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Policy Responses to Sudden Stops in Capital Flows: The Case of Brazil

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Márcio G. P. Garcia
Department of Economics – PUC-Rio

ABSTRACT

Brazil has experienced several international capital flow crises since the 1994 Mexican crisis. In 1999, Brazil was forced out of the peg, and embraced inflation targeting with a floating exchange rate and a tighter fiscal stance. Nevertheless, the 2002 systemic sudden stop turned out to be catastrophic for Brazil; its deleterious effects were enhanced by a confidence crisis created by the prospect that the front-runner presidential candidate would default on the public debt. This combination created a "perfect storm sudden stop". The response was quite heterodox, including central bank intervention through exchange rate derivatives, daily allowance of exchange rate directed to international trade financing, and political negotiation to generate a statement of all candidates that if they won, they would not renege sensible economic policies**.** Monetary and fiscal policies were only lightly tightened. In light of recent results, this seems to have been the most adequate policy.

Keywords: Sudden stop, Brazilian economy, confidence crisis, policy responses.

JEL codes: F21, F32, and F34

Introduction

In 2002 Brazil suffered a sudden stop.[1] Capital flows fell by some US $24 billion, around 6 percent of gross domestic product (GDP). The following characteristics make the 2002 Brazilian sudden stop particularly interesting:

- Brazil is the largest country in Latin America.
- There was a large turnaround of the current account by international standards.
- It was a successful case in view of sudden stop episodes – there was no meltdown.
- High international risk aversion occurred at the time of the domestic presidential elections, and many believed that a non-market-friendly candidate would be elected.
- There was a large increase in country risk and exchange rate devaluation.
- Excessive credit risk generated important and unusual effects in the financial markets, as the futures exchange rate market in backwardation, i.e., "forecasting" appreciation of the Brazilian real. This implied on-shore dollar rates below the international market ones, which was the opposite of the normal case created by high country risk.
- The Central Bank of Brazil used many non-orthodox anti-crisis tools to mitigate the effects of the confidence crisis: exchange rate derivatives; a daily allowance of exchange rate directed to international trade financing; and political negotiation to generate a statement for all candidates that, if they won, they would not renege sensible economic policies.
- Non-monetary liabilities of the government became dollarized to provide crisis insurance for the private sector, at a high cost to the government budget.

After this brief introduction, the second section characterizes the sequence of events that led to the sudden stop in 2002: the 1999 crisis that led to floating the Brazilian currency, and the

[1] Lopes (2005) computed the sudden stop events for several countries. He used Calvo, Izquierdo, and Mejía's (2004) definition adapted to work with annual, instead of monthly, data. According to this definition, a sudden stop is a period (a number of successive years) when there should be at least one year when the fall in capital flows, divided by the GDP of the previous day, is less than or equal to the average of the first differences in capital flows minus two standard deviations; and all years within the period display a decrease in capital flows (divided by the GDP of the previous day) less than the average minus one standard deviation.

flexible exchange rate period, with emphasis on the impact on asset prices. The third section describes the policy response and its effects. The fourth section discusses important issues and constraints that shaped the macroeconomic policy reactions and outcomes. The final section concludes and draws policy lessons from the episode.

Exit from the Crawling Peg and Floating: Facing Old and New Crises

In this section, we analyze the behavior of the main macroeconomic and financial variables during the period when three confidence crises hit Brazil: 1999 (previous speculative attacks forced the floating of the currency in January), 2001 (capital outflows caused depreciation and forced interest rates up), and 2002 (a major confidence crisis caused massive depreciation, inflation, and GDP loss). As explained in footnote 1, only the 2002 crisis strictly classifies (with annual data) as a sudden stop. Nevertheless, the other two crises will also be briefly reviewed in order to provide the link between the shocks that generated the earlier crises with the 2002 sudden stop.

First Phase of the Real Plan: Crawling Peg, 1994-1998[2]

The crawling peg lasted almost four years, until January 1999, when the Brazilian real (BRL) was floated. This first phase of the plan ended with a classic type I currency crisis, in which excessive public expenditures[3] – associated with extremely tight monetary policy, real exchange rate appreciation, and large current account deficits – eventually caused the floatation of the BRL.[4]

The adverse external situation started with the 1997 Asian crisis. There was a brief intermission in the sequence of speculative attacks between the Asian and Russian crises, when foreign reserves peaked at US $74.65 billion in April 1998, due to massive carry trade[5] attracted

[2] The period that led to the 1999 crisis, and the corresponding actions by the International Monetary Fund, are carefully scrutinized in IMF (2003). Here we present a brief review of the main points.

[3] "*The persistently weak fiscal position and high real interest rates led instead to a rapid expansion in the ratio of public debt to GDP, despite the start of a far-reaching program of privatizations and sales of other assets. … Even the modest fiscal adjustment targeted by authorities was rarely achieved and little progress was made in practice on fiscal consolidation between 1995 and 1998, with the fiscal accounts at best in primary balance. The authorities faced strong constitutional and institutional constraints in implementing such a consolidation, in part because of heavy earmarking of tax revenues and political pressures, including competing priorities for the congressional agenda.*" (IMF, 2003, Annex 3, p. 122)

[4] "*The origins of the Brazilian crisis of 1998-99 can be traced to the set of policies adopted following the start of the Real Plan, a stabilization program launched in 1994. High inflation was successfully reduced, but other problems emerged both as an inherent outcome of the disinflation strategy and as a result of policy decisions. Fiscal deficits widened sharply, as a result of asymmetric indexation of expenditures and revenue (which increased the nominal value of expenditures faster than that of revenue) and the loss of control mechanisms that had relied on high inflation to erode the real value of budget expenditures. The mix of loose fiscal policy combined with tight monetary policy led to a real appreciation of the currency and, coupled with a strong increase in domestic demand resulting from initial rapid credit expansion and the loss of inflation tax, to the emergence of large current account deficits."* (IMF, 2003, p. 20)

[5] The carry trade consists of borrowing in low-yielding currency, exchanging the proceeds into a high-yielding currency, and reverting the trade at the end. The gain is the difference in interest rates. If the low-yielding currency

by extremely high short-term interest rates coupled with the crawling peg. But in the second quarter of 1998, the first signs that Russia had serious problems reversed the short-term capital flows. In the second half of 1998, the Russian crisis and the associated demise of the hedge fund Long Term Capital Management aggravated the external situation of emerging economies. After Russia, Brazil was perceived by international financial markets as the next one to fall (devalue and/or default). After the peak in foreign reserves, Brazil lost US $33.46 billion by November, a month prior to the International Monetary Fund (IMF) agreement. In the last quarter of 1998, the IMF stepped in[6] to try to save the exchange rate regime, albeit "… *many members of the IMF´s Executive Board (…) remained unconvinced of the sustainability of the crawling peg, and some expressed dissatisfaction that there had not been a more comprehensive discussion, in the Board, of alternative options. … The IMF´s decision to support the crawling peg involved significant risks. The business community was not entirely in favor of the peg and had been putting pressure on the President to correct the overvaluation of the currency. Moreover, the IMF decision did not fully impress the markets, and some international investors took this as an opportunity to pull out of Brazil, if they had not done so already. General skepticism prevailed in the media coverage of the IMF decision. Contemporary Brazilian observers doubted 'if the package… [would] suffice to prevent a devaluation.' (Garcia and Valpassos, 1998, p. 39).*" (IMF, 2003, p. 23)

In January 1999, President Cardoso started his second term in office. The currency soon came under renewed attack, when the new governor of the state of Minas Gerais (the third most important state), the previous President Itamar Franco, declared a (completely innocuous)

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depreciates vis-à-vis the high-yielding currency, there is an additional capital gain. However, if the high-yielding currency depreciates, then the interest rate differential may be wiped out.

[6] "*The program, approved by the Board in early December 1998, envisaged maintenance of the existing exchange rate regime, but did not specify any immediate change in the rate of crawl. The possibility that exchange rate policy might be modified at subsequent program reviews was left open. The program included strong, front-loaded fiscal adjustment (amounting to 4 percent of GDP) and a commitment to supportive monetary policy. Conditionality on structural measures was limited mainly to critical areas in public finance and financial sector regulation. There was a very limited effort to coordinate the actions of private creditors, as the authorities feared that any stronger action would likely have adverse consequences for future flows. They only sought the voluntary support of private lenders for the program in meetings in a number of international financial centers. There was a generally favorable response to these requests but rollover rates for international bank credits averaged only 65-70 percent. … The financing package supporting the program provided IMF resources of SDR 13.6 billion (about US$ 18 billion, or 600 percent of quota). In addition, bilateral loans arranged through the Bank for International Settlements (BIS) and a bilateral loan from Japan amounted to a further US$ 15 billion, and the World Bank and the Inter-American Development Bank (IDB) offered additional loans of about US$ 4.5 billion each.*" (IMF, 2003, p. 23)

moratorium on debt payments. This might have served as an excuse to float the currency. In retrospect, it seems that a decision had already been made regarding the float after the elections were won and the new administration settled in.[7] Brazil did not have a commitment to the crawling peg as strong as the Argentinean Convertibility Law.

Second Phase of the Real Plan: Flexible Exchange Rate cum Inflation Targeting, 1999-2002

Here we analyze the first four years of the floating rate period of the Real Plan, which corresponds to the second term of President Fernando Henrique Cardoso. Table 1 displays the main macroeconomic indicators of that period.

Table 1: Macroeconomic Indicators of the Floating Period of the Real Plan

	1999	2000	2001	2002
GDP Growth (percent)	0.3	4.3	1.3	2.7
Inflation (CPI in percent)	8.9	6.0	7.7	12.5
Exchange Rate Depreciation (percent)	48.0	9.3	18.7	52.3
Nominal Interest Rate (Selic) (percent)	24.8	17.6	17.5	19.2
Real Interest Rate (percent)	14.6	10.8	8.9	6.2*
Fiscal Surplus (% GDP)				
Primary	3.3	3.6	3.8	4.0
Nominal	-5.8	-3.6	-3.5	-4.7
Current Account				
USD Billion	-25.3	-24.2	-23.2	-7.6
% GDP	-4.8	-4.0	-4.6	-1.7

* Due to the unexpected increase of inflation, the ex post real interest rate of 6.2 percent may be underestimating the ex ante real rate by 4.9 percent, i.e., the ex ante real rate would be around 11.1 percent.

Source : Central Bank of Brazil

After the floating of the currency on January 15, a period of extreme nervousness prevailed for a few months, until a new Governor of the Central Bank, Arminio Fraga, was appointed and managed to bring calm to the financial markets. The inflation-targeting regime was introduced later in the second quarter. In marked contrast with the 1995-98 period, the primary fiscal balance posted a significant improvement, as required by the program agreed with the IMF in 1998. Growth, however, faltered, and the current account balance, despite the earlier depreciations, only fell below the 4 percent of GDP threshold in 2002.

[7] This impression is based on interviews with members of the economic team at the time.

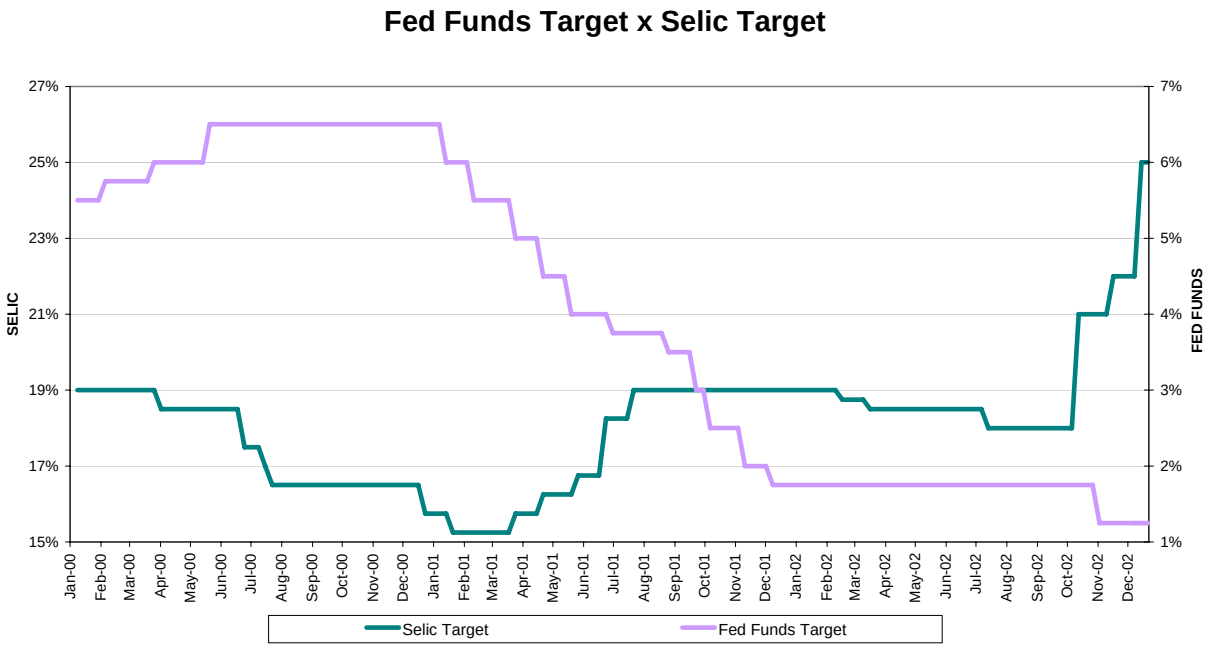
The very high real interest rate, low growth rate, risky debt structure (which was highly indexed to the exchange rate and the short-term interest rate), and recognition of hidden liabilities (so-called "skeletons in the closet") made the net public debt to GDP ratio increase dramatically: from 30.0 percent in 1994 to 38.9 percent in 1998 and 50.5 percent[8] in 2002.[9]

Figure 1 displays the evolution of both the Selic (left hand side (LHS) scale) and U.S. Federal Reserve Funds (right hand side (RHS) scale) target rates. The figure demonstrates two features of the Brazilian monetary policy regime during the period. First, the interest rate in Brazil was remarkably greater than its counterpart in the United States (note the difference in the two scales). From the inflation data displayed in Table 1, it can be shown that these much higher nominal rates also translate to much higher real interest rates. Second, the changes in the interest rate targets display clear negative correlation. As is well known, monetary policy should be counter-cyclical, thereby mitigating the business cycle. However, Brazilian monetary policy was pro-cyclical, and negatively correlated with U.S. monetary policy. This feature clearly jeopardized economic performance, in addition to threatening debt sustainability (Garcia and Rigobon, 2005).

Figure 1

[8] These figures were computed with the updated GDP figures, released in 2007, which were higher than the previous ones. The original figures, cited in the Central Bank of Brazil's Fiscal Policy Press Release on 01/30/2003, were much worse: 30.4 percent in 1994, 41.7 percent in 1998, and 55.9 percent in 2002.

[9] For debt simulations at the time, see Goldfajn (2002). Bevilaqua and Garcia (2002) present a growth decomposition exercise for the Brazilian public bonded debt, showing that high interest rate payments were the main culprit of the large debt accumulation. During the controlled exchange rate period, 1995-98, very high interest rates were required either to keep inflation controlled under expansionary fiscal policy, or to avoid a major devaluation in periods of capital flight (the Mexican and Asian crises).



Source: Central Bank of Brazil.

In order to better understand the joint behavior of the exchange rate and interest rates, we perform a decomposition of the Brazilian domestic interest rates according to the covered interest parity condition. This condition states that a U.S. investor, for example, should be indifferent between investing in U.S. bonds receiving the U.S. dollar interest rate i_t*, and investing in Brazilian bonds receiving the BRL interest rate i_t, *plus* contracting the exchange rate forward, thereby insuring against exchange rate fluctuations, so that both returns in U.S. dollars are the same.[10] The exchange rate insurance premium is the depreciation rate computed by dividing the forward rate by the spot rate, also known as the forward premium, fp_t. The forward premium encompasses not only the expected depreciation $E_t(\ln(S_T/S_0))$,[11] but also a risk premium, usually called currency risk, CUR_t.[12] Therefore, if the covered interest parity held, the domestic rate would equal the international interest rate plus the forward premium, i.e., equation (1) would hold:

$$i_t = i_t^* + fp_t = i_t^* + E_t(\ln(S_T / S_0)) + CUR_t \qquad (1).$$

[10] The same parity condition holds from the perspective of a Brazilian investor, since this condition also implies that BRL returns are equal.
[11] We are implicitly assuming that Jensen´s inequality produces a second-order effect.
[12] The currency risk may be negative, but this possibility was not empirically relevant for Brazil.

The analysis for Brazil uncovered a substantial positive residual once both the international interest rate and the forward premium were subtracted. This covered-interest-parity differential ($CIPD_t$) is a measure of the country risk.[13] Therefore, equation (1) must be adapted to fit the Brazilian data:

$$i_t = i_t^* + fp_t + CIPD_t = i_t^* + E_t(\ln(S_T / S_0)) + CUR_t + CIPD_t \qquad (2).$$

Alternatively, sovereign bonds traded in international markets could be used to infer the country risk. One of the most widely used measures of country risk is the EMBI+Brazil spread, obtained from deducting the yield on U.S. Treasuries of the same duration from the yield offered by a basket of Brazilian foreign debt bonds[14] in international secondary markets. We call this measure the country risk, COR_t, since it is a measure derived from secondary international markets, which are not directly affected by domestic monetary policy measures. The comparison of the two measures of country risk, $CIPD_t$ and COR_t, has important consequences for the joint behavior of the exchange rate and the interest rate, as we will argue below.

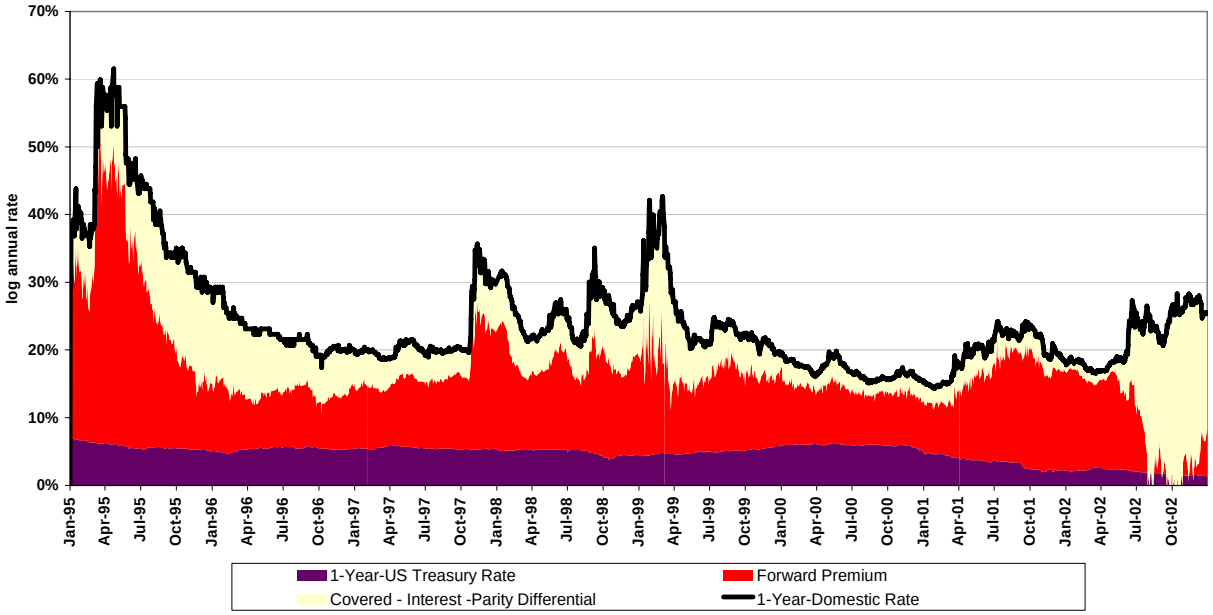
Figure 2A displays the interest rate decomposition described by equation (2) from the time when President Cardoso took office in January 1995. The one-year nominal interest rate is the upper dark line. The one-year rate is usually higher than the basic rate (Selic) displayed in Table 1 because the yield curve has usually sloped upward during the period studied.

The one-year interest rate is decomposed into three series, according to equation (2). The dark blue area at the bottom is the one-year interest rate on U.S. Treasuries, i_t*. On top of the international interest rate, the red area is the forward premium, fp_t. Finally, the yellow residual is the covered-interest-parity differential, $CIPD_t$.

[13] The differential (or deviation) of the covered interest rate parity is the best measure of the lack of perfect capital mobility "*...because it captures all barriers to integration of financial markets across national boundaries: transactions costs, information costs, capital controls, tax laws that discriminate by country of residence, default risk, and risk of future capital controls* (Frankel, 1991)."

[14] Among the several bonds traded in the international market during the period, the C-Bond (Capitalization Bond) was the most liquid one. This bond was completely repaid in October 2005.

Figure 2A **Interest Rate Decomposition**



Source: Central Bank of Brazil.

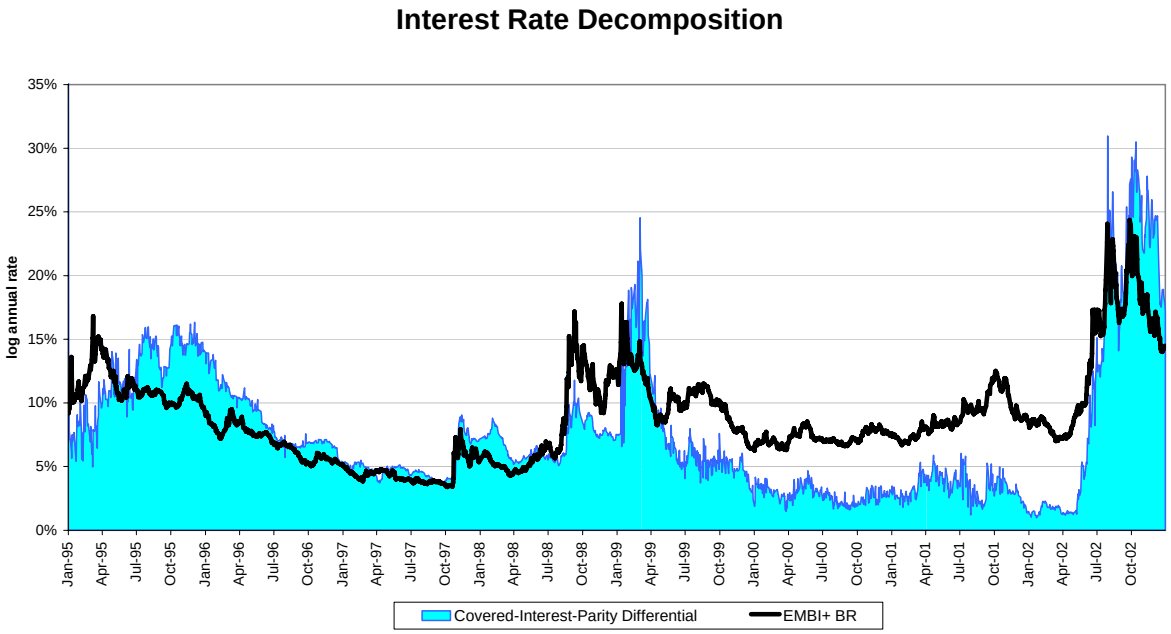
To better contrast the behavior of the CIPD with the EMBI-Brazil spread, these two series are displayed separately in Figure 2B. Although the two lines are country-risk measures, they should differ for several reasons, as analyzed in Garcia and Valpassos (2000):

1. The maturity and duration of the bonds involved are different; the EMBI-Brazil's is much longer than one year during the period studied. This effect is smaller closer to the end of the period.
2. The tax treatment may be very different and it varies according to the investor's type.[15]
3. Capital controls (on capital inflows) affecting the domestic bonds were in place until the Asian crisis (1997).[16]
4. The credit risk (default risk) may be perceived to vary across debt types (domestic vs. foreign). That is, investors may believe that there is a pecking order of default, and domestic debt may be junior, or senior, in relation to foreign debt. For example, in the event of an exchange rate crisis, restrictions on capital outflows may be imposed. If this

[15] See Oliveira (1997).
[16] See Garcia and Barcinski (1998) and Carvalho and Garcia (2006).

were done without defaulting on the debt, it would only affect foreign investors that purchased domestic debt, while those that acquired foreign debt would not be harmed.

Figure 2B



Source: Central Bank of Brazil

Despite all the reasons outlined above, the two Brazilian country-risk measures could not drift too much apart without triggering financial strategies (loosely speaking, arbitrage operations) that forced the spread between the two back to "normal." For example, if a negative shock — such as an increase in the international investors' risk aversion — increased the Embi+Brazil spread,[17] domestic interest rates would also have to rise. Otherwise, arbitrageurs could purchase the cheap asset (foreign debt), and sell the expensive asset (domestic debt indexed to the exchange rate, or plain domestic debt plus a long position in U.S. dollar (USD) futures, in domestic derivatives markets). This arbitrage would cause capital to flee the country, causing losses of foreign reserves (under the crawling peg regime that was in place during the 1995-98 period), or exchange rate depreciation (under the flexible exchange rate regime after 1999). In the first half of the sample, the crawling-peg period, the CIPD systematically surpassed

[17] The EMBI+Brazil in Figure 2B is an index computed by JP Morgan of the prices of Brazilian bonds floated in foreign markets. The difference between its yield in the secondary market and the yield of a U.S. Treasury bond of the same duration (a measure of average maturity) is considered a good measure of the Brazilian country risk.

the EMBI+Brazil spread. Only during crises, when the EMBI–Brazil spread jumped upward, has it been above the covered-interest-parity differential. Note that in those instances, domestic interest rates eventually rose. Therefore, the arbitrage between domestic and foreign Brazilian debt is an *additional* channel through which capital outflows may be triggered.

Salgado, Garcia, and Medeiros (2001) explain the behavior of interest rates in Brazil through a non-linear central bank reaction function. The argument is the following: the Central Bank of Brazil (BCB) faced two different constraints. In "good times," foreign capital was plentiful, and the BCB reaction function did not take into consideration the (nonexistent) pressure from the exchange rate (since it was a crawling peg, the pressure would materialize in a loss of foreign reserves to preserve the peg). During those periods, the BCB would act as a developed country central bank, concerned only with inflation expectations and with the output gap. During crises, however, the loss of reserves necessary to preserve the peg would trigger another channel (call it the exchange rate channel) that would make interest rates jump upward. Typically, as shown in Figure 2B, the EMBI+Brazil spread was the first to jump, and the CIPD moved later when domestic interest rates were raised to avoid further foreign reserves losses. Therefore, the increase in the difference between the EMBI+Brazil spread and the CIPD was as a very good coincidental, and sometimes leading, indicator of crises during the fixed exchange rate period.

After a turbulent initial period that followed the floatation of the BRL in January 1999, the relationship between the two country-risk measures was reversed: the EMBI–Brazil spread became systematically larger than the CIPD. After the floatation of the BRL, since 1999, the opposite has been true – the EMBI+Brazil spread has been larger than the CIPD. We have interviewed market players, asking why, during those episodes, they did not ship enough funds out of the country in order to close the gap between the two country risk measures. The answers favored the arguments that such "arbitrage" was still very risky and costly for banks, and very difficult to undertake for non-financial firms. Therefore, we may interpret the gap that exists when EMBI+Brazil is larger than CIPD as the effect of the still existing controls on capital outflows.

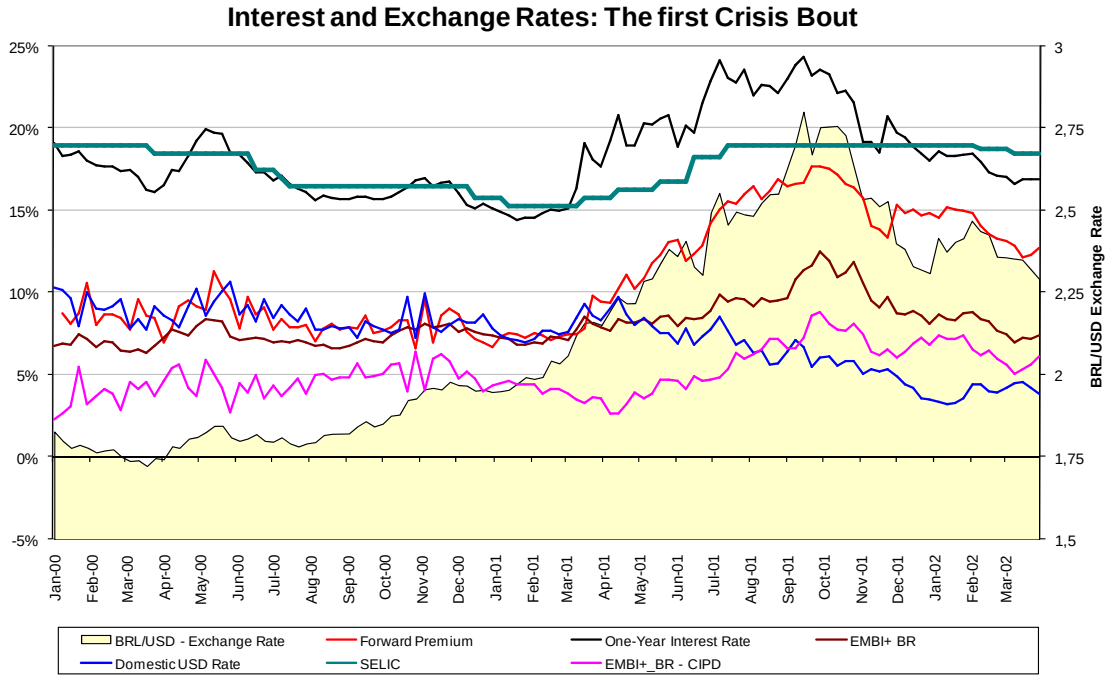
Figure 3 displays the interest rate decomposition data in a different format, covering the period from January 2000 to April 2002. During 2000, the basic interest rate (Selic)—the dark green line (LHS scale)—fell throughout the year, and the exchange rate—the yellow area in the background (RHS scale)—was stable during the first half of the year and started to climb during the second half of the year. The slope of the yield curve is measured by the difference between the one-year interest rate—the black line (LHS scale)—and the Selic rate. The yield curve was not very steep,[18] and even became inverted during brief periods, signaling the expectation of a further fall in interest rates.

In Figure 3, the one-year interest rate is decomposed in two parts: the forward premium—the red line (LHS scale)—corresponding to the depreciation one year ahead; and the domestic USD rate[19]—the blue line (LHS scale)—corresponding to the yield from investing in a domestic bond indexed to the USD. That is, investors can either get a nominal rate in BRL, or buy a bond that pays the actual (ex-post) depreciation plus the USD domestic rate. In terms of the variables in equation (2), the domestic USD rate equals $i_t^* + CIPD_t$.

The EMBI+Brazil yield is also included as the brown line (LHS scale). Finally, the difference between the EMBI+Brazil spread and the CIPD is portrayed as the purple line (LHS scale). During 2000, the forward premium and the USD domestic rate were both falling, evenly splitting the BRL domestic rate.[20] The EMBI+Brazil yield remained stable. In early January 2001, the COPOM[21] cut the Selic target to 15.25 percent, the lowest rate until then since the start of the Real Plan.

Figure 3

[18] Liquidity for BRL-denominated government bonds without indexation clauses was very low for maturities longer than one year. This was an example of the so-called original sin, i.e., the extreme difficulty in having a long-term credit market in the domestic currency (see Goldfajn and Rigobon, 2000). Today, this problem seems to have been almost solved. Nevertheless, lengthening maturities are still a problem in Brazil (see Garcia and Salomão, 2006).
[19] This is also known as the on-shore dollar rate. Unlike other Latin American countries, Brazilian law forbids domestic bank accounts in foreign currency. Therefore, the on-shore dollar rate for deposits in USD is synthesized through a financial strategy using derivatives: purchase a plain domestic bond and purchase an equivalent position in USD futures. At the maturity date, the investor will have the equivalent in BRL of the amount in USD invested at the on-shore dollar rate, still subject to frontier risk to ship the funds abroad. Another alternative is to purchase a Brazilian Treasury bond indexed to the USD exchange rate.
[20] This is most likely just a coincidence.
[21] Comitê de Política Monetária (Monetary Policy Committee), the Brazilian equivalent of the FOMC (Federal Open Market Committee).



Source: Central Bank of Brazil.

Unfortunately, a sequence of domestic and international events[22] hindered the resumption of economic growth. After March 2001, it became clear that the good times were gone.[23] Country risk, as measured by the EMBI+Brazil, started trending upward. The domestic interest rates also reacted. The Selic was increased several times, and the yield curve steepened drastically. The large increase in the one-year interest rate can be fully attributed to the hike in the forward premium. Until September 2001, the exchange rate depreciated continually. The USD domestic rate actually fell during 2001, increasing the difference between the two country-risk measures. At least in theory, this high spread between the two country-risk measures, subject to the previous caveats, could have given rise to "good-deal arbitrages." Such a financial strategy was accomplished through the purchase of the EMBI+BR or other external securities with Brazilian country risk while shorting the domestic dollar-indexed securities, i.e., by borrowing in the domestic USD rate and converting the proceeds in USD to purchase the

[22] On the domestic side, there were the energy crisis (lack of rain compounded by lack of due planning that caused a shortage affecting both firms and households) and the political disarray inside the government coalition. On the international side, it became clear that the U.S. economy entered a recession and the Argentina crisis worsened considerably, bringing contagion to Brazil.

[23] Every year since 1999, the Central Bank of Brazil holds an annual international conference on inflation targeting (IT). For 2001, besides the IT conference, held in the first half of the year, another conference on growth was planned for the second half of the year. This second conference was cancelled, as the country faced several problems in 2001, and growth prospects collapsed.

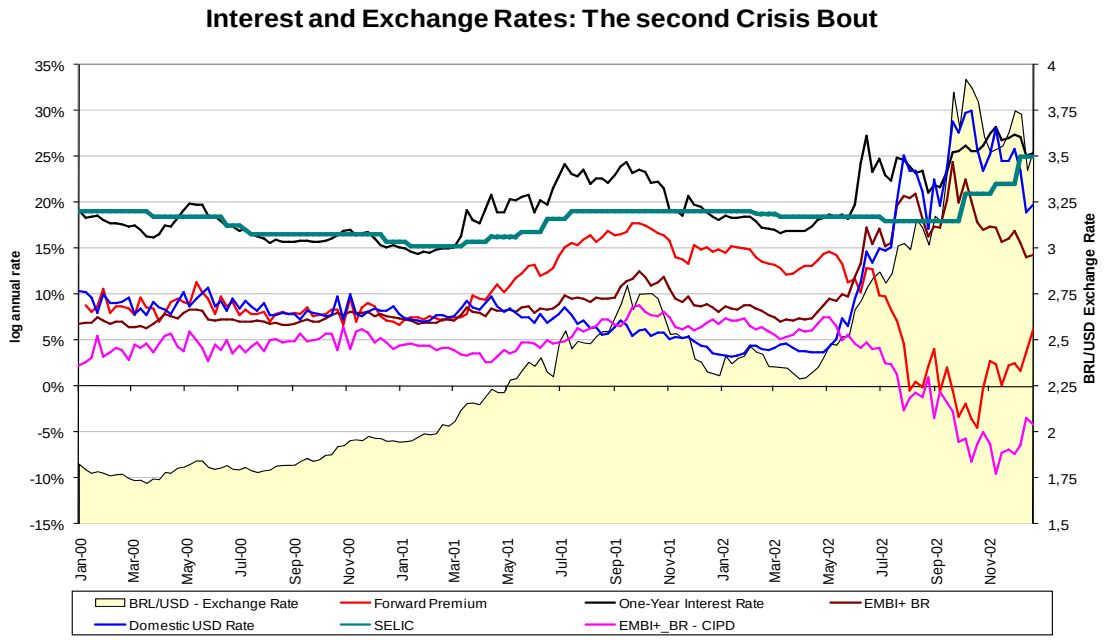
EMBI+BR in the international secondary market. The existence of this apparent arbitrage opportunity during a long period was probably due to restrictions on capital outflows that limited the ability of domestic firms and financial institutions to remit funds abroad.

The immense liquidity that was injected by the U.S. Federal Reserve after September 11, 2001, allowed the situation to improve until the first quarter of 2002. The EMBI-Brazil fell to its previous level, while the exchange rate appreciated. Interest rates fell, and the yield curve flattened.

However, not everything had reverted to the configuration that prevailed one year earlier. The forward premium remained at a much higher level, warning that the exchange rate appreciation was not to be seen as a long-lasting phenomenon. The difference between the two measures of country risk was also large, signaling that "quasi-arbitrage" financial strategies involving capital outflows remained.

With the benefit of hindsight, we now know that another negative combination of domestic and international events created a confidence crisis that made the country risk explode after April 2002. Figure 4 displays what happened during the second bout of crisis.

Figure 4



Source: Central Bank of Brazil.

As happened during the 2001 crisis, the one-year interest rate rose along with the increase in the country risk. Nevertheless, the COPOM[24] decided to keep the downward movement in the Selic rate. The Selic target was eventually raised by 300 basis points, from 18 to 21 percent, on October 14, 2002.

The decomposition of the increase in the one-year interest rate during the second bout of crisis, however, reveals a contrasting picture with that of the 2001 crisis. In 2002, the one-year interest rise was entirely due to the increase in the domestic USD rate (the on-shore dollar rate), which lagged behind the EMBI+Brazil yield during the previous year. Simultaneously, in a clear indication that the markets expected an appreciation of the BRL, the forward premium decreased substantially, even becoming negative.[25] A negative forward premium is akin to a lower forward exchange rate compared with the spot exchange rate. The BRL/USD exchange rate overshot,

[24] The Monetary Policy Committee, COPOM, was composed of the Central Bank directors plus the governor, Armínio Fraga.
[25] This "expected" appreciation, backwardation in futures markets parlance, could be a sheer market outcome or a result of fear of future controls on capital outflows.

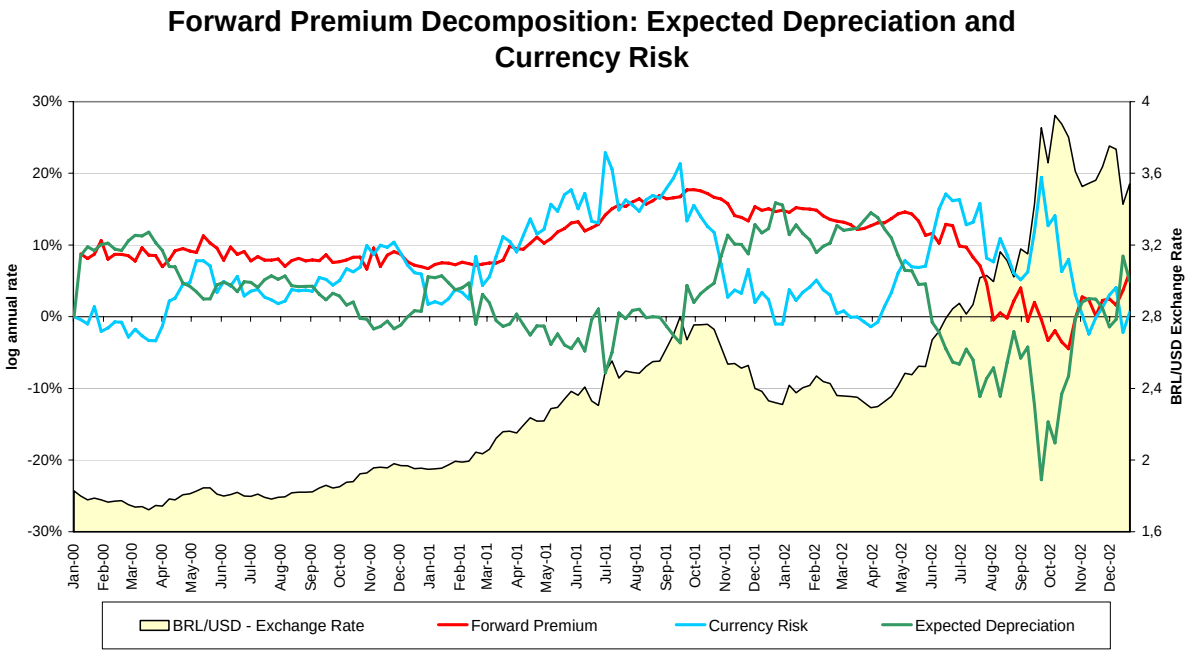
depreciating 70 percent, before closing the year around 50 percent.[26] The real exchange rate was at the most depreciated level in the past three decades, a period that included several depreciation episodes and international financial crises.

The decomposition of the forward premium into the expected depreciation and the currency risk sheds more light on the joint behavior of interest rates and the exchange rate. However, the separation of the two components is not a clear-cut procedure. First, the expected inflation is itself a theoretical construct, since market players may disagree in their expectations. Even if we agree on the existence of an expected inflation variable, the empirical literature points out the existence of a severe bias in the survey data (see Chinn and Frankel, 1994). Alternatively, econometric methods may be used to disentangle the two components (see Garcia and Olivares, 2001).

Notwithstanding the previous caveats, a survey[27] compiled by the BCB is used to decompose the forward premium into the expected depreciation and the currency risk. The results are presented in Figure 5. The forward premium is the red line (LHS scale); the expected depreciation, the dark green line (LHS scale); and the currency risk, the light blue line (LHS scale). On the RHS scale is the exchange rate, as shown by the yellow in the background.

[26] In terms of the USD/BRL exchange rate, the appreciation of the dollar at the overshooting peak was 42 percent, ending the year with an appreciation of 35 percent.
[27] See the Central Bank of Brazil's *Focus-Market Readout* of 10/18/2002.

Figure 5



Source: Central Bank of Brazil.

Figure 5 shows that during the 2001 depreciation episode, the forward premium increase was due to the hike in the currency risk, while expected depreciation became negative.[28] The same movements happened during the 2002 crisis, except that the expected depreciation became much more negative, while the currency risk still increased vis-à-vis the calm interim between the two exchange rate depreciation episodes. Figure 5 demonstrates that the currency risk premium has almost always been positive,[29] even in periods of large expected appreciation of the BRL.

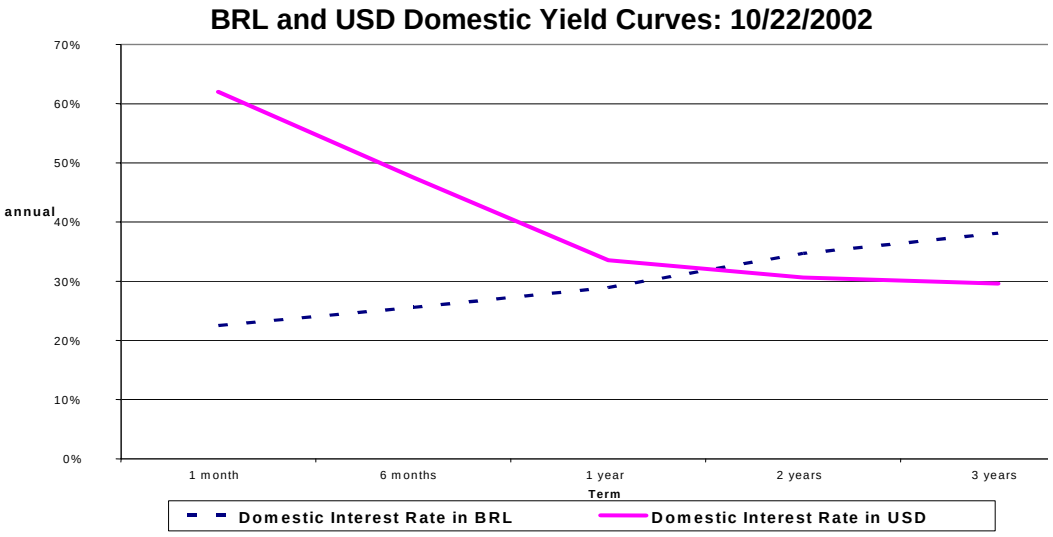
As Figure 4 shows, during the 2002 depreciation episode, the USD domestic rate became larger than the BRL domestic interest rate. Consequently, the forward premium became negative. Since there is an arbitrage between the domestic rate in BRL and the domestic rate in USD plus exchange rate indexation, the negative forward premium caused the yield curve in instruments indexed to the exchange rate to stay above the yield curve for BRL instruments. This effect is more intense the shorter the instrument, since rates are annualized. For example, if the one-

[28] If agents believed that the exchange rate is a martingale (or a random walk), thereby issuing forecasts equal to the current values, and if these forecasts were measured with a lag, we would get expected appreciation when the currency is depreciating, and expected depreciation when the currency is appreciating.
[29] Except for a brief period around the end of March 2000, when the exchange rate reached a trough.

month forward premium is –5 percent, an investor who purchased a USD indexed instrument would have to get at least a 5 percent a month, or 60 percent a year, just to break even.[30]

Figure 6A displays the yield curves for BRL and USD-indexed domestic instruments on October 22, 2002, the peak of the sudden stop. For maturities equal to or less than one year, the USD domestic yield curve is higher than the BRL domestic yield curve. This is a very unusual situation that signaled the extreme scarcity of foreign liquidity in Brazilian domestic markets.

Figure 6A

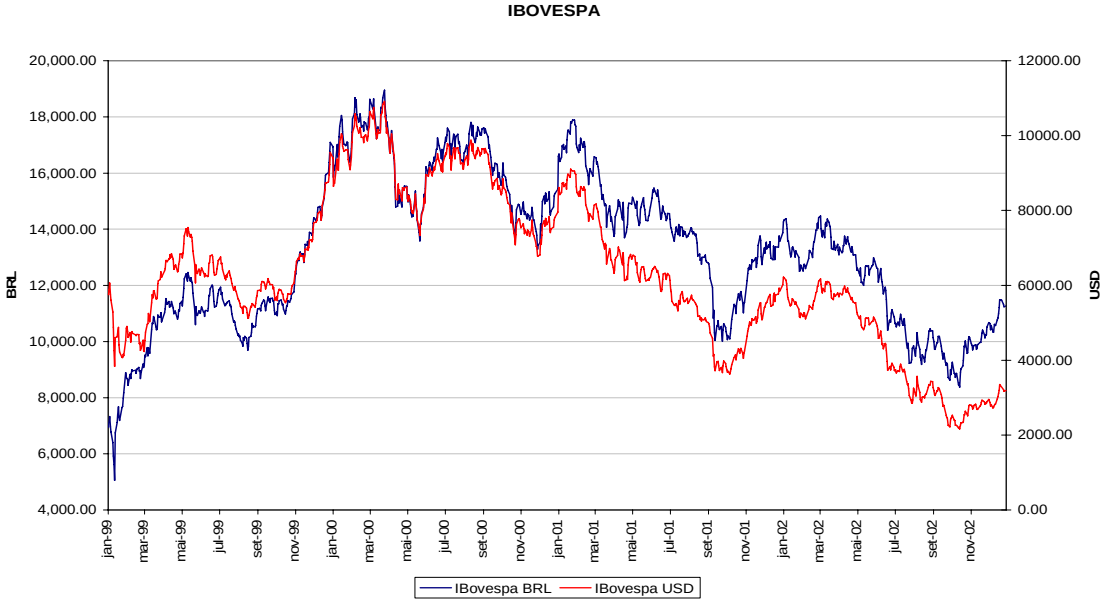


Source: Central Bank of Brazil.

Not surprisingly, the stock market also suffered heavily during the sudden stop. Figure 6B shows the behavior of the main stock market index in Brazil—IBOVESPA—during the four years, both in BRL and USD.

[30] The simple interest is used because these financial contracts are traded with this interest rate convention.

Figure 6B



Source: BOVESPA's website (www.bovespa.com.br).

In summary, the stylized facts are the following:

1. In both of the large depreciation episodes in 2001 and 2002, the country-risk measure given by the C-Bond spread increased, although the increase was much more pronounced in the latter episode than in the former. The latter episode was associated with large exchange rate outflows from Brazil in fear of a possible future default on the public debt.
2. In the 2001 episode, the CIPD and the domestic USD interest rate decreased, although they increased significantly during the 2002 episode. Conversely, the forward premium increased substantially in 2001, and became negative in 2002.
3. The negative forward premium gave rise to an inverted yield curve of USD domestic rates that surpassed the BRL yield curve for maturities up to one year.
4. The 2002 depreciation created an expectation of nominal appreciation of the BRL, a very unusual situation. Nevertheless, the currency risk remained positive in both depreciation episodes.

An alternative way to put the above facts is the following: the extreme scarcity of foreign liquidity in the 2002 sudden stop substantially increased the returns on USD domestic

instruments. Because there was no arbitrage, either the domestic interest rate would have to increase much more than it did, or an expected appreciation of the BRL would have to be generated. Since it was the latter effect that prevailed, the BRL/USD exchange rate had to overshoot the already higher equilibrium exchange rate, because the long-term equilibrium real exchange rate should have also depreciated because of the worsened prospects of capital inflows.

Policy Responses and Effects

In an earlier section, we analyzed the events around the crises of 2001 and 2002, with emphasis on the financial aspects. This was because the 2002 crisis was a clear confidence crisis that mixed political aspects with low liquidity in international financial markets. Therefore, although nothing remarkably unusual was happening in the "real" Brazilian economy, expectations deteriorated remarkably, and financial asset prices reflected this. In this section, we address the solutions that policy makers have tried to avert the crises, how the markets reacted, and how successful the solutions were.[31]

Diagnostics and Therapeutics

By May 2002, it became clear to economic policy makers that a confidence crisis was in process. A telling sign was given by the domestic bond market, where a major premium was required from the Treasury to be able to sell bonds with maturity beyond the inauguration of the next president (January 1, 2003). Eventually, all rollovers were being done with bonds maturing at the end of 2002, or with repos.[32]

With the diagnostic that the crisis was political in essence, i.e., that investors feared the then presumed market-*un*friendly candidate Lula,[33] economic policy makers decided that the

[31] For this section, we rely heavily on interviews conducted with policy makers at the time.
[32] Repurchase agreements are instruments used by the Central Bank of Brazil to place public debt for shorter periods. The typical use of repos is for liquidity management. During the crises, however, given market unwillingness to roll over maturing bonds, repos were used to effectively roll over the debt, thereby significantly shortening the average maturity of public debt.
[33] The Workers' Party had, until then, mostly embraced market-unfriendly economic policy recommendations. For example, a few years before, Lula had participated in a "referendum" to find out whether the Brazilian people wanted the foreign debt to be repaid. Interestingly enough, for the first time in history, the Brazilian government has now become a net creditor in international financial markets (see Figure 9).

medicine also had to be political. *Current* interest rate hikes or fiscal policy measures would be of little use, since what investors feared was major *future* regime changes when the new administration took office. Nevertheless, the primary surplus was somewhat increased (see Figure 7), and the basic interest rate was raised, although not enough to counteract the increase in country risk (see Figure 4).

The BCB Governor, Armínio Fraga, was given the mission to talk to all the presidential candidates and explain that if they all agreed to adhere to sensible economic policies, the crisis could be averted. Simultaneously, the economic team also talked to foreign investors and the IMF. In the end, an agreement was reached with the IMF and the candidates. The candidates agreed to the sensible policies in return for large disbursements from the IMF. The IMF program was designed to provide good incentives to the candidates. Although the entire loan was USD 30 billion, only USD 6 billion would be disbursed in 2002. The remaining USD 24 billion would be disbursed when the next president was in office, provided he fulfilled the IMF program conditions.

A 300 basis points Selic rate increase was undertaken in October, at the peak of the crisis. However, this was not nearly enough to avert capital flight. The idea was to limit the secondary effects of the exchange rate pass-through to domestic inflation.[34] Later, during the first two months, the COPOM, under the new BCB Governor, Henrique Meirelles, would raise the Selic rate to 26.5 percent.

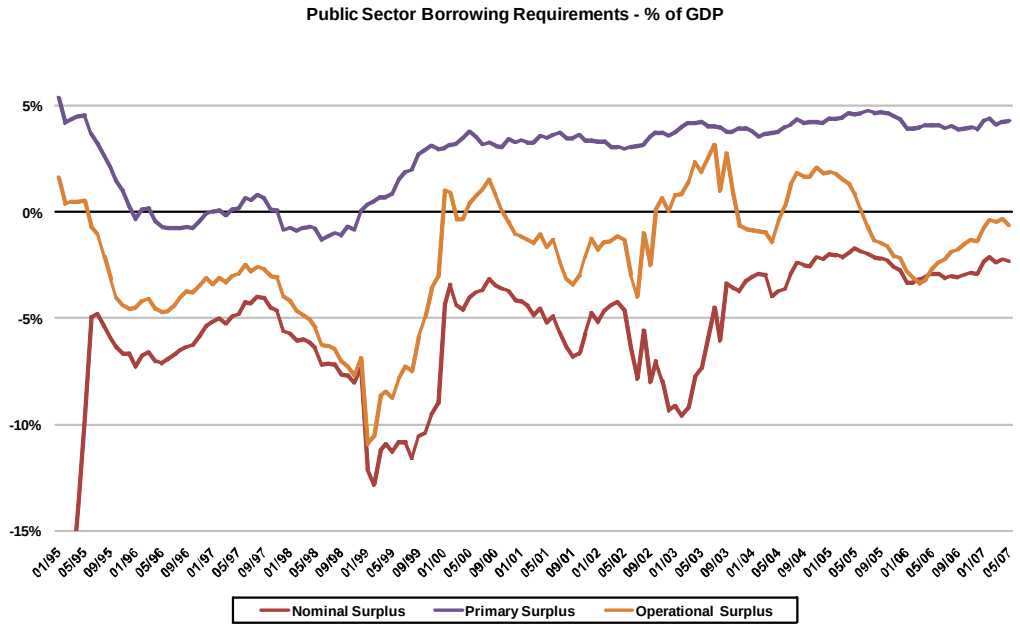
After Lula won the election, and it became clear that he would keep the three basic tenets of Brazilian macroeconomic policy—the large primary fiscal surplus, inflation targeting, and floating exchange rate—and that he would not default on the debt, the markets regained confidence. The crisis was averted without catastrophic losses (and large gains for those that purchased Brazilian assets amid the crisis). Although GDP growth was low (see Table 1), Brazil grew more than 4 percent during the two-year period (2001-02), which probably cannot be considered too bad.

Aftermath of the Crises

[34] Appendix 1 reproduces a box from the Inflation Report (BCB, 2004) that discusses, among other issues, how the pass-through was calculated.

In order to strengthen the economic policy stance, the new Finance Minister, Antônio Palocci, decided to increase the primary surplus target to 4.25 percent of GDP, under the aegis of the IMF program. The target was always met, and frequently exceeded (see Figure 7).[35]

Figure 7

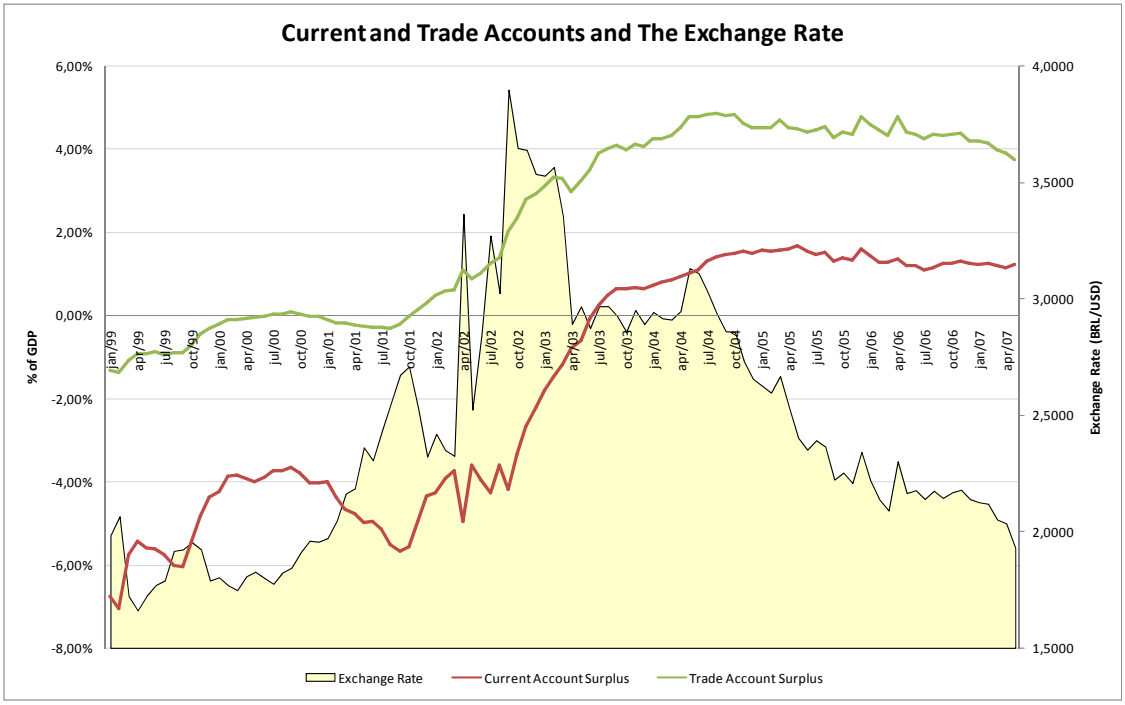


Source: Central Bank of Brazil.

The end of the political crisis brought calm to the markets. The improvement in expectations coincided with a major improvement in Brazil's current and trade accounts. Due to the increased demand for Brazilian products, the trade account increased remarkably. The current account followed suit. This improvement caused the exchange rate to appreciate (see Figure 8), which significantly helped inflation control.

[35] Figure 7 is computed with the GDP data updated in 2007, which are, on average, 10 percent higher than the figures known at the time.

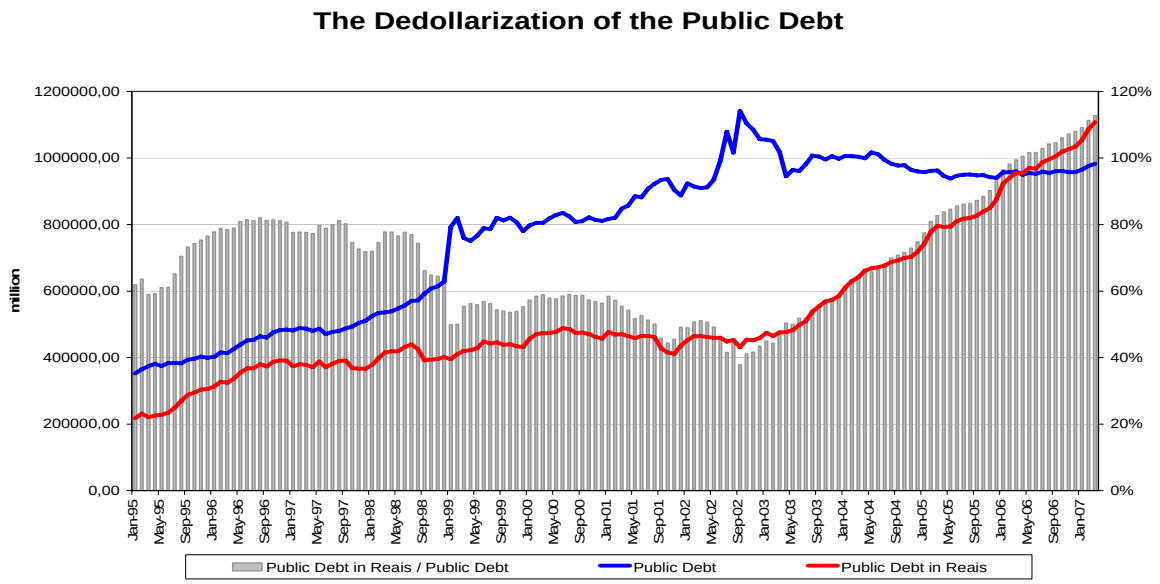
Figure 8



Source: Central Bank of Brazil.

The issuance of public domestic dollar indexed debt and the sale of USD swaps were widely used to try to mitigate the crisis in 2002. Figure 9 shows that in September 2002, more than 60 percent of the non-monetary public (net) debt was either denominated in or indexed to foreign currencies (mainly the USD). This was seen as a great vulnerability and the BCB and in 2003 the Treasury began to change this feature. Figure 9 shows how fast the composition of the non-monetary debt changed. This transformation was accomplished via several instruments: purchase of foreign reserves through sterilized interventions, repurchase of Brazilian foreign debt, substitution of domestic debt in reais by dollar indexed domestic debt, and sales of dollar futures (reverse swaps, in Brazilian market parlance). The result is that today the public sector is a net creditor in foreign currency, i.e., a depreciation of the BRL causes a fall in the net public debt. All such interventions are akin to sterilized interventions (purchases of foreign reserves coupled with sales of domestic debt), and tended to avoid further appreciation of the BRL. The accumulation of foreign reserves was decisive for the ratings agencies to continuously upgrade Brazil, which is now just one step below investment grade.

Figure 9



Source: Central Bank of Brazil.

We now turn to a few specific but important issues and constraints that shaped the macroeconomic policy reactions and outcomes.

Issues and Constraints That Shaped Macroeconomic Policy Reactions and Outcomes

Resilience of the Banking Sector and the Public Sector

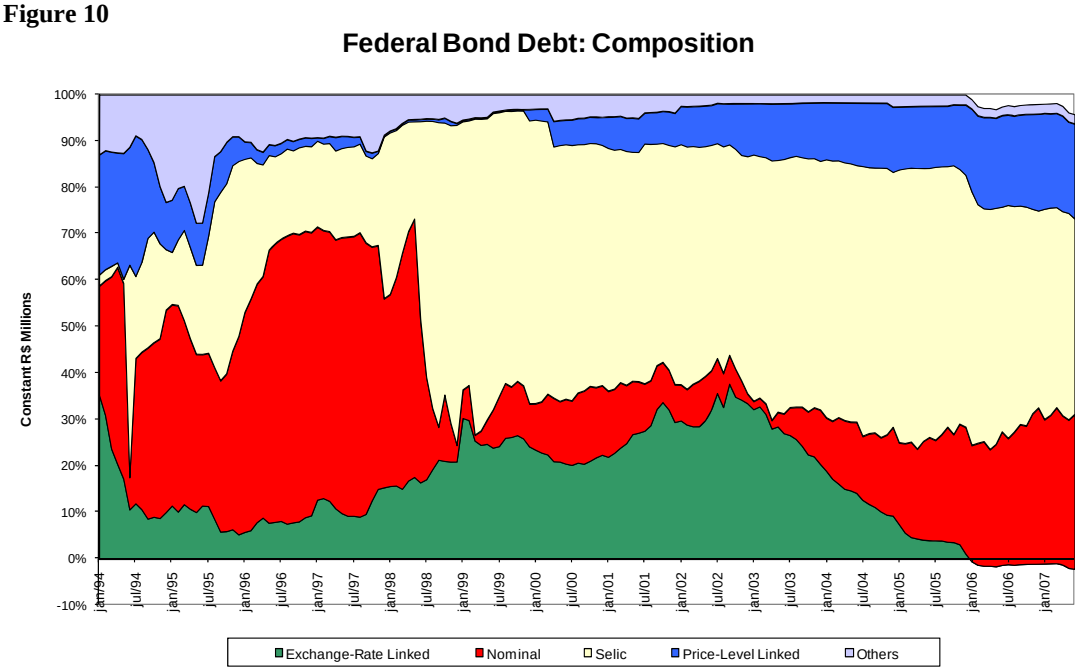
The resilience of the banking sector in Brazil during the 2001-02 sudden stop was due to several factors. After the end of hyperinflation in 1994, several banks became insolvent. During the second half of the 1990s, two programs were put in place (PROER and PROES) to deal with the private and local government owned problematic banks. Therefore, in 2001-02, there were no large banks with weak balance sheets that could pose systemic risk.

The second factor that explained the resilience of the banking sector is that there were no large currency mismatches in their balance sheets. Since the turbulent floatation of the BRL in 1999, banks were aware of the risks involved in large depreciations, and were required, by prudential regulation, to control the exchange rate risk, among other risks. Even so, it could be argued that the sudden stop could have caused large defaults by banks' clients. However, banks did not lend much to firms or families, but mostly to the government. And, as previously shown, the government provided massive insurance against depreciation, via both dollar indexed debt and derivatives.

A large part of the time deposits (or their close substitutes in the form of mutual funds, outside the banks' balance sheets) were indexed to the short-term interest rate. This did not pose risks to the banks because most of the public domestic debt was indexed to the Selic (see Figures 10 and 11). Therefore, there was no mismatch.

Depositors were aware of the solidity of major Brazilian banks and of the indexation of their deposits to the short-term interest rate (or to the exchange rate in a few cases), and that avoided a bank run. Of course, the decision to provide insurance (both against exchange rate depreciations and interest rate increases) had a high cost to the public sector, whose debt increased substantially during the crisis, creating fears of default.

Figure 10

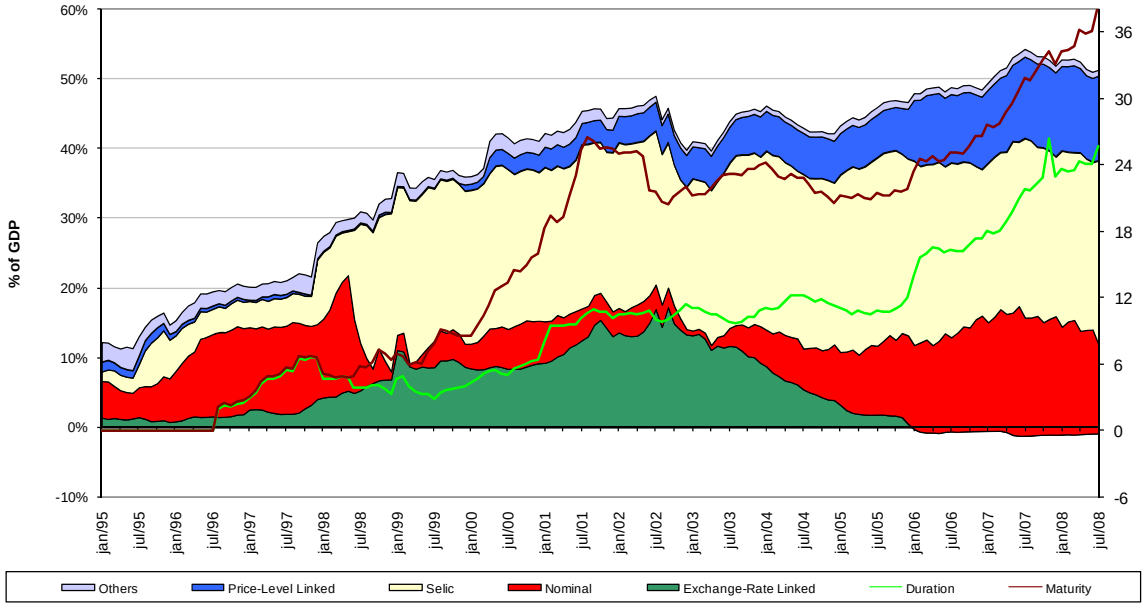


Source: Central Bank of Brazil.

Figure 11

Source: Central Bank of Brazil.

Federal Bond Debt: Composition and Maturity



Figures 10 and 11 display the evolution and main characteristics of domestic federal bonded debt. It is clear that the dollar indexed part grew substantially during the 2002 sudden stop—because of the decision to sell more exchange rate insurance to the private sector, and the fact that depreciation increased the value in BRL of the USD indexed debt. The part indexed to the Selic was always substantial. This composition generated high interest rate costs, as can be seen by the difference between the nominal and primary surpluses in Figure 7. This increased the public debt, but did not lead to insolvency.

Garcia and Rigobon (2005) ran stochastic simulations of Brazil's public net debt, taking into account the "perverse" correlation that was present in the country's macroeconomic variables during international crises. Faced with both recession and depreciation, the BCB could not lower the interest rate (it was increased). Therefore, unlike industrial countries that conduct counter-cyclical monetary policy, only bad effects hit the debt-to-GDP ratio, i.e., GDP growth fell; the interest rate was increased; and, because a large part of the debt was indexed to or denominated in foreign currency, the debt grew even more. Their simulations showed that, albeit the mean of the simulated paths of the debt-to-GDP ratio was declining, a substantial part of the

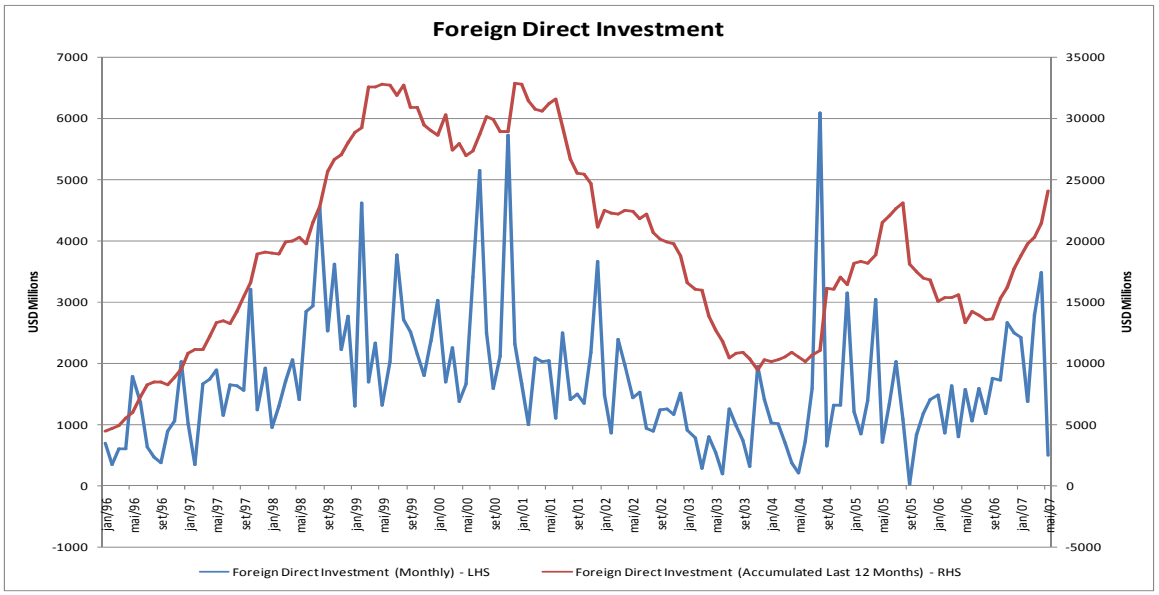
distribution of those paths was crossing high thresholds. The authors argue that, in line with current risk management systems used by banks, such behavior would pose a serious risk for debt sustainability. Fortunately, their worst fears did not materialize; but it remains to be tested whether the perverse correlation structure still remains. This will be crucial to the resilience of the Brazilian economy to a future sudden stop.

Shock Persistence and New Sources of Financing

In the 2002 sudden stop, unlike what was done during the 1999 crisis, the policy makers did not reach an agreement with foreign banks to keep credit lines to exporters open. The BCB used part of its own reserves to mitigate the crisis and, later, received part of an IMF loan (USD 6 billion). Foreign direct investment fell throughout the whole period (see Figure 12), recovering only much after the crisis, in 2004. No noticeable amount of fire sales was detected in the aggregate data.

Table 2 displays the main items in the capital and financial accounts of the balance of payments. (Appendix 2 displays all accounts in the balance of payments from 1994 to 2006.) Table 2 shows clearly how almost all capital inflows fell and capital outflows rose, forcing a brisk reduction in the current account.

Figure 12



Source: Central Bank of Brazil.

Table 2. Financial Accounts

Financial account (US$ Million)	1999	2000	2001	2002	2003	2004	2005	2006
Direct investment (net)	**26888**	**30498**	**24715**	**14108**	**9894**	**8339**	**12550**	**-9420**
Brazilian direct investment	**-1690**	**-2282**	**2258**	**-2482**	**-249**	**-9807**	**-2517**	**-28202**
Equity capital	-1110	-1755	1752	-2402	-62	-6640	-2695	-23413
Affiliated enterprise loans	-580	-527	505	-81	-187	-3167	178	-4789
Foreign direct investment	**28578**	**32779**	**22457**	**16590**	**10144**	**18146**	**15066**	**18782**
Equity capital	29983	30016	18765	17118	9320	18570	15045	15373
Direct investor loans	-1405	2763	3692	-528	823	-424	21	3409
Portfolio investment (net)	**3802**	**6955**	**77**	**-5119**	**5308**	**-4750**	**4885**	**9573**
Brazilian portfolio investment	259	-1696	-795	-321	179	-755	-1771	523
Foreign portfolio investment	3542	8651	872	-4797	5129	-3996	6655	9051
Financial derivatives (net)	**-88**	**-197**	**-471**	**-356**	**-151**	**-677**	**-40**	**383**
Other investments (net)	**-13620**	**-18202**	**2767**	**-1062**	**-10438**	**-10806**	**-27521**	**14577**
Other Brazilian investments (net)	**-4397**	**-2989**	**-6585**	**-3211**	**-9752**	**-2085**	**-5035**	**-8914**
Loan and financing (net)	-1278	-282	-1050	-1740	-811	-1489	-1840	-5015
Long-term	-724	-375	-1358	-1724	-665	-1217	-1872	-4979
Short-term (net)	-554	93	309	-16	-145	-272	32	-35
Currency and deposits (net)	-2301	-1774	-8001	-1300	-8579	-668	-2930	-3241
Other assets (net)	-817	-933	2465	-172	-363	73	-265	-658
Long-term (term)	-53	-105	2424	-122	-77	-38	-169	-198
Short-term (net)	-764	-828	41	-50	-286	111	-96	-460
Other foreign investments (net)	**-9223**	**-15213**	**9353**	**2150**	**-686**	**-8721**	**-22486**	**23491**
Trade credit - suppliers long- and short-term (	-7284	-6409	4233	1741	236	1181	3585	12314
Long-term	-4783	-2987	480	-1370	-959	-1387	-941	-841
Short-term (net)	-2501	-3422	3753	3111	1195	2568	4526	13155
Loans (net)	1342	-8774	5714	1031	-1549	-10421	-26753	9753
Monetary authority (net)	2803	-10434	6639	11363	4645	-4494	-23402	-138
Exceptional financing (net)	2966	-10323	6757	11480	4769	-4363	-23271	0
IMF	4059	-6876	6757	11480	4769	-4363	-23271	0
Other	-1094	-3446	0	0	0	0	0	0
Other long-term loans	-163	-111	-118	-118	-125	-132	-132	-138
Remaining sectors (net)	-1461	1660	-925	-10332	-6194	-5927	-3351	9891
Long-term	-2009	2736	951	-5321	-4751	-4743	-2291	10407
Short-term (net)	548	-1077	-1875	-5011	-1443	-1184	-1059	-516
Currency and deposits (net)	-3249	-33	-596	-621	625	517	567	1419
Other liabilities (net)	-32	4	2	0	3	1	115	5
Long-term (net)	6	4	3	0	3	1	0	0
Short-term (net)	-38	0	-1	0	0	0	115	5

Source: Central Bank of Brazil.

Management of Foreign Reserves

We shall now consider in greater detail a key aspect of the policy reactions: the management of foreign reserves and exchange rate market interventions. In 2002, the BCB, which followed the stock of trade credit lines, realized that both import and export credit lines were falling substantially (see Table 3). Therefore, the BCB decided to sell some of its foreign reserves in the exchange rate spot market (see Table 4). The aim of this decision was not to target the exchange rate. The BCB had an inflation target, and its concern about the exchange rate was only due to the pass-through from depreciation to inflation. With such sales, the BCB wanted to provide minimum liquidity to the exchange rate spot market, and to channel credit lines to exporters.

Table 3

Interbank line of credit position						
						US$ billion
Itemization		Trade credit			Others	Total
		Export	Import	Total		
2001	Dec	8.789	5.509	14.298	6.087	20.385
2002	Jan	8.811	5.620	14.431	5.789	20.220
	Feb	8.839	5.597	14.435	5.746	20.181
	Mar	8.610	5.530	14.140	5.471	19.611
	Apr	8.552	5.456	14.008	5.851	19.859
	May	8.883	5.265	14.148	5.779	19.928
	Jun	8.860	5.160	14.020	5.709	19.729
	Jul	8.240	4.826	13.066	5.532	18.598
	Aug	7.866	4.594	12.461	5.196	17.656
	Sep	7.320	4.370	11.690	4.835	16.525
	Oct	7.395	3.988	11.383	4.794	16.177
	Nov	6.940	3.710	10.650	4.757	15.408
	Dec	6.560	3.272	9.832	4.684	14.516
2003	Jan	6.690	3.139	9.829	4.941	14.771
	Feb	7.102	3.134	10.235	4.696	14.931
	Mar	7.270	2.908	10.178	4.849	15.027
	Apr	7.659	2.801	10.460	4.807	15.266
	May	7.784	2.528	10.312	4.407	14.719
	Jun	7.907	2.382	10.289	4.094	14.383

Source: Central Bank of Brazil.

Table 4

Statement of international reserves growth						
						US$ billion
Itemization		Reserve Position (End of Previous Month)	NET PURCHASES (+)/ SALES (-) OF CENTRAL BANK (interventions)			
			Spot	Lines with repurchase	Export lines	TOTAL (Net purchases)
2001	Dec	37.234	-950	0	0	-950
2002	Jan	35.866	0	0	0	0
	Feb	36.167	0	0	0	0
	Mar	35.906	0	0	0	0
	Apr	36.721	0	0	0	0
	May	33.008	0	0	0	0
	Jun	32.889	-345	-755	0	-1.100
	Jul	41.999	-805	-700	0	-1.505
	Aug	39.060	-1.715	290	-439	-1.864
	Sep	37.643	-880	30	-524	-1.374
	Oct	38.381	-1.555	200	-470	-1.825
	Nov	35.855	-185	90	0	-95
	Dec	37.234	-950	0	0	-950
2003	Jan	37.823	-175	1.076	0	901
	Feb	38.772	-10	-175	0	-185
	Mar	38.530	0	347	0	347
	Apr	42.335	0	99	0	99
	May	41.500	0	429	0	429
	Jun	43.373	0	0	0	0

Source: Central Bank of Brazil.

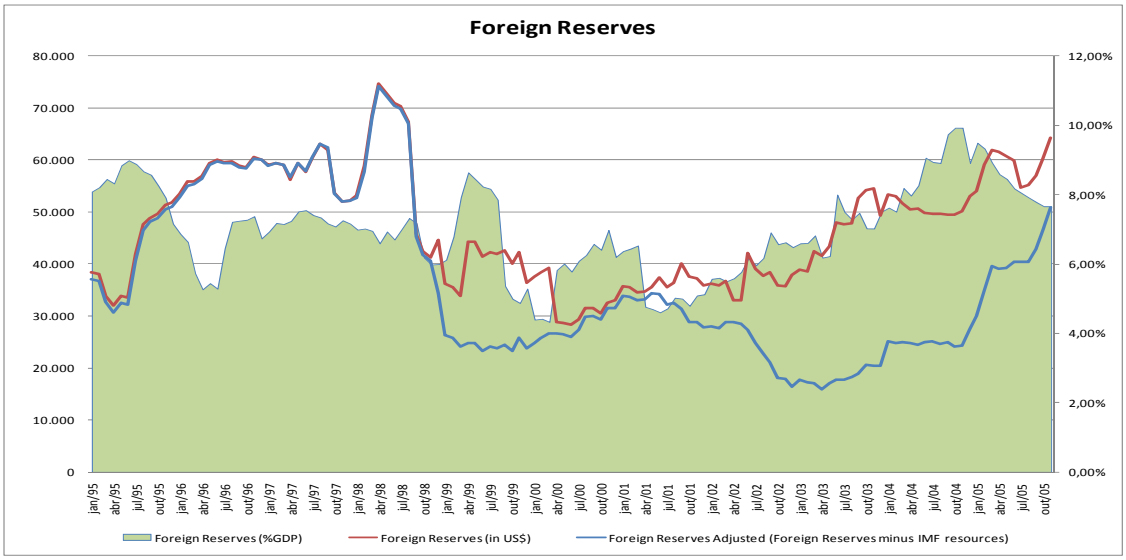
Although the exchange rate suffered enormous depreciation during the 2002 sudden stop, exporters could not fully profit from this because trade credit lines dried up.[36] Therefore, the Central Bank's interventions aimed at providing trade finance to exporters. Legally, the Central Bank could not sell its foreign reserves directly to exporters. However, an ingenious program was put in place to guarantee that at least some of the reserves sold by the Central Bank were channeled to exporters. The banks were only allowed to purchase the reserves if they showed that those reserves were going to be used for export financing. The banks had to provide evidence that export finance of the same amount was being undertaken in order to purchase the foreign reserves. The intervention was deemed a moderate success. The difficulty of judging the

[36] A possible aggravating cause might be the existence of surrender requirements for export revenues, i.e., exporters in Brazil must convert all export revenues to BRL. This requirement may have jeopardized the role of export revenues as collateral for trade finance during the sudden stop, when the value of the BRL was perceived to be in a free fall.

success in recomposing export credit lines with reserves is due to the fact that is difficult to infer whether the export credits presented by banks to the Central Bank were indeed new credit lines or just the ones they would have given even had they not purchased the Central Bank's foreign reserves. Table 3 shows that the total volume of export credit lines in December 2002 was USD 6.560 billion, whereas it was USD 8.811 in January 2002.

The BCB (and the Treasury) also intervened in exchange rate markets through other instruments: regular spot exchange rate sales (see Table 4), exchange rate sales through repos, sales of domestic debt indexed to the exchange rate, and sales of USD futures, in the form of exchange rate swaps traded at BM&F.[37] This increased the amount of public liabilities in foreign currency (see Figure 13), and provided some insurance to Brazilian firms, mitigating the effect of the sudden stop through liability dollarization.[38] That is, exchange-rate-linked public debt was purchased by financial intermediaries that, in turn, entered in exchange rate swaps with firms. By that mechanism, firms could hedge their USD liabilities. Of course, this transferred the exchange rate risk to the public budget, as may be seen by the exchange-rate-linked public debt (Figures 10 and 11).

Figure 13



Source: Central Bank of Brazil.

Monetary Policy: The Brazilian Experience with Inflation Targeting

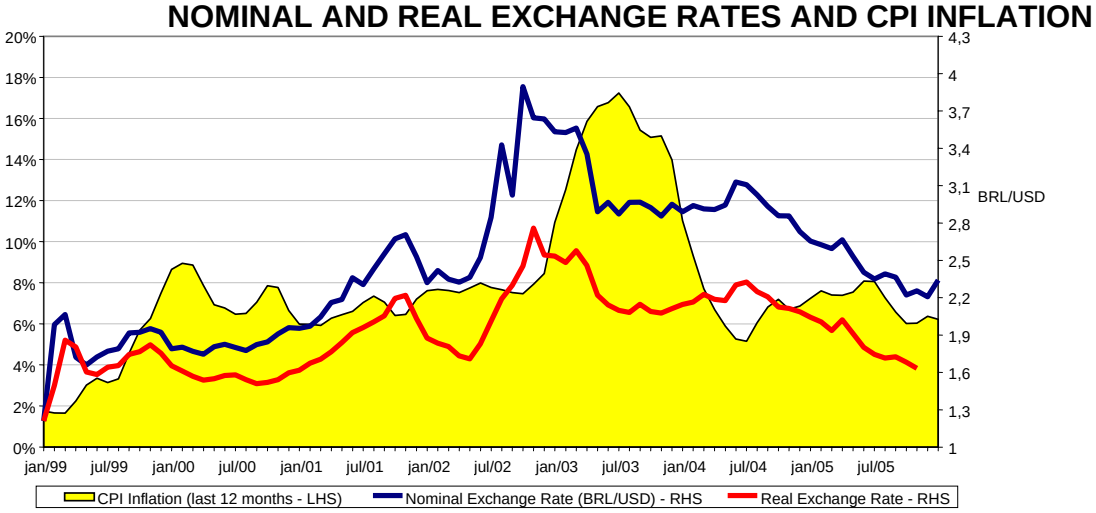
[37] Brazilian Mercantile Exchange, where most derivatives are traded in Brazil.
[38] See Oliveira (2004) for an analysis of how firms hedged the exchange rate risk in Brazil.

Given the importance of the monetary policy reactions, in this section, we review in greater detail the experience of inflation targeting in Brazil, emphasizing the crisis years.

1999 – A Difficult Birth

Brazil adopted inflation targeting (IT) in May 1999 as a way to cope with the inflationary shock that originated in the collapse of the exchange rate peg (crawling peg) that existed from 1995 to January 13, 1999. Figure 14 shows that in January 1999, the nominal exchange rate jumped from 1.21 BRL/USD to 1.98 BRL/USD. At the time, it was widely feared that an inflationary surge could reignite indexation and inflation. IT was regarded as the only option for monetary policy. A famous and humorous economist remarked at the time that apart from IT there was only the NIKE™ approach left.[39] After all, the exchange rate had just been floated after several speculative attacks, and monetary targeting had lost much of its former glory all over the world, given the instability of money demand caused by financial innovations. Furthermore, in a country with a history of hyperinflation, monetary targeting had never been tried successfully and would be even less credible than IT at the beginning.

Figure 14



Source: Central Bank of Brazil.

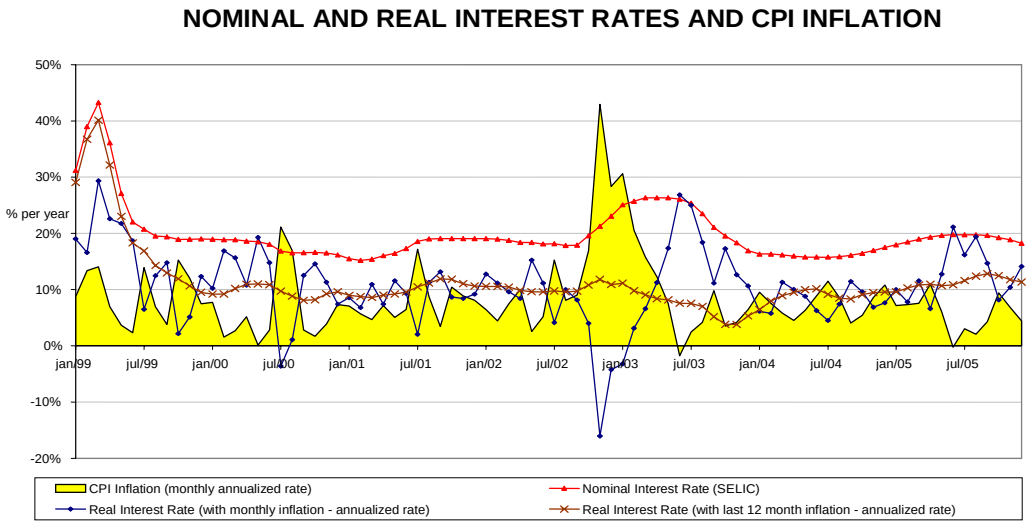
[39] "Just do it!"

The BCB decided to implement inflation targeting with all the bells and whistles that characterized the workings of IT in the United Kingdom, including the publication of a quarterly "Inflation Report." This early phase of the Brazilian IT experience is well documented by the BCB director and staff members directly involved (Bogdanski, Tombini, and Werlang, 2000). Among other things, the launching of IT required the BCB to create a research department, which has been very active ever since. Later on, the BCB started to collect market forecasts of the main economic variables, as a way to gauge the impact of monetary policy on expectations. These forecasts (we shall call them consensus forecasts) are a very good way for the BCB to check whether its actions are indeed affecting expectations. The introduction of IT certainly improved remarkably the technical skills of the BCB.

The law that created the IT system in Brazil requires the National Monetary Council[40] (CMN) to set in the middle of each year the targets for the following two years. Therefore, on June 30, 1999, the CMN decided to set a sliding scale of inflation targets: 8 percent for 1999, 6 percent for 2000, and 4 percent for 2001, with a 2 percent band on each side. In the first year, the action of the BCB—see the high nominal and real interest rates in Figure 15—delivered CPI inflation just below 9 percent, which was less than the upper limit of 10 percent but above the central target of 8 percent. Unlike the large recessions that occurred in the countries that devalued after the Asian crisis, Brazil's GDP growth was positive in the immediate aftermath, at 0.25 percent. Table 5 summarizes the performance of IT regarding inflation and GDP growth. The first year of IT ended quite well, taking into account the fears of high inflation and recession that were entertained immediately after the collapse of the exchange rate peg.

[40] The CMN is composed of the Finance Minister, the Planning Minister, and the Governor of the Central Bank.

Figure 15



Source: Central Bank of Brazil.

Table 5. Inflation Targeting in Brazil, 1999-2009

Year	Target Decision Date	Target		Inflation (CPI)	GDP Growth
1999	June-99	8,00%	± *2,00%*	8,94%	0,25%
2000	June-99	6,00%	± *2,00%*	5,97%	4,31%
2001	June-99	4,00%	± *2,00%*	7,67%	1,31%
2002	June-00	3,50%	± *2,00%*	12,53%	2,66%
2003	June-01	3,25%	± *2,00%*	-	-
2003*	June-02	4,00%	± *2,50%*	-	-
2003*	January-03	8,50%	± *2,50%*	9,30%	1,15%
2004	June-02	3,75%	± *2,50%*	-	-
2004*	June-03	5,50%	± *2,50%*	7,60%	5,71%
2005	June-03	4,50%	± *2,50%*	-	-
2005**	September-03	5,10%	-	5,69%	2,94%
2006	June-04	4,50%	± *2,00%*	3,14%	3,70%
2007	June-05	4,50%	± *2,00%*	3,6%***	4,3%***
2008	June-06	4,50%	± *2,00%*	3,89%***	4,18%***
2009	June-07	4,50%	± *2,00%*	3,98%***	4,15%***

* - Revised Targets
** - Objective, instead of Target
*** - Market´s expectations on June/22/07

Source: Brazilian Central Bank Website (www.bcb.gov.br)

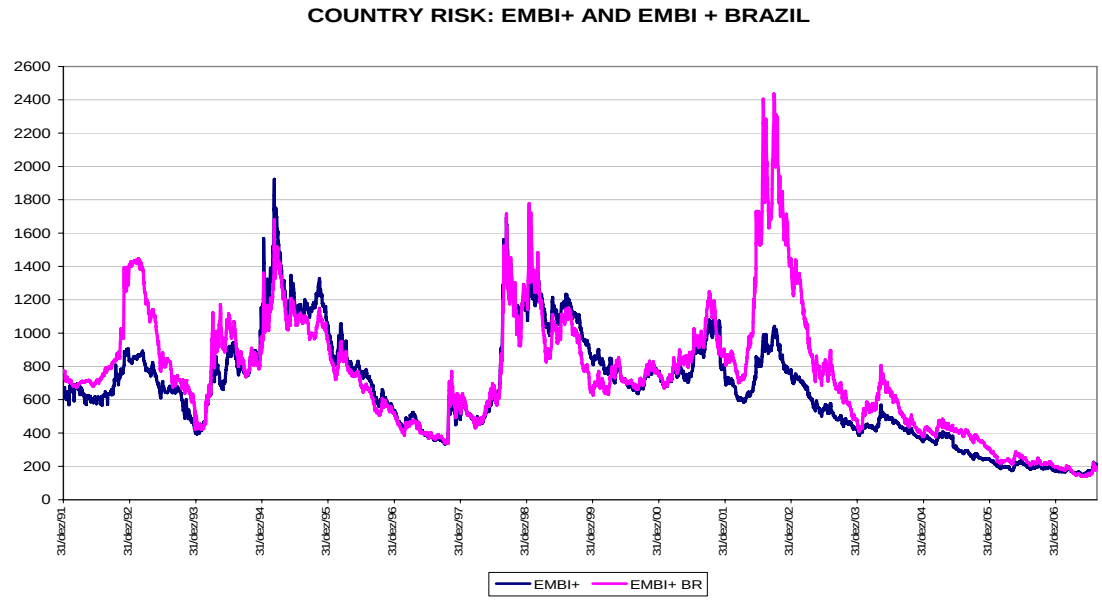
2000 – High Hopes

The year 2000 proved to be very promising for IT. Surfing the end of the world bull market, inflation was, for the only time until then, below target (5.97 percent, see Table 5), and GDP growth reached 4.31 percent. The BCB was able to repeatedly lower the Selic interest rate throughout the entire year (see Figure 15), and the real exchange rate was kept fairly stable (see Figure 14). Hopes were high that Brazil had solved the inflation problem and would enter a period of sustained growth with low inflation.

2001 – First Domestic and International Obstacles

A sequence of domestic and international events stalled the resumption of economic growth. After March 2001, it became clear that the economy had entered into "crisis mode." Country risk, as measured by the EMBI+Brazil spread (see Figure 16), started trending upward. Domestic interest rates also reacted, after reaching a brief trough of 15.25 percent in January 2001. The Selic was increased several times, and the yield curve steepened drastically. Until September 2001, the exchange rate depreciated continually.

Figure 16



Source: Central Bank of Brazil.

After the terrorist attacks of September 11, 2001, the U.S. Federal Reserve (the Fed) injected an immense amount of liquidity to avoid a financial crisis. This action provided the Brazilian economy respite from the external negative shock, thereby improving the financial indicators until the first quarter of 2002. The EMBI+Brazil spread fell to its previous level (see Figure 16), and the exchange rate appreciated (see Figure 14). Interest rates fell (see Figure 15), and the yield curve flattened.

Despite improvement in the last quarter of 2001, the picture for the entire year was not good. Inflation rose to 7.67 percent, breaching for the first time the upper limit of 6 percent.[41] GDP growth was a mere 1.31 percent, thereby killing the hopes of sustained growth entertained one year before. According to BCB Governor Arminio Fraga, 2001 looked like a difficult crisis, although, *a posteriori*, in comparison to 2002, it seemed quite a mild one.

2002 – The Sudden Stop: High International Risk Aversion and Electoral Crisis

The respite provided by the Fed ended in the first quarter of 2002. By the end of March 2002, all financial indicators started to deteriorate. The country risk started to grow substantially, as measured by the EMBI+Brazil in Figure 16. The figure also shows that the same upward movement occurred with the EMBI+, which measures the country risk of a large set of emerging markets. This shows that the shock was global, and not only restricted to Brazil. Indeed, it is commonly agreed that by 2002, global risk aversion shot up, starting a movement called "flight to quality," i.e., redeeming risky assets, such as emerging market bonds, and shifting the funds to safe U.S. Treasury bonds. This shift in worldwide portfolios caused the price of emerging market bonds to fall and, equivalently, their yields to increase.

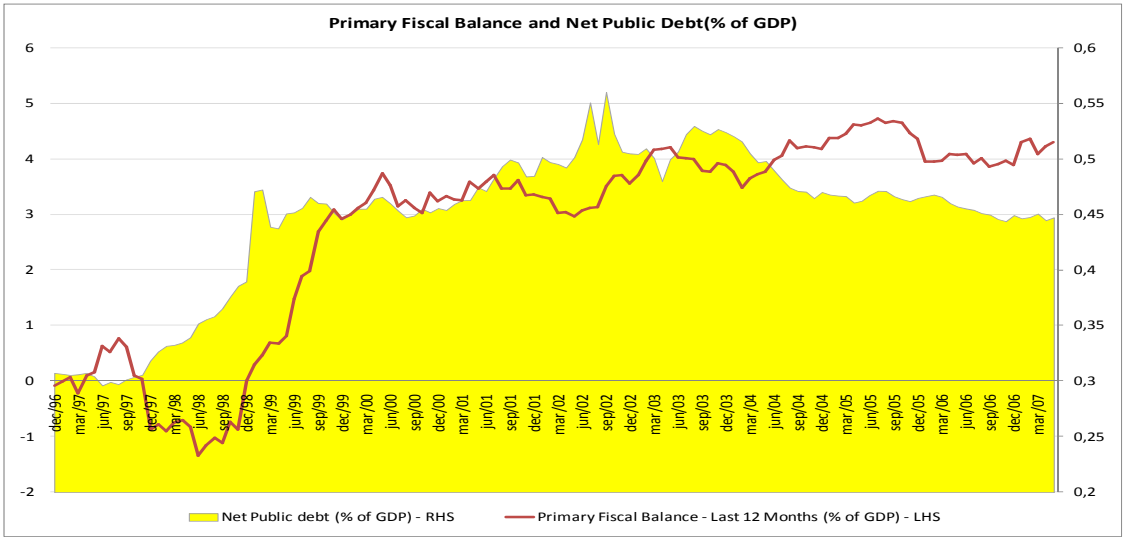
Figure 16 also makes clear that the increase in Brazil's country risk was much more intense than the general movement in emerging markets. This is because 2002 was a presidential election year in Brazil, and the leftist candidate (currently President) Lula became the front

[41] According to the Brazilian IT law, breaching the limit requires the BCB Governor to write an open letter to the Finance Minister, explaining the reasons for the breaching and what will be done to bring inflation back to the target in a timely manner. This letter may be downloaded from the BCB web site at http://www.bcb.gov.br/htms/relinf/carta.pdf. Two interesting points in this open letter are: 1) it outlines a procedure to measure the impact of negative shocks on inflation; and 2) there is no presumption of what was to come next: "… *Na medida que não se vislumbra a repetição dos choques na magnitude observada do ano passado (2000), a tendência da inflação é declinante*." (Insofar as no repetition of the shocks of similar magnitude as last year's is foreseen, inflation should exhibit a falling trend.)

runner in the public opinion surveys. At the time, and contrary to what eventually happened, it was widely feared that Lula would embrace a populist economic policy, including a default on the public debt. This aggravated the flight away from Brazilian bonds, both by international and domestic investors. This unfortunate combination of increase in global risk aversion with fears of a Brazilian default on the debt is what made the country risk explode after April 2002.

An important caveat was raised by then BCB Governor Arminio Fraga. He called attention to the fact that econometric interpretations of the increase in country risk would not find public finances as one of the explanations because the actual primary balance was always kept at a high level (see Figures 7 and 17). However, what geared expectations was the fear that the policy of fiscal and monetary restraint would be reversed, which did not happen. Therefore, the actual statistics do not provide the reasons for the increase in Brazil's country risk.[42]

Figure 17



Source: Central Bank of Brazil.

As they did during the 2001 crisis, the one-year interest rate and the country risk rose together, signaling that markets expected the BCB to react to the increase in the country risk by hiking the basic interest rate, the Selic. However, the COPOM decided to keep the downward movement in the Selic rate, justifying this move with the ensuing recession and a low pass-through from exchange rate depreciation to inflation. The Selic target was raised by 300 basis

[42] This topic is a subject of great political upheaval.

points, from 18 to 21 percent, only on October 14, 2002. For the entire year, the exchange rate overshot, depreciating 70 percent before closing the year at around 50 percent.

Inflation reached 12.53 percent in 2002, while GDP crawled at 2.66 percent. Again, with the breaching of the upper limit (5.5 percent), the BCB governor had to write another open letter to the Finance Minister.

2003 – The Aftermath of the Sudden Stop

This time, the open letter (http://www.bcb.gov.br/htms/relinf/carta2003.pdf) was written by new BCB Governor Henrique Meirelles, appointed by the new President Lula. Despite the change in the governor, the team at the helm of the BCB had not changed much, providing a smooth transition. Nevertheless, the situation was quite similar to 1999 because a large inflationary shock created by the depreciation of 2002 was expected. The year 2003 looked very much like a "back to square one" play.

The methodology outlined in the previous open letter was used to compute the new "target" after appropriately accounting for the targets. With this methodology, the new target for 2003 was set at 8.5 percent. Table 6 shows how the BCB dealt with the large external shocks that hit the Brazilian economy in 2002 and the effects in the following years.

Table 6. Flexibility in the Face of Large External Shocks

Line	Item	2003	2004
(a)	Inflation Target Determined by the N.M.C.	4,0	3,75
(b)	Shock of the Managed and Monitored Prices	1,7	1,1
(c)	Inertia To be Fought in the Following Years	2,8	0,6
	Inherited Inertia of the Previous Year (Total)	4,2	1,0
	On the Managed Prices	1,4	0,4
	On the Free Prices	2,8	0,6
(d)	Adjusted Target (= (a) + (b) + (c))	8,5	5,5

Obs: 1) For the calculation of the shock, the effect of inertia and exchange on the inflation of the managed and monitored ones leaves.

2) Inertia to be fought in the following years is equivalent to 2/3 of the inherited inertia of the previous year.

Despite wide mistrust of the new target, BCB was able to deliver annual inflation quite close to the new target: 9.30 percent. GDP growth was again quite low: 1.15 percent. The rebirth

of the IT regime in Brazil was considered a success. Of course, all would depend on the future results.

The methodology used seems to be quite useful as reference for the markets as to what the BCB might do in the event of a sudden stop.

Fiscal Policy: Budget Rigidities and Pro-Cyclical Public Spending

Widespread budget rigidities are an important constraint on fiscal management and represent a major challenge for fiscal policymaking in Latin America, in general, and in Brazil, in particular (Alier, 2007). Budget rigidities come from institutional arrangements that limit the leeway of the budgetary authorities to alter the composition and size of the budget in the short run. These constraints may severely hamper the efficiency of fiscal policy.

Although the causes and degrees of budget inflexibility vary across Latin American countries, Brazil and Argentina present the most rigid budgets, and Chile has the most flexible one (Alier, 2007). The Brazilian public budget is full of mandatory transfers to sub-national governments and earmarking of revenues. The earmarking of revenues reduces the room in the budget to perform counter-cyclical fiscal policy. This is because earmarking forces the government to spend more during booms. The extra expenditures are difficult to cut back during recessions, allowing less room to expand counter-cyclical expenditures in bad times. As we will argue in the closing section, fiscal vulnerability is the main fragility of the Brazilian economy. Fiscal reform must tackle the issue of de-earmarking revenues, as advocated in Alier (2007).

Conclusion and Policy Lessons

Since the end of hyperinflation in Brazil (July 1994), the setting of the basic interest rate (the Selic) by the BCB has followed a dual character, depending on foreign conditions regarding capital flows. During the period of managed exchange rate, 1995-98, Salgado, Garcia, and Medeiros (2005) show econometrically this dual character of the BCB reaction function. During international financial crises, the BCB set the interest rate at the required level to prevent massive capital flight. This level was set by the covered interest parity condition plus the country risk, as measured by the EMBI+Brazil spread (see Figure 16).

When international financial markets were in tranquil periods, the interest rate was kept at a level higher than was required by the covered interest parity condition plus country risk, in an attempt to keep inflation under control. Because the interest rate in tranquil periods was set at this high level, capital inflows occurred, pressuring the domestic currency to appreciate. To avoid the appreciation (the exchange rate was managed), the BCB performed sterilized interventions and, at the same time, imposed controls on capital inflows aimed at deterring the (excessive) inflows of short-term portfolio capital.

Of course, this *embarras de richesses* was interrupted by the Asian crisis, when monetary policy reverted to "crisis mode," until the peg finally ended in 1999. Since 1999, three key changes in macroeconomic fundamentals have occurred: the exchange rate was floated, the public sector started generating significant primary surpluses (albeit with still sizeable nominal deficits), and inflation targeting became the monetary policy regime. During this period, the duality of monetary policy persisted. Increases in interest rates during the 2002 crisis aimed at mitigating the capital outflows that were causing massive exchange rate depreciation.

However, the successive increases in the Selic rate during September 2004 to May 2005 had nothing to do with fear of capital flight or excessive exchange rate depreciation. Much to the contrary, during this period of monetary tightening, there was a substantial exchange rate appreciation, caused mainly by strong export sector performance, but also aided by the attraction of speculative foreign capital that performed "carry-trade arbitrages."[43]

[43] The basic carry-trade operation is performed by getting a loan in the low-interest-rate currency, e.g., the U.S. dollar, and investing in fixed income in the high-interest-rate currency, e.g., the Brazilian real. The same result would be achieved by purchasing a non-deliverable forward contract of the Brazilian real in the United States. There is evidence that this second strategy was preferred by foreign investors in the recent period.

The still very high Selic rate that currently prevails in Brazil is aimed at fulfilling the inflation target. If the goal were to avoid capital flight, the Selic would be much lower, and the inflation rate higher.

The duality of monetary policy, alternating between tranquil times and crisis modes, has recently been recognized as important for developed economies. U.S. Federal Reserve Governor Mishkin, for example, in a speech (Mishkin, 2008) aimed at justifying the very aggressive interest rate cuts by the Fed, claimed that financial disruptions justify the change in the way monetary policy is conducted. In crisis times, the credible central bank should ease aggressively, unlike its usual conduct of monetary policy. A similar thing happened in Brazil during the crises, except that the lack of credibility, both of monetary policy and, more importantly, debt sustainability, forced the Central Bank of Brazil to increase instead of lower rates.

Ortiz et al. (2007) claim that a systemic sudden stop should not prompt tighter fiscal and monetary policies. Only localized problems should do so. The 2002 sudden stop, for Brazil, was likely a "perfect storm sudden stop," in which a systemic sudden stop was combined with a confidence crisis generated by a presidential candidate that was seen as likely to (because he had promised to) default on the public debt. In such a case, a combination of mild tightening might be the best policy, and that seems to be what was done.

Fiscal policy intervenes decisively in both regimes. During international financial crises, the main risk factor is a possible public debt default. To lower this risk, the government increases the primary surplus, as the Lula administration did right upon entrance.

In tranquil times (in international financial markets), as the period 2003-2007, fiscal sustainability seldom appears in the press. Nevertheless, fiscal policy plays another fundamental role, that of keeping aggregate demand at a high level. Since primary expenditures are too high (except, and unfortunately, public investments) in Brazil, and are immune to monetary policy, inflation shows a very stubborn behavior, resisting the high interest rate set by the BCB.

The low impact of interest rates on inflation is also explained by other weaknesses in the Brazilian economy. Credit to the private sector (as a proportion of GDP) is very low by international standards. This clogs a main transmission channel of monetary policy. Furthermore, a large percentage of the credit in the Brazilian economy is given at subsidized rates that are not affected by the Selic rate. The Brazilian economy is quite closed, with high import tariffs that deter foreign competition and allow several sectors to implement pricing policies that hinder

BCB's actions to fight inflation. To pay for the very high public outlays, an extremely high tax burden was created. The excessive tax burden jeopardizes productive investment. With less supply, it becomes more difficult to fight inflation.

Therefore, BCB has to set extremely high interest rates to keep inflation at bay. Although the interest rate is a weak instrument to fight inflation in Brazil, it retains full power to harm the fiscal accounts and to increase the public debt. Therefore, when the BCB keeps the Selic very high in tranquil times to fight inflation, it also contributes to increased public debt, which raises the risk in crisis times, in a vicious circle. The way out of this conundrum is to tackle the deficiencies in the Brazilian economy cited above. The most important measure, however, is to put a halt to public expenditures.[44]

Although the Brazilian economy has improved remarkably since the hyperinflation years, its main macroeconomic fragility still lies on the fiscal side. The extremely large government expenditures and transfers, which will increase substantially in the future if the government does not undertake determined action against them, pose a large threat for those who consider investing in Brazil. To be able to solve the conundrum of the very high real interest rates in Brazil, government must tackle this old issue. This is the key to be prepared for future crises, and to enhance economic growth in Brazil.

[44] Since the beginning of the Real Plan, primary expenditures have grown at an average rate twice as large as the GDP real average growth rate, which is clearly unsustainable.

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Appendix 1

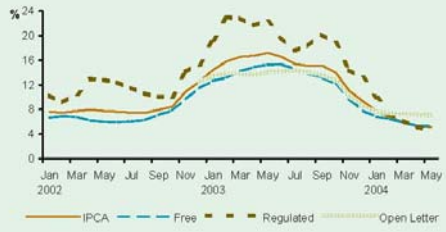
IPC: Inertia, Exchange, Expectations and Relative Prices

This box examines the recent behavior of the IPCA, under the prism of the major factors that explain its dynamics or, more specifically, the evolution of inflation expectations and the performance of relative prices, analyzing the prices that are freely determined by market forces and those that are regulated by contract and monitored by the government.

As stressed in previous Banco Central documents, the upswing in inflation that occurred in the second half of 2002 was caused by a loss of confidence in the evolution of the Brazilian economy and by a sharp rise in international market aversion to risk, both of which occurred in that year. In that process, accumulated year-over-year inflation rose from 7.5% in August 2002 to a maximum of 17.2% in May 2003. From that point forward, it is important to note that the trajectory was clearly downward. In a framework of gradual improvement in expectations regarding the future of the economy, monetary policy measures managed to produce a consistent and steady drop in inflation, as the accumulated-twelve-month IPCA slipped to 5.2% in May 2004, the lowest level since July 1999.

IPCA, free, and regulated inflation and Open Letter projection

Accumulated in 12 months

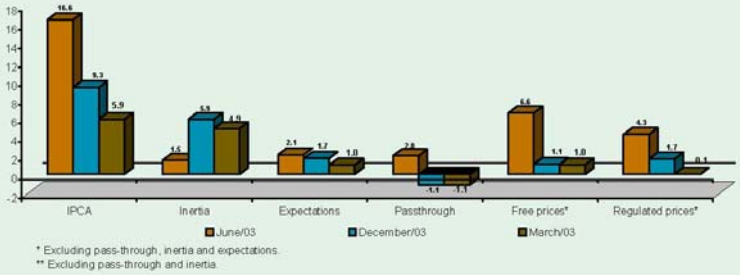


At the same time, as can be seen in the graph alongside this text, this downward inflation trajectory followed the trend projected in the Open Letter from the Governor of Banco Central to the Minister of Finance, dated January 21, 2003. Though effective twelve-month-accumulated inflation was slightly higher than that projected for the start of 2003, from that point forward the two curves show a clear tendency toward convergence until the initial differential is finally reversed at the beginning of 2004, when accumulated-twelve-month inflation closed below the projected level (5.3%, as against 7.2% respectively, in April 2004). Looking at the period as a whole, one perceives

that the two curves have evolved in very like manners. This performance not only demonstrates the good performance of the forecasting models used by Banco Central, but also that inflation has remained on a path toward convergence with the targets.

In order to evaluate the behavior of the major inflationary factors in the period, an exercise was performed breaking down the rate of accumulated-twelve-month inflation, just as was done in previous open letters. This exercise uses estimates of the structural models for three distinct moments: June 2003 (quarter in which accumulated inflation peaked); December 2003 (equivalent to inflation in calendar year 2003) and March 2004 (already terminated quarter in which accumulated inflation reached its lowest level). The graph below breaks down IPCA growth for each period into the following components: i) exchange depreciation; ii) inertia inherited from the share of inflation that exceeded the target in the previous period (calculated for June 2003 and March 2004) through interpolation of the targets for each year); iii) expectations of inflation above the target; iv) market price inflation, excluding the effects of the previous items; and v) inflation in government regulated prices, excluding the effects of items "i" and "ii". The following graph shows the participation of each one of these components in total IPCA.

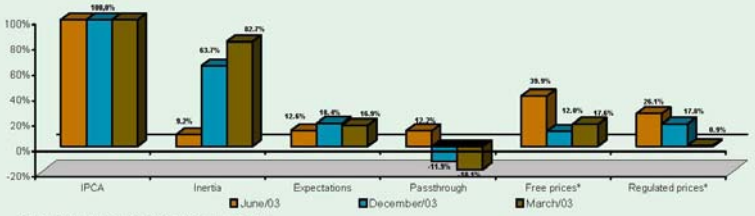
Decomposition of accumulated twelve-month inflation



* Excluding pass-through, inertia and expectations.
** Excluding pass-through and inertia.

Decomposition of accumulated twelve-month inflation

Percentage of total IPCA



* Excluding pass-through, inertia and expectations.
** Excluding pass-through and inertia.

Reflecting the path already stressed, the graph shows that the twelve-month-accumulated inflation rate moved from 16.6% in June 2003, to 5.9% in March 2004. The increases in inflation rates in the final quarter of 2002 and in the first quarter of 2003 generated a powerful impact on the following quarter as a result of inertial mechanisms. For this reason, once the target is deducted, the inertial component made the largest contribution to price growth in the two periods under analysis – 5.9 percentage points for inflation in the twelve-month period ended in December 2002 and 4.9 p.p. for the period up to March 2004, accounting for 63.7% and 82.7% of the IPCA for each period, respectively.

The effect of exchange rate variation on inflation was estimated at 2.0 percentage points in the first period, corresponding to 12.2% of the IPCA. This result was caused by the lag in the pass-through mechanism of exchange growth in 2002, when the exchange rate started from a median of R$/US$2.50 in the second quarter and climbed to R$/US$3.68 on average in the final three months of the year. With the reversal of exchange rate depreciation, this factor represented a deflationary factor in the subsequent two periods.

With the shock that occurred in 2002, inflation expectations deteriorated sharply. This was reflected in the increase in the contribution to the IPCA of the share of expectations that surpassed the target from the first to the second period under analysis – from 12.6% to 18.4%. As of mid-2003, with the recovery of confidence in macroeconomic policy, median inflationary expectations for the next twelve months dropped sharply, converging toward the adjusted targets, as demonstrated in the following graph.

Median of twelve-month-ahead IPCA expectations and target trajectory

Expectational distribution of twelve-month-ahead IPCA

Consequently, there was a reduction in the contribution of expectations above the target for accumulated-twelve-month inflation in the period ended in March 2003, to 16.9% of the IPCA.

The analysis above is restricted to the examination of the contribution of median market expectations to inflation. However, viewed as a mechanism for coordinating expectations, the effectiveness of the inflation targeting system is determined not only by the behavior of the median, but of the entire spectrum of the inflationary expectations of economic agents.

To overcome this gap, the graph alongside presents the probability density of market inflation expectations for the next twelve months on the same three dates specified in the breakdown exercise: June 2003, December 2003 and March 2004. In this way, we are able to aggregate more information to the analysis on the role of expectations, making it possible to examine how their convergence or dispersion has contributed to the evolution of price levels. Between June and December 2003, not only did median inflation expectations drop by about 1 percentage points, but the more pessimistic forecasts (more than 8%) gave way to expectations that were closer to the median. As a result the distribution curve lost weight in the upper tail and moved upward at the center. In other words, there was a significant reduction in the degree of market skepticism with regard to the convergence of inflation to the target trajectory. Between December and March, the median dropped further and was accompanied by a slight increase in the upper and lower distribution tails – graphically, corresponding to the reduction in the height of the distribution center. Looking at the entire period, however, it is evident that monetary policy managed to improve the overall array of inflation expectations considerably.

Finally, particular attention should be given to the evolution of market prices and those regulated contractually and through monitoring. The participation of both groups was greater in the first period, when they contributed with 39.9% and 26.1% of the IPCA, respectively. In the other two periods, the share of market prices was significantly less and remained relatively stable (1.1 and 1.0 percentage

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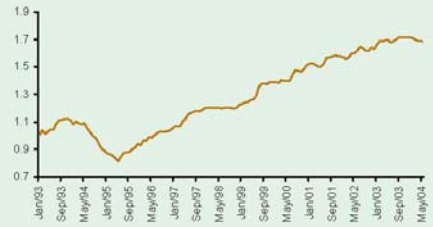
points). Government monitored prices registered a consistent downward tendency in participation in the increase in price levels in each period, indicating that the greater pressure on inflation exerted by this group in recent years has been dissipated.

Ratio between regulated and free prices 1993 - 2004

Basis: jan/93=100

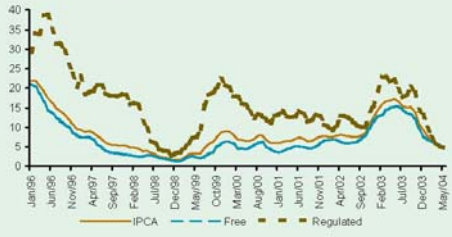


As shown in the graph at the side, since mid-1995 the grouping of government administered prices has registered significantly higher growth than in the case of market prices. This behavior was impacted by a diversity of factors, such as: i) the process of privatization of some public services; ii) withdrawal of the subsidies granted to some of the items included in the grouping of administered prices; iii) the increase in international market oil prices; and iv) devaluation of the exchange rate, with fluctuation of the Real as of 1999. Consequently, since that time, there has been an ongoing process of change in the relative prices of the economy that has been strongly impacted by the rate of inflation.

Aside from direct pressures on price levels, this process has still another effect. Since government administered prices have a strongly backward-looking component (some items are adjusted partly on the basis of past IGP growth), at the same time in which they are greatly dependent on international oil prices and an important exchange pass-through component, this adjustment in relative prices determined a higher degree of persistence of the rate of inflation, requiring a greater effort on the part of Banco Central in combating the secondary effects of the rise in prices and implying higher costs in terms of product in the process of lowering inflation.

IPCA, free and regulated inflation

Accumulated in 12months



Thus, it is important that price realignment converge to the inflation target so that this effect on product will be reduced or avoided and pressure on inflation will be less intense. The graph at the side of this text shows that this may be occurring – the process of alteration in relative prices, underway since 1995, seem to be stabilizing. There is a convergence in the increase of the two groups of prices to the target and, for the first time since the inflation targeting system was adopted, the upward movement in regulated prices was less intense than under market prices, as the accumulated-twelve-month figures closed at 4.7% and 5.3%, respectively, in May.

Appendix 2

Balance of payments US$ million													
Itemization	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
CURRENT ACCOUNT	-1811	-18384	-23502	-30452	-33416	-25335	-24225	-23215	-7637	4177	11679	13985	13621
Balance on goods (FOB)	10466	-3466	-5599	-6753	-6575	-1199	-698	2650	13121	24794	33641	44703	46458
Exports	43545	46506	47747	52994	51140	48011	55086	58223	60362	73084	96475	118308	137807
Imports	-33079	-49972	-53346	-59747	-57714	-49210	-55783	-55572	-47240	-48290	-62835	-73606	-91350
Services and Income	-14692	-18541	-20350	-25522	-28299	-25825	-25048	-27503	-23148	-23483	-25198	-34276	-37143
Services	-5657	-7483	-8681	-10646	-10111	-6977	-7162	-7759	-4957	-4931	-4678	-8309	-9654
Credit	4392	4929	5038	6876	7897	7194	9498	9322	9551	10447	12584	16047	19462
Debit	-10049	-12412	-13719	-17522	-18008	-14171	-16660	-17081	-14509	-15378	-17261	-24356	-29116
Transportation	-2441	-3011	-2717	-3162	-3261	-3071	-2896	-2966	-1959	-1590	-1986	-1950	-3126
Credit	1702	1716	1431	1751	1456	1141	1409	1422	1536	1822	2467	3139	3439
Debit	-4143	-4727	-4148	-4912	-4717	-4212	-4305	-4388	-3494	-3412	-4453	-5089	-6565
Travel	-1181	-2420	-3598	-4377	-4146	-1457	-2084	-1468	-398	218	351	-858	-1448
Credit	1051	972	840	1069	1586	1628	1810	1731	1998	2479	3222	3861	4316
Education-related and cultural and sporting eve	2	2	4	3	3	2	4	3	7	7	7	7	9
Government employees	1	1	1	1	1	0	1	2	24	24	23	28	20
Business	16	19	19	21	24	26	30	23	21	22	28	40	43
Health-related	1	2	4	5	7	6	5	7	11	8	9	18	26
Tourism	951	854	679	630	719	716	618	631	937	1181	1550	1668	2047
Credit card	79	94	134	408	831	878	1153	1064	998	1238	1605	2101	2170
Debit	-2232	-3391	-4438	-5446	-5732	-3085	-3894	-3199	-2396	-2261	-2871	-4720	-5764
Education-related and cultural and sporting eve	-14	-16	-16	-22	-29	-37	-77	-72	-63	-68	-75	-93	-113
Government employees	-17	-10	-11	-13	-13	-7	-9	-13	-35	-42	-48	-38	-37
Business	-141	-145	-155	-176	-189	-157	-197	-181	-161	-157	-189	-253	-282
Health-related	-3	-3	-5	-6	-10	-8	-8	-6	-8	-6	-7	-8	-13
Tourism	-950	-933	-1291	-1773	-2018	-986	-1667	-1276	-829	-741	-960	-1933	-2192
Credit card	-1108	-2284	-2961	-3456	-3473	-1891	-1935	-1651	-1301	-1248	-1592	-2396	-3127
Insurance	-132	-122	-63	74	81	-128	-4	-275	-420	-436	-544	-568	-430
Credit	142	186	237	412	390	165	312	180	206	124	105	134	324
Debit	-274	-308	-300	-338	-309	-293	-317	-455	-626	-560	-649	-702	-755
Financial services	47	-152	-215	-885	-527	-269	-294	-307	-232	-383	-77	-230	-123
Credit	258	261	569	318	333	305	376	317	390	363	423	507	738
Debit	-212	-413	-784	-1203	-859	-574	-670	-624	-623	-745	-499	-737	-861
Computer and information services	-149	-249	-379	-589	-789	-1010	-1111	-1106	-1118	-1034	-1228	-1626	-1903
Credit	4	43	5	9	12	15	34	27	36	29	53	88	102
Debit	-153	-292	-384	-598	-801	-1026	-1145	-1133	-1155	-1063	-1281	-1713	-2005
Royalties and license fees	-220	-497	-753	-848	-1329	-1150	-1289	-1132	-1129	-1120	-792	-1303	-1513
Credit	19	32	87	102	150	133	125	112	100	108	113	102	150
Debit	-239	-529	-840	-950	-1479	-1283	-1415	-1244	-1229	-1228	-905	-1404	-1664
Operational leasing services	-939	-769	-656	-1048	-634	-599	-1311	-1867	-1672	-2312	-2166	-4130	-4887
Credit	15	34	5	21	14	6	91	278	49	25	59	78	77
Debit	-955	-804	-661	-1069	-648	-605	-1401	-2146	-1721	-2337	-2225	-4208	-4964
Government services	-327	-339	-303	-350	-385	-498	-549	-652	-252	-151	-192	-755	-450
Credit	91	130	203	501	548	318	537	604	761	877	957	1192	1517
Debit	-418	-469	-506	-851	-933	-816	-1087	-1256	-1013	-1028	-1149	-1947	-1967
Communication services	25	-10	-44	9	81	14	4	29	14	84	174	127	104
Credit	39	37	24	45	159	30	36	242	135	449	243	239	205
Debit	-14	-47	-68	-35	-79	-16	-32	-213	-122	-366	-70	-112	-102
Construction services	32	6	1	10	52	16	227	17	12	10	1	8	18
Credit	39	9	7	16	59	16	228	18	12	10	1	8	23
Debit	-6	-4	-6	-6	-7	0	0	0	0	0	0	0	-4
Merchanting and other trade-related services	-199	-90	-36	-160	-31	251	194	-23	-12	-92	-235	-279	1
Credit	234	321	361	324	408	626	589	413	421	389	379	606	967
Debit	-433	-411	-396	-485	-439	-375	-395	-436	-433	-480	-613	-885	-967
Business, professional and technical services	23	372	348	886	1071	1259	2251	2300	2460	2158	2378	3651	4556
Credit	789	1156	1234	2286	2748	2771	3888	3921	3848	3719	4515	6038	7524
Mail orders	0	0	0	0	1	0	1	1	1	3	2	3	3
Self-employed remuneration	10	16	28	41	49	47	58	52	57	43	67	455	1437
Installation and maintainance of administrative	581	820	642	1173	1392	1368	1569	1728	1669	1578	1694	1906	2055
Participation in fairs and exhibits	2	9	9	9	15	15	12	11	9	10	8	17	18
Professional athlete's transfer fees	14	15	38	110	82	94	130	127	67	73	102	158	131
Publicity	11	17	55	186	116	125	162	149	112	95	105	116	155
Architectural, engineering and other	172	280	459	765	1093	1121	1957	1854	1932	1918	2535	3374	3682
Installation/implementation of technical and eco	0	0	3	1	0	1	0	0	1	0	0	8	42
Debit	-767	-784	-886	-1400	-1676	-1512	-1637	-1621	-1388	-1562	-2136	-2387	-2967
Acquisition of medicaments	0	0	0	-2	0	0	0	0	0	-1	-1	0	0
Mail orders	-1	-6	-5	-4	-5	-8	-26	-31	-31	-29	-33	-37	-40
Self-employed remuneration	-4	-5	-13	-19	-12	-14	-14	-20	-15	-36	-6	-147	-403
Installation and maintainance of administrative	-556	-442	-456	-532	-535	-459	-395	-379	-265	-284	-335	-378	-484
Participation in fairs and exhibits	-5	-15	-9	-7	-11	-10	-22	-20	-23	-93	-38	-47	-53
Professional athlete's transfer fee	-1	-1	-1	-23	-28	-33	-23	-6	-5	-4	-4	-7	-14
Publicity	-13	-28	-33	-52	-66	-56	-110	-80	-43	-50	-158	-58	-92
Architectural, engineering and other	-187	-286	-370	-762	-1018	-932	-1046	-1086	-1005	-1065	-1560	-1709	-1882
Installation/implementation of technical and eco	0	0	0	0	-1	0	0	0	0	0	0	-4	0
Personal, cultural and recreational services	-196	-202	-266	-206	-292	-335	-300	-307	-251	-283	-362	-396	-452

Credit	9	29	35	23	36	39	63	58	58	54	47	56	81
Audiovisual	2	22	4	6	4	7	17	27	28	29	15	16	21
Cultural and sports events	6	8	30	17	32	33	46	31	30	25	32	40	61
Debit	-204	-231	-300	-229	-328	-374	-363	-365	-309	-337	-409	-451	-533
Audio-visual & related services	-51	-90	-121	-71	-133	-264	-260	-256	-215	-250	-300	-314	-387
Cultural and sports events	-153	-141	-179	-159	-195	-111	-103	-109	-94	-86	-109	-137	-146
Sundry services	0	0	0	0	0	0	0	0	0	0	0	0	0
Credit	0	0	0	0	0	0	0	0	0	0	0	0	0
Debit	0	0	0	0	0	0	0	0	0	0	0	0	0
Income	-9035	-11058	-11668	-14876	-18189	-18848	-17886	-19743	-18191	-18552	-20520	-25967	-27489
Credit	2261	3369	5235	5159	4599	3935	3621	3280	3295	3339	3199	3194	6438
Debit	-11296	-14810	-17435	-20186	-22911	-22783	-21507	-23023	-21486	-21891	-23719	-29162	-33927
Compensation of employees	-131	-160	-60	50	103	142	79	95	102	109	181	214	177
Credit	59	60	197	253	282	310	237	270	293	269	354	325	397
Debit	-190	-219	-257	-203	-179	-168	-158	-175	-191	-160	-173	-111	-220
Investment income	-8903	-10898	-11609	-14926	-18292	-18990	-17965	-19838	-18292	-18661	-20701	-26181	-27666
Direct investment income	-4334	-2545	-2194	-4581	-5585	-3664	-3239	-4638	-4983	-5098	-5789	-10302	-12811
Credit	368	794	1432	889	444	1487	999	367	967	886	1114	733	1073
Debit	-4702	-3340	-3626	-5470	-6029	-5151	-4238	-5005	-5950	-5984	-6903	-11035	-13884
Profits and dividends	-1923	-1818	-1295	-3845	-4673	-2832	-2173	-3438	-4034	-4076	-4937	-9142	-11431
Credit	368	763	1409	862	421	1389	932	264	857	760	916	641	928
Debit	-2290	-2581	-2705	-4707	-5093	-4221	-3105	-3702	-4891	-4836	-5853	-9783	-12359
Reinvested earnings	-83	-384	-531	-151	-124	0	0	0	0	0	0	0	0
Interests on intercompany loans	-2329	-344	-367	-586	-788	-832	-1066	-1201	-949	-1022	-852	-1161	-1380
Credit	0	31	22	27	24	97	67	103	109	126	198	92	145
Debit	-2329	-375	-390	-612	-812	-929	-1133	-1303	-1058	-1148	-1050	-1253	-1525
Portfolio investment income	-918	-3949	-4191	-5635	-6950	-7710	-8545	-9621	-8384	-8743	-10415	-11778	-11051
Credit	45	953	1362	1597	1497	773	859	1463	1383	1323	733	785	3049
Debit	-964	-4902	-5553	-7232	-8447	-8483	-9404	-11084	-9767	-10066	-11149	-12563	-14101
Income on equity (dividends)	-560	-750	-1004	-1447	-2059	-1283	-1143	-1523	-1128	-1564	-2400	-3544	-4924
Credit	32	66	18	27	11	11	5	1	1	3	4	10	21
Debit	-593	-815	-1022	-1474	-2070	-1294	-1148	-1524	-1129	-1568	-2404	-3554	-4945
Income on debt securities (interests)	-358	-3199	-3188	-4188	-4891	-6427	-7402	-8097	-7256	-7179	-8015	-8234	-6128
Credit	13	887	1343	1570	1486	762	854	1462	1382	1320	729	775	3028
Debit	-371	-4087	-4531	-5758	-6377	-7189	-8256	-9560	-8638	-8499	-8744	-9009	-9156
Other investments income	-3651	-4403	-5223	-4710	-5758	-7617	-6181	-5579	-4925	-4820	-4497	-4101	-3804
Credit	1789	1562	2245	2420	2374	1365	1525	1179	653	861	998	1351	1919
Debit 4/	-5440	-5966	-7468	-7129	-8132	-8982	-7707	-6758	-5578	-5681	-5495	-5452	-5723
Interest paid	-5156	-5966	-7468	-7129	-8132	-8982	-7707	-6758	-5578	-5681	-5495	-5452	-5723
Refinanced interest	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest in arrears	-284	0	0	0	0	0	0	0	0	0	0	0	0
Current unilateral transfers	2414	3622	2446	1823	1458	1689	1521	1638	2390	2867	3236	3558	4306
Credit	2576	3861	2702	2135	1815	1969	1828	1934	2627	3132	3542	4051	4847
Debit	-161	-239	-256	-313	-357	-280	-307	-296	-237	-265	-306	-493	-541
CAPITAL AND FINANCIAL ACCOUNT	8692	29095	33968	25800	29702	17319	19326	27052	8004	5111	-7523	-9464	15982
Capital account	174	352	454	393	320	338	273	-36	433	498	372	663	869
Capital transfers	174	352	454	393	320	338	272	-38	414	497	370	663	869
Credit	176	364	466	406	405	360	300	326	445	535	803	905	1083
Debit	-2	-12	-12	-14	-85	-22	-28	-364	-31	-37	-433	-243	-213
Acquisition/disposal of non-produced non-financial	0	0	0	0	0	0	0	2	19	1	2	0	0
Credit	0	0	0	0	0	0	0	2	19	1	2	1	1
Debit	0	0	0	0	0	0	0	0	0	0	0	0	-1
Financial account	8518	28744	33514	25408	29381	16981	19053	27088	7571	4613	-7895	-10127	15113
Direct investment (net)	1460	3309	11261	17877	26002	26888	30498	24715	14108	9894	8339	12550	-9420
Brazilian direct investment	-690	-1096	469	-1116	-2854	-1690	-2282	2258	-2482	-249	-9807	-2517	-28202
Credit	201	438	1572	199	171	713	953	5106	585	1737	1287	1515	1129
Debit	-891	-1534	-1103	-1315	-3025	-2404	-3234	-2849	-3067	-1986	-11094	-4032	-29331
Equity capital	-690	-1096	469	-1116	-2854	-1110	-1755	1752	-2402	-62	-6640	-2695	-23413
Debit	201	438	1572	199	171	388	840	4236	417	1645	1156	1180	1002
Credit	-891	-1534	-1103	-1315	-3025	-1498	-2595	-2483	-2818	-1707	-7796	-3875	-24416
Affiliated enterprise loans	0	0	0	0	0	-580	-527	505	-81	-187	-3167	178	-4789
Credit	0	0	0	0	0	325	112	871	168	93	131	335	126
Debit	0	0	0	0	0	-905	-639	-365	-249	-280	-3298	-157	-4915
Claims on affiliated enterprises	0	0	0	0	0	-385	-547	-268	-79	-187	-3170	103	-4773
Credit	0	0	0	0	0	254	64	93	165	92	115	160	120
Debit	0	0	0	0	0	-638	-611	-360	-243	-279	-3284	-57	-4893
Liabilities to affiliated enterprises	0	0	0	0	0	-195	20	773	-2	0	3	75	-16
Credit	0	0	0	0	0	71	48	778	4	1	16	175	6
Debit	0	0	0	0	0	-267	-28	-5	-6	-1	-13	-100	-22
Foreign direct investment	2150	4405	10792	18993	28856	28578	32779	22457	16590	10144	18146	15066	18782
Credit	3222	6370	12034	22081	34982	36254	40290	30017	26460	19238	25801	30062	32297
Debit	-1072	-1965	-1242	-3088	-6127	-7676	-7511	-7559	-9870	-9094	-7655	-14996	-13514
Equity capital	1972	4239	9893	16817	25479	29983	30016	18765	17118	9320	18570	15045	15373
Credit	2590	5475	10496	18761	28480	31372	33403	21093	18960	13087	20542	22043	22706
Currency	2357	4778	9644	17897	26346	26947	31610	16817	10400	7846	15972	16406	20463
Currency excluding privatization	2357	4778	7298	12648	20226	18162	24560	15738	10120	7846	15972	16406	20233
Privatization	0	0	2345	5249	6121	8786	7051	1079	280	0	0	0	230
Conversion	138	307	292	663	1932	4298	1710	4215	8484	5213	4557	5603	2234

Merchandise	12	7	29	50	78	127	83	61	76	29	13	35	9
Reinvestment	83	384	531	151	124	0	0	0	0	0	0	0	0
Debit	-618	-1237	-603	-1944	-3002	-1389	-3387	-2328	-1842	-3767	-1971	-6998	-7333
Direct investor loans	178	166	898	2176	3377	-1405	2763	3692	-528	823	-424	21	3409
Credit	632	894	1537	3320	6502	4882	6888	8924	7500	6150	5259	8018	9590
Debit	-454	-728	-639	-1144	-3125	-6287	-4125	-5232	-8028	-5327	-5683	-7997	-6181
Claims on direct investors	0	22	0	0	0	-3	-196	4	2	21	-12	-319	-612
Credit	0	22	0	0	0	36	110	13	5	30	5	29	221
Debit	0	0	0	0	0	-39	-306	-9	-4	-10	-17	-347	-833
Liabilities to direct investors	178	145	898	2176	3377	-1402	2959	3688	-529	803	-412	340	4021
Credit	632	873	1537	3320	6502	4846	6777	8911	7495	6120	5254	7990	9369
Debit	-454	-728	-639	-1144	-3125	-6248	-3819	-5223	-8024	-5317	-5666	-7650	-5349
Portfolio investment (net)	50642	9217	21619	12616	18125	3802	6955	77	-5119	5308	-4750	4885	9573
Brazilian portfolio investment	-3405	-1155	-403	1708	-457	259	-1696	-795	-321	179	-755	-1771	523
Credit	298	1053	182	2770	2089	4220	2888	1626	1016	1805	2767	3159	6024
Debit	-3703	-2208	-585	-1062	-2546	-3961	-4584	-2421	-1337	-1626	-3522	-4929	-5501
Foreign company equity	-347	-244	-270	-361	20	-864	-1953	-1121	-389	-258	-121	-831	-915
Credit	268	91	4	27	94	371	1970	170	320	66	36	70	406
Debit	-615	-335	-274	-388	-74	-1235	-3923	-1291	-709	-324	-157	-901	-1322
Brazilian Depositary Receipts - BDR	0	0	0	0	72	6	-945	150	106	-10	0	-4	-614
Credit	0	0	0	0	72	7	1669	153	113	2	1	0	6
Debit	0	0	0	-1	0	-1	-2614	-3	-7	-12	-1	-4	-620
Other equities	-347	-244	-270	-360	-52	-871	-1008	-1271	-495	-248	-121	-827	-301
Credit	268	91	4	27	21	364	301	17	207	64	35	70	400
Debit	-615	-335	-274	-387	-74	-1234	-1309	-1288	-702	-312	-156	-897	-701
Debt securities (short- and long-term)	-3058	-912	-132	2069	-477	1123	258	326	67	437	-633	-940	1438
Credit	31	962	179	2743	1996	3849	918	1457	696	1738	2732	3089	5618
Debit	-3088	-1874	-311	-674	-2473	-2725	-660	-1130	-629	-1302	-3365	-4029	-4180
Debt securities (long-term)	-3052	-917	-132	2069	-477	1123	258	326	67	437	-633	-519	858
Credit	0	911	168	2743	1996	3849	918	1456	696	1738	2731	3088	4714
Memo: collateral releases	0	0	0	2146	60	423	245	326	0	359	8	0	846
Debit	-3052	-1828	-300	-674	-2473	-2725	-660	-1130	-629	-1302	-3365	-3607	-3855
Memo: collateral debit	-3052	-768	0	0	0	0	0	0	0	0	0	0	0
Debt securities (short-term)	-6	5	0	0	0	0	0	0	0	0	0	-421	579
Credit	31	51	11	0	0	0	0	0	0	0	0	0	904
Debit	-36	-46	-11	0	0	0	0	0	0	0	0	-421	-325
Foreign portfolio investment	54047	10372	22022	10908	18582	3542	8651	872	-4797	5129	-3996	6655	9051
Credit	75172	36484	45529	60183	59740	38875	38816	29497	18352	27347	30614	59376	99317
Debit	-21125	-26112	-23507	-49275	-41158	-35332	-30165	-28625	-23150	-22218	-34610	-52721	-90266
Equities	7280	3243	6145	6871	995	2572	3076	2481	1981	2973	2081	6451	7716
Credit	25142	24617	25749	39017	27786	15533	18346	10494	10055	10552	16370	34033	51287
Debit	-17862	-21374	-19603	-32146	-26791	-12962	-15270	-8013	-8074	-7579	-14289	-27582	-43571
Issued in the country	7280	2444	4900	2636	-2785	1490	-3262	-545	-723	2094	1236	5421	5859
Credit	25142	22774	22776	31298	21989	12580	10425	7015	7103	9475	14797	32332	48511
Debit	-17862	-20330	-17876	-28662	-24774	-11090	-13687	-7560	-7826	-7381	-13562	-26911	-42652
Issued abroad (Depositary Receipts)	0	799	1246	4234	3780	1081	6338	3026	2704	878	845	1030	1857
Credit	0	1843	2973	7719	5797	2953	7921	3478	2952	1076	1572	1701	2776
Debit	0	-1044	-1727	-3485	-2017	-1872	-1583	-452	-248	-198	-727	-671	-919
Debt securities	46767	7129	15876	4037	17587	971	5575	-1609	-6778	2156	-6076	204	1335
Credit	50030	11867	19780	21166	31955	23342	20470	19003	8297	16795	14245	25344	48030
Debit	-3263	-4738	-3904	-17129	-14367	-22371	-14895	-20612	-15076	-14639	-20321	-25139	-46695
Issued in the country (net)	0	-915	-65	-1613	-2932	-1378	-199	-274	-223	272	101	689	11042
Medium and long-term	0	-982	-111	-1627	-3017	-1223	-258	-246	-218	163	38	413	6971
Credit	0	209	333	522	3986	2760	980	532	538	717	1121	2450	17776
Debit	0	-1191	-444	-2149	-7004	-3983	-1238	-778	-756	-555	-1083	-2037	-10805
Short-term	0	66	46	14	85	-155	59	-28	-5	109	63	276	4070
Credit	0	256	80	16	91	104	469	356	383	479	748	1633	10400
Debit	0	-190	-34	-3	-6	-259	-410	-384	-388	-370	-685	-1358	-6330
Issued abroad - long- and short-term (net)	46767	8045	15941	5650	20520	2349	5774	-1335	-6556	1884	-6178	-485	-9707
Bonds (long-term)	42196	1501	941	-2588	-169	3300	3707	1160	1597	2319	-440	2207	-13223
Credit	42676	2130	1512	4995	2698	7708	12222	9699	4101	7087	5928	12490	5575
New issues	200	1819	1263	2751	2698	4708	6086	7549	4070	5889	5928	7981	4877
	0	150	0	204	0	0	249	868	161	1262	200	0	125
Bond swaps	42476	311	249	2244	0	3000	6136	2150	30	1198	0	4509	698
Debit	-480	-629	-571	-7584	-2867	-4408	-8515	-8539	-2504	-4768	-6368	-10282	-18798
Paid	-480	-629	-571	-5492	-2867	-1410	-2370	-6389	-2473	-3570	-6368	-5773	-17867
Face value	-480	-629	-571	-7624	-2867	-1410	-2370	-6389	-2473	-3570	-6368	-5773	-16694
	0	-323	-124	-243	-233	-49	0	-3263	-511	-20	-875	-599	-100
Discounts	0	0	0	2132	0	0	0	0	0	0	0	0	-1172
Memo: Of which nationalized debt (Bra	0	0	0	5902	0	0	0	3263	0	0	0	0	0
Bond swaps	0	0	0	-2092	0	-2997	-6145	-2150	-30	-1198	0	-4509	-931
Face value	0	0	0	-2693	0	-4197	-6521	-2150	-30	-1289	0	-4509	-648
Discounts	0	0	0	601	0	1200	376	0	-1	90	0	0	-283
Notes and commercial papers (long-term)	4576	6456	14930	8439	20629	-1388	1886	-3118	-7338	-761	-6111	-3127	3425
Credit	7279	9104	17744	15632	24940	11976	6496	7350	2093	4729	5085	7337	10194
Debit	-2704	-2648	-2815	-7193	-4311	-13364	-4610	-10468	-9432	-5490	-11196	-10463	-6769
Money market instruments	-4	88	71	-200	60	437	181	623	-815	326	373	435	91
Credit	75	167	111	1	240	794	304	1066	1182	3783	1363	1434	4084
Debit	-79	-80	-40	-201	-180	-357	-123	-442	-1996	-3457	-990	-999	-3993

Other investments (net)	-43557	16200	673	-4833	-14285	-13620	-18202	2767	-1062	-10438	-10806	-27521	14577
Other Brazilian investments (net)	-13010	-1819	-10316	-1987	-11392	-4397	-2989	-6585	-3211	-9752	-2085	-5035	-8914
Loan and financing (net)	-1545	-1822	-1224	348	-5181	-1278	-282	-1050	-1740	-811	-1489	-1840	-5015
Long-term	-450	-950	-140	-507	-2765	-724	-375	-1358	-1724	-665	-1217	-1872	-4979
Credit	533	617	412	888	1229	814	594	1417	1739	1962	2422	2069	1513
Debit	-983	-1566	-552	-1395	-3994	-1537	-969	-2775	-3462	-2627	-3639	-3941	-6492
Short-term (net)	-1095	-872	-1083	856	-2416	-554	93	309	-16	-145	-272	32	-35
Currency and deposits (net)	-4923	6432	-6480	-829	-3234	-2301	-1774	-8001	-1300	-8579	-668	-2930	-3241
Banks (net)	-5625	6596	-4368	3400	1800	345	1321	-3857	4341	-7009	1407	-1187	-1732
Other sectors (net)	702	-164	-2111	-4229	-5033	-2647	-3095	-4144	-5641	-1570	-2075	-1744	-1509
Of which: collateral releases	0	0	0	0	0	0	166	0	0	0	0	0	0
Other assets (net)	-6541	-6429	-2613	-1506	-2978	-817	-933	2465	-172	-363	73	-265	-658
Long-term (term)	-78	-48	-25	-72	-94	-53	-105	2424	-122	-77	-38	-169	-198
Short-term (net)	-6464	-6382	-2588	-1434	-2884	-764	-828	41	-50	-286	111	-96	-460
Other foreign investments (net)	-30547	18019	10989	-2846	-2893	-9223	-15213	9353	2150	-686	-8721	-22486	23491
Trade credit - suppliers long- and short-term (ne	7821	8118	12337	1045	2740	-7284	-6409	4233	1741	236	1181	3585	12314
Long-term	-319	-96	-239	6404	4307	-4783	-2987	480	-1370	-959	-1387	-941	-841
Credit	475	722	627	7440	9355	3374	2675	3293	1284	1007	969	740	812
Debit	-793	-818	-865	-1036	-5047	-8157	-5663	-2813	-2654	-1967	-2356	-1681	-1653
Paid	-793	-818	-865	-1036	-5047	-8157	-5663	-2813	-2654	-1967	-2356	-1681	-1653
Arrears	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-term (net)	8140	8214	12576	-5359	-1567	-2501	-3422	3753	3111	1195	2568	4526	13155
Loans (net)	-33955	5493	3270	5879	4031	1342	-8774	5714	1031	-1549	-10421	-26753	9753
Monetary authority (net)	-129	-239	-387	-234	8944	2803	-10434	6639	11363	4645	-4494	-23402	-138
Exceptional financing (net)	-129	-47	-72	-34	9329	2966	-10323	6757	11480	4769	-4363	-23271	0
IMF	-129	-47	-72	-34	4789	4059	-6876	6757	11480	4769	-4363	-23271	0
Credit	0	0	0	0	4810	6031	0	6757	16045	17596	0	0	0
Debit	-129	-47	-72	-34	-21	-1972	-6876	0	-4564	-12826	-4363	-23271	0
Other	0	0	0	0	4540	-1094	-3446	0	0	0	0	0	0
Credit	0	0	0	0	4540	4924	0	0	0	0	0	0	0
Debit	0	0	0	0	0	-6017	-3446	0	0	0	0	0	0
Other long-term loans	0	-192	-316	-200	-384	-163	-111	-118	-118	-125	-132	-132	-138
Credit	0	0	0	57	0	0	0	0	0	0	0	0	0
Amortization	0	-192	-316	-257	-384	-163	-111	-118	-118	-125	-132	-132	-138
Remaining sectors (net)	-33826	5732	3657	6113	-4914	-1461	1660	-925	-10332	-6194	-5927	-3351	9891
Long-term	-37959	-841	-3519	8278	6490	-2009	2736	951	-5321	-4751	-4743	-2291	10407
Credit	4222	5473	5984	17700	24055	17499	15926	14281	11115	10081	8405	7976	27132
Multilateral organizations	1133	1654	2875	3093	4170	4584	4674	3083	3872	2766	2393	2718	5100
Bilateral financing	306	404	394	1260	1144	1119	1034	1739	1519	1731	785	1219	1469
Bilateral excluding refinancing	306	404	394	1260	1144	1119	1034	1739	1519	1731	785	1219	1469
Refinancing (Paris Club)	0	0	0	0	0	0	0	0	0	0	0	0	0
Buyers' credits	475	733	622	8331	10233	7593	3252	4443	3438	2696	1492	1433	2117
Direct loans	2308	2681	2093	5017	8509	4203	6967	5017	2286	2888	3735	2606	18446
New inflows	2308	2681	2093	5017	8509	4203	6967	5017	2286	2888	3735	2606	18446
Refinancing	0	0	0	0	0	0	0	0	0	0	0	0	0
Debit	-42180	-6314	-9503	-9423	-17565	-19508	-13190	-13331	-16436	-14831	-13147	-10267	-16725
Multilateral organizations	-1802	-1670	-1629	-1449	-1422	-1599	-1477	-1643	-2511	-3979	-3847	-2530	-2130
Bilateral financing	-997	-2018	-2386	-1827	-1907	-1692	-988	-1879	-2030	-2585	-2617	-2624	-3470
Paid	-997	-2018	-2386	-1827	-1907	-1692	-988	-1879	-2030	-2585	-2617	-2624	-3470
Refinanced	0	0	0	0	0	0	0	0	0	0	0	0	0
Arrears	0	0	0	0	0	0	0	0	0	0	0	0	0
Buyers' credits	-704	-1073	-1455	-2041	-8181	-9092	-6321	-6164	-8239	-4803	-3757	-2443	-2313
Debit	-704	-1073	-1455	-2041	-8181	-9092	-6321	-6164	-8239	-4803	-3757	-2443	-2313
Arrears	0	0	0	0	0	0	0	0	0	0	0	0	0
Direct loans	-38677	-1552	-4034	-4106	-6056	-7126	-4403	-3645	-3655	-3464	-2926	-2671	-8812
Paid	-2573	-1552	-4034	-4106	-6056	-7126	-4403	-3645	-3655	-3464	-2926	-2671	-8812
Refinanced	-39410	0	0	0	0	0	0	0	0	0	0	0	0
Arrears	-631	0	0	0	0	0	0	0	0	0	0	0	0
Discounts	3937	0	0	0	0	0	0	0	0	0	0	0	0
Short-term (net)	4132	6573	7176	-2165	-11404	548	-1077	-1875	-5011	-1443	-1184	-1059	-516
Currency and deposits (net)	1209	4919	-4339	-9743	-9665	-3249	-33	-596	-621	625	517	567	1419
Other liabilities (net)	-5623	-511	-279	-27	1	-32	4	2	0	3	1	115	5
Long-term (net)	0	15	0	1	15	6	4	3	0	3	1	0	0
Short-term (net)	-5623	-526	-280	-28	-14	-38	0	-1	0	0	0	115	5
Arrears (net)	-5654	-510	-286	0	0	0	0	0	0	0	0	0	0
Other (net)	31	-16	6	-28	-14	-38	0	-1	0	0	0	115	5
ERRORS AND OMISSIONS	334	2207	-1800	-3255	-4256	194	2637	-531	-66	-793	-1912	-201	965
OVERALL BALANCE	7215	12919	8666	-7907	-7970	-7822	-2262	3307	302	8496	2244	4319	30569
CHANGE IN RESERVES (- = increase)	-7215	-12919	-8666	7907	7970	7822	2262	-3307	-302	-8496	-2244	-4319	-30569

Balance of payments

US$ million

Itemization	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Balance on goods (fob)	10466	-3466	-5599	-6753	-6575	-1199	-698	2650	13121	24794	33641	44703	46458
Exports	43545	46506	47747	52994	51140	48011	55086	58223	60362	73084	96475	118308	137807
Imports	-33079	-49972	-53346	-59747	-57714	-49210	-55783	-55572	-47240	-48290	-62835	-73606	-91350
Services and income (net)	-14692	-18541	-20350	-25522	-28299	-25825	-25048	-27503	-23148	-23483	-25198	-34276	-37143
Services	-5657	-7483	-8681	-10646	-10111	-6977	-7162	-7759	-4957	-4931	-4678	-8309	-9654
Credit	4392	4929	5038	6876	7897	7194	9498	9322	9551	10447	12584	16047	19462
Debit	-10049	-12412	-13719	-17522	-18008	-14171	-16660	-17081	-14509	-15378	-17261	-24356	-29116
Income	-9035	-11058	-11668	-14876	-18189	-18848	-17886	-19743	-18191	-18552	-20520	-25967	-27489
Credit	2261	3369	5235	5159	4599	3935	3621	3280	3295	3339	3199	3194	6438
Debit	-11296	-14810	-17435	-20186	-22911	-22783	-21507	-23023	-21486	-21891	-23719	-29162	-33927
Current unilateral transfers	2414	3622	2446	1823	1458	1689	1521	1638	2390	2867	3236	3558	4306
CURRENT ACCOUNT	-1811	-18384	-23502	-30452	-33416	-25335	-24225	-23215	-7637	4177	11679	13985	13621
CAPITAL AND FINANCIAL ACCOUNT	8692	29095	33968	25800	29702	17319	19326	27052	8004	5111	-7523	-9464	15982
Capital account	174	352	454	393	320	338	273	-36	433	498	372	663	869
Financial account	8518	28744	33514	25408	29381	16981	19053	27088	7571	4613	-7895	-10127	15113
Direct investment	1460	3309	11261	17877	26002	26888	30498	24715	14108	9894	8339	12550	-9420
Abroad	-690	-1096	469	-1116	-2854	-1690	-2282	2258	-2482	-249	-9807	-2517	-28202
Equity capital	-690	-1096	469	-1116	-2854	-1110	-1755	1752	-2402	-62	-6640	-2695	-23413
Intercompany loans	0	0	0	0	0	-580	-527	505	-81	-187	-3167	178	-4789
In the reporting country	2150	4405	10792	18993	28856	28578	32779	22457	16590	10144	18146	15066	18782
Equity capital	1972	4239	9893	16817	25479	29983	30016	18765	17118	9320	18570	15045	15373
Intercompany loans	178	166	898	2176	3377	-1405	2763	3692	-528	823	-424	21	3409
Portfolio investments	50642	9217	21619	12616	18125	3802	6955	77	-5119	5308	-4750	4885	9573
Assets	-3405	-1155	-403	1708	-457	259	-1696	-795	-321	179	-755	-1771	523
Equity securities	-347	-244	-270	-361	20	-864	-1953	-1121	-389	-258	-121	-831	-915
Debt securities	-3058	-912	-132	2069	-477	1123	258	326	67	437	-633	-940	1438
Liabilities	54047	10372	22022	10908	18582	3542	8651	872	-4797	5129	-3996	6655	9051
Equity securities	7280	3243	6145	6871	995	2572	3076	2481	1981	2973	2081	6451	7716
Debt securities	46767	7129	15876	4037	17587	971	5575	-1609	-6778	2156	-6076	204	1335
Financial derivatives	-27	17	-38	-253	-460	-88	-197	-471	-356	-151	-677	-40	383
Assets	4	280	99	164	257	642	386	567	933	683	467	508	482
Liabilities	-31	-263	-138	-416	-717	-730	-583	-1038	-1289	-834	-1145	-548	-99
Other investments	-43557	16200	673	-4833	-14285	-13620	-18202	2767	-1062	-10438	-10806	-27521	14577
Assets	-13010	-1819	-10316	-1987	-11392	-4397	-2989	-6585	-3211	-9752	-2085	-5035	-8914
Liabilities	-30547	18019	10989	-2846	-2893	-9223	-15213	9353	2150	-686	-8721	-22486	23491
ERRORS AND OMISSIONS	334	2207	-1800	-3255	-4256	194	2637	-531	-66	-793	-1912	-201	965
OVERALL BALANCE	7215	12919	8666	-7907	-7970	-7822	-2262	3307	302	8496	2244	4319	30569