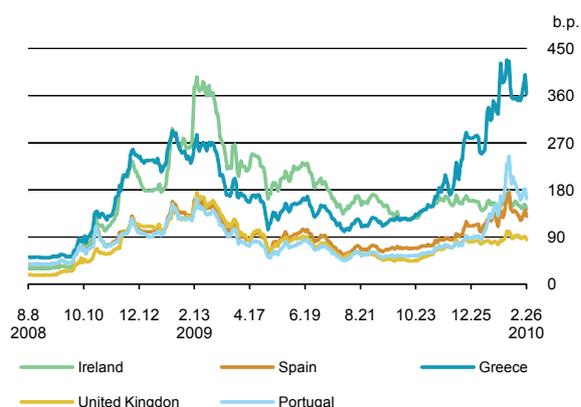
Source: Bloomberg  
1/ OIS (Overnight Indexed Swap) is an interest rate swap transaction, where one party agrees to receive/pay a fixed rate to another party, against paying/receiving a floating rate. In the case of UK, the floating rate is SONIA (Sterling Overnight Index Average); in the case of Euro Area, the floating rate is EONIA (Euro Overnight Index Average).

**Chart 1.2 – Spread interbank rate (3m) vs OIS<sup>1</sup> (3m)  
United States of America**



Source: Bloomberg  
1/ OIS (Overnight Indexed Swap) is an interest rate swap transaction, where one party agrees to receive/pay a fixed rate to another party, against paying/receiving a floating rate.

**Chart 1.3 – Sovereign 5-year CDS**



Source: Thomson

Additionally, doubts on the effects of the withdrawal of extraordinary monetary easing measures and the increasing uncertainty over financial sector regulation<sup>3</sup> in Europe and in the United States (US) had a negative impact on financial institutions stock prices and put pressure on premiums of CDS banking sector.

It is worth noticing that the expansionary monetary policies kept feeding the financial system with liquidity, as shown by the spread between the Libor and the Overnight Indexed Swap (OIS) in the US, Euro Area and UK.

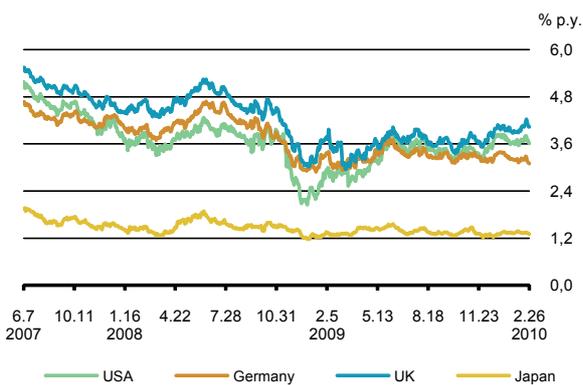
Deterioration of fiscal solvency indexes of relevant economies is largely a consequence of fiscal stimulus and bank support measures, which were taken as of the collapse of Lehman Brothers, in September 2008. With the economic activity still slowly recovering, especially within the Euro Area, the increase in public sector financing demand caused a raise in risk premium of countries such as Portugal, Ireland, Italy, Spain, and especially Greece, whose sovereign CDS spread grew 240, to 364 b.p., between September 2009 and February 2010.

Increase in Greek sovereign risk also reflected in increased returns demanded to finance the country's debt. At the end of January, ten-year bond yields – Hellenic Republic Government Bonds (HRGB) – reached 7.0%, representing a record spread of 398 basis point (b.p.) over German bonds with the same characteristics. By the end of February, owing to the announcement of measures to contain the Greek fiscal deficit, it went back to 314 b.p.

In more mature economies, yields on ten-year bonds remained relatively stable along the period, with a slight turn in the UK case, whose spread over German bonds of similar maturity increased from 31 b.p., at the end of August 2009, to 93 b.p. at the end of February 2010. This wider *spread* showed increasing fear over fiscal sustainability of the British economy and greater uncertainties with respect to the economic growth recovery in important countries within the Euro Area. At the end of February, the government bond yields of these economies rose after the announcement of an increase in the Federal Reserve's discount rates, which had an impact on expectations about the end of the extraordinary support measures still in place.

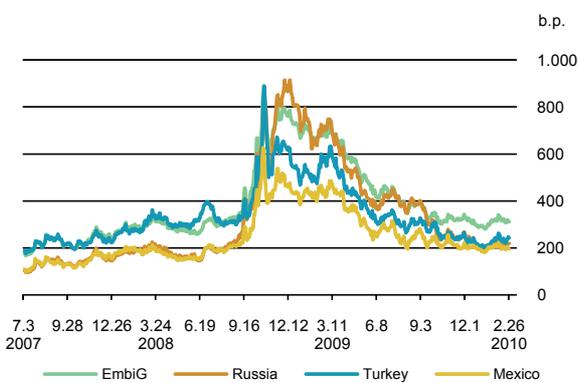
3/ On December 17, 2009, the Basle Committee on Banking Supervision announced a series of propositions aiming at rendering banks more resistant to future financial crisis, which will require banks to operate with lower leverage and higher share of capital, which tend to decrease credit risk of such institutions, but, on the other hand, can erode their profitability.

**Chart 1.4 – Yields on treasury bonds**  
Nominal yields on 10-year treasury bonds



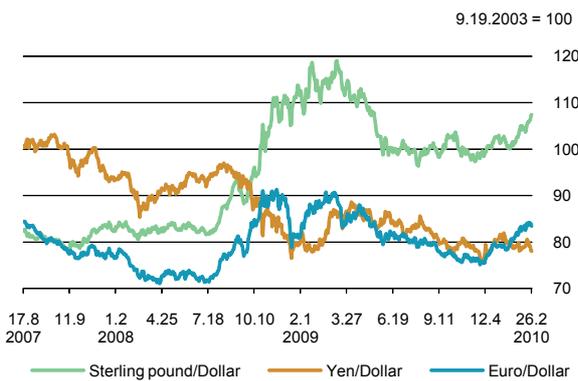
Source: Bloomberg

**Chart 1.5 – Embi Global**



Source: Bloomberg

**Chart 1.6 – Developed countries currencies**  
Dollar exchange rates



Source: Bloomberg

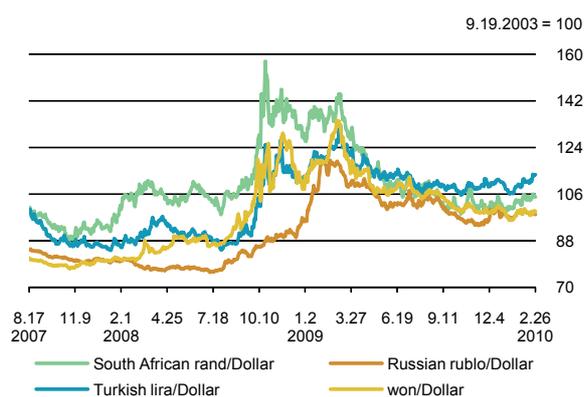
Sovereign risk premiums of main emerging markets, showing improved fiscal fundamentals and more solid growth expectations, were only marginally impacted by the turbulences occurred in some economies within the Euro Area, since the Emerging Markets Bond Index (EMBI+) demonstrated relative stability during this period.

Regarding the currency market, the euro exchange rate revealed a confidence crisis in the Euro Area members and the expectations created over the dynamism of the European economy recovery after the release of the information on the GDP decrease in the last quarter of 2009. In this context, between October 2009 and February 2010, the euro suffered some 8.0% depreciation against the US dollar. The demand for US dollars resulted in its appreciation relative to the British pound, as well as to the main emerging markets currencies, as of December 2009.

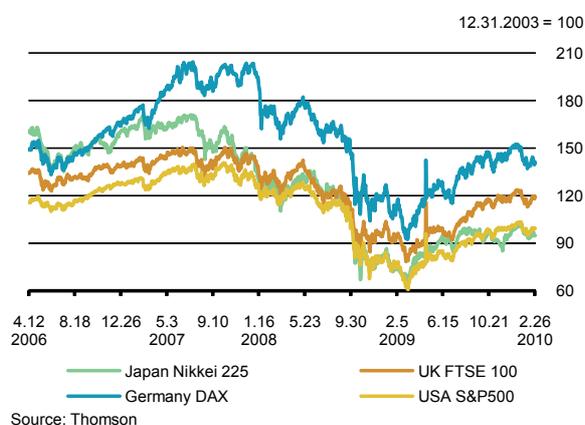
Until January, capital markets kept improving, both in mature and emerging economies, as shown in the last Financial Stability Report (FSR) published by the BCB, but increasing fear of a Greek sovereign default added volatility to such markets, which then started to record losses. In January, markets were also affected by fears of tighter monetary policy in China, upon announcement made by Chinese authorities regarding increases in reserve requirements for the largest financial institutions. In this context, the Financial Times Securities Exchange Index (FTSE 100); Standard and Poor's 500 (S&P 500); Deutscher Aktienindex (DAX) and Nikkei, showed accumulated losses around 1.1%, 1.0%, 6.0% and 4% in 2009, as well as Shanghai Composite; São Paulo Stock Exchange Index (Ibovespa); Sensex; and Kospi, fell, respectively, 7.0%, 3.0%, 6.0% and 5.2% in the same period.

In this scenario, pressure over CDS premiums and stock prices of the banking sector institutions within the Euro Area became the greatest risk for the financial stability of the region. In the third quarter of 2009, according to the Bank for International Settlements (BIS), French and German banks only, showed a US\$1.6 trillion joint exposure in Greek, Spanish, Portuguese, Italian, and Irish markets. Furthermore, the announcement that the sixth largest Austrian bank would be nationalized caused additional pressure over the European banks CDS in December. Thus, the average CDS premium of five relevant European banks, after maintaining relative stability along the four latest months of 2009, went up to 98 b.p. in the first two months of 2010.

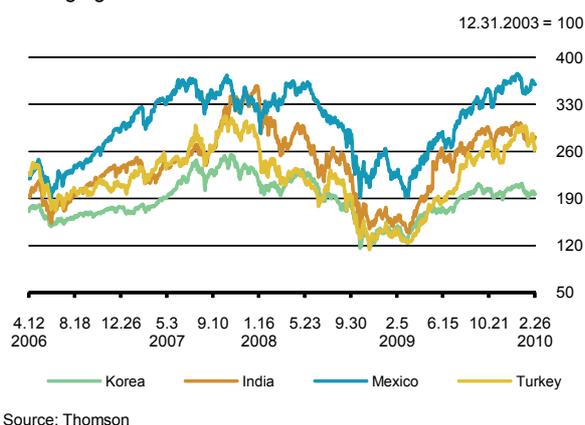
**Chart 1.7 – Emerging markets currencies**  
Dollar exchange



**Chart 1.8 – Stock exchanges**  
Developed economies



**Chart 1.9 – Stock exchanges**  
Emerging economies



Greek Banks in particular demonstrated greater vulnerability, owing to funding difficulties. It is worth noticing that additional<sup>4</sup> long-term Greek debt downgrades could have rendered their sovereign bonds ineligible as collaterals on bank refinancing operations with the European Central Bank (ECB), further restricting liquidity conditions of such institutions.

Euro area banks still face risks resulting from holding mortgage-backed assets in their balance sheets. Regardless of improved corporate results of banks in 2009 vis-à-vis 2008, in December ECB advised that between October 2009 and December 2010 European banks still could face potential losses up to €187 billion, owing to their exposure to loans and to the mortgage-backed “toxic assets”. Furthermore, credit risks deriving from higher unemployment rate, exchange rate, and exposure in East and Central Europe markets still persisted upon these institutions.

In the US, notwithstanding low banking system exposure to sovereign default risk of European countries, bank CDSs followed the same path as European banks, showing not only fears of possible contamination, but also uncertainties hovering over the regulatory environment that the US Government has been drawing for the sector.

Proposals already sent to the US Congress aim at restricting the field of action of banks with wide base of public deposits<sup>5</sup>, limiting their size and preventing their exposure to high-risk financial instruments, including derivatives, and other forms of investment that may carry systemic risk, such as hedge funds and private equity funds. These measures especially impacted large financial institutions, whose exposure to higher risk markets contribute towards their greater gains. In addition, US Government announced the creation of a new tax to be levied on institutions that was assisted by the federal Government during the crisis, aiming at obtaining a refund equivalent to US\$90 billion over the next decade.

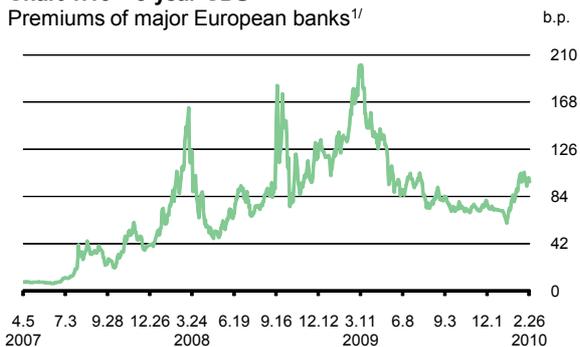
The improvement in liquidity conditions as shown by spreads between Libor and OIS rates, and in the overall economic activity, allowed the Federal Reserve (Fed) to announce, in February 2010, the end of an important part of the liquidity support programs, including currency swap lines established with a number of central banks. Still in February, Fed decided to raise the discount rate from 0.50%

4/ In December, Fitch, Standard & Poor’s and Moody’s lowered Greece’s long-term sovereign rating to BBB+, BBB+ e A2, respectively.

5/ This set of proposals sent to the US Congress is known as Volker rule.

**Chart 1.10 – 5-year CDS**

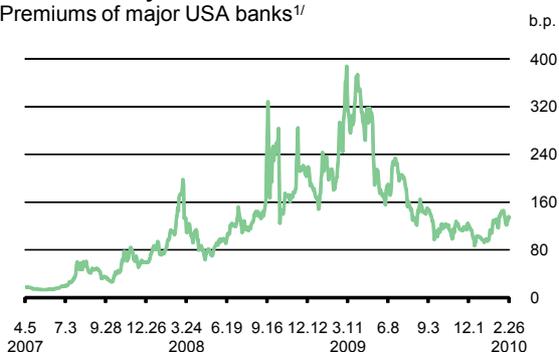
Premiums of major European banks<sup>1/</sup>



Source: Thomson  
 1/ USA index is the arithmetic average for HSBC, UBS, Santander, BNP Paribas and Deutsche Bank's 5-year CDS premiums. Since it's not a random sample, it may not reflect the behavior of the financial system as a whole.

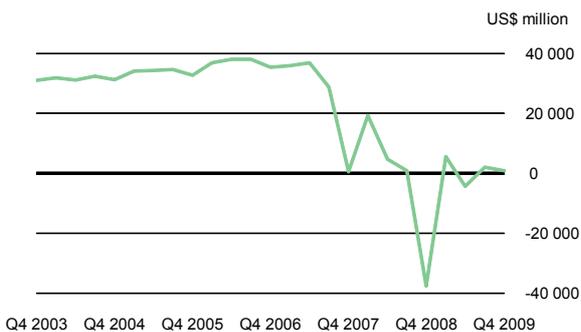
**Chart 1.11 – 5-year CDS**

Premiums of major USA banks<sup>1/</sup>



Source: Thomson  
 1/ USA index is the arithmetic average for Citigroup, Bank of America, JPMorgan, Goldman Sachs and Wells Fargo 5-year CDS premiums. Since it's not a random sample, it may not reflect the behavior of the financial system as a whole.

**Chart 1.12 – USA – Net income performance**



Source: Thomson

to 0.75% aiming to normalize its facilities programs, which increased the spread between this rate and the Fed Funds' upper limit of the band to go from 0.25% to 0.50%.

The improved economic environment reflected in better banking sector results, allowing major institutions that resorted to Government aid, when the crisis deepened, to refund most part of the credit received. According to the Federal Deposit Insurance Corporation (FDIC), in the fourth quarter of 2009, the US banking industry reached a liquid result of US\$914 million, as compared to a liquid loss of US\$37.8 billion recorded in the last quarter of 2008. Nonetheless, US banks still faced difficulties along the period, especially medium-size institutions that have limited funding access and face tighter restrictions on credit operations to obtain larger gains. In the fourth quarter of 2009, write-offs totaled US\$53 billion and the loan and lease arrears increased to US\$391.3 billion. Both the net annualized write-off rate of 2.89% and the 5.3% delinquency rate reached the highest levels of the past twenty six years, according to FDIC publications.

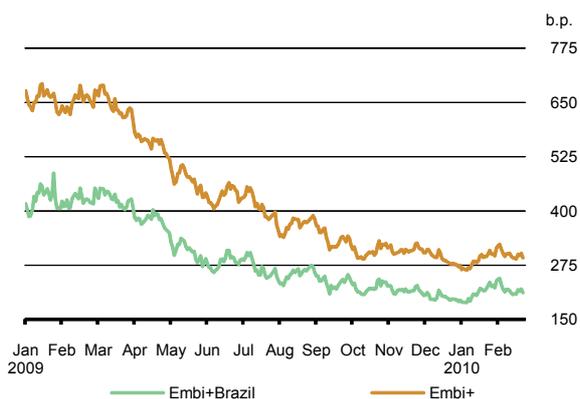
In Asia, where disturbances caused by the financial crisis were smaller from the start, financial markets were relatively stable. Thus, supervising and monetary authorities concentrated their concern in progressively adjusting the liquidity injected during the crisis, so as to hold the financial system balanced. Especially in China, where growth rate is expanding again, there were fears of a new real estate bubble. Therefore, the People's Bank of China (PBC), aside from raising interest rates on three and twelve-month bonds, reinstated in January and February 2009 the increase in reserve requirements, suspended between December 2008 and 2009.

## 1.3 National financial market

### 1.3.1 National financial market analysis

Along the second semester of 2009, better performance of the world economy resulted in lower risk aversion in the international markets, and consequently Embi+ and Embi+Brazil kept its dropping course. From mid-January 2010 on, however, this trend was reversed. The overcoming of the worldwide economic and financial crisis required Government stimuli, whose amounts instigated investors concerns, despite the results achieved, as the US economic recovery, Chinese growth, as well as some emerging countries' growth, including Brazil. Expressive fiscal deficits

**Chart 1.13 – Embi+ and Embi+Brazil**



Source: Bloomberg

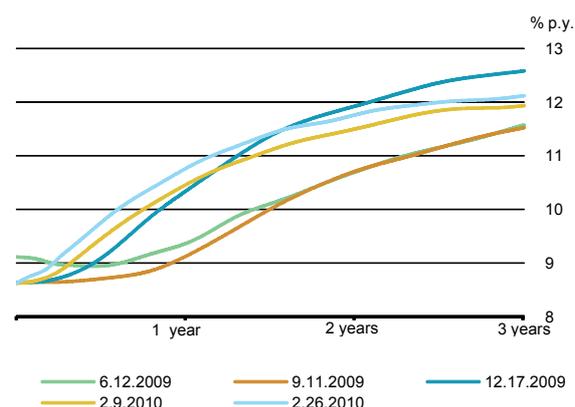
**Chart 1.14 – Interest rates**

Overnight Selic rate and swap of 3 and 6 months, 1 year, 2 and 3 years



Sources: BM&FBovespa and BCB

**Chart 1.15 – Domestic yield curve**



Sources: BM&FBovespa and BCB

of economies within the Euro Area, which ended up in downgrading Greek and Spanish sovereign ratings, raised uncertainties as to the economic recovery of the European countries. Such facts along with the restrictive economic policy signals observed in China generated an increase in risk aversion as of the second ten-day period of January. Still in the end of February, however, Embi+ and Embi+Brazil went back to levels prevailing before the worsening of the global financial crisis, at 292 and 212 points, respectively meaning a 34.4% and 24.6% fall in eight months. The greater resilience of the Brazilian economy was evidenced by the economic recovery in the second semester of 2009, with a small reduction in primary surplus and favorable perspectives for inflation control. This prompted an improvement in our foreign currency debt risk evaluation, in September, which upgraded Brazil to the investment grade rating by Moody's<sup>6</sup>.

Commodities markets, in general, followed the unfolding of the world economy in the period. Oil prices were also influenced by accentuated variations in climate conditions. After an increase of some US\$25.00 in Brent oil barrel prices, in the first semester of 2009, the upward trend weakened in the following semester, showing more price volatility. From July 2009 to February 2010, price went up from US\$68.34 to US\$76.68, and during July, October and January presented a variation range over US\$10.00<sup>7</sup>. Considering the 7.4% appreciation of the real vis-à-vis the US dollar in the same period, the oil price variation in Real was lower and the average barrel price of R\$130.62 basically confirmed the level of price once reached in the end of first semester of 2009.

At the beginning of the second semester of 2009, an inflation benign scene and the perception that it would require longer time for a consistent recovery both of the global and domestic economy, contributed towards another basic interest rate reduction. On July 22nd, Monetary Policy Committee (Copom) proceeded the easing cycle, started in January with an additional 0.5 p.p. cut in the Selic rate target, accumulating a 5.0 p.p. annual reduction<sup>8</sup>. Longer term forward interest rates varied without a defined trend up to early September, reflecting the inconsistency of economic activity indicators in the US and in the Euro Area countries. However, low current inflation levels, as well as the expectation that they remain so, kept shorter term interest rates low and stable.

6/ Standard & Poor's and Fitch already had upgraded Brazil to investment grade in the second quarter of 2008.

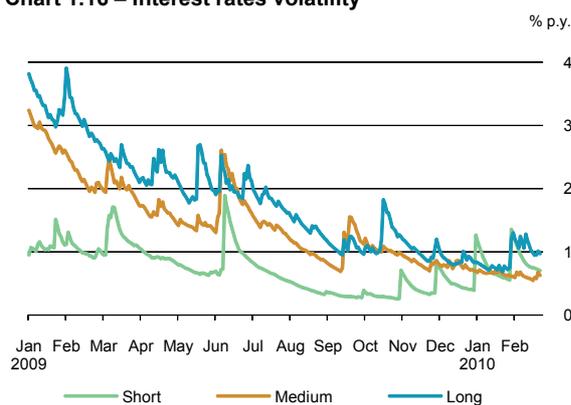
7/ US\$81.97 maximum price for the period was registered on January 6, 2010.

8/ At the end of the first two months of 2010, the Selic rate target remained at 8.75%, and was not changed in Copom meetings held on 9/2/2009, 10/21/2009, 12/9/2009 and 1/27/2010.

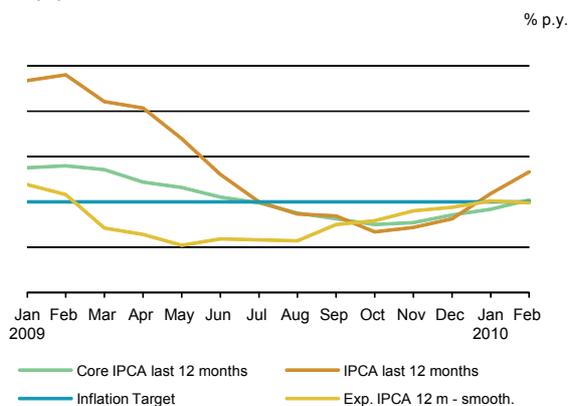
**Table 1.1 – Selected interest rates**

Date	1 day	3 months	6 months	1 year	2 years	3 years
6.12.09	9,16	8,98	8,96	9,36	10,66	11,53
9.11.09	8,65	8,64	8,71	9,12	10,67	11,49
12.17.09	8,65	8,71	9,09	10,30	11,89	12,56
2.9.10	8,65	8,83	9,49	10,44	11,48	11,92
2.26.10	8,65	9,08	9,81	10,75	11,75	12,10

Sources: BM&amp;FBovespa and BCB

**Chart 1.16 – Interest rates volatility**

Sources: BM&amp;FBovespa and BCB

**Chart 1.17 – IPCA**

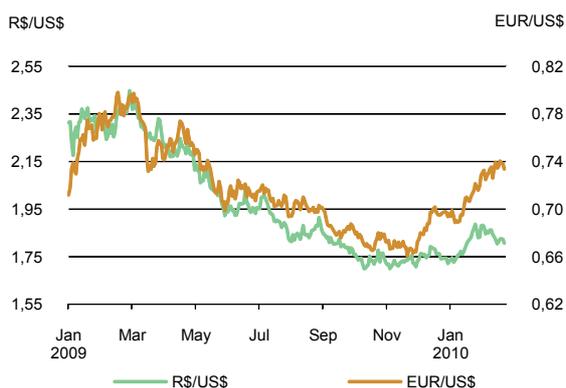
Sources: IBGE and BCB

From the second ten-day period of September through mid December, interest rates went up in the intermediary and long term sections of the yield curve, and kept relatively stable in the short end, up to three-month maturities, resulting in an increase in the yield curve inclination. As expectations on both economic growth and narrowing output<sup>9</sup> gap improved, concern with inflation increased. These factors, plus the beginning of a tightening monetary cycle by the Australian Central Bank<sup>10</sup> in October, contributed towards the increase of expectations with respect to the beginning of the restrictive monetary policy cycle in Brazil, creating pressure on shorter-term interest rates as well as a reverse effect on two and three year-rates following the second half of December. This was strengthened early in 2010, due to an increase in current and expected inflation, that somewhat mirrors robust results on credit markets, retail sales and total wages.

In the first two months of 2010, longer-term interest rates showed a rather erratic behavior. The concern with the output gap narrowing in Brazil<sup>11</sup>, in addition to the uncertainties brought about by wider range of credit restrictions in China, and to US proposals limiting activities and risks taken by large banks pushed longer-term rates up. This trend was reversed by uncertainties in the external scenario, owing to the fear that fiscal instability in some European countries might hinder global activity recovery process, which caused a stop loss movement on long positions within the Brazilian interest rate market. At the end of this period, long-term rates went up, owing to the publication of significant Federal tax revenues in January and the closing of position in future interest rate market, by investors who were betting on a flatter yield curve. On February 24, pursuing the phasing out of anti-crisis measures taken as of October 2008<sup>12</sup>, the BCB published the changes in reserve requirements on time deposits, and in the additional requirement, reversing some 70% of the R\$99.8 billion released in the second semester of 2008 to mitigate credit scarcity and improve its distribution to medium and small banks.

- 9/ In the second half of 2009, the industrial capacity utilization level (NUCI) compiled by National Industry Confederation (CNI) went up 2.39 p.p. on a seasonally-adjusted basis, and closed the year at 81.3%, still 2 p.p. under the top reach in September 2008. In January 2010, a 0.08 p.p. reduction occurred.
- 10/ On 10/6/2010 it was the first G-20 central bank to start the withdrawal of incentives to the economy since the worsening of the global financial crisis.
- 11/ Seasonally-adjusted NUCI calculated by Getulio Vargas Foundation (FGV) reached 84.0% in February, the higher since October 2008, when it reached 85.1%.
- 12/ Worth noting among these measures, the temporary tax reduction, in December 2008, such as Industrial Production Tax (IPI), initially applicable until the end of March, later postponed for three months, and by the end of June maintained until October. From then on, tax rates were gradually reversed until January 2010, when they returned to their original levels.

**Chart 1.18 – Exchange rates**



Source: Bloomberg

During the second semester of 2009, interest rate volatility maintained downward trend begun in November 2008. There were sharp raises on medium-term rates, in September, and for long-term rates, in October. The rapid increase in one-year rates to 10%, promptly enhanced volatility in September, while the increase in October was the result of investors' reaction, since they were expecting a reduction in the inclination of the yield curve, and reduced their position in view of the Tax on Financial Operations (IOF) levied on the entry of foreign investors' funds<sup>13</sup>. In the subsequent three months, as the smooth and consistent interest rate increase took place, the volatility of longer-term rates reduced and only went up again in February, as a result of the increase in risk aversion and the subsequent increase in the respective rates. Even in such a context, volatility in the long-term section of the yield curve was below the one recorded in months prior to the crisis. Volatility of short-term rates, up to three months, however, increased as of November, as the beginning of a tightening monetary cycle conducted by the BCB approached, rendering shorter-term interest rates more vulnerable.

General Price Index – Domestic Supply (IGP-DI) shifted between monthly deflations and small price increases along the second half of 2009, but showed strong recovery in the first two months of 2010, influenced by wholesale price acceleration reflected in Wholesale Price Index – Domestic Supply (IPA-DI) evolution. While in the second semester IPA-DI recorded a 0.33% deflation, in the first two months of 2010 alone, it increased 2.35%. Concerning the Broad National Consumer Price Index (IPCA), prices rose 3.26% from July 2009 to February 2010 and 4.31% in 2009, below the 4.5%<sup>14</sup> inflation target. The worsening of the international financial crisis and of its impacts on the real sector of the Brazilian economy was evidenced in lower inflation expectations up to May 2009. Afterwards, they stabilized around 4.07% up to August. As of September expectations increased again, converging towards the target in January, where it remained. Price acceleration recorded in consumer price indexes as of the last quarter of 2009 reflected the trend towards the economic activity recovery<sup>15</sup>.

13/ IOF tax on foreign investors' foreign exchange operations related to capital inflows driven to financial and capital markets. On 10/20/2009, these operations were taxed at a 2% rate, 0.5 p.p. higher than the one that was applicable between March and October 2008 and. Such tax was restricted to foreign investments in private fixed income securities and government bonds.

14/ National Monetary Council Resolutions n. 3,463 of 6/26/2007, n. 3,584 of 7/1/2008 and n. 3,748 of 6/30/2009 respectively set forth inflation target for 2009, 2010 and 2011 at 4.5%, measured by IPCA, and tolerance intervals at 2.0 p.p. below or above the target.

15/ More recently, the descending path of core inflation measures and diffusion indexes observed in 2009 were reversed and, in early in 2010, there was seasonal pressure over prices.

In the second half of 2009, exchange rate fell until October, when it reached 1.70R\$/US\$, and kept relatively stable around 1.73R\$/US\$ up to early December. The speedy Brazilian economic recovery intensified the capital flows, which remained positive as of May, and increased foreign exchange flow to US\$14.6 billion in October, out of which the financial sector was responsible for US\$13.1 billion. Such capital inflows, as well as decreased risk aversion in international markets, and certain concerns among investors with respect to the fiscal situation in US, allowed for an emerging economies' currency recovery vis-à-vis the US dollar. Aiming at regulating capital flow, at the end of October, the Brazilian Government levied a 2% Tax on Financial Operations (IOF) on foreign capital inflows driven to portfolio investments, comprising both equity and fixed income, exempting direct investments. In November, financial flow dropped 81.4% to US\$2.4 billion. As of December, the US dollar strengthened against the Euro, as a result of regulatory uncertainties and fiscal deterioration in some mature economies. The Real exchange rate against the US dollar, however, remained relatively stable, resulting in a 6.5% Real appreciation against the Euro<sup>16</sup> in three months.

In the eight months ending in February 2010, Brazilian exports fell 16.1% in relation to the same period in the previous year, while imports rose 9.9%, a US\$27.1 billion worsening in our balance of trade. Nonetheless, the balance of foreign exchange operations went from a negative US\$15.6 billion to a positive US\$26.7 billion, as a result of the reversion in financial operations. From July 2009 to January 2010, net foreign direct investment (FDI) fell 53.5% as compared to the same period in the previous year. BCB maintained its policy towards recovery of international reserves that totaled US\$241 billion in February 2010, according to the international liquidity concept, signifying a 15.8% increase in eight months.

### 1.3.2 Assets market

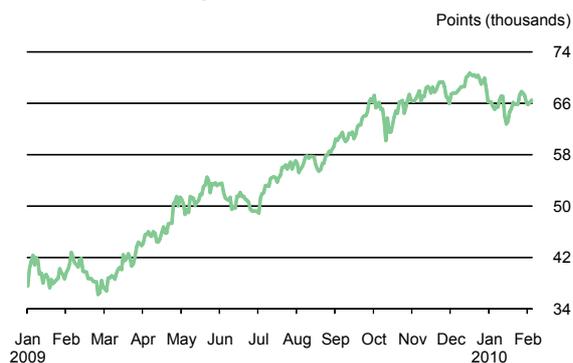
As of the second quarter of 2009, the Brazilian economy began to grow, more vigorously in the second half of the year<sup>17</sup>. Nonetheless, a 0.2% GDP contraction occurred in 2009. Decrease in tax revenues, and tax reduction policy within the set of anti-cycle measures implemented by the

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16/ From December 2009 to February 2010, there was a 2.9% devaluation of the real vis-à-vis the dollar. In January alone, there was a 8.1% depreciation which was partially recovered in February.

17/ In the third and fourth quarters, GDP growth relative to previous quarters reached 1.7% and 2% respectively.

Chart 1.19 – Bovespa index



Source: BM&FBovespa

Government, worsened the fiscal result along the year<sup>18</sup>. Consolidated public sector primary surplus totaled R\$64.5 billion, equivalent to 2.06% of the GDP<sup>19</sup>, a 1.48 p.p. reduction in relation to 2008 surplus, while nominal deficit grew 1.43 p.p., to 3.34% of the GDP<sup>20</sup>. Despite global economic disturbances, Government policies conducted to an economic recovery and an expressive capital market performance. Furthermore, cautious management of the internal federal public debt (DPMFi) enabled achievement of the goals set in the 2009 Annual Borrowing Plan (PAF), reducing the public debt cost as well as lengthening debt maturity.

On futures interest rate market, traded within BM&FBovespa, as international crisis effects subsided, the contracts' maturities rose. In the eight months ending in February 2010, contracts with maturities between six months and two years went up to 57.2% of the average daily turnover, while those under six months fell to 29.1%. As compared to the same period in the previous year, it represents a 6.6 p.p. increase and a 5.3 p.p. reduction, respectively<sup>21</sup>. In dollar futures market, average daily trading volume showed consistent recovery as of December 2008. In February, it had almost doubled, as 361 thousand deals were closed. As global economy gradually improved, non-resident investors (NRI) began to shift from long to short positions and, in July and August 2009 they were, in average, short. However, as of September they became long again, whose balance reached US\$3.5 billion in February 2010.

Ibovespa, the main Brazilian stock index, kept its recovery path in the second half of 2009, mainly up to November. Various factors contributed to this evolution, especially: successive upper revisions for world growth; Brazil's credit rating raised to investment grade by Moody's, with a positive perspective for the sovereign debt; Central Bank's easing monetary policy; and fiscal incentives which contributed to improve economic agents' mood, as well as that of national consumers and investors. Nonetheless, influenced by IOF tax<sup>22</sup> changes, October and November volatility was high. As of December, Ibovespa hasn't showed a clear trend, strongly oscillating around 67.500 points due to the risk aversion that

18/ In April, 2009 public sector primary surplus target went down from 3.8% to 2.5% of GDP and 2010 target was set at 3.3% of GDP.

19/ Such results met the primary surplus target adjusted for the year at 1.93% of GDP, discounting investments under the Growth Acceleration Program (PAC) allowing reduction (0.57% of GDP).

20/ In January 2010, the accumulated 12-months primary surplus reached R\$73.3 billion (2.32% of GDP), while nominal deficit reached R\$94.9 billion (3% of GDP). January's R\$2.2 billion nominal surplus reflects the fiscal recovery already under way.

21/ Futures contract maturing in January 2011 was the most traded and took up 38.9% of the average daily turnover.

22/ Aside from charging 2% IOF in October, a 1.5% charge on depositary receipts was levied in November so as to strengthen the capital market.

prevailed in the market. All months in the second half of 2009 showed positive net foreign investment flow, totaling R\$10.5 billion. In January and February 2010, however, there was a R\$3.4 billion outflow. In the past eight months ending in February, Ibovespa rose 29.2% in nominal terms and 39.6% in dollar, while the Morgan Stanley Capital International Emerging Markets Index (MSCI EM)<sup>23</sup> grew 22.9%.

The international financial crisis had an impact in Brazil's public bonds market and in DPMFi, mainly along the first quarter of 2009, when maturities of new issues shortened and the portion of fixed rate bonds has decreased. Slowly, as the internal economic growth took up, and the international economic scenario looked less gloomy, it went back to normal. In the past eight months ending in February 2010, the share of inflation-linked bonds increased 2 p.p., offsetting the fall in the share of fixed rate bonds. Overall these two categories<sup>24</sup> made up 60% of DPMFi, equally distributed among them. The share of floating-rate bonds greatly varied along the second semester<sup>25</sup>, but in February 2010 went back to the same level as in June 2009 (38%). DPMFi increased 5,7% in these eight months and at the end it totaled R\$1,4 trillion.

In the eight-month period ending in February 2010, there was a reduction in the share of short-term maturing debt as well as a maturity lengthening of new issues. This lengthening was particularly significant as of January and in February it reached a 61.3 months<sup>26</sup> record. After keeping relatively stable around 29% in the third quarter of 2009, the twelve-month maturing portion of the DPMFi suffered a setback in the fourth quarter, and at the end of February 2010 it was at the same level (25%) as before the global financial crisis deepened. In addition, the progressive confidence recovery, as of the second quarter of 2009, facilitated the 17.4 p.p. reduction in the portion of fixed rate bonds maturing in next twelve-months to 40.2% at the end of February<sup>27</sup>. Treasury bond substitution transactions were an important DPMFi management instrument during the period. Between June 2009 and February 2010, early redemption of bonds

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23/ MSCI EM index represents the behavior of emerging countries stock exchange as measured by Morgan Stanley.

24/ However, while increased share of such bonds was gradual, that of fixed rate bonds was more erratic: they increased 4 p.p. from July to December 2009 to 34%, but in January it went back to a 30% relative share.

25/ Differently from the previous period, this calculation was not affected by BCBs foreign exchange swap exposure, which was neutral since the end of the first semester.

26/ Representing an increase of 24.3 months in one year.

27/ 23.5 p.p. reduction from March to December 2009 and 6.0 p.p. increase in the first two months of 2010.

with maturities of less than a year totaled R\$24.8 billion, while new issues with maturities over one year, linked to substitution transactions, totaled R\$36.6 billion<sup>28</sup>.

In managing banking liquidity, the Central Bank performed daily intraday and overnight repos as well as weekly six-month maturity repos<sup>29</sup>. In the eight-month interval ending in February 2010, the financial volume of long-term repos totaled R\$110.7 billion, a 83.1% increase over the same period in the previous year<sup>30</sup>. At the end of February, 19.2% of the balance of repos was comprised of six-month transactions. After reaching a R\$509 billion record in January, the balance of repos performed by BCB closed at R\$472 billion<sup>31</sup> in February, a 22.4% growth since June 2009.

## 1.4 Conclusion

Along the second half of 2009, the improvement in world economy allowed for a decrease in risk aversion in international markets, which favored capital inflows into Brazil, and contributed to the Real appreciation and to the good performance of capital markets, and in the eight months ending in February 2010, Ibovespa accumulated a 40% dollar-appreciation. However, along with the reviews of growth expectations in major economies and the high fiscal deficits stemming from anti-crisis measures, uncertainties as to the conditions to fulfill such expectations grew, reflecting in Brazil's interest market. Although a consistent recovery in the level of domestic activity and a slightly ascending trend in longer-term interest rates were in place, especially after the second half of September, corresponding volatilities remained low, with brief peaks reflecting such uncertainties. In face of the increase in the capacity utilization and in inflation expectations, shorter-term rates gradually increased as of November, in anticipation of a preventive and prompt attitude on the part of the BCB.

Stimuli measures created by the Government to face the crisis were gradually reversed as internal demand expanded

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28/ Bond issues of over one year maturities, attached to substitution transactions, were distributed as follows: R\$11.1 billion National Treasury Bills (LTN), R\$5.2 billion Treasury Financial Bills (LFT), R\$19.3 billion National Treasury Notes – B Series (NTN-B) and R\$1.0 billion National Treasury Notes – F Series (NTN-F).

29/ As of April 24, 2009, these repo auctions became accessible to all financial institutions as opposed to dealers only, while five and seven months transactions were replaced by a six months maturity. Balance of five and seven months deals were zeroed on 9/14/2009 and 11/16/2009 respectively.

30/ Compared to the eight previous months (November 2008 to June 2009) the increase is smaller, just 59.2%.

31/ Regarding changes in reserve requirements announced by February end, there should be a R\$37 billion rise on reserve balance as of March 24 and an additional R\$34 billion as of April 9.

and economic performance improved in the second half. In 2009, inflation remained 0.19 p.p. below the 4.5% target. There was a small (0.2%) GDP contraction, and a primary surplus of 2.06% of the GDP. Moreover, once the crisis was overcome, it was possible to lengthen the maturity of DPMFi issues and decrease the short-term maturing portion, recovering pre-crisis level.

## 2.1 Introduction

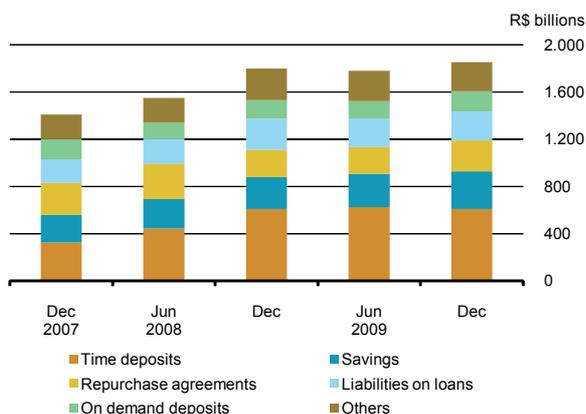
This chapter describes the evolution of the Brazilian banking system<sup>32</sup> in the second half of 2009, emphasizing risk exposure, earnings, and solvency analysis.

In December 2009, the group of analyzed institutions held R\$2.76 trillion in assets<sup>33,34</sup> and a domestic credit portfolio of R\$1.22 trillion. Both amounts represented 86% of the overall National Financial System<sup>35</sup> (SFN). A 3% growth in assets and 8% in loans and leases portfolio were recorded, compared to the previous semester.

The main events determining the banking system dynamics were credit expansion and improved credit portfolio quality, resulting mainly from economic activity recovery. Liquidity analysis demonstrates that the banking system holds liquid assets enough to cover its transactions, including under stress situation, aside from having means to fund the credit portfolio growth.

The financial institutions solvency remains at comfortable levels. Regardless the increased exposure in credit risk, there were new capital injections, and profit accumulation along the semester in question, so that the Total Capital Ratio (TCR) was kept at high levels. Leverage, measured as the ratio between total assets and equity, dropped. Earning levels were satisfactory, owing especially to increased volumes and to the diversification of revenue sources.

Chart 2.1 – Funding



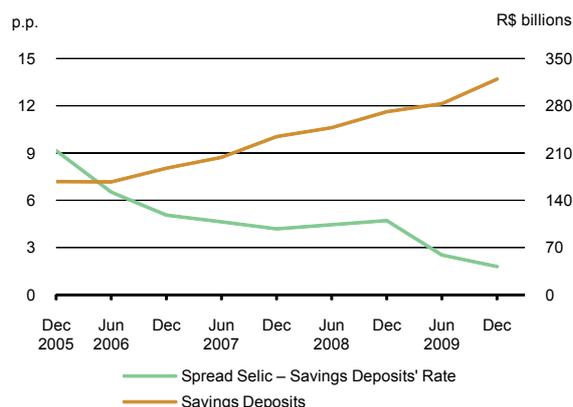
32/ For purposes of this chapter, banking system is defined as the set of institutions like commercial banks, multiple banks, savings banks, investment banks, as well as financial conglomerates comprising at least one of such institutions. Development banks are not included.

33/ Total assets less brokered repos. Same concept used in Top 50 banks and the SFN consolidated, available at the BCB website.

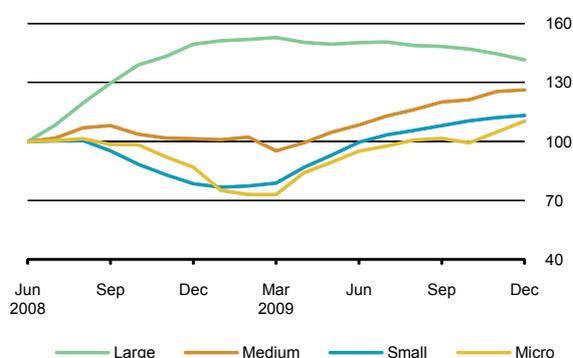
34/ This chapter uses variables adjustments, such as elimination, reclassification, and netting, which are detailed in section “Concepts and Methodology”.

35/ National Financial System, aside from the banking system, comprises: development banks, credit cooperatives, development agencies, savings and loan companies, mortgage companies, leasing companies, foreign exchange and securities brokers, consumer finance companies, real estate financing companies, micro-entrepreneur credit companies and securities dealers.

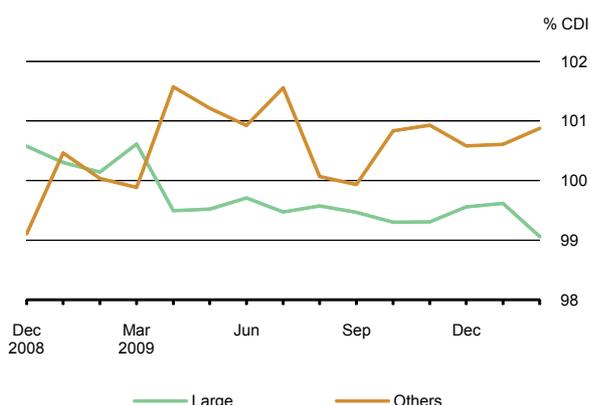
**Chart 2.2 – Growth of savings deposits**



**Chart 2.3 – Changes in time deposits**  
Jun/2008 = 100



**Chart 2.4 – Time deposits' rates**



## 2.2 Risks<sup>36</sup>

### 2.2.1 Liquidity

Once the peak of the international crisis was over, evidencing the adequacy of the banking system liquidity level to stand stress situations, this report's aim is to go beyond from strict assessment over liquidity risk to cope with short-term disruptions, focusing also on sufficiency of liquid assets to sustain the long-term credit expansion process.

Therefore, the analysis starts by evaluating the main events in the semester, especially regarding funding issues, examines the system current situation in terms of liquidity exposure, and ends with a prospective view of the sustainability of the credit growth cycle in Brazil.

Pushed mainly by the increase in savings deposits, liabilities began to increase again, after a semester of stagnation (Chart 2.1). Reduction in the yield of time deposits, resulting from expressive amount of liquid assets held by banking institutions, caused a retraction in this kind of investment, and funds migrated mainly towards mutual funds and savings accounts.

Amounts in savings deposits went up 12.8% and reached R\$319.4 billion (Chart 2.2). This increase was caused by interest rate reduction in other kinds of investment, mainly in time deposits, rendering savings deposits a more attractive option than the others.

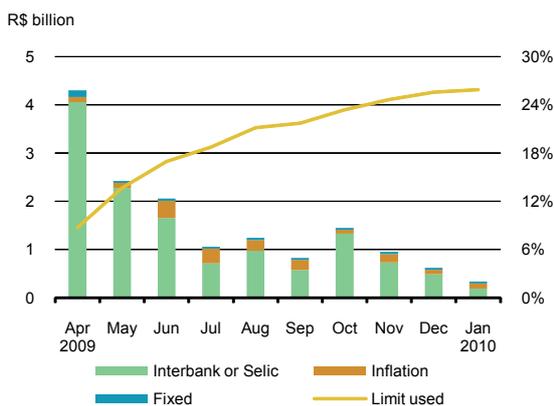
Demand deposits also increased, as a result of seasonal effect related to the payment of the 13th salary. Between June and December 2009, balance of such deposits went from R\$145.1 billion to R\$170.9 billion, equivalent to a 17.8% growth.

Although smaller banks showed positive net fund raising, total volume of time deposits fell, owing to net withdrawals seen in larger banks (Chart 2.3).

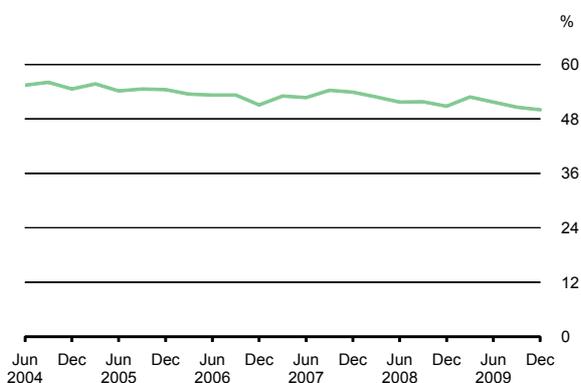
Large banks time deposits dropped around R\$31 billion. Along 2008, these banks offered higher rates so as to maintain their funding at comfortable levels, given the expectations of a worsening in the crisis (Chart 2.4). As these concerns lessened, and considering the high liquidity available to such banks, rates returned to levels similar to the ones existing in the pre-crisis period, rendering such investments less attractive.

36/ Given their relevance, liquidity and credit risks are separately treated in this section. Other risks are under section 2.4 Solvency and also in "Stress Tests" box.

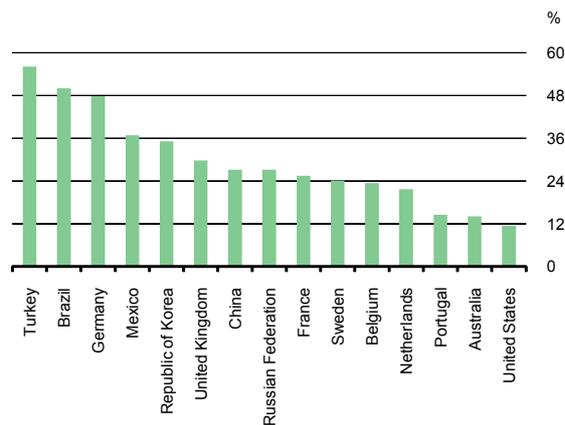
**Chart 2.5 – DPGE monthly issuance**



**Chart 2.6 – Liquid assets to total assets**



**Chart 2.7 – Liquid assets to total assets**  
Latest available data



Source: *Financial Soundness Indicators* – IMF

However, this reduction happened at the same time as investment funds managed by these banks obtained net fund raising of R\$56.1 billion. Moreover, there was also some R\$30 billion increase in volume of repurchase agreements between banks and funds. Thus, the reduction in time deposits balance of large banks resulted from strategic changes rather than investors' flight to other types of investments.

By contrast, volume of time deposits in medium size, small and micro<sup>37</sup> banks increased 7.9%, 23.6% and 15.8%, respectively.

It's worth noting that such an increase stemmed mainly from traditional deposit borrowings, considering smaller use of Time Deposit with Special Guarantee (DPGE) from the Credit Guarantor Fund (FGC). For the bulk of medium size, small and micro banks, the balance increase in time deposits was R\$15.2 billion, out of which only R\$3.9 billion were DPGE. Furthermore, in relation to these banks, in the first half of 2009, the average monthly amount of DPGE raised was R\$2.9 billion, while in the second half it was only R\$1.0 billion (Chart 2.5).

However, substitution of DPGE by traditional time deposits did not occur in all institutions. Some banks, holding 0.5% of the banking system total assets, still show a reduction in traditional deposits and remain dependent upon DPGEs as a relevant funding source. In these institutions there was an increase in funding costs, creating pressure over earnings.

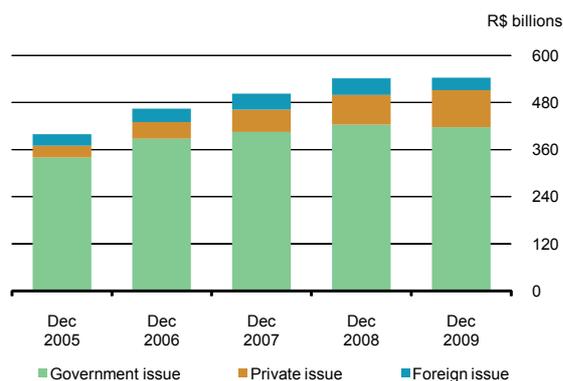
Although there was a recovery in fund raising by banking system, there was a reduction in liquid assets to total assets ratio from 51.8% to 50% from June to December<sup>38</sup>. Along 2009, as the level of uncertainty over the Brazilian economy decreased, banking institutions restructured their assets profile, so as to privilege those with greater return rates. Thus the credit portfolio growth was financed not only by the increase in fund raising but also by reduction in liquid assets.

Decrease in importance of liquid assets is a trend verified in the financial system in the past years (Chart 2.6), which is likely to remain for some time. Owing to downward trend in interest rates, banking institutions started to gradually transfer investment from liquid assets to credit operations,

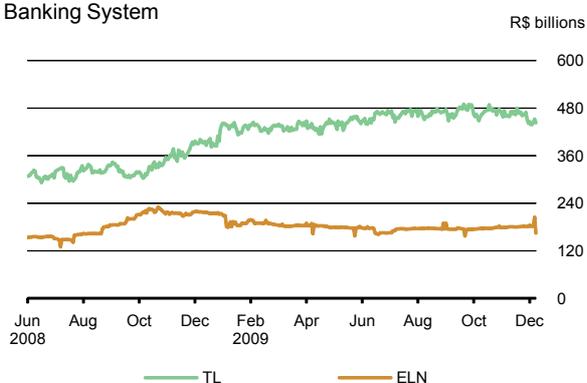
37/ See "Concepts and Methodology" section for segmentation by size criteria.

38/ This measurement is based on the Financial Soundness Indicators (FSIs) methodology proposed by the International Monetary Fund (IMF). Although criteria proposed by FSI guide to classify assets as liquid are different from the ones used in Brazilian liquidity management, this measurement has the advantage of being internationally comparable.

**Chart 2.8 – Evolution of securities and derivatives portfolio by issuer**



**Chart 2.9 – Total Liquidity (TL) vs Estimated Liquidity Needs (ELN) Banking System**



**Chart 2.10 – Excess liquidity By control type**



aiming to maintain the level of earnings. Despite this trend, volume of liquid assets is still high compared to institutions in other countries, mainly the developed ones (Chart 2.7), evidencing the low vulnerability of Brazilian banks to liquidity risk.

Other characteristic that renders the banking system less vulnerable to liquidity risk is the quality of the liquid assets. Differently from other countries, the securities portfolio of Brazilian banking institutions mostly comprises Federal public bonds (Chart 2.8), which are accepted by the BCB in its operations at interbank markets and have a liquid and organized secondary market with adequate price structure.

Besides, the lower dependence of the Brazilian banking system in relation to foreign funding renders it less vulnerable to international markets fluctuations. Based on December 2009 data, one observes that only 5.3% of the banking system liabilities have a foreign counterpart or are linked to other countries' currencies.

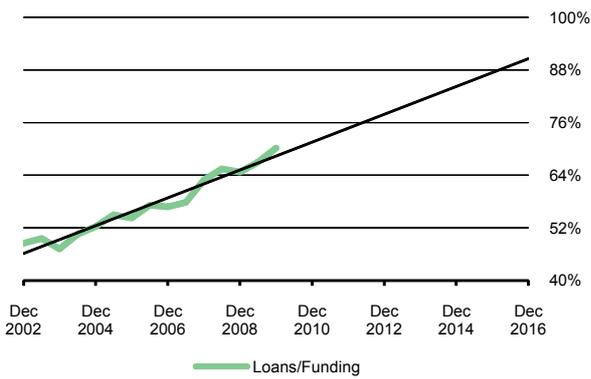
Liquidity sufficiency is also evidenced in the estimated requirement of funds to pay for short-term commitments. Since 2003, this evaluation is carried out through the confrontation of liquid assets volume (total liquidity – TL) against the estimated liquidity needs (ELN). ELN was built so as to estimate the minimum liquidity required to meet the withdrawals and losses resulting from sudden changes in market parameters, especially those verified during crisis. In this sense, comparison between these two measurements allows to evaluate the level of adequacy of system liquidity in a three-week horizon.

In December 2009, the volume of liquid assets in the banking system was R\$443.5 billion, while ELN was only R\$164.7 billion (Chart 2.9), showing a comfortable position as far as liquidity risk exposure is concerned.

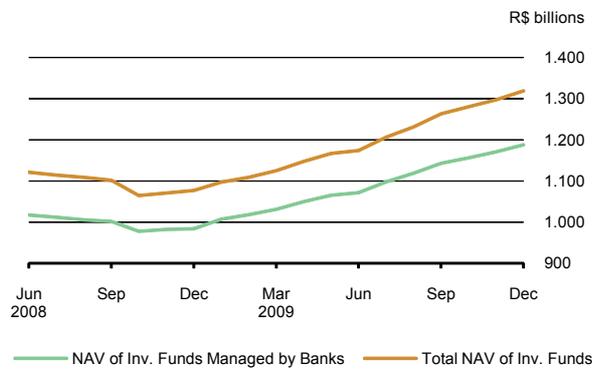
However, significant part of the liquidity surplus, represented by the difference between TL and ELN (Chart 2.10) was generated between the last quarter of 2008 and the first of 2009, and it occurred as a result of BCB's changes in reserve requirements, designed to offset the effects of the international financial crisis over the Brazilian banking system. Therefore, it is expected that this surplus returns to pre-crisis levels, which were appropriate, despite being inferior to current level.

Another relevant issue refers to the sustainability of the growth in credit portfolio at higher rates than the funding

**Chart 2.11 – Credit growth sustainability**

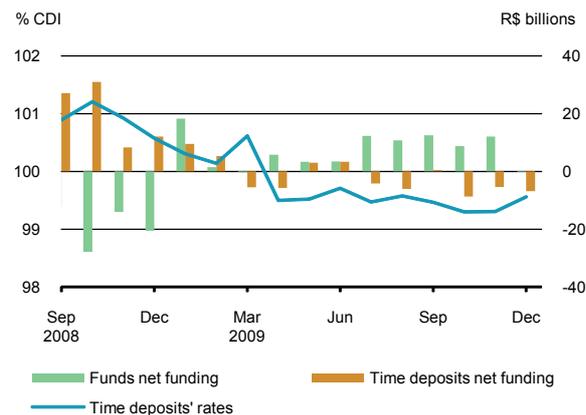


**Chart 2.12 – Evolution of investment funds' net asset value (NAV)<sup>1/</sup>**



Source: Comissão de Valores Mobiliários – CVM  
1/ Excludes funds of funds

**Chart 2.13 – Transfer of resources between funds and time deposits**



expansion observed in the last years. Between December 2002 and December 2009, the ratio between credit operations and funding rose from 49% to 70% (Chart 2.11). Should this dynamic persist, in a few years we may reach the point where credit growth would be limited to the capacity of obtaining additional resources.

However, it should be noted that banking institutions carry significant volume of liquid assets and can also compete for resources presently allocated in mutual funds. Net asset value of such funds amounts to R\$1.3 trillion, out of which R\$1.2 trillion (90%) are managed by banks (Chart 2.12). Additionally, these mutual funds are mostly comprised by liquid assets<sup>39</sup> that can easily be cashed if investors wish to channel these resources to bank deposits. Finally, it should be registered the movement of resources between mutual funds and banks' time deposits, according to yield changes of the latter (Chart 2.13). In this instance, banks could raise their time deposit yield rates so as to become more competitive compared to funds. Summarizing, bank funding sources should not hinder the credit growth in the banking system in the coming years.

That said, one verifies that the liquidity dynamics in the second half of 2009 was marked by increased fund raising, influenced by the rise in savings deposits. However, this result did not prevent a reduction in the liquid assets to total assets ratio, given the bigger increase in credit operations. Nonetheless, funding should not hinder credit portfolio growth in the coming years. Aside from banking system having an expressive volume and high quality of liquid assets, mutual funds carry a significant amount of resources which banks may attract, should they be interested in doing so.

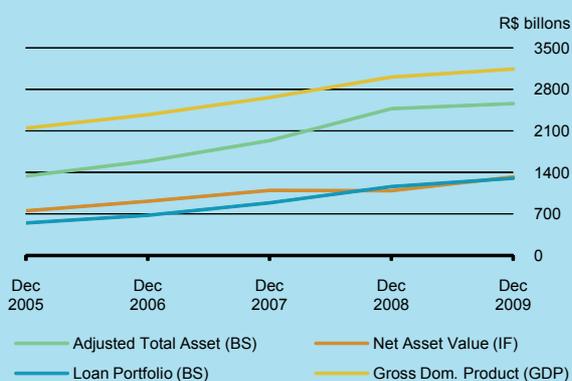
39/ See "Mutual Funds" box for data on composition of mutual funds and their relation with the banking system.

## Mutual Funds

This box sums up some characteristics of the Brazil's mutual funds industry<sup>1</sup>, as well as some relations it bears with the banking system, so as to facilitate the understanding of risks overview.

Firstly, it's worth noting the relevance of mutual funds that, like the banking system, are consistently expanding in the past years. At the end of 2009, funds were responsible for the management of R\$1.3 trillion in assets, amount equivalent to the overall domestic credit portfolio. In December 2009, the ten largest fund managers controlled 89% of the total fund's net asset value, compared to 69% in 2000.

**Chart 1 – Banking System, GDP and Investment Funds**



Source: Bacen, IBGE and Comissão de Valores Mobiliários (CVM)

Although banks and mutual funds are different legal entities, under specific regulation and clear rules for independent management, the current setting of the mutual funds system demands integrated monitoring of banking and mutual funds markets given that:

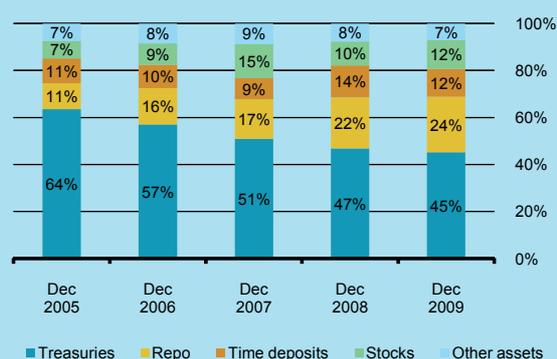
1) in December 2009, banks and their associated companies were responsible for the asset management of 90% of the mutual funds industry;

2) the majority of mutual fund investors is comprised by bank clients, who use the same distribution structure (managers, branches, customer services, internet sites, etc.); and

3) the proximity between the two systems could induce agents to link a troubled mutual fund to possible liquidity or solvency constraints in the manager bank.

Asset structure of mutual funds industry is characterized mainly by the low level of credit risk and high level of liquidity. In December 2009, 69% of the resources managed by funds were invested in Federal public bonds or in repurchase agreements backed by these same type of securities. Factors as low leverage and small volume of foreign assets also contribute to low risk of assets.

**Chart 2 – Investment Funds' Portfolio**



Brazilian Securities Exchange Commission (CVM) limits mutual funds to invest up to 20% of their net asset value in securities issued by the banking institution to which they are associated. Accordingly, one can note that even including investment in securities issued by non-associated financial

institutions, this total, on aggregate, represents only 12% of their net asset value. It's worth mentioning that mutual funds can set their own limits that may even be more conservative than those set by CVM. On aggregate, this conservative approach leads to an abundant liquidity situation.

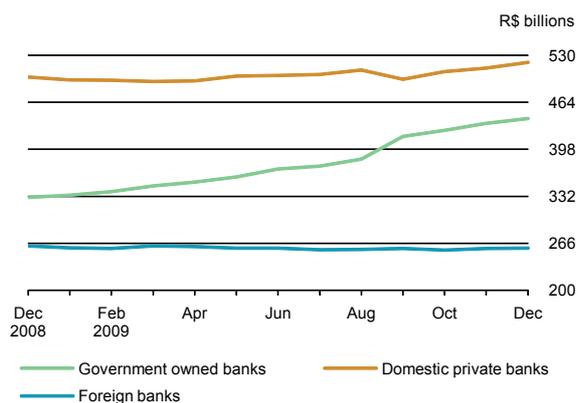
Increasing volume of mutual funds repurchase agreements has as counterparties institutions within the banking system that in turn usually deal new repos with BCB. As these agreements are usually short-term deals, they can quickly be settled according to cash flow need, without risk of maturity mismatch between assets and liabilities, both of mutual funds and banks.

The close relations between banking system and mutual funds, as well as the high liquid assets to total asset ratio of the latter, allow one to infer that in spite of being legally distinct institutions, combined liquidity analysis of both systems indicates an even more comfortable situation than the analysis limited to the banking system.

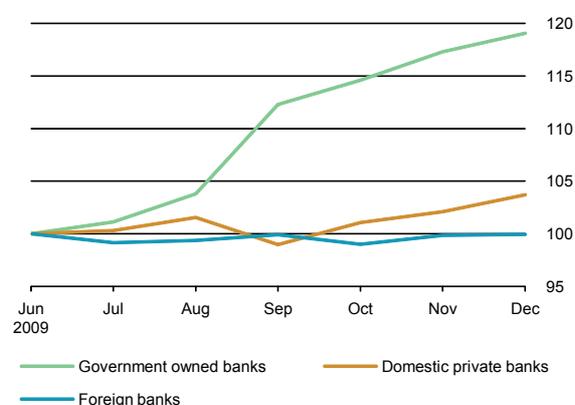
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1/ Information within this Box, excepting mutual funds that invest in another mutual funds' shares, pertain to funds regulated by CVM Rule 409, of August 18, 2004, that is: Short-Term Funds; Referenced Funds; Fixed Income Funds; Stocks Funds; Foreign Exchange Funds; External Debt Funds; and Multimarket Funds.

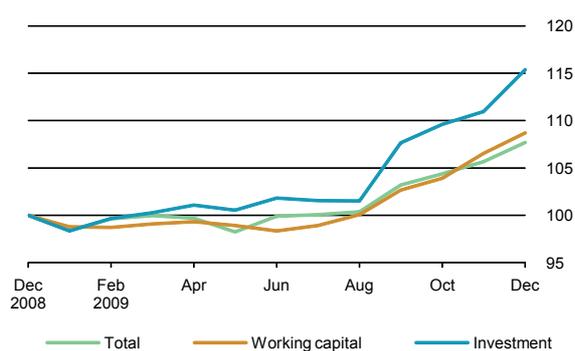
**Graph 2.14 – Credit operations – Total**  
Banking system by controlling stake



**Chart 2.15 – Growth of credit operations**  
Jun/2009 = 100



**Chart 2.16 – Growth of main credit types – Corporate loans**  
Dec/2008 = 100



## 2.2.2 Credit

Considering credit market recovery and its significant growth perspective in the coming years, evaluation of credit within the banking system must also contemplate the analysis of risk that such expansion might represent.

The second half of 2009 was marked by the return of banking system's credit operations expansion (Chart 2.14), reflecting the recovery in economic activity and the improvement in employment and income levels. Progress in economic scene and banking system's credit portfolio expansion, in turn, reflected positively in the quality of such transactions.

Such 8% portfolio expansion was mostly influenced by the performance of public banks that kept the same growth pace they presented up to beginning of the crisis, and by the recovery of credit operations granted by national private banks (Chart 2.15). Outstanding performance by public banks meant a 3.4 p.p. increase in their share of the total portfolio. Part of this growth is explained by the acquisition of a 50% stake in of Banco Votorantim by Banco do Brasil, which caused a level shift in the series in September 2009. Foreign banks portfolio remained practically stable along the period.

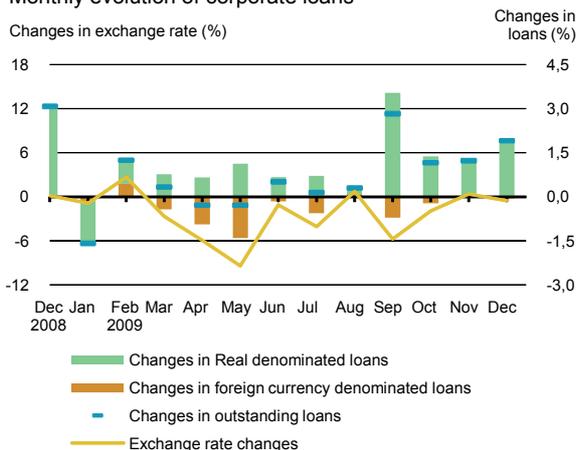
Analyzing the destination of loans, one can notice, differently from the first half of 2009, that credit to legal entities showed an expressive growth (Chart 2.16), due to Brazil's economic recovery. Between June and December 2009, these loans raised 8%, even considering accounting effects of local currency appreciation occurred in this period<sup>40</sup>, which brought down the balance of foreign-currency-denominated credit operations (Chart 2.17).

Increase in loans and leases resulted mostly from higher demand for working capital and investment financing. These kinds of loans, which represent the largest share of corporate credit (78%), had a robust expansion in the semester, growing 12%.

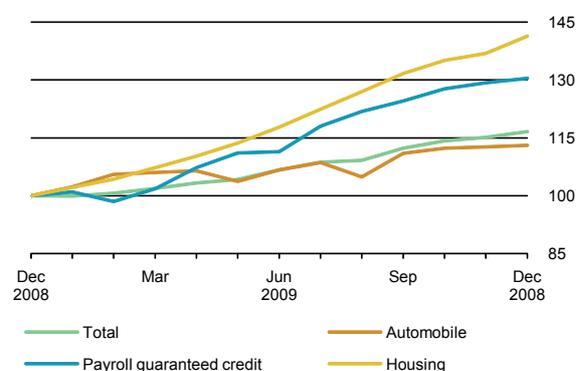
Loans to individuals, on the other hand, increased 9% with emphasis in 17% increase in payroll-deducted operations, 6% increase in vehicles financing (including financial leases), and 20% increase in real estate financing (Chart 2.18). Vehicles financing was boosted by sales increase

40/ Real was worth US\$0.51 on June 30, 2009, and US\$0.57 on December 31, 2009, presenting an 11% appreciation in the period.

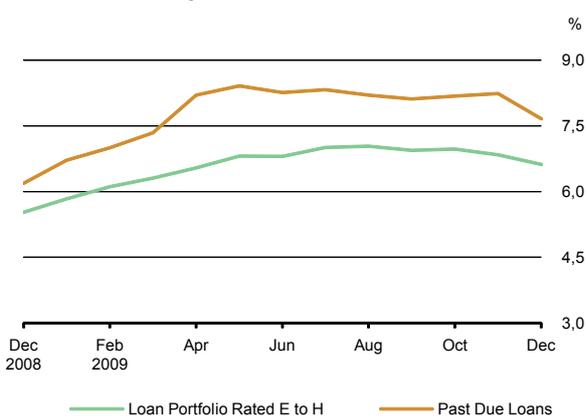
**Chart 2.17 – Impact of exchange rate changes**  
Monthly evolution of corporate loans



**Chart 2.18 – Growth of main credit types – Corporate loans**  
Dec/2008 = 100



**Chart 2.19 – Quality of the Loan Portfolio**



resulting from Tax on Industrialized Products (IPI) reduction and real estate financing grew due to higher availability of bank funding for long-term financing.

In the period, improvement in domestic economic scenario and acceleration in the pace of credit granting had a positive impact over financial institutions' credit portfolio quality. Portion of deals classified between levels E and H fell from 6.8% to 6.6%. Additionally, loans in arrears<sup>41</sup> to total loans ratio went down from 8.3% to 7.7% (Chart 2.19).

The behavior of delinquency rates<sup>42</sup> also showed positive signs. On the household credit portfolio it went from 7.4% in June to 6.9% in December. On corporate credit delinquency rate remained stable at 3%, but its peak occurred in October, suggesting that the recovery has already started (Chart 2.20). Reduction in delinquency rates can be seen in all bank industry. This trend was initiated on public-owned banks, mainly owing to the accelerated growth in their credit portfolios. Rates of such banks reached a 3.5% peak in August 2009 and fell to 3% in December. In foreign-owned and domestic private banks the peak was in September and October 2009, reaching respectively 5.7% and 6.2%, going down to 5.6% and 6.1% in December.

Behavior of loans with payments past due up to ninety days, which is a leading indicator to delinquency rate, clearly reflects the improvement in the domestic scenario. In April 2009, share of these operations in total loans reached the maximum of 3.8% and is backing down ever since, reaching 3% in December 2009 (Chart 2.21). Should expectations of larger increase in loans and leases occur in the coming months, delinquency rates should show a more significant reduction.

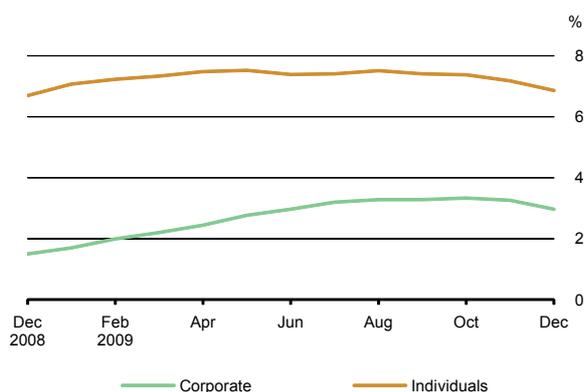
The provisions to nonperforming loans (NPL) ratio kept almost at the same level of June 2009, although the dynamics was different across segments (Chart 2.22). In June, public-owned banks presented a ratio significantly over the benchmark of "one", therefore they were able to reduce provisions for credit portfolio without jeopardizing the loan loss reserve coverage<sup>43</sup>. On the other hand, foreign-owned banks increased their provisions by 7% in the second half, thus, the coverage index reached 1.14. For national private banks, this index remained practically unchanged at 1.6.

41/ Comprises balance of loans with payments past due over 15 days.

42/ Nonperforming loans (NPL) to total loans ratio. NPL comprises loans with payments past due over 90 days.

43/ Loan loss reserve coverage index is measured as the provisions to NPL ratio.

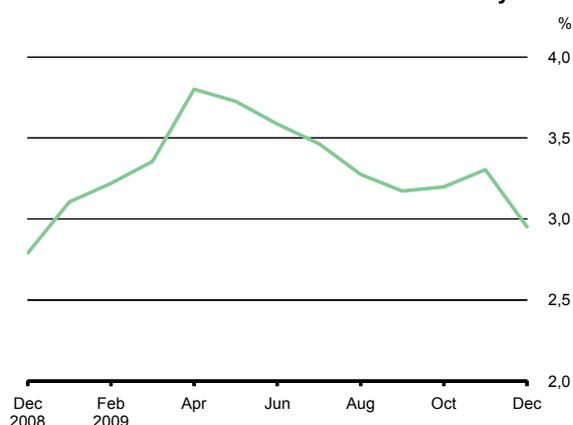
**Chart 2.20 – Non-performing loans**  
Individuals and corporations



Notwithstanding provisions have not shown considerable growth in the overall banking system, there was significant improvement for institutions with lower coverage indexes. In June 2009, 23 institutions presented provisions to NPL ratios below 1. In December 2009 there were 15 such institutions, representing only 0.9% of the banking system credit portfolio, demonstrating that the system is better prepared to absorb eventual losses (Chart 2.23).

Therefore, the second half of 2009 was marked by loans expansion and improvement in credit portfolio quality. But, besides this favorable perspective, another important issue to be analyzed is the sustainability and risks that credit growth may bring along to the banking system in the medium and long run.

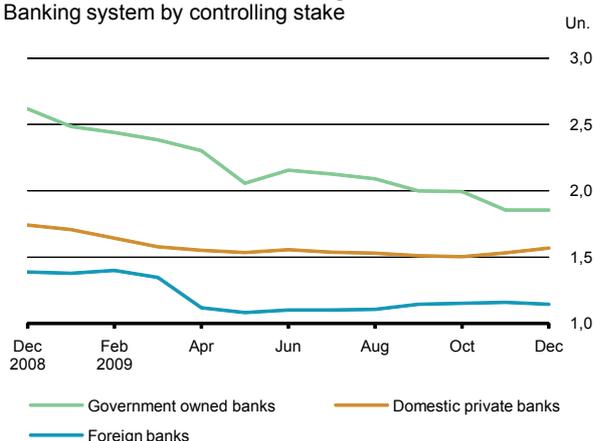
**Chart 2.21 – Loans in arrears for less than 90 days**



Generally speaking, as of 2003, the banking system has prioritized loan expansion to preserve earnings. Since then, credit portfolio has grown at annual rates above 20%, notwithstanding a small reduction in this rate owing to the 2008 financial crisis. For 2010, same magnitude growth is estimated.

Accelerated loan growth imposes caution on the part of BCB and other authorities responsible for the Brazilian financial stability, given that most financial crises were preceded by rapid expansion of credit operations. However, a growth analysis must also consider other factors characterizing a healthy expansion of such loans.

**Chart 2.22 – Evolution of Coverage Ratio**  
Banking system by controlling stake

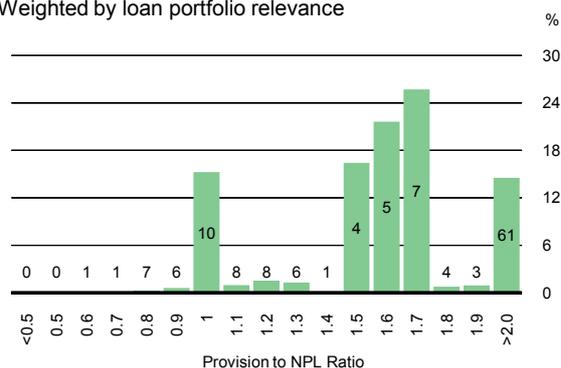


In Brazil's case, credit growth cycle was started with a credit to GDP ratio of only 22% (December 2002), reaching 45% in December 2009. Although the ratio has doubled in seven years, it remains lower than those of countries in similar economic situation, signaling that credit can still grow without reaching levels to be concerned about.

In the recent period of credit expansion, there was a significant reduction in interest rates on such transactions, resulting from the Brazilian economic stabilization and inflation reduction. Thus, new clients, once non-borrowers due to the high interest rates and economic scenario uncertainties, joined the banking system. So, credit expansion derived mainly from clients with a low-risk rather than a high-risk profile.

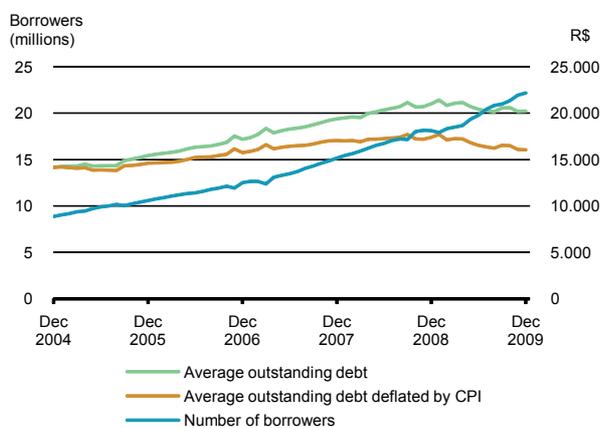
New clients' inclusion also allowed a large increase in credit portfolio, without significant change in average indebtedness per client (Chart 2.24). Analyzing deflated credit portfolio based on IPCA, there is certain stability in borrowers'

**Chart 2.23 – Frequency Distribution of the provision to NPL Ratio (Dec/2009)**  
Weighted by loan portfolio relevance



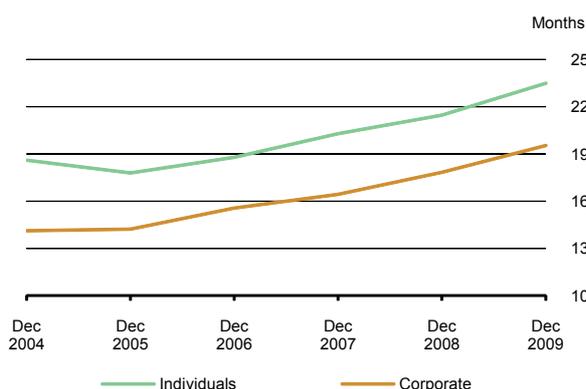
Figures on bars refer to the number of financial institutions with a Provision to NPL Ratio within that range.

**Chart 2.24 – Average outstanding debts and number of borrowers – Individuals<sup>1</sup>**



<sup>1/</sup> Does not include loans under R\$5 thousand.

**Chart 2.25 – Duration of loans**



indebtedness. Aggregate analysis of the share of income committed to interest and principal payment<sup>44</sup>, on its part, indicates that the portfolio has grown without compromising debtors' payment capacity.

Aside from growth on existing credit types, such as real estate and vehicles financings, new ones were developed such as payroll-deducted loans. This evolution resulted both from interest rates decrease and from changes in the regulatory framework. The new credit types contributed to the greater share of household credit to total credit, which went from 41% in December 2004 to 44% in December 2009.

Therefore, there was a change in the profile of the credit portfolio to individuals between 2004 and 2009. Overdraft, credit card and personal credit (payroll-deducted loans not included) that corresponded to 19% of such portfolio, responded for 15% in 2009. Payroll-deducted loans, real estate and vehicle financings (including financial leases) went from 40% to 57% at the end of that period. Thus, there was a significant reduction in the risk profile of the credit portfolio of the system as a whole, considering that types of greater growth presented smaller delinquency rates, reducing the institutions' losses.

Decreased uncertainties about Brazilian economy and increase in some credit types' balance, such as real estate financing, allowed for the widening of average portfolio maturity (Chart 2.25) for individuals (from 19 months in 2004 to 24 months in 2009) and for corporations (from 14 months in 2004 to 20 months in 2009), also contributing to the portfolio increase.

Finally, the share of large amount loans reduced given the inclusion of new debtors, both individuals and corporations, consequently decreasing credit risk concentration of the overall portfolio. The thousand largest debtors represented 25% of the total credit portfolio in December 2004, share that reduced to 20% in December 2009.

In sum, the semester was marked by expansion in loans and by quality improvement in credit portfolio, which has been expanding in a consistent and sustainable way. This increase is mainly occurring in lower risk credit types, helped by the increase in the customer base, with moderate increase in the average indebtedness and reduction in the portfolio concentration. Regardless of progress made,

44/ Pursuant to Inflation Report of March 2010 available at BCB site.

financial supervision as well as institutions shall face a series of challenges. Among them, the need to improve the regulatory framework, credit granting criteria and credit risk management practices.

## Matrix for Migration of Credit Classification

This Matrix shows the shifts in credit risk rating of debtors with debts equal to or over R\$5 thousand in a certain financial institution. Making possible to analyze the variation in risk level of deals in a twelve-month period, and evaluate the consistency of such ratings granted by financial institutions and, consequently, their respective internal risks.

Percentages presented in each risk level (horizontal) represent the amount that shifted from one level to the other. Percentages in bold (diagonal) represent amounts whose risk level did not change. Percentages above the bold diagonal, represent deals whose risk level were lowered, while those under improved their risk level. As only initial base-date and final base-date are considered, sub-dimensioning of reductions may occur in cases where there was debt increase during the period.

**Table 1 – Credit rating migration matrix**

Risk rating		Dec 2009											In percentage	
													Total	R\$ million
		AA	A	B	C	D	E	F	G	H	Losses	Reductions <sup>1/</sup>		Portfolio as of Dec 2009
Dec 2008	AA	55,3	17,2	4,0	1,0	0,4	0,2	0,1	0,1	0,1	0,2	21,5	26,8	271.337
	A	7,3	51,1	12,0	3,7	2,1	1,0	0,8	1,0	0,8	0,6	19,5	37,9	383.029
	B	2,8	25,1	<b>33,2</b>	8,3	5,3	2,1	1,6	2,0	1,4	1,6	16,6	19,7	198.819
	C	2,5	16,2	15,5	<b>20,1</b>	8,7	3,4	3,5	3,8	3,1	6,1	17,2	6,9	69.813
	D	1,0	8,6	9,2	9,6	<b>16,6</b>	7,0	3,9	4,9	4,3	16,4	18,4	3,4	34.663
	E	0,8	6,8	4,3	4,3	8,2	<b>14,2</b>	6,3	4,4	5,0	28,0	17,8	1,5	14.987
	F	2,8	5,2	2,8	2,5	3,8	6,2	<b>10,7</b>	5,6	6,9	37,1	16,4	1,1	10.885
	G	0,3	3,1	1,9	1,7	2,1	3,9	3,2	<b>13,5</b>	6,5	49,5	14,3	1,1	11.255
	H	0,1	3,2	0,8	0,7	0,7	0,8	1,0	1,8	<b>33,5</b>	42,8	14,7	1,6	16.365
<b>Total</b>		18,4	30,6	13,7	5,1	3,3	1,6	1,3	1,5	1,7	3,6	19,1	100,0	
<b>R\$ million</b>	<b>Portfolio as of Dec 2009</b>	185.935	309.034	138.047	51.862	33.612	16.585	12.914	15.614	17.664	36.669	193.218		1.011.154 <sup>2/</sup>

1/ Corresponds to settlement of credit portfolio sales.

2/ This amount comprises only identified credit operations, whose debtors' total financial liabilities are greater than R\$5 thousand.

Analysis of this matrix shows that out of the credits identifiable in the SCR in December 2008 related to Banking I and II, in the amount of R\$1,011.2 billion, 43.7% did not suffer changes in risk level until the end of December 2009. Shifts between risk levels also indicate that 12.5% of credits decreased the level of risk, while 21.1% shifted to higher risk and 3.6% turned into loss. Reductions (settlement and transfers) reached 19.1% during the period.

Date		Kept at the same level		Moved to other ratings			Provisions		Discrepancy
		Remaining	Reductions	Above	Below	Losses	Initial	Final	
2007	2008	46,5	17,7	11,6	21,9	2,3	4,2	6,6	2,4
Dec	Dec								
2008	2009	44,3	18,0	11,4	23,6	2,8	4,0	7,4	3,4
Jun	Jun								
2008	2009	43,7	19,1	12,5	21,1	3,6	4,3	8,4	4,0
Dec	Dec								

As normally expected, credits classified in levels E, F and G, representing 3.7% of the sample, were the ones that deteriorated most in relative terms, shifting their initial amounts to higher risk levels, including loss, respectively of 43.7%, 49.6% and 56.1%. Credits classified in levels G and H caused greater losses of 49.5% and 42.8%, respectively, of their initial balances.

The final result of this matrix analysis demonstrates that in the December 2008 to December 2009 period, compared to previous periods, there was an increased shift in credit deals to loss (3.6%). This was expected as a reflection of the financial crisis in 2009, i.e., in the first moment noncurrent loans ratio (non-payment) increased causing ratings to be lowered and, afterwards, part of these deals became loss. Risk increase reflected in the June 2008 to June 2009 matrix, and the consequent increase in losses, shown in the December 2008 to December 2009 matrix, were followed by an increase in provisions along the second half of 2008 and the year 2009.

**Table 2.1 – Profit reconciliation**

	R\$ billions		
	1 <sup>st</sup> sem.	2 <sup>nd</sup> sem.	Change
Intermediation Result	88,3	94,4	6,1
Net Provision Expenses	-36,7	-33,3	3,4
Adm. Exp. - Rev. Serv.	-28,5	-31,2	-2,7
Other Operating Results	-3,0	-2,8	0,2
Non-Operating Result	5,8	3,9	-1,9
Income Taxes and Contributions	-6,4	-7,4	-1,0
Net Profit	19,6	23,6	4,0

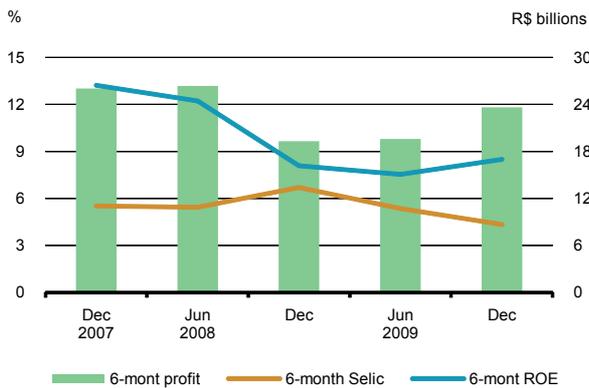
## 2.3 Earnings

The continuation of the Brazilian economy recovery allowed for improved conditions within the banking system, positively impacting its performance. Increased liquidity and lower funding costs, along with NPL reduction, rendered second half of 2009 results even greater than the ones of the previous semester (Table 2.1 and Chart 2.26).

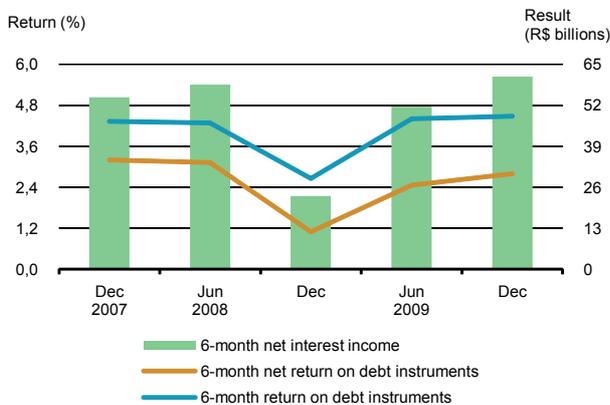
Once again the banking system showed satisfactory return on equity, even considering capital subscriptions during the period. Net Income of R\$23.6 billion was R\$4 billion higher than that of the previous semester (Table 2.1), closer to pre-crisis levels.

Aside from profit increase, once again quality of earnings improved. Increased financial intermediation results (Chart 2.27), improved efficiency, and reduced contribution of non-operational profits are examples of the enhanced quality of earnings. Relevant to mention that the profitability increase occurred despite provisioning expenses remained on a higher level than the ones prior to the financial crisis.

**Chart 2.26 – Profit and return on equity**



**Chart 2.27 – Result and return of financial intermediation**



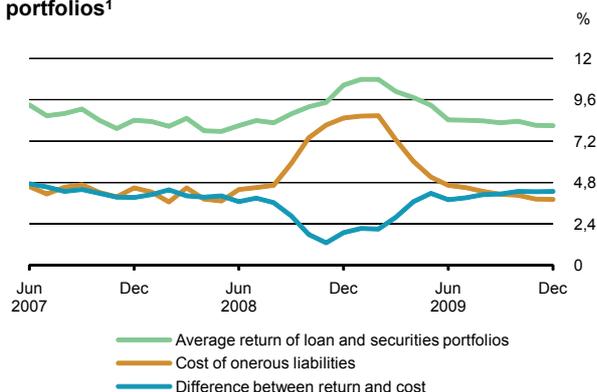
To maintain the level of profitability on the financial intermediation activity, the banking system seeks to obtain scale gains to compensate eventual decrease in revenues, caused by interest reduction. On one side, it seeks to increase client basis and volumes, as well as to change the mix of assets towards the ones with higher yields, migrating for instance from government securities to loans. On the other hand, downward trend of spreads and basic interest rate have contributed to decrease net interest margin.

The cost of liabilities fell impacted by appreciation of the Brazilian real and the reduction in rates paid to depositors, resulting from decrease in fund raising necessity (Chart 2.28). This fact kept the gross intermediation margin at levels close to the ones prior to the financial crisis.

Reduction in bad debt provisions, from R\$40.6 billion to R\$36.7 billion, also contributed to increased net interest margin (Chart 2.29).

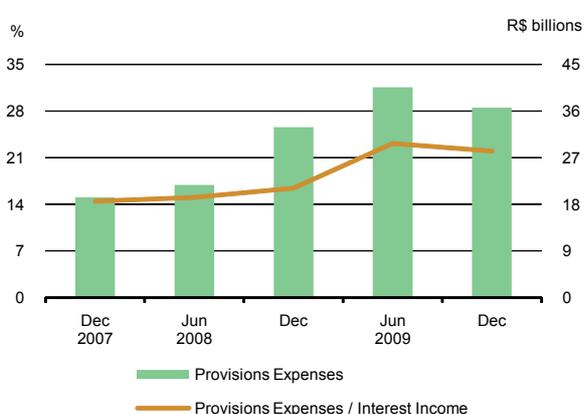
However, such provisions still consumed more than 20% of interest revenues, against 15% in pre-crisis period. Since estimating profitability is somewhat dependent on the level of provisioning, if this ratio was to come down to pre-crisis levels, that could be an additional boost for returns.

**Chart 2.28 – Cost of onerous liabilities and average return of loan and securities portfolios<sup>1</sup>**



<sup>1/</sup> Sum of revenues/expenses for the last six months to the average of the positions in the begin and in the end of the period.

**Chart 2.29 – Provisions expenses to interest income**



**Table 2.2 – Services revenues**

	R\$ million		Ann. change %
	2009	2008	
Tariff revenues	11.299,3	14.110,0	(19,9)
Credit and guarantees provided	5.529,8	5.731,7	(3,5)
Credit card revenues	13.189,8	11.621,6	13,5
Capital markets revenues <sup>1/</sup>	1.436,4	845,9	69,8
Mutual fund management	8.117,7	7.691,1	5,5
Collection service	4.272,5	3.884,4	10,0
Tax collection and agreements	1.944,6	1.768,5	10,0
Other	12.128,2	11.050,2	9,8
<b>Total</b>	<b>57.918,3</b>	<b>56.703,4</b>	<b>2,1</b>

Source: Notes to the financial statements from the six largest banks.

<sup>1/</sup> Includes brokerage, underwriting and security issues.

As positive as profitability increase, is the diversification of sources of revenues, which were less dependent on the checking account tariff revenues and more influenced by other types of services revenues, such as those related to investment banking, collection, assets under management, and credit cards (Table 2.2). The latter was the main responsible for the increase in service revenues, as a result of growth in number of credit cards and in financial volume of these transactions.

Administrative expenses are still growing, because of expenditures required to increase client basis and amount of assets (Chart 2.30). This strategy is helping financial institutions to obtain stronger results, and also positively impacting net interest margin and the efficiency index<sup>45</sup>. Part of the increase is due to amortization of deferred assets and intangibles, that represented 6.6% of total administrative expenses in 2009, against only 2.5% in 2008.

Participation of non-operational earnings in the second half of 2009 profit was smaller than in the first half (Chart 2.31). Compared to 2007 and 2008, relative participation of this source of income is even less important, strengthening the perception of improved quality of 2009 profit. Non-operational profits during that period were significantly impacted by gains on sales of investments in companies such as BM&F, Bovespa, Serasa, Redecard and Visanet, which were possible owing to the improvement in the Brazilian capital market in the past years.

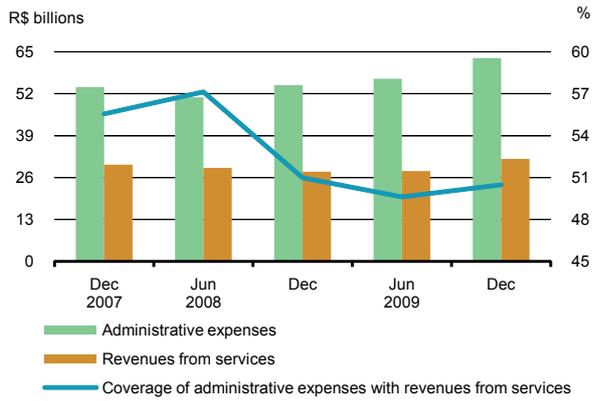
Financial institutions still hold remaining investments that can generate new non-operational results in the coming fiscal years, since their accounting values are generally smaller than their market values. There are potential gains encompassed in the difference between accounting and market values of other assets such as the branches network, and securities under the category held to maturity.

The banking system has ways to maintain adequate level of return in the coming fiscal years, regardless of non-recurring gains.

Analysis contained in this report, have not identified elements that may alter the perception that, under normal conditions, earnings should remain high in the coming years. However, with the evolution of the Brazilian economy, and consequently of the banking system, composition

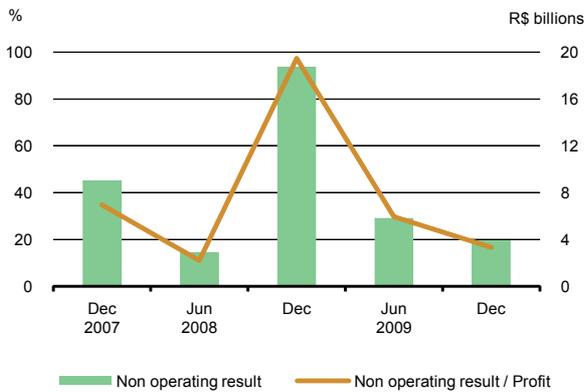
45/ Coverage of administrative expenses with services' revenues.

**Chart 2.30 – Administrative expenses versus revenues from services**



and sources of such results are changing. Perspectives point towards banks advancing their strategies to obtain efficiency gains. Consolidations, economies of scale, cost cutting, increase in client basis and in volume, new products, improvement in controls and risk management make up a non-exhaustive list of initiatives of financial institutions to maintain high profitability.

**Chart 2.31 – Contribution from non-operating result to annual profit**



## **BCB Convergence to International Financial Reporting Standards**

With increasing integration of financial markets, intensive capital flow among nations, the development of acknowledged accounting standards, allowing the flow of relevant data on the financial situation of companies, becomes indispensable to the good standing of such markets. Currently the International Accounting Standards Board (IASB) strives to harmonize accounting standards used by different countries, issuing accounting standards called International Financial Reporting Standards (IFRS), already adopted or in the process of being adopted by more than one hundred countries, including Brazil.

A relevant factor for dissemination of IFRS was its adoption by the European Union, in 2005, for public listed companies within their Member States. Along the same line, is the support of the Securities and Exchange Commission (US SEC), responsible for regulation of capital markets in the US, which began to accept financial reports in IFRS from foreign companies.

The recent world-wide economic crisis reinforced IASB's role in the international agenda. G20 recommendations, envisaging a new economic order, included specific tasks to be performed by IASB, particularly in the process to simplify excessively complex standards and the review of pro-cyclical practices.

In Brazil, BCB started the convergence towards IFRS by publishing Communiqué n. 14,259, in March 2006, informing that new rules would be issued to comply with IFRS within the SFN, as of consolidated accounting reports referring to December 31, 2010.

This decision was followed by CVM that published Instruction n. 457, in July 2007, determining listed

companies to publish consolidated financial statements in accordance with IFRS as of December 31, 2010. Additionally, in December 2007, Law n. 11,638 was passed confirming the Brazilian Government stand in adopting international accounting standards.

Following Communiqué n. 14,259, the National Monetary Council (CMN) issued Resolution n. 3,786, on September 24, 2009, determining that institutions authorized by BCB, constituted as public companies or those obligated to hold auditing committees, to elaborate and publish their consolidated financial statements in accordance with IFRS, as of December 31, 2010.

Such financial statements do not replace the ones presently required by BCB from financial institutions, to which accounting procedures set forth in the Financial Institutions' Accounting Plan (Cosif) must be applied. In parallel Cosif is slowly incorporating IFRS, pursuant to a specific asymmetry reduction chronogram, followed by strict evaluations of possible impacts in the SFN.

Some impacts result out of several IFRS. Others are caused by specific standards. One of the main overall impacts is the fact that IFRS are normally more subjective and flexible than Brazilian accounting rules. This characteristic requires deeper degree of analysis, interpretation and argumentation by those who prepare financial reports.

Such characteristics stem from the choice to produce standards based more in accounting principles than in detailed rules to define, recognize and measure assets and liabilities. And one of the most emphasized principles, in the majority of IFRS, is the prevalence

of the economic substance over the contractual form as basis for accounting. This principle can produce several impacts in the financial system, among them the ones that stand out are:

- a) a financial leasing asset is to be registered by the lessee, differently than today;
- b) asset definition in IFRS concept, privileging control over ownership of the goods, introduces several changes in financial institutions' asset structure; and
- c) derecognition procedures of financial assets also disregard the contractual format of deals and become a consequence of the proportion of risks and benefits<sup>1</sup> retained.

Other IFRS aspect is the large number of accounting estimates to measure items of the balance sheet, especially related to fair value measurement of financial assets and liabilities and losses recognition through impairment tests. To successfully apply these new standards, specific knowledge in evaluation models and in pricing assets and liabilities is required. Many such situations can be listed, like:

- a) IFRS adoption results in increased asset items measured at fair value, including liabilities. It will be a significant challenge to measure on-balance sheet items that possess no market values;
- b) in business combinations, assets and liabilities are measured at fair value, including identifiable intangible assets not previously recognized. Such estimates reflect in the goodwill value determination;
- c) depreciation and asset amortization charges in the IFRS environment must be calculated according to the actual asset consumption relative to its useful life and not based on pre-established percentages by the regulatory entity; and
- d) both financial and non-financial impairment tests require estimates to determine benefits generated and consequently the amount of recoverable assets.

Additional impact comes from the significant information requirement on companies' transactions aiming at improving the level of transparency in financial reports. IFRS requires a larger number of

publications than the Brazilian standard, which will mean a substantial increase in explanatory notes in financial reports and will demand greater effort on the part of the institutions to fulfill such requirements.

Also information systems in accounting and business areas will be deeply affected by IFRS. Novelties like effective interest rate calculation, basis for accrual of revenues or definition of cash generating units for impairment of some assets (eg. goodwill), shall cause substantial changes in internal systems of the financial institutions. Thus, BCB is taking the necessary steps towards the consolidation of the convergence of Brazilian GAAPs to IASB<sup>2</sup> standards, as well as the preparation of the Supervision area to effectively perform within this new environment.

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1/ International standard on the subject (IAS 39, section "derecognition of financial asset") is under reformulation, according to draft published by IASB.

2/ On incorporation of international standards to local accounting regulation, see chapter 5.

Chart 2.32 – Leverage

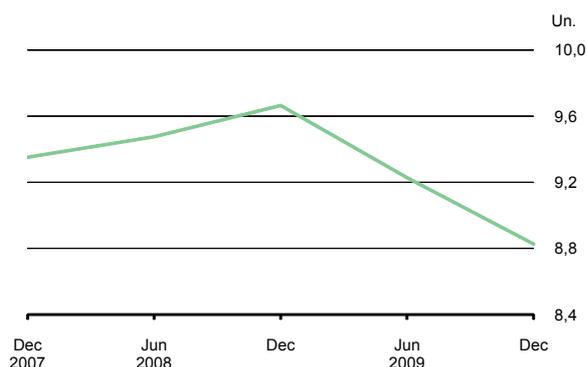


Chart 2.33 – Regulatory Capital (RC), Required Net Worth (RNE) and Basel capital ratio

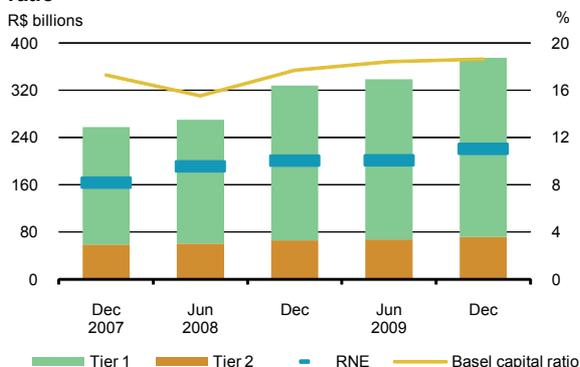
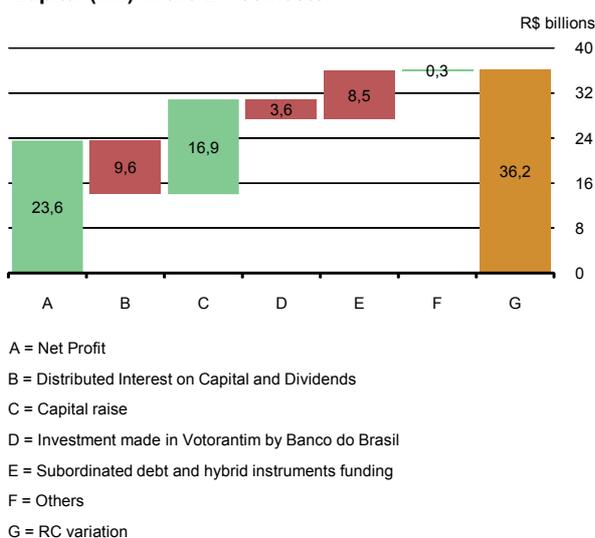


Chart 2.34 – Components of Regulatory Capital (RC) in the 2<sup>nd</sup> semester



## 2.4 Solvency

Solvency situation has improved as shown by decrease in leverage and slight increase in Total Capital Ratio – TCR (Basle Ratio). On one hand, there was an increase in credit risk exposure mainly due to recovery in loan granting. On the other hand, accumulated profits and new capital inflow strengthened the capital basis. Thus, leverage dropped from 9.2 to 8.8 (Chart 2.32), while TCR went from 18.4% to 18.6% (Chart 2.33).

Regulatory Capital (RC) showed significant increase, influenced by the issuing of new stock, subordinate debt, and hybrid instruments (Chart 2.34). RC went from R\$337.9 billion to R\$374.1 billion between June and December 2009, out of which R\$25.4 billion came from these new emissions.

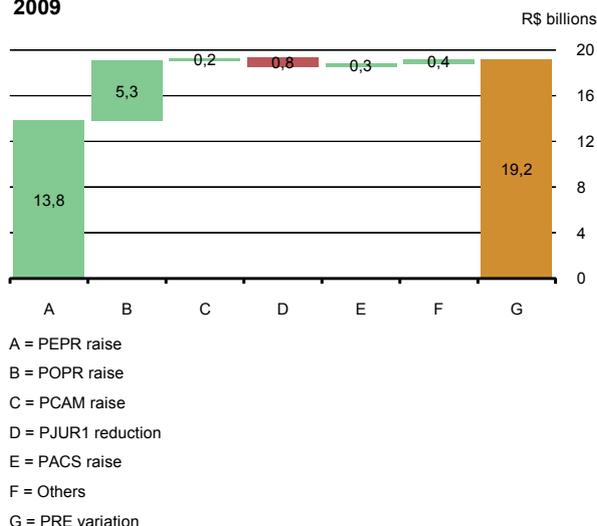
Accumulated earnings, mainly derived from operational income, totaled R\$23.6 billion and were another determinant factor to the increase in capital base. Deducting R\$9.6 billion distributed as dividends and interest over own capital throughout the semester, we arrive at R\$14 billion that contributed to the increase in RC.

In relation to capital base, as of April 1, 2010, additional provision no longer can be included in RC. Taking into account that in December 2009 such provision amounted to R\$14.1 billion, the impact of this new regulation will reduce RC somewhere around 3.8% and TCR in 0.7 p.p. The latter would reach 17.9%.

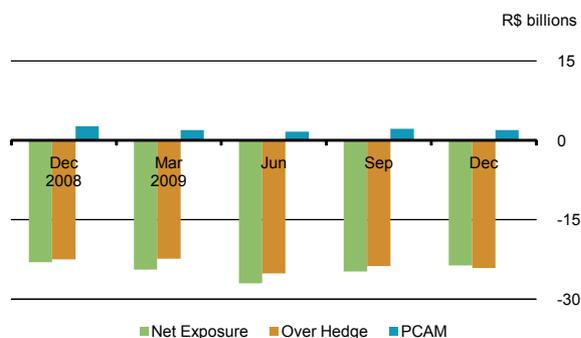
As for risk exposure, credit risk was relevant to the increase in minimum required capital (MRC), which went from R\$201.7 billion to R\$221.0 billion (Charts 2.33 and 2.35). Influenced mostly by growth in loans and financings, the amount of minimum required capital for credit risk (MRC\_Cr) increased 7.4%, going from R\$187.0 billion in June to R\$201 billion in December 2009. Such increase is smaller than the 8.0% increase in credit portfolio, but greater than the 3.0% increase in assets, which means that MRC\_Cr was the main driver for the increase in MRC.

Growth in credit commitments that are unconditionally cancellable at any time by banks without prior notice, and guarantees also contributed to the increase in MRC. The first ones showed impressive increase in revolving credit, credit card and overdraft open limits. Increase in guarantees was mainly due to sureties and risk retained in credit cessions.

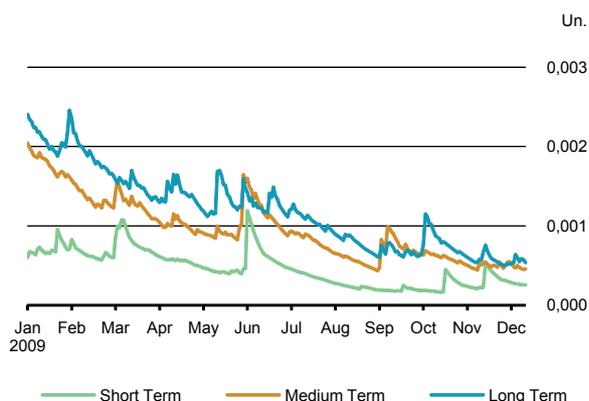
**Chart 2.35 – Capital Requirement (PRE) variation breakdown for the 2<sup>nd</sup> semester of 2009**



**Chart 2.36 – Foreign Exchange Exposure**



**Chart 2.37 – Interest Rate Volatility**



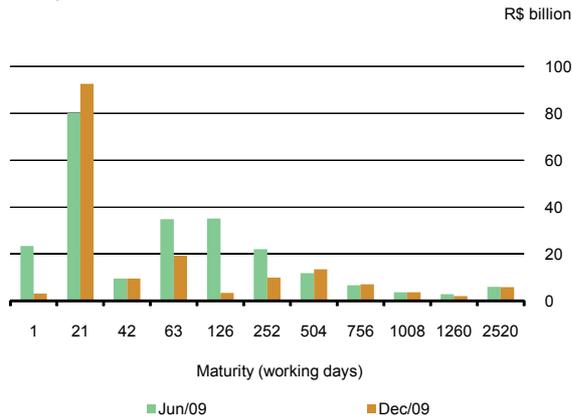
Operational risk (MRC<sub>Op</sub>) also contributed to increase in MRC mainly as a result from the change in the multiplying factor, and to a lesser degree as consequence of a raise in level of activity. Since July 2008, the value of the multiplying factor used for such calculation has increased from 0.5 to 0.8, which meant an increase in MRC<sub>Op</sub> from R\$6.9 billion to R\$12.2 billion. In January 2010, it reached its peak at 1.0. No significant changes on the basis of calculation occurring, the portion of capital requirement of the operational risk should present an increase around 25% in the coming months.

To counteract foreign exchange risk, capital requirement raised 14.2% in the second half, even considering the appreciation of the Brazilian real against the dollar, and the reduction in net sold foreign exchange exposure of the banking system as a whole. This results from the fact that large banks carry regulatory foreign exchange exposure under 5% of RC, resulting in null capital requirement. Such institutions carry effective exposure mainly from short positions taken to hedge investments abroad, which take into account not only the value of the investment itself but also the fiscal impact over the revenues generated by these same short positions. It is the so called over hedge (Chart 2.36). Smaller size institutions, on their side, carry foreign exchange exposure in excess of 5%, thus determining the dynamics of capital requirement, although representing a small proportion in relation to total exposure of the system. In the second half, this group increased such exposure and owing to this, notwithstanding the reduction in aggregate exposure, there was a slight increase in capital requirement.

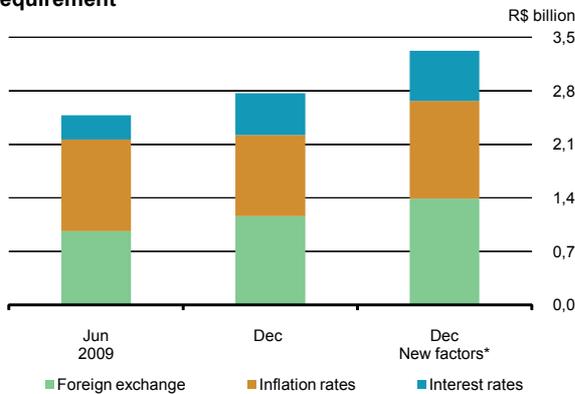
Capital requirement on variation of fixed interest rates of the trading portfolio suffered a 32.2% reduction. Short, medium and long-term volatility measures showed over 50% decreases (Chart 2.37), only partly compensated by the increase in the multiplying factor used in capital requirement calculation. Moreover, there was a reduction both in mismatch and in net exposure to this risk factor (Chart 2.38). Between June and December 2009, net exposure went from R\$236 billion to R\$170 billion. Additionally, there was a significant reduction in average maturity both in long and in short positions. As a result, mismatch of this portfolio measured by duration gap, went from 17.6 days to 12.5 days.

Other items relating to market risk remained with little impact over the amount of capital requirement, totaling R\$4.3 billion equivalent to 2% of MRC. Worth mentioning that as of January 4, 2010 multiplying factors used to calculate MRC on exposures to interest rates in foreign exchange denominated securities, to price index, and to

**Chart 2.38 – Exposure to fixed rate risk**  
Maturity

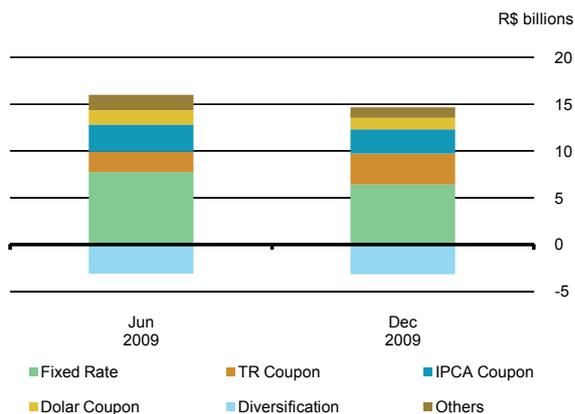


**Chart 2.39 – Coupon interest rate risk capital requirement**



\*Estimated by applying the new factors to positions in Dec/2009.

**Chart 2.40 – Capital requirement for the interest rate risk in the banking book**



interest rates were altered<sup>46</sup>. The aggregate impact of such change should not be significant, given the increase in capital requirement should be around R\$550 million, equivalent to 0.2% of December 2009 MRC (Chart 2.39).

Capital requirement on interest rates associated to banking portfolio fell by 11%, moving from R\$13.0 billion to R\$11.5 billion between June and December 2009 (Chart 2.40). This decline resulted from a reduction in the mismatch of exposure to fixed interest rates risk. It is noticeable the increase in capital requirement associated with the exposure subject to variations in the fixed interest rate part of instruments pegged to Taxa Referencial (TR), which can be attributed to the substantial increase in real estate financing portfolio.

Another issue deserving attention is the evolution of capital quality. In the past years, the volume of non usual and low liquidity assets in the balance sheets of large institutions grew significantly. Such is the case, for instance, of deferred tax assets (DTAs) that practically doubled in the past two years, jumping from R\$49.8 billion in December 2007 to R\$97.7 billion in December 2009, and of deferred and intangibles assets that climbed from R\$7.3 billion to R\$42.8 billion in the same period.

Notwithstanding this leap of DTAs, it is reasonable to admit that they will be realized in the coming years. Considering ten years as the acceptable time-horizon for DTAs realization<sup>47</sup>, annual profits of at least R\$28.7 billion will be required, which is less than the R\$45.2 billion recorded on average over the past five years (Chart 2.41). However, should this exercise be individually applied, there are institutions with much tighter margins.

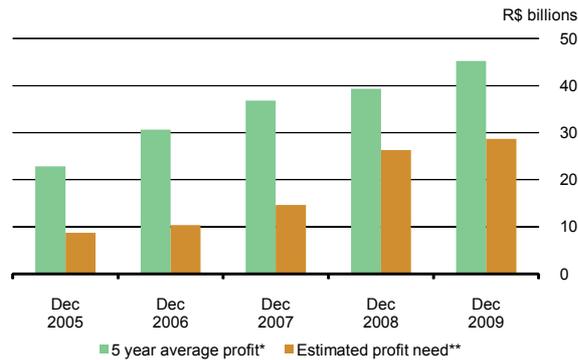
As for deferred and intangibles assets, after the increase in the second half of 2008, there was a decrease due to amortizations. On the other hand, investments in associates and controlled institutions within the country showed a 15.8% growth, increasing by 4.3% the volume of permanent assets. As a result of increase in capital basis, however, the fixed assets to capital ratio remained practically unchanged, going from 27.8% in June 2009 to 27.7% in December of the same year (Chart 2.42).

Finally, regardless of the increase of non usual and low liquidity assets, the capital basis grew proportionately more,

46/ Comunic  n. 19,229, of December 30, 2009.

47/ Resolution n. 3,355/2006 establishes that financial institutions can register DTAs as long as there are grounds, through technical studies, to condone the performance of such assets within ten years maximum.

**Chart 2.41 – Tax credit growth sustainability**



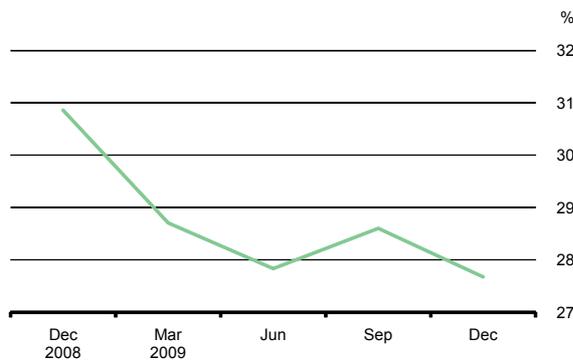
\*5 year average for the annual profit before taxes.

\*\*Tax credit/(34% x 10 years).

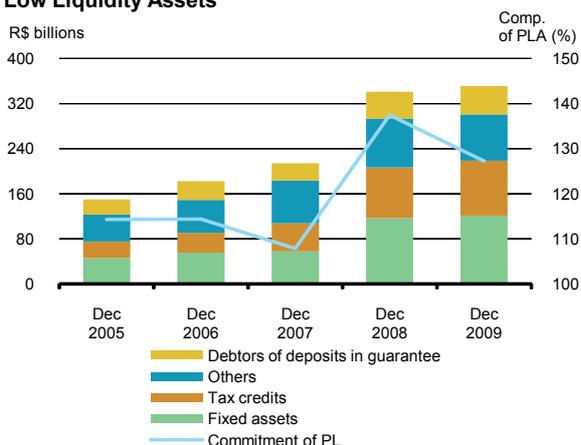
thus the share of such assets in net worth of the banking system showed a decrease. More precisely, there was a reduction in the non usual and low liquidity to net worth ratio, which went from 132% to 128% (Chart 2.43).

Therefore, evidence indicates a comfortable level of solvency at the banking system. The increase in credit exposure risk was offset by new capital being issued and by profit retention, which kept TCR at satisfactory level. Furthermore, notwithstanding the increase in the loan portfolio, the increase in capital basis allowed for the leverage to remain at low levels. Finally, growth in unusual and low liquidity assets was accompanied by the growth in net worth, which prevented deterioration of the quality of the capital.

**Chart 2.42 – Fixed Asset Limit**



**Chart 2.43 – Evolution of Non Usual Assets and of Commitment of Net Worth (PL) with Low Liquidity Assets**



# Stress Test for Market Risk Capital

These tests aim at estimating the impact on equity and the new capital requirement for financial institutions, as a result of the abrupt variations on foreign exchange rate. Within BCB's supervision process, two distinct analyses are conducted: Sensitivity and Scenario. Sensitivity analysis seeks to evaluate the isolated effect of incremental variations in interest and in foreign exchange rates over TCR. Scenario analysis applies a specific scenario to each risk factor.

Results show that either an increase or a reduction in interest rates has limited impact over TCR of the banking segment. Moreover, even in a stress scenario, improbable to occur, such TCR would still be over the minimum 11% required. This situation demonstrates the resilience of the capital system. Direct impact of foreign exchange rate is insignificant in TCR. Its indirect effect is more significant and is measured by capital stress tests for credit risk.

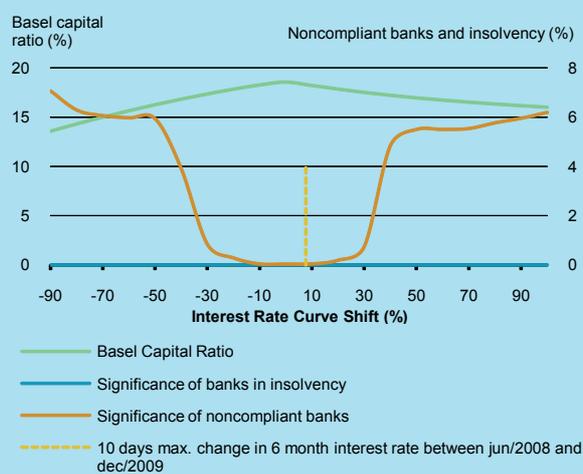
## Sensitivity analysis

The effect of interest rates variation has limited impact on TCR. This impact can be assessed through a sensitivity analysis to variations in fixed interest rates and coupon rates on interest rates, currency and price index.

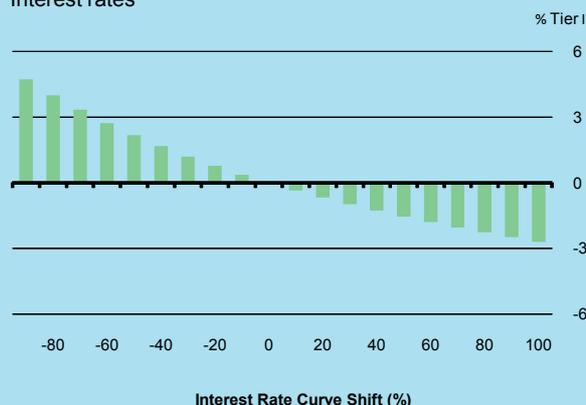
Shocks over interest rates' term structure substantially affect volatility, which is a key variable in capital requirement calculation, both increases and reductions in such rates would increase capital requirement, and, consequently, reduce TCR on fixed interest rates exposure<sup>1</sup>. Besides, as the system on average is long in interest rate trading portfolio, an increase in such

rates would carry a negative impact on net worth of the institutions concerned.

**Chart 1 – Sensitivity analysis – Interest rates**



**Chart 2 – Impact on tier I capital Interest rates**



By conducting incremental movements in interest rates curves, and estimating the corresponding impact on CAPITAL and on RWA, the reduced impact on

TCR of the institutions becomes clear. In extreme scenarios, either of rates increase or reduction, no institution would become insolvent, although some, representing less than 8% of the assets of the universe under analysis, would present a TCR lower than the minimum required. Even if foreign exchange rates varied from 0.35 to 3.48 the net worth of financial institutions would be little affected. Impact in TCR would be very small, and the number of institutions that would not fit in would be insignificant.

### Scenario analysis

Solvency of institutions is also assessed using specific stress scenarios for the various risk factors<sup>2</sup>. This section presents only the most severe scenario, consisting of interest rates reduction<sup>3</sup>. This analysis demonstrates that the TCR of the set of institutions would remain over 11%, going from 18.6% to 15.0%, indicating a good performance of the system as far as capital is concerned. Additionally, the individual analysis shows that some institutions (holding 6.1% of the assets of the analyzed universe) would present a TCR below the minimum required (7.0% average) and none of them would become insolvent.

**Table 1 – Risk factor variations (Dec/2009)**

Scenarios	Fixed Interest Rate (p.p)		
	1 month	6 months	2 years
Interest rate			
Increase	5,1	8	9,2
Decrease	-6,1	-7,7	-8
Combination	-6,1	-7,7	-8

- 
- 1/ For other interest rates risk factors Ms altered as of January 4, 2010 were used. For additional details on methodology used, see box “Concepts and Methodology”.
  - 2/ Evaluated scenarios consist of: 1) interest rates increase/reduction; 2) foreign exchange rate depreciation/appreciation; 3) interest rate increase and foreign exchange depreciation.
  - 3/ Apparent contradiction justified by the fact of an impact of an interest rate reduction on capital requirement be well above that of an increase. Therefore, although institutions are bought, reduction still has a more severe impact than increase.

## Capital Stress Tests for Credit Risk

Credits are the main source of risk to financial institutions. Capital stress test for credit risk seeks to estimate losses resulting from a sudden increase in credit risk resulting from adverse shocks, as well as from new capital requirements. Therefore, two different analyses are performed: sensitivity and scenario analysis. Sensitivity analysis seeks to evaluate the isolated effect on TCR of incremental variations in minimum provision level. Scenario analysis is divided in two parts: *ad hoc* scenario analysis and scenario analysis based on stress of macro-economic variables. *Ad hoc* analysis is performed by lowering two levels in credit ranking of all clients of a financial institution. Macroeconomic stress analysis seeks to relate variables that measure credit risk with variables that capture the macroeconomic cycle of the country<sup>1</sup>.

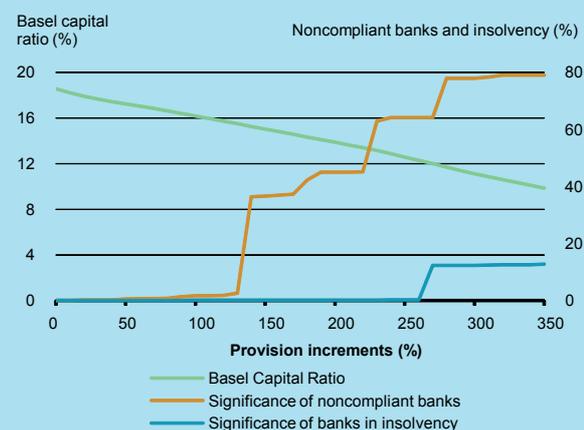
Both in *ad hoc* and in macroeconomic analysis TCR of the system remain above the 11% minimum. In sensitivity analysis, TCR would only be lower than the minimum required in case of shocks equal to or above 310% of the level of provisions. Such results demonstrate the good situation of capitalization of the financial system.

### Sensitivity analysis

Given the importance of credit portfolio, provisions' increase has significant impact in consolidated net worth of the system. In an extreme scenario with 100% increase in minimum provisions of all institutions, the impact would bring about expenses in the order of 17.5% of Tier one, and a small number of institutions would not fit in (2% of analyzed assets). Only in even more extreme situations, above the historically observed ones, with provision increases

exceeding 140%, TCR of some larger institutions would be lower than the required minimum, and only increases over 270% would bring such institutions to insolvency.

**Chart 1 – Sensitivity analysis – Provision**



### *Ad hoc* scenario analysis

*Ad hoc* analysis demonstrates that, should there be a two levels decrease in credit ranking of all clients, TCR of the bulk of institutions would remain above 11%, going from 18.6% to 15.6%, indicating the good standing of the system's capitalization. Some institutions would be non-compliant (24% of analyzed assets), and none of them would become insolvent.

### Scenario analysis based on stress of macroeconomic variables

Macro-economic stress analysis seeks to relate the effects of adverse variation in GDP, in interest rates, and in foreign exchange to delinquency rate, and as

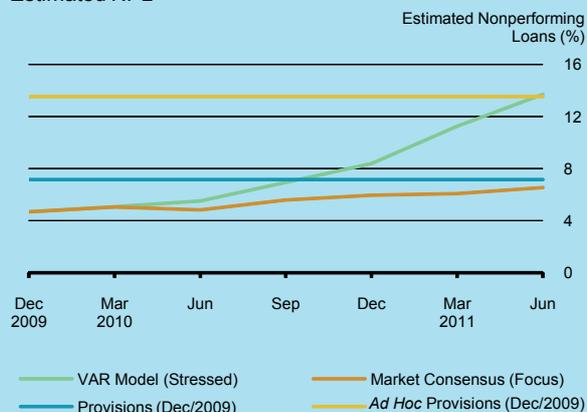
a consequence, in provisions and in TCR. As the ripple effect of macroeconomic shocks over credit quality is delayed, shock simulations take place up to December 2010 and delinquency rate is measured up to June 2011.

Using the market consensus on macroeconomic variables scenario, obtained by researching market expectations published in the Focus Report, there would be small changes in non-performance levels.

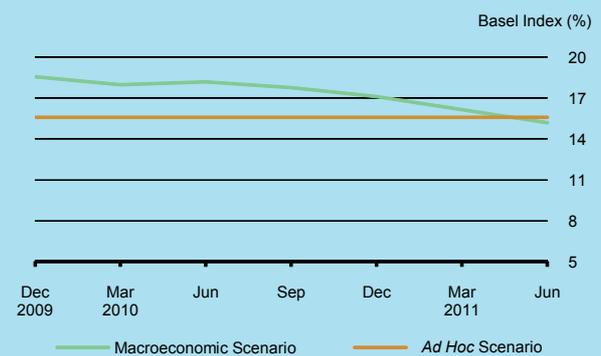
Using a stress scenario, whose variables were estimated using a VAR<sup>2</sup> model, December 2010 provision stock would only be smaller than projected NPL as of September 2010. Therefore in June 2011, the provision increase required to cover NPL would be 99.8%. Impact over TCR would be small, reducing from 18.6% in December 2009 to 15.2% in June 2011.

Results indicate that the above mentioned stress scenario do not substantially affect the Brazilian banking system until June 2011. System's TCR would remain above 11% minimum required.

**Chart 2 – Macroeconomic Stress Testing**  
Estimated NPL



**Chart 3 – Macroeconomic Stress Testing**  
Basel Index



1/ For further information, see box “Concepts and Methodologies”.  
2/ Vector autoregressive, for further information, see box “Concepts and Methodology”.

## 2.5 Conclusion

This edition analyzed the main events of the second half of 2009 and made a prospective analysis of the banking system, focused on sustainable growth of the credit portfolio.

Hence, assessments were made on sources of financing; quantity and quality of net assets; level of provisions; composition of credit portfolio, average indebtedness of borrowers; and capital basis adequacy.

For the time being, funding should not limit credit growth. Banks carry a substantial volume of high quality liquid assets. Use of alternative sources such as external funding or securitization is still low. Finally, although credit is growing at higher rates than funding, mutual funds represent a potential source of financing, since they can increase their investments in certificate of deposits (CDB), should there be an increase in return rates of these financial instruments.

Likewise, capital should not hinder the expansion of the credit portfolio. In the past years, this growth has been accompanied by an increase in capital basis through issue of new capital and profit retention. Therefore both TCR and leverage have been kept at comfortable levels.

With respect to the quality of the credit portfolio, current provisions are enough to face expected losses. Even in extreme scenarios of macroeconomic stress, impact of provision increase as a result of delinquency would result in a TCR higher than the minimum requirement.

Aside from these factors, attention was drawn to the manner in which this expansion is occurring. This process was initiated within a scenario of high interest rates and very low levels of credit granting. As rates began to decrease, new types of credit and new clients were incorporated into the market, without significant increase in risk and indebtedness of borrowers.

In this sense, the growth of the credit portfolio is running in a sustained manner and the goal of the banks in keeping high lucrativeness is being reached, even under the present economic setting characterized by lower interest rates.

Profitability of the system in recurring transactions is satisfactory. Banks are demonstrating enough flexibility to adapt to economic environment changes, either by trying to compensate for losses resulting from reduction of rates with volume increases, or by diversifying their revenue sources.

Results of this semester were better in quantity and quality than the past semester, and in a normal scenario there is no reason to fear about the performance of the Brazilian banking system in the coming fiscal years.

Even at a time when both the present situation and the future outlook are positive, the banking system must proceed with actions taken in order to improve management, notably of credit risk, bearing in mind the magnitude of the growth of such assets, as well as to continue seeking efficiency gains so as to maintain the present lucrativeness.

**Table 3.1 – STR  
Turnover details**

Type of funds transfer	2009				R\$ billion Accumulated
	1 <sup>st</sup> Semester		2 <sup>nd</sup> Semester		
	Value	% <sup>1/</sup>	Value	% <sup>1/</sup>	
<b>I - Transfers related to other settlement systems <sup>2/</sup></b>					
1. securities <sup>3/</sup>	64326,1	92,8	68400,1	91,7	132726,2
2. derivatives	193,2	0,3	96,6	0,1	289,8
3. foreign exchange	356,9	0,5	383,3	0,5	740,3
4. others <sup>4/</sup>	1 227,2	1,8	1 460,1	2,0	2 687,3
<b>II - Others financial institution funds transfers</b>					
1. on behalf of its own	1 494,3	2,2	1 683,0	2,3	3 177,4
2. on behalf of clients	889,4	1,3	1 007,6	1,4	1 897,0
<b>III - Government transfers</b>					
	832,7	1,2	1 521,1	2,0	2 353,8
<b>Total</b>	<b>69 319,9</b>		<b>74 551,8</b>		<b>143 871,7</b>

1/ As a percentage of total turnover.

2/ Funds transfers to settle net or gross financial positions stemming from others clearing and settlement systems.

3/ Includes organized over-the-counter derivatives transactions, and Banco Central do Brasil's intraday and overnight repos.

4/ Concerning Compe, Siloc and Sitraf.

## 3.1 Introduction

The Brazilian Payment System (SPB), comprising the Interbank Funds Transfer Settlement Systems and the Securities, Derivatives and Foreign Exchange Settlement Systems, worked properly in the second half of 2009, given risk and efficiency aspect of such system. Backtestings periodically performed showed satisfactory results along the semester.

Even with the reduction in reserve requirements occurred in the last quarter of 2008<sup>48</sup>, aggregate intraday available liquidity continued above the needs of the financial institutions participating in the clearing and settlement systems, especially regarding the Reserves Transfer System (STR), which in practice is the central settlement system.

The Centralizer Clearance for Checks (Compe) and the Deferred Settlement System for Interbank Credit Orders (Siloc) were not considered systemically important, pursuant to BCB's evaluation criteria. Although systemically important, the BM&F Securities Clearinghouse did not present enough volume so as to impact financial stability.

## 3.2 Major developments in the second half of 2009

The recovery process in Brazilian capital markets, starting at the beginning of the year, went on pushed by optimistic perspectives of economic growth and foreign funds inflow. The Ibovespa increased approximately 33% between July

48/ Along the last quarter of 2008, BCB established a number of measures to decrease liquidity concentration and increase credit flow, both within the financial system and from it to the non-financial system. Among these measures was the release of funds attached to compulsory deposits. However, from the point of view of potential sources of intraday liquidity, decrease in such levels can result in reduction of availability of funds to meet payments within the STR.

**Table 3.2 – STR**  
**Number of transactions details**

Type of funds transfer	2009				Accumulated
	1 <sup>st</sup> Semester		2 <sup>nd</sup> Semester		
	Volume	% <sup>1/</sup>	Volume	% <sup>1/</sup>	
Thousand					
I - Transfers related to other settlement systems <sup>2/</sup>					
1. securities <sup>3/</sup>	961,6	18,4	1095,1	20,1	2056,6
2. derivatives	5,6	0,1	5,5	0,1	11,0
3. foreign exchange	5,2	0,1	5,7	0,1	11,0
4. others <sup>4/</sup>	95,7	1,8	103,2	1,9	199,0
II - Others financial institution funds transfers					
1. on behalf of its own	1 667,0	31,9	1 721,6	31,5	3 388,6
2. on behalf of clients	1 805,8	34,5	2 198,7	40,3	4 004,4
III - Government transfers					
	686,2	13,1	330,6	6,1	1 016,8
<b>Total</b>	<b>5 227,1</b>		<b>5 460,3</b>		<b>10 687,4</b>

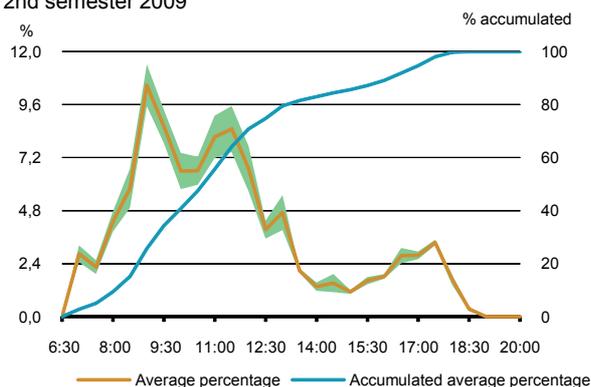
1/ As a percentage of total turnover.

2/ Funds transfers to settle net or gross financial positions stemming from others clearing and settlement systems.

3/ Includes organized over-the-counter derivatives transactions, and Banco Central do Brasil's intraday and overnight repos.

4/ Concerning Compe, Siloc and Sitraf.

**Chart 3.1 – STR**  
**Turnover – Intraday profile**  
2nd semester 2009



and December, closing the year above 68.000 points. Risk levels remained within a context of normalcy.

The BM&FBovespa open outcry was closed at the end of June 2009. Since then, negotiations are carried out only through electronic means, which improved transparency and price formation in this business environment.

On October 19<sup>th</sup>, 2009 the Authorized Direct Debit (DDA) system became operational, allowing presentation and payment of invoices in an electronic environment.

On November 10<sup>th</sup>, 2009 several Brazilian cities suffered interruption in electricity services between 10 p.m. and 1:30 a.m. approximately. Yet all systems remained operational without bringing any additional disturbances to SPB. This opportunity served to test business continuity plans of SPB participating entities, and to identify possible failures that required specific attention.

## 3.3 Performance of settlement systems

### 3.3.1 Funds Transfer Systems

#### 3.3.1.1 Reserves Transfer System – STR

The STR functioning was normal, with average availability index of 100%, better than in the previous semester, whose index was 99.9%<sup>49</sup>.

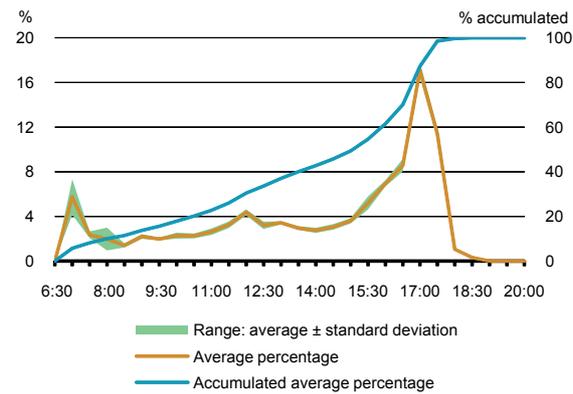
Tables below show in details, in amount and in quantity, the evolution of fund transfers carried through STR in the second half of 2009. Such transfers reached a daily average of R\$582 billion, a turnover equivalent to one Brazilian GDP every six days<sup>50</sup>, approximately. In the first half of 2009, daily average was R\$564 billion, while in the second half of 2008, these transfers had reached a daily average of R\$479 billion.

In value terms, settlements of operations involving public securities, including BCB intraday credit operations, continued accounting for the major share of fund transfers (88.2%). Compared to the previous semester, there was a 6.7% increase in total amount of this type of transaction.

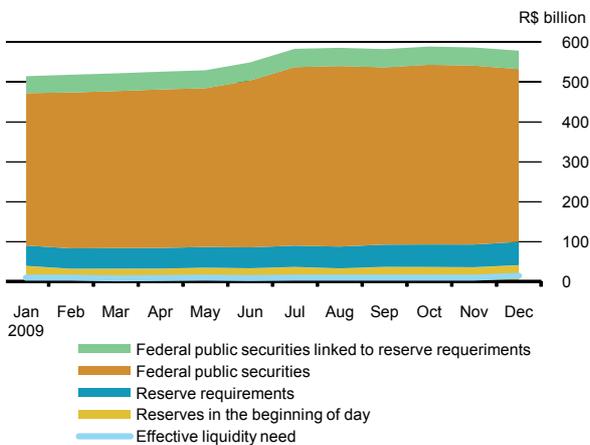
49/ According to the relevant regulation, STR must keep a 99.8% minimum availability index.

50/ Brazil's GDP, at market prices, present value was R\$3.1 trillion in 2009

**Chart 3.2 – STR**  
**Number of transactions – Intraday profile**  
 2nd semester 2009



**Chart 3.3 – Intraday liquidity needs**



The overall value of transfers related to multilateral security settlements showed a 1.7% reduction, and a 31.7% increase as compared to the first half of 2009 and the second half of 2008, respectively. With reference to multilateral settlement of derivative operations, there was 50.0% decrease in comparison with the first half of 2009, and a 71.2% decrease in relation to the second half of 2008. Multilateral settlement of foreign exchange operations increased 7.4% when compared to the first half of 2009, and decreased 7.1% when compared to the second half of 2008.

Still on financial turnover, various types of transfers of funds presented different behaviors: transfers related to multilateral settlements of clearing systems increased 19.0%; Available Electronic Transfers (TED) per client account went up 13.3%; while proprietary rose 12.6%.

TEDs continued to show expressive participation (71.8%) in the number of transfers of funds settled, although only accounting for 3.6% of total amount settled.

There was a 3.3% increase in the quantity of proprietary TEDs, in comparison with the previous semester, and an 11.3% increase in relation to the second half of 2008. The number of TEDs by client accounts increased 21.8% compared to the previous semester, and increased 12.4% in relation to the same semester of the previous year. While the number of TEDs by client accounts is still larger than the number of proprietary ones, the latter is larger in amount.

As a result, there is a 7.0% reduction in the average amount of TEDs by client account, and a 9.1% increase in the average amount of proprietary TEDs. In nominal terms, the average amount of each order reached R\$458 thousand and R\$978 thousand, respectively.

Regarding the intraday distribution of fund transfers, a relevant factor in analyzing liquidity needs of the participants of the system, one can see that, considering the average financial turnover settled daily, the total amount settled until 9 a.m. increased from 24.7% to 25.7%, in comparison with the first half of 2009.

In the morning period, the largest concentration occurred between 8 and 10 a.m., carrying 31.5% of the total movement (particularly between 8:30 a.m. and 9 a.m., when 10.5% of the total movement took place, as compared to a 3.9% average in other periods). Such concentration results mainly from repurchase agreements carried through Special System for Settlement and Custody (Selic), especially

**Table 3.3 – STR**  
**Effective liquidity need**

Effective liquidity need to total available liquidity ratio	2009			
	1 <sup>st</sup> semester		2 <sup>nd</sup> semester	
	Number FI	% <sup>1/</sup>	Number FI	% <sup>1/</sup>
0% to 10%	18	74,6	11	74,6
10% to 20%	25	11,0	17	2,5
20% to 30%	32	9,0	9	8,2
30% to 40%	24	2,7	13	2,0
40% to 50%	3	0,5	20	9,3
50% to 60%	2	0,6	15	1,4
60% to 70%	1	0,3	13	0,2
70% to 80%			7	0,5
80% to 90%				
90% to 100%	3	1,2	2	1,2
<b>Total</b>	<b>108</b>	<b>100,0</b>	<b>107</b>	<b>100,0</b>

1/ Share of payments made by the institutions in this category to total turnover.

**Table 3.4 – CIP-Sitraf**  
**Turnover details**

Itemization	2009				Accumulated
	1 <sup>st</sup> Semester		2 <sup>nd</sup> Semester		
	Value	% <sup>1/</sup>	Value	% <sup>1/</sup>	
TED on behalf of customers	2 175,9	88,9	2 526,0	90,1	4 701,9
TED on behalf of its own	270,9	11,1	276,5	9,9	547,5

1/ As a percentage of total turnover.

**Table 3.5 – CIP-Sitraf**  
**Volume – Details**

Transaction	2009				Accumulated
	1 <sup>st</sup> Semester		2 <sup>nd</sup> Semester		
	Volume	% <sup>1/</sup>	Volume	% <sup>1/</sup>	
TED on behalf of customers	24,2	79,7	27,7	82,2	51,9
TED on behalf of its own	6,2	20,3	6,0	17,8	12,2

1/ As a percentage of total volume.

the “far leg” transactions. Additionally, this period also concentrates demand for BCB intraday rediscount, which implies the processing of repurchase agreements in the Selic framework.

In terms of quantity, there are two concentration periods: one in the morning (until 8 a.m.), the other in the afternoon (between 4 p.m. and 5:30 p.m.), during which were processed an average daily rate of fund transfers of 10.1% and 37.1%, respectively. These percentages were 15.9% and 34.1%, respectively, in the previous semester. The anticipation and spreading out of settlements along the day contribute to mitigate and contain operational and liquidity risks.

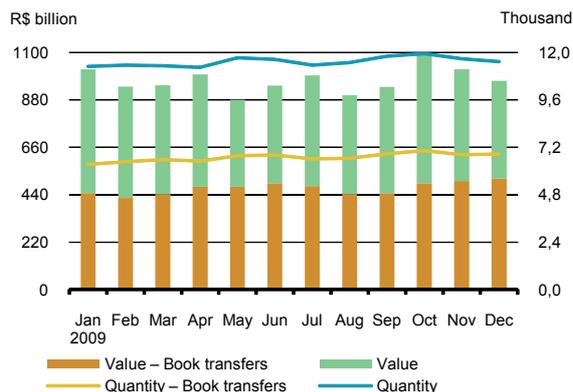
The settlement peak was 26 thousand fund transfer orders per hour, occurred on November 30<sup>th</sup>, 2009, corresponding to 64.9% of the installed capacity of the system, which covers 40 thousand orders per hour.

The Index of Aggregate Liquidity Needs of the system remained at an average level of 1.8% of the available intraday liquidity, very close to the 1.7% of the previous semester, and slightly inferior to the 2.1% of the same period in 2008. These indicators demonstrate that liquidity available to the system is sufficient to ensure settlement of fund transfer orders, with no occurrences of gridlock during the period under analysis.

Compared to the previous semester, there was a reduction from 99 to 50 in the number of institutions with low percentage of liquidity needs (under 40%). On the other hand, the number of institutions with liquidity needs between 40% and 80% increased from 6 to 55. The number of institutions with high percentage of liquidity needs (over 80%) did not change much, and remained low: 2% in the second half of 2009 and 3% in the previous semester.

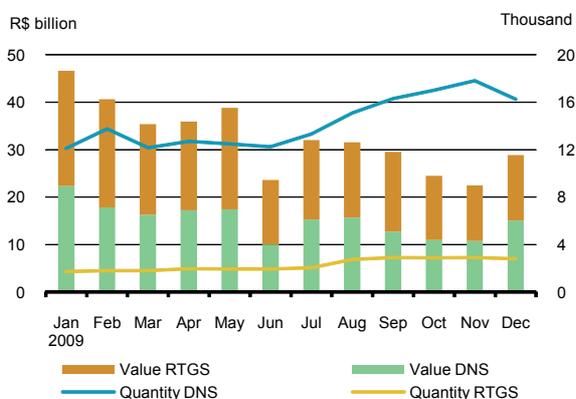
Compared to total payments carried through STR, the portion of institutions requiring more intraday liquidity is relatively low. Approximately 77.1% of all payments were handled by institutions requiring, on average, up to 20% of their intraday liquidity to cope with such payments. Payments handled by institutions using over 80% of their stock of liquidity along the day represented 1.2% of the total. After processing changes in distribution of intraday liquidity use within the system, the resulting scenario is one in which liquidity availability remains sufficient to ensure the flow of payments.

**Chart 3.4 – Selic**  
Average daily transactions



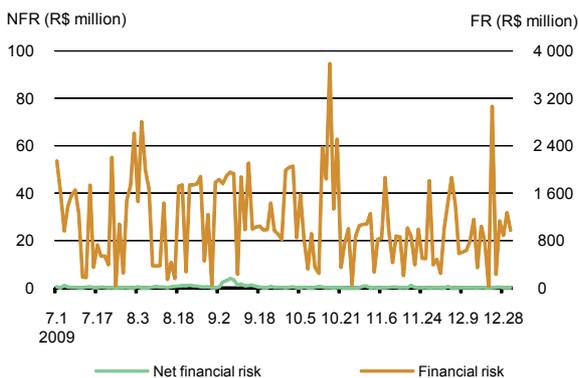
Sources: BCB and Selic

**Chart 3.5 – Cetip**  
Average daily transactions



Sources: Cetip and BCB

**Chart 3.6 – CBLC – Clearinghouse**  
Net financial risk



Sources: CBLC and BCB

### 3.3.1.2 Funds Transfer System – Sitraf

As in the first half of 2009, Sitraf operated normally on all business days of the second half of 2009, with availability index of 100%. In the second semester, the processing peak occurred at the beginning of December 18 (115.2% of the system's envisaged capacity), given the increased volume of payment messages posted by financial institutions. Owing to the time table (from 7:40 a.m. to 8:40 a.m.), in thesis, the system would have enough time to process all orders in the same day, although processing was limited to the envisaged capacity.

Average daily financial turnover was R\$21,9 billion, corresponding to 264 thousand fund transfer orders, causing an increase in quantity and value, compared to the previous semester, that resulted in a daily average of R\$19.9 billion and 247 thousand, respectively. TEDs by client account represented 82% of transfers, equivalent to an average amount of R\$91.1 thousand, while those in the own name of the participating financial institution was R\$46.1 thousand, signifying an increase of 1.3% and 5.5%, respectively, as compared to the previous semester. Average amount of TEDs settled under the Sitraf, both for clients and financial institutions accounts, is below the corresponding average amount seen in the STR.

In intraday distribution of fund transfers, greater concentration takes place between 3 p.m. and 4:30 p.m., with 33.4% in terms of total daily amount, and 24.0% in terms of quantity.

### 3.3.2 Securities, derivatives, and FX interbank clearing and settlement systems

#### 3.3.2.1 Special System of Settlement and Custody – Selic

Considering repo and outright operations in the second half of 2009 Selic settled an average of 11,600 operations per day in the total amount of R\$986.8 billion. These figures represent an increase of 1.8% in quantity, and 3.2% in value, compared to the previous semester, and an increase of 1.5% and 22.6%, respectively compared to the same semester of the previous year.

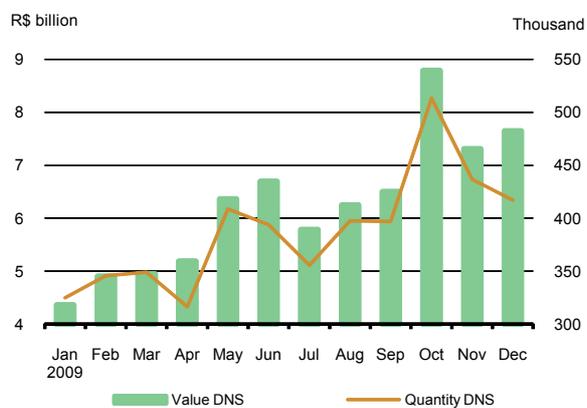
**Table 3.6 – CBLC Clearinghouse  
Collaterals by asset type<sup>1/</sup>**

Discrimination	2009					
	Jul	Aug	Sep	Oct	Nov	Dec
Stocks	42,4	44,2	44,5	41,6	45,6	47,3
Government bonds	44,6	41,6	44,1	48,2	44,4	42,7
International bonds	8,6	9,7	6,8	5,7	5,8	5,4
ILC <sup>2/</sup>	0,5	0,5	0,5	0,5	0,6	0,8
TD <sup>3/</sup>	2,3	2,4	2,3	2,6	2,4	2,7
Cash	1,1	1,1	1,5	1,2	1,0	0,9
Others	0,5	0,5	0,3	0,2	0,2	0,2

Sources: CBLC Clearinghouse and BCB

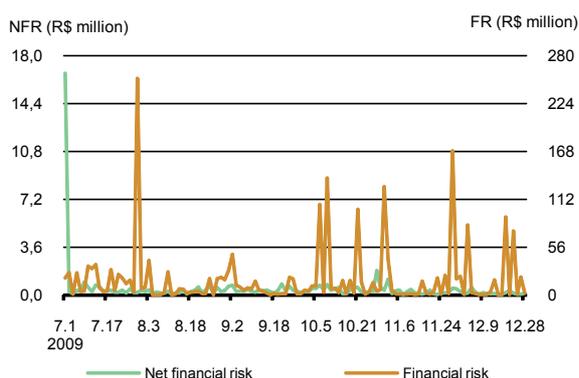
- 1/ Only linked collaterals are considered.  
2/ Interbank letter of credit.  
3/ Time deposit certificates.

**Chart 3.7 – CBLC – Clearinghouse  
Average daily turnover**



Sources: CBLC and BCB

**Chart 3.8 – BM&FBovespa – Derivatives  
Financial risk and net financial risk**



Sources: BM&FBovespa-Derivatives Clearinghouse and BCB

### 3.3.2.2 Organized Over-the-Counter Market for Securities and Derivatives – Cetip

Operations settled in the multilateral modality (primary market operations) dropped 20.3%, showing a total daily average value of R\$13.4 billion. The average netting rate was 31%, representing daily average liquidity savings of approximately R\$4.2 billion. There was a 26.3% reduction in the daily average operations settled in the gross or bilateral modalities, reaching R\$14.7 billion.

### 3.3.2.3 Brazilian Clearing and Depository Company (CBLC)

In backtesting analysis, maximum amount of Financial Risk (FR)<sup>51</sup> found for the two participants with the largest debtor position in one day was R\$3.8 billion, in October. When the value of individual guarantees is taken into account, the maximum value of Net Financial Risk (NFR)<sup>52</sup> for the two largest participants was R\$4.0 million in September, equivalent to 1.3% of additional available safeguards (settlement fund with daily average value of R\$316.4 million).

The guarantees deposited at the clearinghouse are mainly composed of public securities and stocks.

In the multilateral settlement modality, daily average financial turnover was R\$6.5 billion, comprising 419.4 thousand transactions. The financial turnover increased 33.47% in relation to the previous semester, while the number of transactions grew up 17.7%, indicating an increase in the value of assets settled within the system. Average netting rate in the period was 91.5%, resulting in daily liquidity savings of R\$6.0 billion.

The financial amount of operations settled in gross terms increased 79.9% compared to the previous semester, reaching a daily average of R\$363.3 million. In December, the daily average was R\$175.3 million.

51/ FR measures, based on daily real variations in asset prices, the replacement risk of each of the clearinghouse participants. For each day, the two participants which the clearinghouse has the most critical exposure to in terms of risk are considered.

52/ NFR corresponds to the value of the RF calculated for each participant, deducting its corresponding amount of guarantees. It represents the share of risk exposure not covered by the individual participants' guarantees. For each day, the two participants which the clearinghouse has the most critical exposure to in terms of risk are considered, i.e., the two participants with the highest RFL value.

**Table 3.7 – BM&FBovespa Derivatives Clearinghouse**  
Primitive Risk Factors (PRF)

Discrimination	Min <sup>1/</sup>	Max <sup>1/</sup>	N <sup>2/</sup>	%
				Confidence of VaR <sup>3/</sup>
Ibovespa spot	-47%	38%	0	99
USD spot	-27%	27%	0	99
Fixed rate 42	-4%	4%	0	99
Fixed rate 126	-5%	6%	0	99
Fixed rate 252	-7%	10%	0	99
Fixed rate 756	-7%	12%	0	99
DDI <sup>4/</sup> 180	-20%	14%	0	99
DDI 360	-10%	10%	0	99
DDI 1080	-10%	10%	0	99

Sources: BM&FBovespa-Derivatives Clearinghouse and BCB

1/ Second semester of 2009.

2/ N is the number of exceptions observed in the sample of size T.

3/ Kupiec test, T = 255 days.

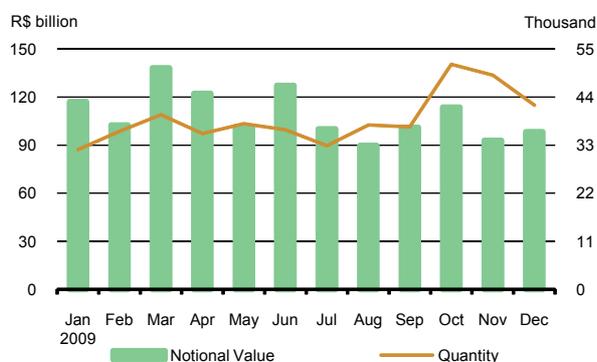
4/ Foreign exchange coupon.

**Table 3.8 – BM&FBovespa-Derivatives Clearinghouse**  
Collaterals by asset type

Discrimination	2009					
	Jul	Aug	Sep	Oct	Nov	Dec
Government bonds	88,7	89,1	89,6	88,5	87,4	88,4
Letters of credit	3,3	2,9	3,0	2,8	3,1	2,8
Time deposits	3,0	2,9	2,7	2,9	2,7	2,3
Stocks	3,6	3,6	3,3	4,4	5,4	5,4
Gold	0,5	0,5	0,5	0,1	0,1	0,1
Cash	0,9	0,9	0,8	1,2	1,1	0,9
Others	0,1	0,2	0,1	0,2	0,2	0,2

Sources: BM&FBovespa-Derivatives Clearinghouse and BCB

**Chart 3.9 – BM&FBovespa Derivatives Clearinghouse**  
Trading volume notional value – Daily average



Sources: BM&FBovespa-Derivatives Clearinghouse and BCB

### 3.3.2.4 BM&FBovespa Derivatives Clearinghouse – BM&FBovespa-Derivatives

Backtesting analysis shows that the highest RF value found for the two most critical participants registered in one day was R\$253.3 million, on July 29<sup>th</sup>, 2009. When deposit guarantees of these two participants are considered, the highest RFL value found was R\$16.7 million on July 1<sup>st</sup>, 2009, representing 4.8% of R\$345.5 million available additional safeguards. In the previous semester, maximum amounts of RF and RFL were R\$351.0 million and R\$1.2 million, respectively.

In the second half of 2009, as previously verified in the first half, the two-day added variations in the main Primitive Risk Factors (FPR), used by the clearinghouse to calculate the guarantees, remained at levels set in the stress scenarios, contrary to what had happened in the second half of 2008, when the limits for the FPR Ibovespa and for the FPR dollar were surpassed.

In December, guarantees comprised, for the most part, highly liquid public securities, allowing swift cash conversion in case of need.

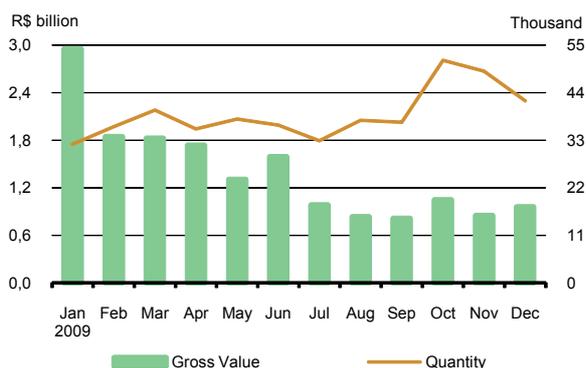
Within the semester under analysis, the average daily notional value of the transactions was R\$99.2 billion, representing a 15.9% decrease in relation to the first half of 2009. The average daily gross value of settlement, represented by the sum of all transactions, such as daily and periodical adjustments in derivative contracts was R\$910 million, representing a 51.4% reduction in relation to the previous semester, and 73.0% in relation to the same semester of the previous year. The average number of daily operations, 41.7 thousand, increased 14.8% in relation to the previous semester and 31.5% in relation to the same semester in the previous year.

The average netting rate was 59.2%, representing an average daily liquidity savings of R\$538.7 million.

### 3.3.2.5 BM&FBovespa Foreign Exchange Clearinghouse – BM&FBovespa-Foreign Exchange

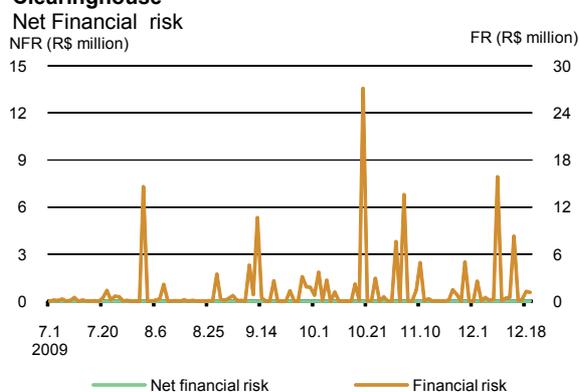
Backtesting analysis shows that the highest RF value found for the two participants with the largest debtor exposures in a given day was R\$27.1 million on October 20, while the RFL value was null in the remainder days of the period.

**Chart 3.10 – BM&FBovespa Derivatives Clearinghouse**  
Gross Settlement Value – Daily average



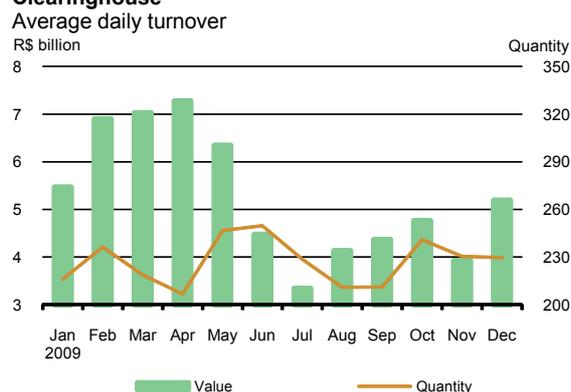
Sources: BM&FBovespa-Derivatives Clearinghouse and BCB

**Chart 3.11 – BM&FBovespa Foreign Exchange Clearinghouse**



Sources: BM&FBovespa-FX Clearinghouse and BCB

**Chart 3.12 – BM&FBovespa Foreign Exchange Clearinghouse**



Sources: BM&FBovespa-FX Clearinghouse and BCB

The averages of daily value transactions and of the number of operations per day were R\$4.3 billion and 225, respectively. Netting rate was 64.3%, ensuing R\$2.8 billion in savings of daily average liquidity. The average turnover of the system was 31.4% smaller than the previous semester.

### 3.4 Conclusion

Clearing and settlement systems operated adequately, without interruption or significant delays. Interruption in electrical power supply on November 10, 2009, did not cause any additional disturbance to the SPB.

In the STR framework, available aggregate intraday liquidity allowed an adequate distribution of payments along the day, in great part settled almost immediately after receipt of the corresponding order. Additionally, when considering the distribution of intraday liquidity, it becomes clear that the risk of interruption in the flow of payments caused by liquidity problems in the system is very small. In the Sitraf framework, the majority of fund transfer orders were settled almost immediately after its receipt, resulting in little or no queues.

Backtesting analysis results of the systems having BM&FBovespa (BM&FBovespa-Assets, BM&FBovespa-FX, BM&FBovespa-Derivatives and CBLC) as central counterparties show that risks were properly managed. Special attention must be given to BM&FBovespa-Derivatives system, whose main primitive risk factors (FPR) behaved normally along 2009, after a period of high volatility verified in the second half of 2008, which caused extrapolations of “dollar” and “Ibovespa” FPRs. These results demonstrate that the mechanisms used to manage and contain inherent risks are adequate, and have contributed to preserve the financial system stability.

**Table 3.9 – Brazilian Payment System Overview – 2<sup>nd</sup> semester 2009**

Payment system	Main settled operations	Ownership	Turnover Daily average <sup>3/</sup>	Volume Daily average <sup>4/</sup>	Type of settlement	Netting rate	Liquidity saving <sup>3/</sup> Daily average	Central Counterparty
<b>Payment clearing and settlement systems</b>								
STR	Selic, clearing houses, TED and other payments <sup>1/</sup>	public	582,4	42,7	RTGS	-	-	-
CIP-Sitraf	TED <sup>2/</sup>	private	21,9	263,6	Hybrid	-	-	-
CIP-Siloc	DOC and "Bloqueto de cobrança" with individual value under R\$5 thousand	private	3,9	7 267,2	DNS	0,8	3,2	-
Compe	Cheques with individual value under R\$250 thousand	public	4,4	5 147,5	DNS	0,9	4,0	-
<b>Securities clearing and settlement systems</b>								
Selic	Federal government securities	mixed	319,1	4,5	RTGS	-	-	-
BM&FBovespa-Derivatives Clearing house	Commodities, Futures, Options and Swaps	private	0,9	41,7	DNS	0,6	0,5	Yes
BM&FBovespa-Foreign Exchange Clearing house	Interbank foreign exchange	private	4,3	0,2	DNS	0,6	2,7	Yes
BM&FBovespa-Securities Clearing house	Federal government securities	private	0,6	0,0	DNS	0,6	0,4	Yes
CBLC	Stocks, options and corporate bonds	private	0,3	0,0	RTGS / DNS	- / 0,9	- / 4,7	No / Yes
Cetip	Swaps, Corporate bonds and Government securities	private	20,0	1,9	RTGS / DNS	- / 0,6	- / 6,9	No / No

1/ Including bilateral settlement of cheques with individual value of at least R\$250 thousand and "bloquetos de cobrança" with individual value of at least R\$5 thousand.

2/ TED – Electronic Funds Transfers on behalf of customers as well as by its own.

3/ R\$ billion.

4/ Thousand operations.

## Implementation of the Authorized Direct Debit

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On October 19, 2009, the Authorized Direct Debit (DDA) system became operational, designed to enable distribution and payment of invoices in an electronic environment. The system was developed and implemented by associations representing financial institutions involved with collection, together with the Interbank Payments Clearinghouse, responsible for its operational procedures.

The DDA emerged as a market response to an inefficiency listed in the “Diagnosis of the Retail Payment System in Brazil”, published in May 2005. It allows the electronic distribution of invoices to bank clients, the party holding the obligation to pay a debt, and must be listed as an “electronic drawee” in one or more financial institution, with which it holds a business relation. Most immediate benefits to SFN are savings in printing and courier for physical documents, and reduction in the lapse of time for information to reach the drawee, greater convenience for payments to be carried out, and safety against possible frauds and operational risks.

DDA is a good option for clients not using direct debit to pay their obligations, arguing that the other party may tap the account in amounts exceeding what is effectively owed, as DDA allows drawee to control obligations submitted for payment. According to information of the Brazilian Federation of Banks (Febraban) and the Interbank Payments Clearinghouse (CIP), three months after its inception, the system already had 2.6 million clients listed as “electronic drawees”, out of which some 80% were Individuals (PF). The number of such clients corresponded to 3.3 % of the total number of clients with active checking accounts.

There are 31 financial institutions participating in the system which represented over 99% of the volume of electronic invoices issued by the market.

The system accumulated 34.2 million electronically generated documents and more than 90% of drawees were legal entities. In settlement of deals, around two thirds of the transactions involved interbank settlement. The number of electronically submitted documents, in this period, represented 8.3% of total interbank invoices.

A wider scope of services offered is now expected, to allow greater integration and speed in the exchange of information among financial institutions both beneficiaries and charging parties, as well as reception facilities and protest documents.

In the future, it is expected that DDA makes viable the dissemination of interbank direct debit throughout the country. Today, companies providing this service to their clients are still obliged to maintain collection agreements with financial institutions to facilitate receipt of bills. Transfer of such collection to DDA system would be beneficial, because it would allow companies to sign agreement with only one institution, reducing costs associated with keeping several of them, and thus increasing efficiency in direct debit services. At the same time, operational risk and losses resulting from fraud would be mitigated, owing to the fact that management of access to the system and its security would be improved with the creation of a central database.

However, DDA is beneficial only to the population with bank access, leaving out those who do not

hold checking accounts. However, this should not be viewed as detrimental to the DDA platform, inasmuch as it is a consequence of the present stage of social development in our society. Public policies are being implemented to promote access to banking services to those who do not have checking accounts, which coupled with financial institutions' expansion of channels of electronic access will contribute to enhance DDA use.

# Financial System Organization

**Table 4.1 – Total amount of financial institutions**

Type of Institution	2007	2008	2009	
	Dec	Dec	Jun	Dec
<b>Banks</b>				
Multiple	135	140	140	139
Domestic				
without foreign ownership	77	78	84	86
with foreign ownership	10	7	-	-
Foreign				
under foreign control	48	55	56	53
Commercial	20	18	18	18
Domestic				
without foreign ownership	12	11	11	11
with foreign ownership	-	-	-	-
Foreign				
under foreign control	1	1	1	1
foreign bank subsidiaries	7	6	6	6
Development	4	4	4	4
Investment	17	17	16	16
Savings banks	1	1	1	1
<b>Associations</b>				
Leasing	38	36	35	33
Consumer finance companies	52	55	55	59
Savings and loan companies and savings and loan associations <sup>1/</sup>	18	16	16	16
Securities brokers	107	107	106	105
Foreign exchange brokers	46	45	45	45
Securities dealers	135	135	133	125
Development agencies	12	12	14	14
Mortgage companies	6	6	6	6
<b>Subtotal</b>	<b>591</b>	<b>592</b>	<b>589</b>	<b>581</b>
Credit unions	1 465	1 453	1 429	1 405
Microentrepreneur credit institutions <sup>2/</sup>	52	47	46	45
<b>Subtotal</b>	<b>2 108</b>	<b>2 092</b>	<b>2 064</b>	<b>2 031</b>
Consortium managers	329	317	312	308
<b>Total</b>	<b>2 437</b>	<b>2 409</b>	<b>2 376</b>	<b>2 339</b>

1/ Institutions that do not receive deposits from the public.

2/ Amount of 2007 corrected due to change of business objective.

## 4.1 Introduction

The persistent downward trend of the Selic rate, between January and July 2009, and reduction in reserve requirements, which went on until the end of the year, were responsible, along with other BCB measures to promote market liquidity, by the strong credit recovery in the second half of that year, impacting family consumption and investment and repositioning the Brazilian economy in its growth course, which has been interrupted in late 2008, as a result of the international financial crisis.

In this economic setting, financial institutions worked out their strategies for the period. While on one side, at the end of 2009, domestically controlled banks had already returned to pre-crisis levels of credit granting, on the other side, they still kept a cautious stand towards future non-performance levels. Public banks, favored by anti-cyclic measures adopted by the Federal Government, continued promoting liquidity and counteracting the economic slowdown caused by the financial crisis, in order to recover their participation in the financial market. In December 2009, credit volume was already back to pre-crisis level, representing 45% of GDP<sup>53</sup>.

## 4.2 Banking institutions

Despite the effects of the financial crisis over acquisitions in the second half of 2009, three deals stood out: 1) the association between Banco do Brasil and Banco Votorantim – advised to the market on January 9, 2009 and approved by BCB on September 11, 2009; 2) acquisition of Banco IBI by Banco Bradesco – announced to the market on June 4, 2009 and approved by BCB on September 11, 2009; and 3) the

53/ Financial system total credit/GDP.

**Table 4.2 – Organic movement on NFS – July to December 2009**

Processes approved and published in the Official Daily Government Newspaper (except Paralisations)

Events	BM	BC	BI	CFI	DTVM	CTVM	CC	SAM	SCM	Coop
Authorizations	2	-	-	3	2	-	-	-	2	7
Cancellations <sup>1/</sup>	-	-	-	-	-	-	-	-	1	25
Transfers of control	-	-	-	-	-	-	-	-	-	-
Acquisitions	-	-	-	-	-	-	-	1	-	8
Splits	-	-	-	-	-	-	-	-	-	-
Changes of business objective										
- input	-	-	-	1	-	1	-	-	-	-
- output	1	-	-	-	8	2	-	-	2	-
Change of type	-	-	-	-	-	-	-	-	-	31
Extrajudicial liquidation process	-	-	-	-	-	-	-	-	-	1
Paralisations	2	-	-	-	2	-	-	1	-	7

Source: Official Daily Government Newspaper

1/ From the total amount of canceled union credits, 13 of them was already in process of ordinary liquidation and did not appear as authorized institutions. Cancellation was made under articles 35 or 36 of Resolution n. 3.442, of February 27<sup>th</sup>, 2007.

**Table 4.3.a – Banking participation in the main financial aggregates of the Mandatory Chart of Accounts of the Brazilian Financial System – June, 2009**

Itemization	Amount	Equity	Total assets <sup>4/</sup>	Deposits	Credit operations	%
Banking <sup>1/</sup>						
Government owned <sup>2/</sup>	11	13,3	27,9	32,5	39,7	
Private	148	86,7	72,1	67,5	60,2	
Domestic	85	66,0	52,5	49,0	38,4	
Domestic with foreign ownership <sup>3/</sup>	57	20,4	19,4	18,4	21,8	
Foreign banks full branches	6	0,3	0,2	0,1	0,1	
Total	159	100,0	100,0	100,0	100,0	

1/ Includes multiple, commercial banks and the Caixa Econômica Federal.

2/ Includes the Caixa Econômica Federal.

3/ Multiple and commercial banks with foreign control.

4/ It is not diminished by the brokerage.

association between Caixa Econômica Federal and Banco Panamericano, announced to the market on December 1, 2009, and still under BCB analysis.

As a consequence of such organic moves, there was a reduction of one institution in the number of banks, as shown in Table 4.1. Table 4.2 indicates the granting of two authorizations for the constitution of multiple Banks, the takeover of one multiple bank, and the closure of two multiple banks. The main transactions were:

#### National Multiple Banks

- Banco Randon S.A. – authorized to operate on December 18, 2009;
- Banco BTG Pactual S.A. – became domestically controlled, after UBS Pactual transfer of control and subsequent name change on December 29, 2009;
- BFC Banco S.A. – became a non-financial institution, consequently having its financial institution permit cancelled, on December 22, 2009; and
- Banco Nossa Caixa S.A. – taken over by Banco do Brasil, on November 30, 2009.

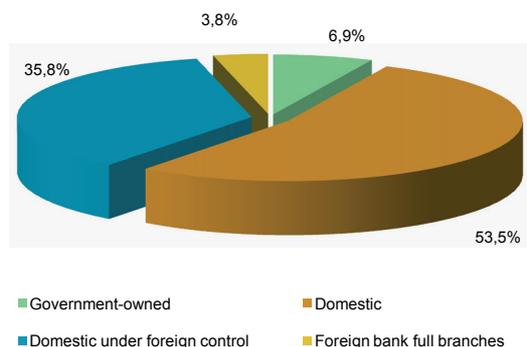
#### Multiple Banks with Foreign Capital Control

- Scania Banco S.A. (Swedish capital) – authorized to operate on December 4, 2009;
- Banco Comercial e de Investimento Sudameris S.A. (Netherlands capital) – closure on August 31, 2009;
- Banco IBI S.A. Banco Multiplo – transfer of control to Bradesco Bank on November 27, 2009 (Luxembourg capital); and
- Banco UBS Pactual S.A. – (Swiss capital) control transferred to Andre Santos Esteves (controller of BTG Group) on December 29, 2009.

The participation of financial institutions, in the banking segment, in financial aggregates of the Financial Institutions Accounting Plan (Cosif), between June and December 2009 reflects strategies implemented by the private and the public segments during this period. There was a drop in participation of the private banking segment in total assets, deposits, and in total credit granted in the banking system, whereas the participation of the public banking segment increased in such aggregates.

Participation of both segments in the evolution of credit transactions is compared in Tables 4.3. “a” and “b”, and clearly shows the difference in strategies.

**Chart 4.1.a – Banking system by ownership**



**Table 4.3.b – Share of banking system in the aggregate statistics of Brazilian Financial System**  
December, 2009

Itemization	Amount	Equity	Total assets <sup>4/</sup>	Deposits	Credit operations	%
Banking <sup>1/</sup>						
Government owned <sup>2/</sup>	10	12,7	29,6	33,55	41,8	
Private	148	87,3	70,5	66,45	58,3	
Domestic	88	65,4	52,4	49,23	38,7	
Domestic with foreign ownership <sup>3/</sup>	54	21,6	17,9	17,18	19,5	
Foreign banks full branches	6	0,3	0,2	0,04	0,1	
Total	158	100,0	100,0	100,0	100,0	

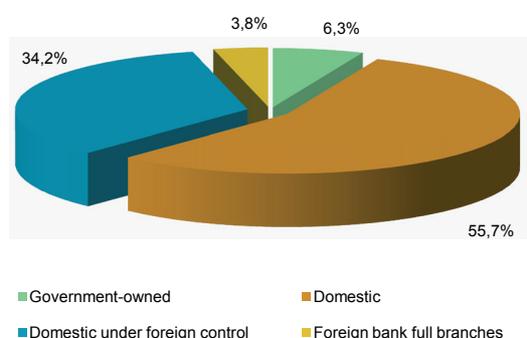
1/ Includes multiple, commercial bank and the Caixa Econômica Federal.

2/ Includes the Caixa Econômica Federal.

3/ Multiple and commercial banks with foreign control.

4/ It is not diminished by the brokerage.

**Chart 4.1.b – Banking system by ownership**  
December, 2009



The private institutions' segment reduced its participation in this aggregate from 60.2% in June 2009 to 58.2% in December 2009, while the public institutions' segment increased its participation in this aggregate from 39.7% to 41.8% in the same period.

### 4.3 Non-banking institutions

In the non-banking segment, there was no relevant event that might impact SFN structure, as seen in Table 4.1.

### 4.4 SFN levels of concentration

Level of concentration measured by Herfindahl-Hirschman<sup>54</sup>(HHI) applied to total assets, credit operations, and SFN total deposits, presented a particular evolution in both semesters of 2009.

HHI in total assets reached 0.1310 in June 2009, imposing an inflection in the curve, relatively to the March level (0.1332), when its slope became negative. However, in September this index went up again reaching 0.1346, determining a new curve inflection, since its slope turned to positive again. In December 2009, HHI reaches 0.1359, confirming the concentration level increase of September. The HHI curve trajectory is directly related to concentration acts in the period, as reported below.

Relatively to credit transactions, such indicator kept its growth trend in all four quarters of 2009, with discreet stability between September and December 2009, when the curve inclination was virtually flat.

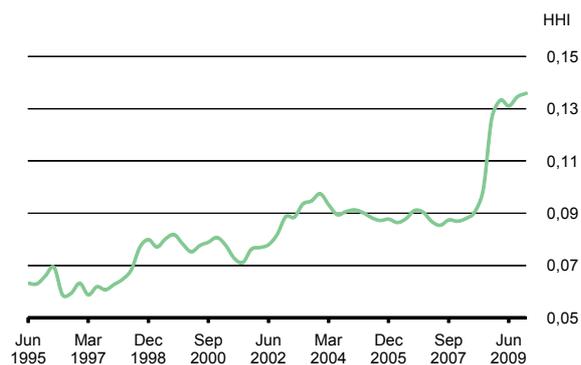
HHI curve trajectory on total deposits presents an inflection point in June 2009, comparatively to March 2009, and the negative slope becomes a little steeper in September, becoming positive again in December, although at lower levels than those of March.

Monitoring SFN concentration levels, performed by BCB, showed that inclination variations in HHI curve in the four past semesters were determined by the transactions involving Bancos Santander and ABN Amro; Itau and

54/ HHI is used by national and international authorities defending competition as accessory instrument to evaluate economic concentration levels. Following this index, levels between 0 and 0.1 are low; between 0.1 and 0.18, moderate; and over 0.18, high. HHI is the sum of the result of the square root of each institution's participation in the financial market considering:  $HHI = (IF_1)^2 + (IF_2)^2 + \dots + (IF_n)^2$ .

**Chart 4.2 – Total assets**

Evolution of Herfindahl-Hirschman Index – HHI



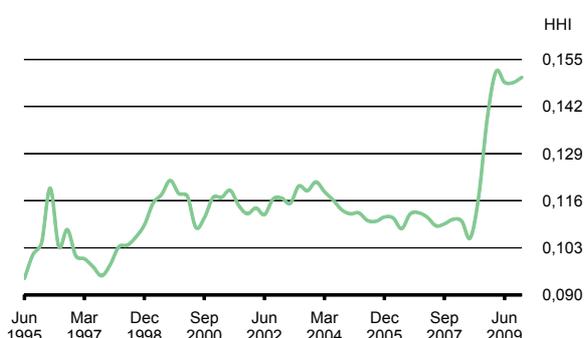
**Chart 4.3 – Credit operations**

Evolution of Herfindahl-Hirschman Index – HHI



**Chart 4.4 – Deposits**

Evolution of Herfindahl-Hirschman index – HHI



**Table 4.4 – Financial institutions with foreign control and with foreign ownership<sup>1/</sup>**

Itemization <sup>2/</sup>	2006		2007		2008		2009	
	Dec	Dec	Dec	Dec	Dec	Dec	Jun	Dec
Foreign control	130	122	134	136	136	136	136	136
Foreign ownership	57	61	72	75	75	75	75	83
Total	187	183	206	211	211	211	211	219

Source: RCFJ011 report.

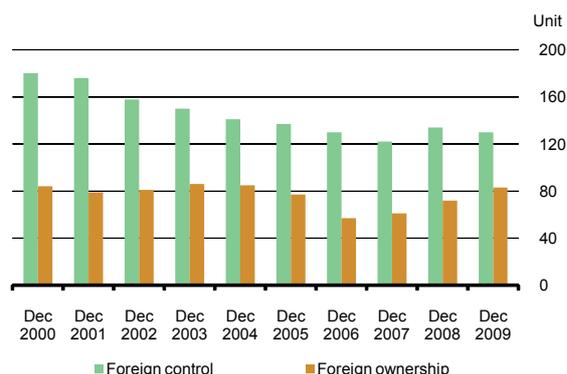
1/ Banking institutions and other types financial institutions.

2/ Participation in voting capital.

Unibanco, Banco do Brasil and Nossa Caixa; Banco do Brasil and Votorantim; and Bradesco and IBI. Nonetheless, the characteristics of such concentration deals mitigated possible anti-competitive effects over the system:

- SANTANDER and ABN AMRO Concentration Act** – the deal was approved on July 22, 2008. Although implying a concentration increase, there will be no significant adverse effect on competition. Analysis of concentration and domination indexes provides evidence that this acquisition improves Santander’s condition to compete with largest banking conglomerates in the country. As a consequence it will favor competition for efficiency and productivity among the largest participants in the Brazilian banking market.
- Itau and Unibanco Concentration Act** – concerning the effect over competition, studies showed that, despite the concentration in relevant markets, mainly in credit cards, the structure and the level of competition in these markets, as well as efficiency gains resulting from this deal will favorably impact competition among such institutions.
- Bradesco and IBI Concentration Act** – acquisition of Banco IBI and the exclusive partnership with C&A to provide consumer credit is bound to improve Bradesco’s position in the low and medium income segment. Given that the Itau Unibanco conglomerate has considerable market share, improved Bradesco position in credit card market will increase competition, possibly generating positive effects for consumers. The rivalry among these institutions and the market structure will favorably impact competition.
- Banco do Brasil and Nossa Caixa Concentration Act** – relevant geographic market affected by this deal is Sao Paulo State. Despite increasing concentration, this deal is not regarded as having anti-competition effects. Studies indicate there may be an increase in competition among leading institutions in that State as a result of the improved position obtained by Banco do Brasil.
- Banco do Brasil and Banco Votorantim Concentration Act** – primarily affected market was the financing of vehicles (a relevant market in Brasil), where competition will not be compromised, despite the concentration increase verified. Knowledge of Banco Votorantim in vehicle financing coupled with cheaper funding offered by Banco do Brasil may improve competition in that market.

**Chart 4.5 – Number of financial institutions with foreign control or with foreign ownership**



**Table 4.5 – Foreign-controlled banks or foreign banks branches (by origin of continent/country)**  
December, 2009

Itemization	Amount							
	Banks				Foreign			
	Domestic private <sup>1/</sup>				Full branches <sup>2/</sup>			
	Multi-ples	Commer- cial	Sub- total	%		Total	%	
America	16	-	16	29,6	5	21	35,0	
Argentina	-	-	-	0,0	2	2	3,3	
Bermuda	1	-	1	1,9	-	1	1,7	
Mexico	1	-	1	1,9	-	1	1,7	
Uruguay	2	-	2	3,7	1	3	5,0	
USA	12	-	12	22,2	2	14	23,3	
Asia	7	1	8	14,8	-	8	13,3	
China	1	-	1	1,9	-	1	1,7	
Japan	5	-	5	9,3	-	5	8,3	
South Korea	1	1	2	3,7	-	2	3,3	
Europe <sup>3/</sup>	30	-	30	55,6	1	31	51,7	
Sweden	2	-	2	3,7	-	2	3,3	
Switzerland	2	-	2	3,7	-	2	3,3	
U. Kingdom	3	-	3	5,6	-	3	5,0	
Euro area	23	-	23	42,6	1	24	40,0	
France	8	-	8	14,8	-	8	13,3	
Germany	5	-	5	9,3	-	5	8,3	
Italy	1	-	1	1,9	-	1	1,7	
Netherlands	6	-	6	11,1	1	7	11,7	
Portugal	3	-	3	5,6	-	3	5,0	
<b>Total</b>	<b>53</b>	<b>1</b>	<b>54</b>	<b>100,0</b>	<b>6</b>	<b>60</b>	<b>100,0</b>	

1/ Foreign-controlled (excludes subsidiaries).

2/ Foreign banks full branches.

3/ It includes euro area countries.

## 4.5 Conclusion

The second half of 2009 was marked by the different market strategies implemented by public and private banks. While public segment, despite the international financial crisis, had an aggressive behavior in credit offering in order to regain its market share, the domestically controlled segment adopted a cautious stand.

Such strategies reflected upon the participation of both segments in Cosif's financial aggregates, mainly with respect to credit transactions.

Ownership transfer or association between conglomerates seen in the past four semesters maintain the trend of increase in SFN concentration levels, although characteristics and conditions of such deals have mitigated possible anti-competition effects over the relevant markets.

## 5.1 Introduction

The prudential financial regulation, which focuses in the financial system stability, is receiving special attention from the Central Bank of Brazil (BCB). There are two strategic projects under way: “Basle II” and “Convergence”, both designed to incorporate prudential regulatory principles stemming from international organizations to the National Financial System (SFN), by editing rules under the competence of BCB and the National Monetary Council (CMN), without disregarding the regulation of specific aspects of financial institutions’ functioning.

The activities relating to such projects include studying and formulating rules that innovate or improve the existing regulation, in order to fulfill the need to adapt international organizations’ recommendations to the specific SFN procedures, taking into account characteristics of the Brazilian economy.

## 5.2 Basel II Project

The Basel II Project, scheduled to be accomplished until 2013, is designed to implement in Brazil the recommendations of the Basel Committee on Banking Supervision (BCBS) on capital structure adequacy to the risks associated with financial institutions operations, focusing on capital management and allocation. The initial directives and schedule of this project were informed by Communiqué n. 12,746, of December 9, 2004. Since then, CMN and BCB have approved various regulations intended to perfect Brazilian prudential rules in accordance with the above mentioned Communiqué and Communiqués n. 16,137, of September 27, 2007, and n. 19,028, of October 29, 2009.

In order to improve the existing regulation, Circular n. 3,471, of October 16, 2009, was issued, setting forth risk calculation factors for the purpose of calculating the portion of Minimum Required Capital (MRC), established in Resolution n. 3,490, of August 29, 2007, concerning risk weighted exposures to repurchase agreements and retail loans, and exposures guaranteed by funds controlled by public banks. In this context, Circular n. 3,476, of December 24, 2009, was also published, changing rules regarding the calculation of capital requirement due to operational risk (MRC\_Op).

The actions under this project scheduled for the fiscal year 2009, also comprise the issuance of rules referring to the establishment of eligibility criteria for the adoption of internal models to determine the capital requirement related to market risk, the information on the necessary procedures to request the use of internal models to determine market risk capital requirement, as well as information of the key points for a database format for internal systems to verify MRC\_Op, implemented through the following regulations:

- I – Circular n. 3,477, of December 24, 2009, on releasing information regarding risk management, MRC, and Regulatory Capital (RC) adequacy, set forth in Resolution n. 3,444, of February 28, 2007.
- II – Circular n. 3,478, of December 24, 2009, on minimum requirements and method of calculation, by means of internal models, of the daily amount related to MRC due to market risk, and authorization for the use of such models.
- III – Communiqué n. 19,217, of December 24, 2009, providing preliminary guidance in relation to advanced approach use, based on internal models, for the purpose of determining the portion related to operational risk within PRE.

### 5.3 Convergence project

This project aims at incorporating to Brazilian financial regulation accounting and auditing recommendations issued by the International Accounting Standards Board (IASB) and by the International Federation of Accountants (IFAC) that are applicable to financial institutions.

According to Communiqué n. 14,259, of March 10, 2006, setting forth the objectives and directives of this project, the aim is to produce and publish high quality,

transparent and comparable accounting information, in order to be understood by regulating authorities, financial analysts, investors, auditors, accountants, and others, regardless of origin and location. It also has the purpose of stimulating accounting and auditing practices compatible with international standards, to strengthen information credibility, facilitate follow-up and comparison of economic and financial performances of financial institutions in different countries.

Two stages of the project have already been completed: i) diagnosis of differences between international accounting and auditing rules and the rules of Cosif, in November 2007; and ii) use of international rules on consolidated accounting records for publication, as of the base date of December 2010, which was implemented through Resolution n. 3,786, of September 2009. Still remaining is the need to reduce existing asymmetries between criteria applicable to consolidated demonstrations, which will allow cost reduction in supervision and improve quality and comparability of accounting statements, be they on a consolidated or individual basis.

The process of reducing asymmetries, which is the next phase of the Convergence Project, will be implemented on a case-by-case basis, through analysis of each international rule applicable to institutions under BCB supervision, preceded by evaluation, among other aspects, of legal, social and prudential impacts<sup>55</sup>. Moreover, even during the two preceding phases (diagnosis and consolidation) rules were already put out, aiming at reducing asymmetries through incorporation to individual accounting statements of the best practices internationally recognized.

For instance, already issued regulation establishes criteria and conditions for: a) publication, in explanatory notes, of information on related parties; b) elaboration and publication of Demonstrative Cash Flows; c) assets impairment; d) providing independent auditing services to SFN institutions; e) adoption of classification procedures; f) book-keeping and disclosure on sales or transfers of financial assets; as well as procedures applicable to recognition, calculation and publication of provisions and contingencies of assets and liabilities.

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55/ On possible impacts of adoption of IFRS on SFN, see box “Convergence to IFRS in BCB, chapter 2.

## 5.4 Derivative instruments regulation

Circular n. 3,474, of November 11, 2009, and Resolution n. 3,824, of December 16, 2009, imposed on financial institutions the register in systems managed by clearing houses authorized by BCB or CVM of their proprietary open positions in financial derivatives abroad, directly or through offices or companies integrating the financial conglomerate. They must also record financial derivatives linked to the cost of the debt originally negotiated in loan transactions between residents and non-residents, including individuals or non-financial legal entities, based on external funding. Information about such registrations, as well as those concerning other records required by regulation, constitutes an important source of information to risk regulation, supervision, and monitoring of the SFN.

## 5.5 Regulation of other financial subjects

During the period covered by this report, other financial matters were regulated. Although not having a strict prudential implication, they are important to guide the financial institutions towards fulfilling the role of promoting a balanced development of the country and serving the overall interests of society, as set forth in art. 192 of the Federal Constitution. Among them:

- I – consolidation and perfecting of rules on procedures to be adopted by financial institutions and others authorized to function by BCB, in order to prevent and combat terrorism financing, money laundering or fraud with goods, rights and values described in Law n. 9,613, of March 3, 1998, seeking to incorporate to internal regulation recommendations from international organizations that are responsible for such matters;
- II – issuance of regulation related to real estate credit, specifically the granting of real estate financing the use of funds in savings deposits taken by entities under the Brazilian Savings and Loans System (SBPE), and insurance to cover real estate financings; and
- III – prohibition of charges related to renewal of records, which impacts management of operational risk.

Finally, since April 2009, Brazil became a full-fledged member of two important fora of prudential international regulation: the Financial Stability Board (FSB) and the BCBS. Both institutions share an important role in developing and implementing international standards on banking regulation and supervision.

As a result of the latest international financial crisis, which exposed the vulnerability of several financial systems, a series of regulatory reforms began to be discussed by the Basle Committee comprising: i) definition of regulatory capital; ii) counterparty credit risk; iii) financial institutions leverage; iv) treatment of capital requirement in relation to procyclicality; and v) liquidity risk management. Reform proposals were published by the Basle Committee in December 2009. Documents presenting such proposals were: i) “Strengthening the resilience of the banking sector” and “International framework for liquidity risk measurement, standards and monitoring”; ii) “Revisions to the Basel II market risk framework”; iii) “Guidelines for computing capital for incremental risk in the trading book”; and iv) “Enhancements to the Basel II framework”. It is worth stressing that such initiatives are backed by the FSB, as well as by G-20.

## 5.6 Conclusion

The regulatory changes implemented along the second semester of 2009 aimed at continuing a series of long-term actions directed towards completing the adjustment of Brazilian banking rules to international standards of prudential regulation through the “Basle II” and “Convergence” projects. Also, the recent financial crisis brought out the need to improve certain international standards of prudential regulation, especially with respect to market and liquidity risk. Brazil, through its representatives before the Basle Committee, has directly participated in this revision process.

## Concepts and Methodologies

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- a) Leverage: total assets to equity ratio;
- b) Total Assets: current assets plus non-current assets minus derivatives;
- c) Adjusted Total Assets: comprises total assets after netting and reclassification of balance sheet items or group of items. Netting involves repurchase agreements, interbank relations and relations within branches, foreign exchange portfolio and debtors due to litigation. Reclassifications are within foreign exchange and lease portfolios;
- d) Low-liquidity Assets: assets not related to the institution's main activities. For analysis purposes, the following assets were considered: deferred tax assets, fiscal credits, debtors due to litigation, unusual onlending, various unusual assets and permanent assets;
- e) Financial Intermediation Assets: assets that provide income on financial operations, such as gold, foreign currency cash, interbank operations, stocks and securities, derivatives assets, credit operations net of provisions, foreign exchange portfolio, usual and unusual onlending;
- f) Netting: accounting rule that aims to determine, in the balance sheet as well as in the income statement, the net balance of two opposite (long and short) positions in a specific asset;
- g) Onerous Liabilities Cost: expenses on financial operations to onerous liabilities ratio. Onerous liabilities are those that generate expenses to the financial institution, such as: time deposits, repurchase agreements, foreign exchange acceptances, mortgage-linked bonds, debentures, foreign bonds, BCB open market and others;
- h) Delinquency: non-performing loans, comprised by credit operations with payments past due over ninety days;
- i) Total Capital Ratio: International concept as defined by the Basle Committee, which recommends 8% minimum required capital to risk-weighted assets ratio. In Brazil, minimum capital requirement (MRC) is 11%, according to National Monetary Council Resolution n. 3.490, of August 29, 2007, and Central Bank of Brazil Communiqué 3.360, of September 12, 2007. A 11% MRC shall be observed for all financial institutions and other entities supervised by BCB, except credit unions not affiliated to central credit unions;

- j) Coverage Index: provisions to non performing loans ratio;
- k) Fixed Asset to Regulatory Capital Ratio: according to Resolution n. 2.669, of November 25, 1999, ratio shall not be higher than 50%;
- l) Total Liquidity: disposable liquid assets kept by institutions in order to meet obligations;
- m) Estimated Liquidity Needs: represents the liquidity level that each institution needs to keep so as to withstand funding volatility and losses under market stress;
- n) Segmentation by size: financial institution size is determined taking into account adjusted total assets, calculated on a consolidated basis. Financial institutions whose share in total financial system assets exceed 15% are considered large. Remaining institutions are classified according to their share in the remaining assets in a descending order, and classified as follows:
  - i. institutions that comprise together the 75<sup>th</sup> percentile of total remaining assets, in an accumulated basis, are considered large;
  - ii. institutions between the 75<sup>th</sup> and the 90<sup>th</sup> percentile are considered medium;
  - iii. institutions between the 90<sup>th</sup> and the 99<sup>th</sup> percentile are considered small; and
  - iv. remaining institutions are considered micro.
- o) Financial Operations Gross Earnings: gross income on financial operations to financial assets ratio;
- p) Financial Operations Earnings: income on financial operations net of provisions to financial assets ratio;
- q) Semiannual Return on Equity: semiannual net profit to average equity ratio in the semester;
- r) Reclassification: rearrangement in balance sheet items or groups of items for analysis purposes.

## **Concepts and Methodologies – Capital Stress**

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Capital stress tests are used to estimate losses and new capital requirement of financial institutions, caused by great short-term changes in interest rates and in exchange rates and by credit risk increase. For each stress scenario, a new Total Capital Ratio (TCR) and the relevance of institutions that would be non-compliant or technically insolvent are computed. Relevance is calculated based on the Adjusted Total Asset (ATA) of the institution compared to the financial system's ATA. Non-compliance takes place when Regulatory Capital (RC) is smaller than Minimum Required Capital (MRC). Technical insolvency occurs when the estimated losses are higher than the adjusted equity.

### **Market Risk Stress**

The scenarios used for interest and foreign exchange risks are calculated based on a series of logarithmic returns in a ten-day horizon. Percentile Pa (99.87%) for upward scenario and Percentile Pb (0,13%) for downward scenario are selected and then variations on risk factors are calculated.

All positions subject to interest rates fluctuations classified in the trading portfolio are stressed out. Forward positions (maturities from 21 to 2.520 business days) are recalculated after considering the shocks and so the impact over equity is evaluated. Besides the impact study over equity, trading portfolio stressed positions originate new capital requirements for interest rates risks (PJUR1, PJUR2, PJUR3, PJUR4). Considering fixed interest rate risk (PJUR1), for each generated yield curve, new regulatory parameters on capital requirements are calculated. For capital requirements related to other types of interest rates risks, the multiplying factors “Mext” published by BCB on January 4, 2010 were used.

Currency risk is calculated by applying stressed exchange rates over the effective exposure<sup>1</sup>. The new capital requirement for currency risk (PCAM) is calculated by applying stressed exchange rates over regulatory exposure. It is assumed that all foreign exchange-linked positions follow the percentage changes estimated for the US dollar stress scenario.

### **Credit Risk Stress**

#### a) *Ad Hoc*

*Ad hoc* scenario, used for credit risk increase, consists in estimating, for each financial institution, a two-level downgrade on its portfolio credit rating. Provisions need is estimated through the difference between new required provisions and current provisions. Then, the impact of the provision need on RC and MRC and, thus, on Total Capital Ratio is provided. The possible constitution of deferred tax assets owing to the non-deductibility of provision expenses is considered in the calculation.

#### b) Macroeconomic

A macroeconomic scenario is obtained through a vector autoregressive model (VAR), which considers Gross Domestic Product (GDP), exchange rate, domestic interest rate (CDI) and US interest rate. For the stress scenarios, there were considered a one-sided test with a 5% significance level.

VAR model results are applied to two dynamic panel models. The first one estimates balance of credit with payments past due over 90 days; the other estimates financial system’s credit portfolio. Then, the same *ad hoc* methodology is used, i.e., one estimates the increase in provisions to compensate higher delinquency, the RC and MRC adjustments, including those due to credit portfolio growth, followed by the recalculation of TCR, considering the constitution of deferred tax assets.

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1/ Net outcome of all long and short foreign exchange positions.

## Appendix

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**Banco Central do Brasil Management**

**Units involved in the elaboration of the Financial Stability Report**

**Abridgment**

# Banco Central do Brasil Management

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## Board

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**Aldo Luiz Mendes**  
Deputy Governor

**Alexandre Antonio Tombini**  
Deputy Governor

**Alvir Alberto Hoffmann**  
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Deputy Governor

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Deputy Governor

**Luiz Awazu Pereira da Silva**  
Deputy Governor

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# Units involved in the elaboration of the Financial Stability Report

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# Abridgment

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BCB	Central Bank of Brazil
BIS	Bank for International Settlements
BM&F	Futures and Commodities Exchange
BM&FBOVESPA-Assets	Futures and Commodities Exchange Assets Clearinghouse
BM&FBOVESPA-Derivatives	Futures and Commodities Exchange Derivatives Clearinghouse
BM&FBOVESPA-Foreign Exchange	Futures and Commodities Exchange Foreign Exchange Clearinghouse
Bovespa	São Paulo Exchange
CBLC	Brazilian Settlement and Custody Company
CDB	Banking Deposit Certificate
CDS	Credit Default Swap
Cetip	Financial and Papers Custody and Settlement Clearinghouse
CMN	National Monetary Council
Compe	Check and Other Titles Central Clearing House
Copom	Monetary Policy Committee
Cosif	Financial Institutions Accounting Plan
DAX	Deutscher Aktienindex
Demab	Open Market Operations Department
Deorf	Financial System Organization Department
Depep	Research Department
Desig	Department of Financial System Surveillance and Information Management
DI	Interfinancial Deposit
DPMFi	Internal Federal Securities Debt
Embi+	Emerging Market Bond Index Plus
Embi+Brazil	Emerging Market Bond Index Plus Brazil
ECB	European Central Bank
FDIC	Federal Deposit Insurance Corporation
Fed	Federal Reserve
FGC	Guarantor Credit Fund
FPR	Primitive Risk Factor
FSB	Brazilian Sovereign Fund
FTSE 100	Financial Times Securities Exchange Index
GDP	Gross Domestic Product
IAS	International Accounting Standards
IASB	International Accounting Standards Board
Ibovespa	Sao Paulo Exchange Index
IFAC	International Federation of Accountants
IGP-DI	General Price Index – Internal Availability
INR	Non-resident Investors

IPCA	National Consumer Price Index
LFT	Treasury Financial Bills
Libor	London Interbank Offered Rate
LTN	National Treasury Bills
MRC_Cr	Minimum Required Capital to Credit Risk
NEL	Estimated Liquidity Need under Stress
OIS	Overnight Indexed Swap
PAF	Annual Financial Plan
p.b.	basis point
p.p.	percentage point
PBC	Peoples Bank of China
PDCF	Primary Dealer Credit Facility
PJF	Financial Legal Person
PLA	Adjusted Net Worth
POPR	Minimum Required Capital to Operational Risk
PR	Regulatory Capital
PRE	Minimum Required Capital
REF	Financial Stability Report
RF	Financial Risk
RFL	Net Financial Risk
SCM	Credit Association to Micro Companies
SCMEPS	Credit Association for Micro and Small Business
SCP	Secured Commercial Paper
SCR	Central Bank Credit Information System
Selic	Special Settlement and Clearing System
SFN	National Financial System
Siloc	Deferred Interbank Settlement System
Sitraf	Fund Transfer System
SPB	Brazilian Payment System
STN	National Treasury Secretariat
STR	Reserves Transfer System
TAF	Term Auction Facility
TALF	Term Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity
TARP	Troubled Asset Relief Program
TCR	Total Capital Requirement – Basle Index
TEC	Special Credit Transfer
TED	Available Electronic Transfers
TSLF	Term Securities Lending Facility
TVM	Real Estate Bills
VIX	Volatility Index