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Brazil: Selected Issues and Statistical Appendix

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INTERNATIONAL MONETARY FUND

BRAZIL

Selected Issues and Statistical Appendix

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Approved by the Western Hemisphere Department

July 15, 1999

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I. Social and Demographic Indicators

Area (sq. km)	8,547,403	Nutrition	
		Calorie intake (per capita a day)	2,751
Population (1997)			
Total (million)	160	Health	
Annual rate of growth, 1986-96		Population per physician	844
(percent a year)	1.4	Population per hospital bed	299
Density (per sq. km.)	19.1	Population per nurse	3,379
GDP per capita (US$), 1998	4,801		
		Access to electricity	
Population characteristics (1997)		Percent of dwellings	
Life expectancy at birth (years)	67	Urban	88.5
Crude birth rate (per thousand)	21	Rural	20.6
Crude death rate (per thousand)	7		
Infant mortality (per thousand live births)	34	Access to safe water	
Under 5 mortality rate (per thousand)	44	Percent of population (1995)	
		Urban	80.0
Income distribution (1995)		Rural	28.0
By highest 10 percent of households	48.7		
By lowest 20 percent of households	2.6	Education (1994)	
		Gross enrollment rates, percent in	
Distribution of labor force, percent in total		Primary education (1997)	123
Agriculture	23.1	Secondary education	45
Industry and mining	23.7	Tertiary education	11
Services	53.2		

II. Economic Indicators, 1995–99

	1995	1996	Prel. 1997	Est. 1998	Proj. 1999
	(In percent)				
National accounts and prices					
Annual changes in sectoral product aggregates at factor cost					
GDP (in constant prices)	3.4	2.8	3.7	0.1	-1.0
Agriculture	4.1	4.1	2.7	0.2	4.7
Industry and mining	1.9	3.7	5.5	-0.9	-3.0
Services	1.3	0.8	1.7	0.7	-0.5
Consumer price index (end of period)	22.0	9.1	4.3	2.5	8.0
Investment, consumption, and savings ratios					
Gross investment/GDP ratio	22.3	20.7	20.0	19.1	17.7
Private consumption/GDP ratio	59.9	62.2	63.1	62.8	63.5
Government consumption/GDP ratio	19.6	19.2	19.2	20.0	19.0
National savings/GDP ratio	19.7	17.7	15.8	14.8	13.7
	(In billions of reais)				
Public sector finances					
Noninterest revenues	216.8	249.2	279.1	282.7	324.5
Noninterest expenditures	214.4	249.9	287.3	282.5	294.3
Primary balance (deficit -)	2.4	-0.7	-8.2	0.1	30.2
PSBR	48.7	47.2	54.3	72.5	87.4
Memorandum items:					
Primary balance (percent of GDP)	0.4	-0.1	-0.9	0.0	3.1
PSBR (percent of GDP)	7.2	5.9	6.1	8.0	9.0
GDP (in billions of reais)	646.2	778.8	866.8	901.4	975.1

	1995	1996	Prel. 1997	Est. 1998	Proj. 1999
	(In billions of reais)				
Monetary accounts of the banking system					
Liabilities to private sector	236.8	260.8	314.9	347.4	379.3
Of which:					
Money (M-1)	23.8	26.2	42.3	46.1	50.3
Quasi-money	165.2	180.1	211.3	229.9	250.5
Net domestic assets	192.7	209.5	267.8	306.8	341.2
Of which:					
Credit to the public sector	27.1	78.5	103.4	165.4	183.4
Credit to the private sector	226.5	236.5	266.6	307.1	341.5
	(In billions of U.S. dollars)				
Balance of payments					
Merchandise trade balance	-3.5	-5.6	-8.3	-6.6	3.0
Exports, f.o.b.	46.5	47.7	53.0	51.1	52.0
Imports, f.o.b.	50.0	53.3	61.3	57.7	49.0
Services and transfers (net)	-14.6	-17.6	-24.9	-28.5	-27.4
Of which:					
Interest	-8.1	-9.1	-10.2	-11.9	-15.7
Current account	-18.0	-23.0	-33.3	-33.6	-22.2
Capital account	31.5	32.0	25.4	16.2	14.2
Foreign direct investment	3.9	9.4	16.9	26.1	19.8
Portfolio investment	2.3	6.0	5.3	-1.9	3.5
Long-term capital (net)	6.5	12.7	18.6	31.5	-3.8
Overall balance	13.5	9.0	-7.9	-17.4	-8.0
Change in reserves (increase = -)	-12.9	-8.7	7.9	17.4	8.0
Memorandum items:					
Debt service ratio (including IMF) 1/	43.6	53.3	70.6	88.3	130.1
Current account (as percent of GDP)	-2.6	-3.0	-4.1	-4.3	-4.0
External debt outstanding (as percent of GDP)	22.6	23.2	24.9	30.2	41.5
Central bank gross reserves 2/	10.4	11.4	8.3	7.5	7.9
International reserve position and external debt (as of December 31)					
International reserves (gross) 3/	51.5	60.1	51.7	44.0	38.3
External debt (gross)	159.2	179.9	200.0	234.5	231.9
Public	95.2	93.7	85.7	94.9	102.5
Private	64.0	86.2	114.3	140.2	129.4

IMF data (as of June 30, 1999)	
Membership status:	Article XIV
Intervention currency and rate (buying)	U.S. dollar at R$1.75 per U.S. dollar
Quota	SDR 3,036.10 million
Fund holdings of reais	SDR 10,092.02 million
(as percent of quota)	332.4 percent
Fund credit	SDR 7,055.10 million
Credit tranche	SDR 542.70 million
SRF	SDR 6,512.40 million
SDR department	
Net cumulative allocation	SDR 358.67 million
Holdings	SDR 0.03 million
Share of profits from gold sales	US$69.9 million

Sources: Brazilian authorities; World Bank; and Fund staff estimates.

1/ As percent of exports of goods and nonfactor services.
2/ In months of imports of goods and nonfactor services, end-period.
3/ Includes disbursements from the international support package.

I. Price Developments after the Floating of the Real: the First Six Months[1]

A. Overview

1. This chapter looks at price developments following the floating of the *Real* in mid-January 1999. In general, the "passthrough" from the exchange rate depreciation to consumer prices[2] has been much lower than initially expected, and only amounted to 10 percent at end-March, and 13 percent at end-June. Although it is far too early to reach definite conclusions only six months after floating the currency, the chapter points toward four main elements that may help to explain why inflation has remained surprisingly low: (i) an economy that does not rely on imported inputs to the extent of other economies; (ii) relatively tight monetary and fiscal policies; (iii) sluggish consumption that has resulted in profit margin reductions at different stages of the production process; and (iv) a number of exceptional and favorable factors, like a good harvest and the slow adjustment in some administered prices (such as electricity tariffs), that have dampened upward pressure on prices in different subsectors of the economy (e.g., food and energy). To the extent that the latter two elements may be expected to be temporary, underlying inflation may be expected to be higher in the future.

B. Devaluation and Inflation: The Experience of Some Other Countries

2. Experiences with inflation following a substantial devaluation have varied significantly across countries, ranging from virtually no effect to hyperinflation. Clearly, hyperinflation outcomes were not due to the devaluation itself but were more likely attributable to continued macroeconomic disequilibria. Still for any given price change, it is difficult to extract only the devaluation-induced part. Therefore, studies have usually looked at passthrough in terms of the overall price changes following devaluation.

3. Borensztein and de Gregorio[3] (B&G) who looked at 49 episodes of large devaluations (of which eight were followed by hyperinflation and consequently excluded), show that, in general, the passthrough from devaluation to inflation is not full. On average, 30 percent of the devaluation passed through to inflation in the first three months, and 55 percent in two years. Hence, changes in the real exchange rate are fairly long lasting. However, individual country experiences varied widely. There were countries with virtually no passthrough after three months ("short run") and only 15 percent after two years ("long run"), countries with a

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[1] Prepared by Gerd Schwartz.

[2] Passthrough is defined here as the accumulated consumer price inflation relative to the cumulative depreciation of the *Real* vis-à-vis the U.S. dollar. If not noted otherwise, the IPCA of Brazil's Statistical Institute (IBGE) is used to measure consumer prices.

[3] Eduardo Borensztein and José de Gregorio (1999) "Devaluation and Inflation after Currency Crisis," (draft), February.

higher short-run than long-run passthrough, and countries where the short-run passthrough was over 50 percent and the long-run passthrough over 100 percent. Of the three Brazilian devaluation episodes included in the original "49-episodes" B&G data set—February 1983, February 1987, and March 1990—the latter two were excluded as they resulted in hyperinflation.

4. For the more recent experiences that are included in the B&G data set, Latin American countries usually experienced a much higher passthrough than European economies (Figure 1.1). Mexico in December 1994, Colombia in August 1995, Venezuela in May 1994, all experienced a reasonably low short-run passthrough, that ranged from 14 percent in Mexico to 40 percent in Venezuela, but had a fairly high long-run passthrough, that ranged from 69 percent in Mexico to 173 percent in Colombia. In contrast, Finland, Italy, Spain, Sweden, and the United Kingdom—all in September 1992—experienced a short-run passthrough of no more than 7 percent, and long-run passthrough of no more than 24 percent.

5. The more recent experiences in East Asia—Indonesia, Korea, Malaysia, Philippines, and Thailand—all show that the passthrough from devaluation to inflation has been lower than expected, with the exception of Indonesia. An analysis by Stone[4] shows that during the 20-month period June 1997 to February 1999, passthrough ratios (on the basis of nominal effective exchange rates) ranged from 23 percent in Malaysia to 49 percent in the Philippines, and only in Indonesia exceeded 100 percent. Hence, even after 20 months, real exchange rates remained substantially below their pre-crisis levels, particularly in those economies that have achieved some degree of stabilization following the crisis.

C. Brazil: Passthrough Experience Since the Floating of the Real

6. With only six months passed since the *Real* was floated, it is still too early to reach final conclusions about Brazil's inflation experience as a result of the float. What is commonly agreed though, is that, so far, the passthrough to inflation was quite low (Figure 1.2), and certainly much lower than expected. The passthrough from a "big" exchange rate movement to consumers depends principally on an economy's degree of openness, the specific goods that are imported, the behavior along the supply chain, and the economic policies that accompany the exchange rate movement.

7. Why has the passthrough been so low in Brazil? There are four elements that may help to explain the phenomenon: an economy that does not rely on imported inputs to the extent of other economies; sluggish domestic demand that has resulted in profit margin squeezes at different stages of the production process; relatively tight fiscal and monetary policies; and a number of exceptional and favorable factors, like a good harvest and the slow adjustment in some administered prices (such as electricity tariffs), that have dampened

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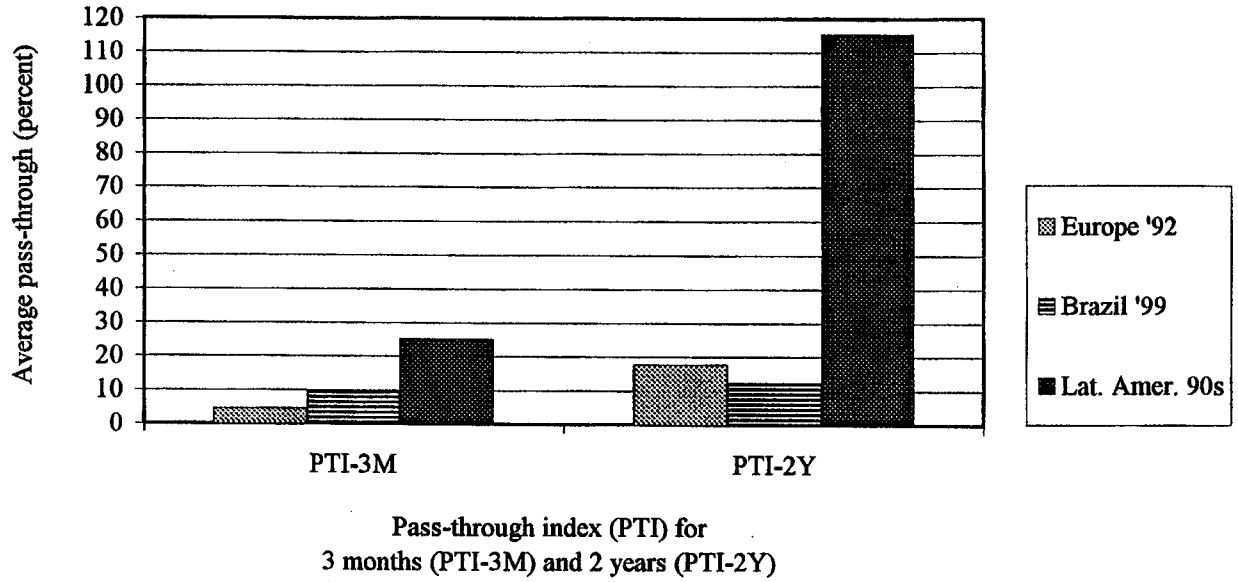
[4] Mark Stone (1999), "The Low Rates of Inflation in Post-Crisis East Asia" (draft).

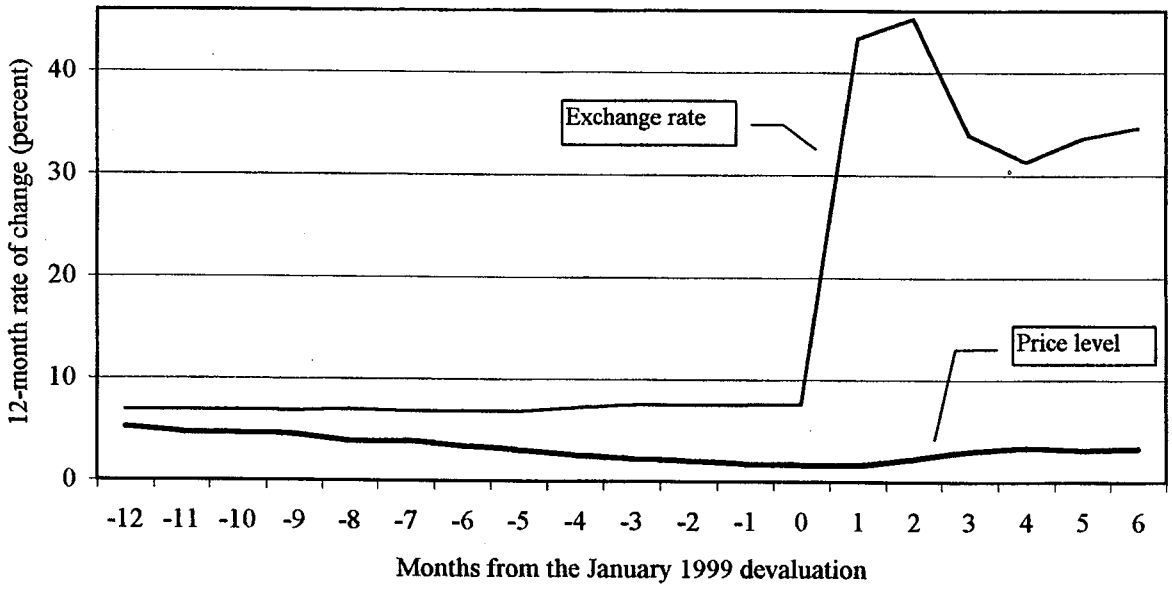
Figure 1.1. Pass-Through Experiences in the 1990s 1/



Source: Borensztein and de Gregorio (1999), and Fund staff estimates for Brazil.

1/ The "Europe '92" PTIs are calculated as the arithmetic mean of the respective PTIs for Finland, Italy, Spain, Sweden and the U.K.; the "Latin America 90s" PTIs are calculated as the arithmetic mean of the respective PTIs for Colombia, Mexico, and Venezuela; the Brazil PTIs are calculated on the basis of the consumer price index (IPCA); the data for Brazil's "PTI-2Y" only reflects data to June 1999 (latest available data).

Figure 1.2. Brazil: Exchange Rate and Price Level 1/
(12-month rate of change)



Source: Central Bank of Brazil

1/ Based on the consumer price index (IPCA).

upward pressure on prices in different subsectors of the economy (e.g., food and energy). All four are interrelated.

Openness and the impact of devaluation on the cost structure

8. Given Brazil's degree of openness, how did devaluation affect the cost structure of enterprises operating in different sectors of the Brazilian economy?

9. Using the 1995 input-output (I-O) matrix, a recent study by Pereira and Carvalho[5] suggests that a devaluation of the *Real* vis-à-vis the U.S. dollar by about one-third (say, from R$1.21 per U.S. dollar to R$1.82 per U.S. dollar) would increase production prices by 8.24 percent after the devaluation has worked itself through the system.[6] This calculation assumes that there is no change in profit margins (that is, all cost increases from the devaluation are fully passed through along the supply and production chain).

10. Using the 1995 I-O matrix suggests that (variable) costs subject to exchange rate devaluations range from below 1 percent to close to 50 percent, depending on the industry (Table 1.1). In 11 out of 42 industries variable costs subject to exchange rate fluctuations exceed 20 percent of total variable cost. This total is the sum of *direct* and *indirect* effects. Direct effects are experienced by industries that use imported inputs. Of course, even industries that do not use imported inputs would be affected by the devaluation to the extent that their domestic suppliers use imported inputs and pass on these higher costs to them.

11. In an economy that mainly imports production inputs, the passthrough of an exchange rate movement to consumers may be occurring more slowly than in an economy that mainly imports finished consumer products, as it takes time for the price effect to work through the supply chain. In Brazil, in most industries, indirect effects (that are experienced by purchasing production inputs from those who import directly) outweigh the direct effects (that are experienced when importing directly).

12. The 1995 I-O matrix suggests that the shares of imported goods in the variable costs of enterprises, i.e., direct effects, range from below 1 percent in some industries (e.g., coffee, private nonmarket services, animal slaughter) to close to 30 percent (electronic equipment) (Table 1.1). Imported goods accounted for more than 10 percent of variable costs in only 9 out of 42 industries. Hence, the direct impact of a devaluation is comparatively small. However, using the technical coefficients of the I-O matrix, the indirect impact of the

---

[5] See Thiago Rabelo Pereira and Alexandre Carvalho (1999), "O Impacto da Desvalorização Cambial Sobre os Custos Industriais: Um Estimativa dos Efeitos Cumulativos dentro da Cadeia Industrial," (The Impact of Exchange Rate Devaluation on Industrial Costs: Estimates of the Cumulative Effects Across Industries). *Boletim de Política Industrial,* No.7, April.

[6] To the extent that the Brazilian economy may be more open now than it was in 1995, the price impact of the devaluation would be accordingly higher.

Table 1.1. Brazil: Impact of a Devaluation of the Real on Industrial Costs in Different Sectors of the Economy 1/

Sector	Percent of Costs Sensitive to a Devaluation (percent)			Impact on Costs of a Devaluation (in percent) of the Real against the U.S. Dollar		
	Total	Direct (1st round) Impact	Indirect Impact	20 Percent	30 Percent	50 Percent
Agriculture and fisheries	8.7	2.5	6.2	1.7	2.6	4.4
Mineral extraction	10.8	2.5	8.3	2.2	3.2	5.4
Oil and gas extraction	7.2	2.4	4.8	1.4	2.2	3.6
Nonmetallic minerals	10.6	2.8	7.8	2.1	3.2	5.3
Iron and steel	19.4	7.1	12.2	3.9	5.8	9.7
Metallurgy (noniron)	29.5	14.9	14.6	5.9	8.9	14.8
Other metallurgy	13.4	2.4	11.0	2.7	4.0	6.7
Machines and tractors	13.9	6.6	7.2	2.8	4.2	6.9
Electric materials	19.4	6.5	12.9	3.9	5.8	9.7
Electronic equipment	47.5	29.4	18.1	9.5	14.2	23.7
Cars, trucks, and busses	27.5	15.8	11.7	5.5	8.3	13.8
Other vehicles and vehicle parts	15.5	4.9	10.6	3.1	4.7	7.8
Wood and furniture	9.2	1.8	7.4	1.8	2.8	4.6
Paper and graphics (printing)	17.9	7.0	10.9	3.6	5.4	9.0
Rubber	26.2	10.2	16.1	5.2	7.9	13.1
Chemical elements	12.0	5.0	7.0	2.4	3.6	6.0
Oil refinery	30.9	19.0	11.9	6.2	9.3	15.5
Chemicals	29.5	14.2	15.3	5.9	8.8	14.7
Pharmaceuticals and perfumes	23.5	14.1	9.4	4.7	7.0	11.7
Plastics	22.1	7.6	14.6	4.4	6.6	11.1
Textiles	27.4	10.7	16.7	5.5	8.2	13.7
Clothing	20.1	5.0	15.2	4.0	6.0	10.1
Footwear	17.6	6.0	11.6	3.5	5.3	8.8
Coffee	6.1	0.2	5.9	1.2	1.8	3.0
Processing of vegetable products	12.5	4.8	7.7	2.5	3.8	6.3
Animal slaughter	8.1	0.6	7.4	1.6	2.4	4.0
Milk products	9.8	1.9	7.9	2.0	2.9	4.9
Sugar	11.2	1.8	9.4	2.2	3.3	5.6
Vegetable oils	13.2	3.8	9.4	2.6	4.0	6.6
Food products	13.9	5.0	8.9	2.8	4.2	6.9
Other industries	12.3	4.4	7.9	2.5	3.7	6.1
Public services	9.5	5.0	4.6	1.9	2.9	4.8
Civil construction	8.2	2.3	5.9	1.6	2.5	4.1
Commerce	7.1	1.5	5.6	1.4	2.1	3.6
Transport	22.0	11.3	10.7	4.4	6.6	11.0
Communications	6.4	3.7	2.7	1.3	1.9	3.2
Financial sector	2.6	1.0	1.6	0.5	0.8	1.3
Services to families	7.7	1.7	6.1	1.5	2.3	3.9
Services to enterprises	5.2	1.4	3.8	1.0	1.6	2.6
Housing rent	0.9	0.4	0.5	0.2	0.3	0.4
Public administration	5.3	1.7	3.5	1.1	1.6	2.6
Private nonmarket services	1.0	0.2	0.8	0.2	0.3	0.5

Source: Thiago Pereira and Alexandre Carvalho (IPEA/DISET), as published in Boletim de Política Industrial, No.7 (April 1999)

1/ On the basis of the 1995 Input-Output matrix; assumes that profit margins remain unchanged.

devaluation on the cost or production ranges again from less than 1 percent in some industries to around 18 percent in the electronic equipment industry. In 16 out of 42 industries, these indirect effects exceeded 10 percent of total variable costs.

13. In 34 out of 42 industries, indirect effects exceeded the direct effects. This implies that most industries are relatively more affected by a devaluation indirectly, that is because they buy their inputs from other domestic suppliers who buy imported inputs, than directly, through the prices of their own direct imports. This in turn may mean that the effects of a devaluation may take some time before they show up in consumer prices. The extent to which this will happen would depend on the profit margin squeezes along the supply chain.

Profit margin developments

14. Margins may be squeezed (for different reasons) at different stages of the supply chain, as illustrated in Figure 1.3, which is adapted from Haldane.[7] In the stylized example, the size of the passthrough from a devaluation to retail prices would depend on what happens to the profit margins of foreign exporters, domestic input suppliers, domestic wholesalers, and domestic retailers. Of course, there are several key factors influencing the latter, including the business cycle and, more generally, the type of policies pursued by the government.

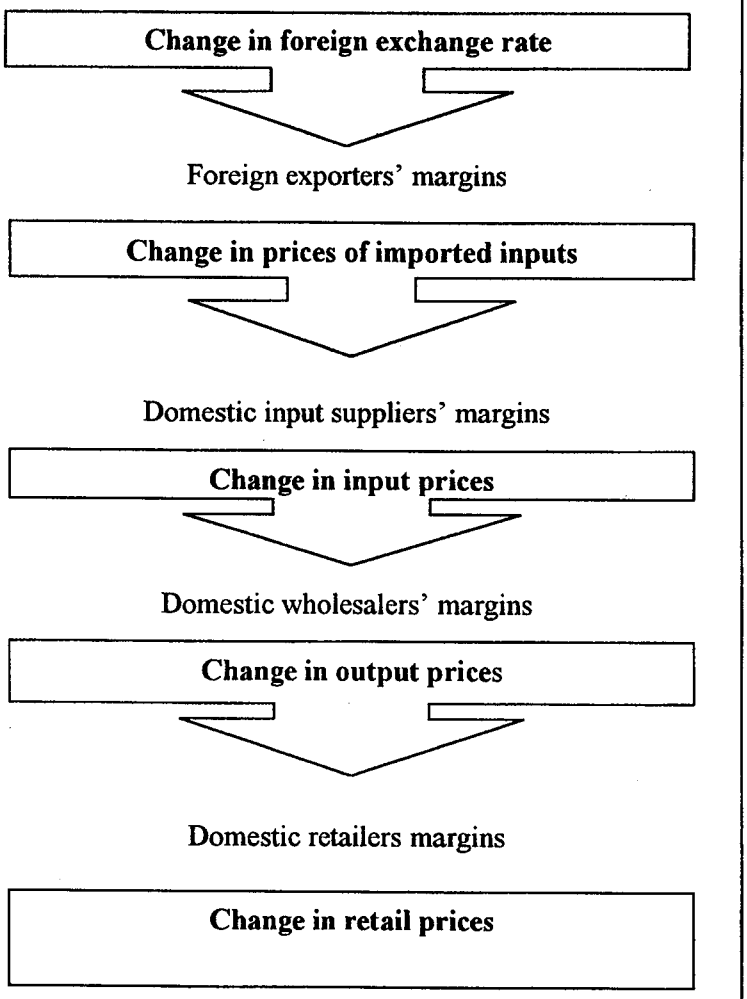
15. Apart from simply observing that wholesale price developments have outrun consumer price developments this year, there are two other indicators that seem to suggest that profit margins have indeed been cut over the past several months somewhere along the supply and production chain. First, a survey by the National Industry Federation (CNI) suggests that producers did not expect to pass through to prices a large part of the devaluation. Second, calculations by the Institute of Economic and Administrative Research (IPEA) suggests that, in the initial stages of devaluation, profit margins have indeed been squeezed in most industries.

16. In March this year, a survey carried out by CNI, showed that 71 percent of small enterprises and 78 percent of large enterprises believed that price increases due to the devaluation should only be passed on to consumers partially. Only 14 percent of small enterprises, and 10 percent of large enterprises suggested that the passthrough should be complete. Whereas 34 percent of small enterprises suggested that their profit margins should be squeezed in response to the depreciation, only 15 percent of large enterprises suggested this to be the correct response. At the same time, 75 percent of the large enterprises but only

[7] Andrew Haldane (1999), Presentation at the BCB/MAE seminar on inflation targeting, Rio de Janeiro, May 3–5.

52 percent of the small enterprises suggested that prices should be kept in check by seeking to reduce other costs or increase productivity.[8]

Figure 1.3. Passthrough from Exchange Rate Changes to Retail Prices



[8] Confederação Nacional da Indústria (1999), *Sondagem Industrial—Suplemento Especial* (Industry Survey—Special Supplement); January/March.

17. Although the CNI survey focused more on normative aspects—how should prices be formulated in light of the devaluation—it is supported by evidence in different sectors. Many industries were indeed reluctant to seek a high passthrough. Several importers, for example, suggested that they were seeking to have a reasonable split between reductions in profit margins and price increases.[9]

18. To some extent, at least, the reluctance of the entrepreneurs to seek a higher passthrough may have had to do with the generally sluggish domestic demand in light of a projected negative economic growth in 1999. It also may indicate that the exchange rate levels which prevailed in February and March 1999 were viewed as a temporary overshooting and would not justify dramatic price increases; if price increases were carried out anyway, they could potentially harm the company's market share and, thus, have adverse long-run repercussions. In light of these considerations, many entrepreneurs seem to have adopted a "wait and see" attitude, at least initially. With fears of a prolonged economic downturn receding, companies that were initially reluctant to increase prices may possibly now seek to do so.

19. Overall, wholesale prices have been growing more rapidly than consumer prices since the *Real* was left to float in January (Figure 1.4).[10] Recent estimates by IPEA[11] show that profit margins have behaved differently depending on industry, but that most industries saw their profit margins shrink in the initial stages of the devaluation (Table 1.2); in some cases, however, shrinking profit margins had little to do with the depreciation of the *Real* per se. In 19 out of 26 industries for which calculations were made, profit margins in February 1999 were lower than immediately before the devaluation in December 1998. Industries that *increased* profit margins (5 out of 26) mostly have a strong export orientation (e.g., mineral extraction). However, some industries with a strong export orientation experienced a drop in profit margins that probably reflects adverse international price developments (e.g., the coffee industry).[12] Also, in some industries where profit margins have fallen dramatically

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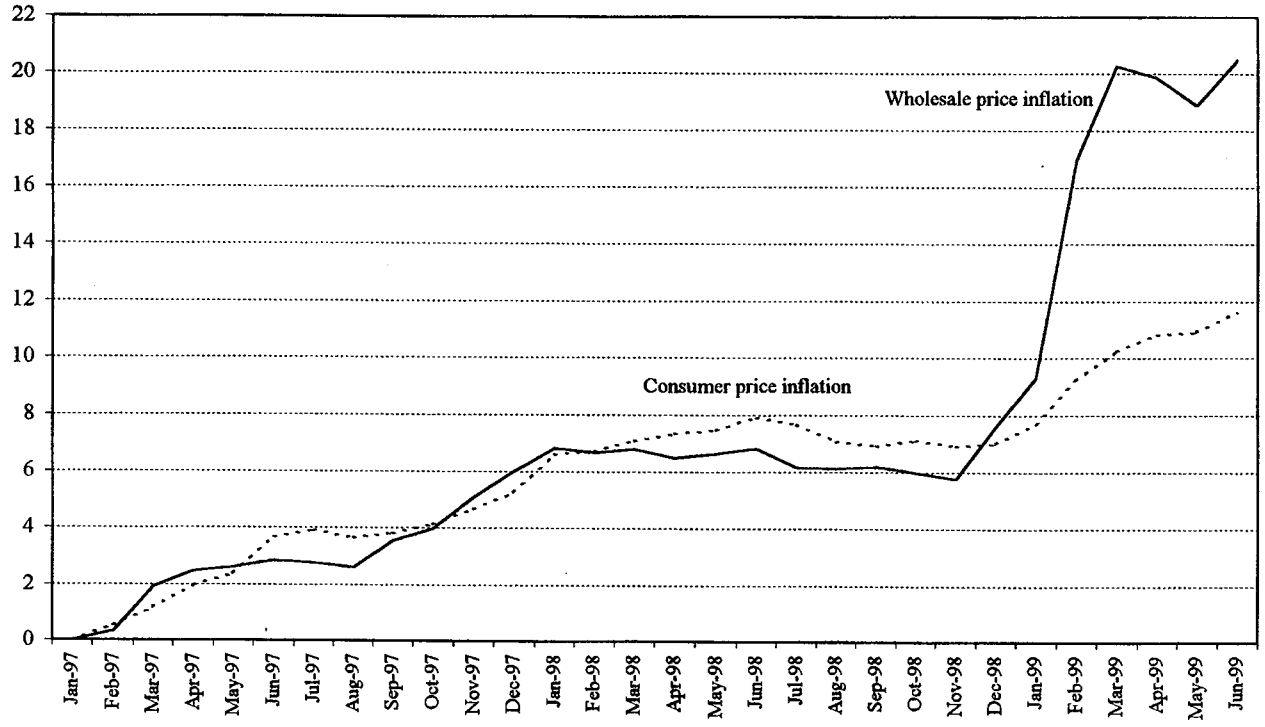
[9] See, for example, "Importados enfrentam 'filtro' da desvalorização" (Imports encounter "filter" from devaluation) in *Gazeta Mercantil* of May 21, 1999.

[10] A more detailed comparison could be carried out by isolating the price changes in tradable goods in both indices. This was not done here.

[11] See *Boletim de Política Industrial,* No.7, April 1999. The estimates of changes in profit margins are derived by comparing actual price increases in different sectors with the "full passthrough" estimates obtained on the basis of the 1995 I-O matrix.

[12] International prices for coffee per ton have continued to drop from around US$120 in December 1998 to about US$94 in July 1999.

Figure 1.4. Brazil: Monthly Wholesale and Consumer Price Inflation
(cumulative increase in prices from January 1995, in percent) 1/



Source: Getulio Vargas Foundation.

1/ Reflects FGV-IPA (wholesale prices) and FGV-IPC (consumer prices) indices, published by the Getulio Vargas Foundation (FGV).

Table 1.2. Brazil: Estimates of Profit Margins in Different Sectors (August 1994=1)

	Jan-98	Feb-98	Mar-98	Jun-98	Sep-98	Dec-98	Jan-99	Feb-99
Agriculture and fisheries	0.99	0.99	1.00	0.97	0.98	0.97	0.96	0.98
Mineral extraction	0.81	0.81	0.81	0.79	0.80	0.76	0.81	0.85
Nonmetallic minerals	0.89	0.91	0.92	0.93	0.94	0.88	0.88	0.85
Iron and steel	0.96	0.96	0.96	0.96	0.95	0.93	0.91	0.89
Metallurgy (noniron)	0.96	0.95	0.95	0.94	0.93	0.90	0.88	0.89
Other metallurgy	0.87	0.86	0.87	0.86	0.86	0.81	0.82	0.83
Machines and tractors	0.79	0.79	0.80	0.80	0.81	0.77	0.75	0.72
Electric materials	0.79	0.78	0.79	0.79	0.79	0.75	0.75	0.75
Electronic equipment	0.69	0.68	0.69	0.68	0.67	0.63	0.58	0.57
Cars, trucks, and busses	0.83	0.83	0.83	0.81	0.80	0.78	0.78	0.76
Other vehicles and vehicle parts	0.88	0.88	0.89	0.89	0.89	0.86	0.85	0.82
Wood and furniture	0.85	0.85	0.85	0.85	0.85	0.81	0.82	0.79
Paper and graphics (printing)	0.86	0.86	0.85	0.88	0.87	0.83	0.81	0.85
Rubber	0.90	0.90	0.90	0.91	0.92	0.89	0.88	0.85
Oil refinery	1.01	1.02	1.03	1.03	1.01	1.03	0.96	0.91
Pharmaceuticals and perfumes	0.89	0.90	0.92	0.91	0.91	0.88	0.84	0.84
Plastics	0.86	0.86	0.87	0.85	0.84	0.80	0.81	0.83
Textiles	0.92	0.91	0.92	0.92	0.92	0.90	0.88	0.88
Clothing	0.83	0.82	0.83	0.82	0.82	0.79	0.78	0.76
Footwear	0.79	0.79	0.78	0.79	0.77	0.74	0.73	0.68
Coffee	0.89	0.90	0.94	0.99	0.98	0.94	0.93	0.88
Animal slaughter	0.95	0.95	0.96	0.96	0.97	0.95	0.95	0.95
Milk products	1.02	1.02	1.01	1.04	1.02	0.99	0.98	0.96
Sugar	0.84	0.85	0.85	0.84	0.80	0.75	0.74	0.70
Vegetable oils	1.22	1.18	1.13	1.08	1.04	1.05	1.06	1.02
Food products	0.97	0.98	0.97	1.05	1.06	1.04	1.01	0.98

Source: IPEA, *Boletim de Política Industrial*, No. 7, April 1999, based on an elaboration by IPEA/DISET.

(e.g., oil refinery), much of the drop probably reflects the fact that energy prices were, initially, not fully adjusted to the exchange rate developments.

Exceptional and favorable factors

20. The discussion above indicates that exceptional and favorable factors in certain sectors may have contributed to price inflation being below expectations since the *Real* was floated. In general, it is not clear how much of the stronger increase in wholesale prices will eventually find its way to consumer prices. In other words: it remains to be seen how much of the squeeze in profit margins that has occurred is temporary or permanent. This uncertainty also stems from the fact that some exceptional price developments in different subsectors of the Brazilian economy have helped to prevent upward pressure on prices, but which may not necessarily be permanent features, particularly if domestic demand strengthens.

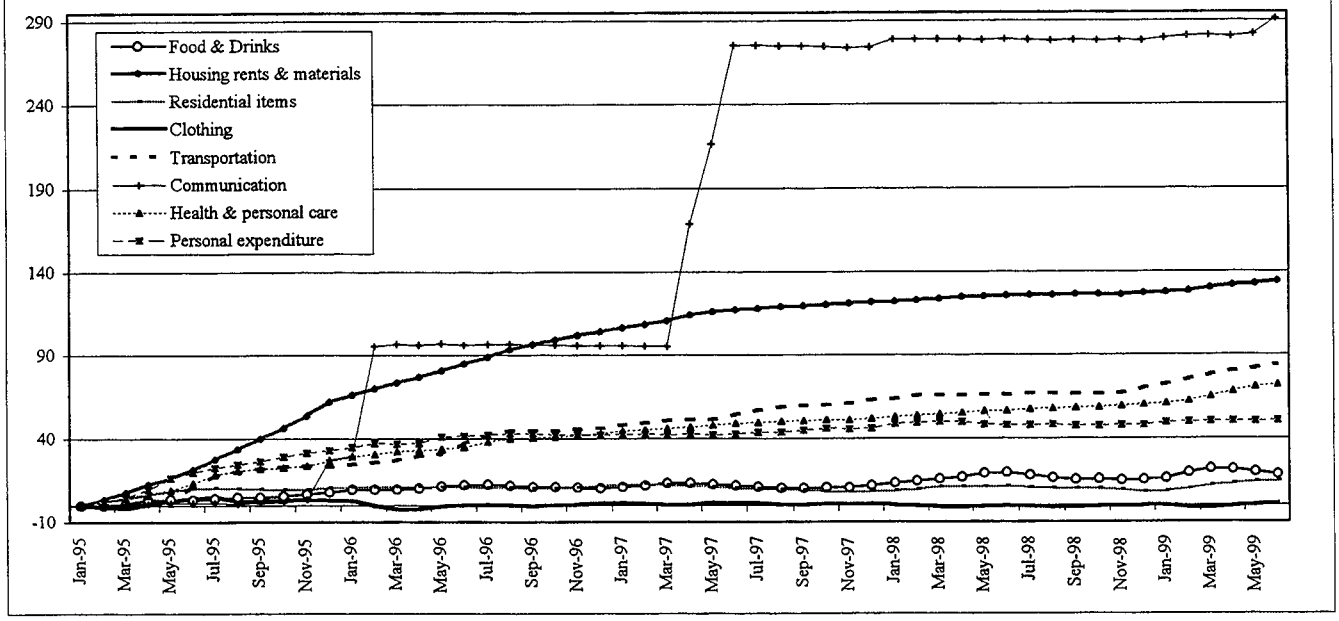
21. A look at the components of the consumer price index (INPC) reveals that, cumulatively from January 1995, price developments for different components of consumer prices have been significantly different. For example, while communication tariffs and housing rents and prices for housing materials experienced cumulative increases of over 100 percent, clothing prices experienced almost no inflation (Figure 1.5). Since January 1997, prices for clothing, and food and drinks—both basic consumer goods—experienced a cumulative inflation of -1 percent and 7 percent, respectively, while the rest of the index grew by over 14 percent (Figure 1.6). The virtually flat clothing prices may reflect a long-run trend toward permanently lower profit margins in that sector, although clothing prices cannot keep flat forever. At the same time, prices in sectors that have experienced above average price increases over the last few years (e.g., communication, housing) may not continue to rise as fast in the future. In contrast, the drop in food prices is probably an exceptional event related to the bumper harvest this year, and therefore of temporary nature. Also, energy price developments can be considered an exceptional factor, as consumer prices and tariffs were adjusted in several partial steps following the floating of the *Real*, and the passthrough in this sector was not complete until mid-year. Higher energy prices and tariffs are expected to put upward pressure on consumer prices during the next few months.

Economic policies and the transmission of inflation

22. The low passthrough has led to speculation that it may simply reflect a temporary delay in price adjustments that will sooner or later show up in consumer prices. Independently, questions have been raised how the government may gear its policies toward containing inflationary pressures in the future.

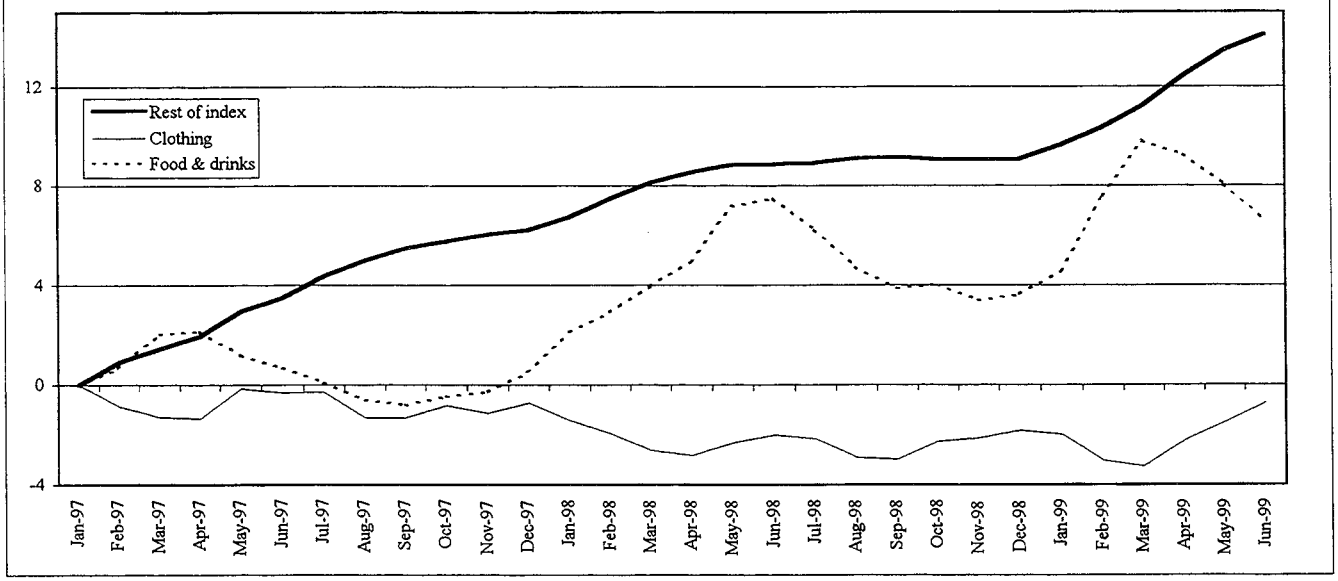
23. This section, which presents some very preliminary results from work that is still in progress, offers two main conclusions. First, while there may have been some delays in adjusting prices fully to the exchange rate developments that have taken place, in Brazil, the passthrough from devaluation to inflation can be expected to take place over a period of no more than six–nine months, which is a lot faster than in most industrialized economies. Also,

Figure 1.5. Brazil: Components of Consumer Price Inflation, 1995-99
(cumulative increase in consumer prices (INPC) from January 1995, in percent)



Source: IBGE.

Figure 1.6. Brazil: Components of Consumer Price Inflation, 1997-99
(cumulative increase from January 1997, INPC index)



Source: IBGE.

given a history of swift adjustments of prices during the country's long history of high and variable inflations that ended with the *Real* Plan in 1994, and notwithstanding the fact that formal indexation mechanisms no longer exist, it seems unlikely that there has been a significant delay in adjusting prices. The exception here were some administered prices, as discussed above. Second, key variables in determining inflation are broad monetary aggregates (M2) and wages. Containing the growth of these two variables can be expected to have considerable benefits for containing inflationary pressures.

24. To analyze the speed and determinants of price adjustments, an unrestricted vector autoregression (VAR) model was used, that includes consumer price inflation (as measured by the IPCA that was just selected as the main index for the government's inflation targeting framework), money, wages, the exchange rate, the government's primary deficit, and the unemployment rate, which is included as an indicator of slack in the economy.[13] Three different monetary aggregates (base money, M1, and M2) were examined to see which provides the best explanation for the inflation transmission mechanism.

25. VAR modeling does not require any a priori assumptions concerning the exogeneity of variables, and provides a convenient way to summarize the empirical channels in which different variables affect each other. The estimated VAR can be used to evaluate the strength of the estimated empirical relationships based on variance decomposition and impulse response functions. Variance decompositions show the portion of the forecast error variance for each variable that is attributable to its own innovations and to shocks with respect to other system variables. Impulse response functions show the estimated response of each variable to a one standard deviation impulse in one of the innovations. These dynamic multipliers show how new information in one of the variables causes changes in the forecast of another variable.

26. Before implementing the VAR, the various time series that are to be included are analized to determine their stationarity through standard augmented Dickey-Fuller (ADF)

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[13]A detailed specification of these variables is provided in the appendix. The analytical approach presented here has benefited (and borrowed) significantly from other research carried out in the Fund, including, in particular, Kevin Ross (1998), "Post Stabilization Inflation Dynamics in Slovenia," *IMF Working Paper WP/98/27* (March); Benedict Clements (1998), "Fiscal Policy and Other Determinants of Inflation in Bolivia" (draft); and Ramana Ramaswamy and Torsten Sløk (1998), "The Real Effects of Monetary Policy in the European Union: What are the Differences?" *IMF Staff Papers*, Vol. 45, No.2 (June), pp. 374–396. However, errors in this chapter should not be attributed to these sources.

and Phillips-Perron (PP) unit root tests.[14] A set of Granger causality tests is presented to explore likely causalities among the variables included in the VAR.

27. The results of the unit root tests are presented in Table 1.3 for both levels and first order differences of the different variables.[15] The tests were carried out for the overall period for which data were collected,[16] and for the period from the beginning of the *Real* Plan (July 1994). For the period since July 1994, the null hypothesis of a unit root cannot be rejected at the 5 percent level of significance under either the ADF or the PP only for the exchange rate and the unemployment rate. For the exchange rate, however, the null hypothesis was rejected for the overall period for which data were collected (from January 1994), whereas for the unemployment rate the unit root (i.e., nonstationarity) vanished when using first order differences. At the 1 percent level, the unit root tests for the other series seem to suggest stationarity in levels under at least one of the two tests. In general, the unit root tests on first order differences yielded better results, the exception being wages and the price index when the test was carried out for the overall period for which data were collected (January 1993 and January 1991, respectively).

28. The correlation matrices in Table 1.4 show strong contemporaneous correlation between the levels of most of the variables. Surprisingly, for the period from July 1994, unemployment levels were positively correlated with the other variables. For the first-order differences, correlations are less strong, and unemployment now shows the expected negative correlation with the other variables. For the levels, wages seem to have the strongest correlation with the other variables included. For the first-order differences, the contemporaneous correlation between prices and M2 remains quite strong. In general, the first-order differences show a much stronger correlation for the period from January 1994 than for the period from July 1994. For example, for the period from January 1994, changes in wages and changes in prices have a correlation coefficient of 0.86, whereas for the period from July 1994, the correlation coefficient between these two variables is only 0.03. This may point to the significant deindexation of the economy that has taken place under the *Real* Plan.

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[14] The ADF test augments the Dickey-Fuller (DF) test by including higher order lag terms (in addition to AR(1) processes) so as to capture autocorrelation in the error terms. The PP test applies a nonparametric correction in estimating the variance of the error term.

[15] The various tests and results for M1 are excluded from the presentation here as they yielded results similar to those for base money.

[16] The availability of data differs depending on the variable in question; see the appendix of this chapter for an overview of the data. For all variables, data were available from at least January 1994; for some variables, data were available from 1991 onward.

Table 1.3. Brazil: Unit Root Tests 1/

	Levels		First Order Differences	
	Augmented Dickey-Fuller (ADF)	Phillips- Perron (PP)	Augmented Dickey-Fuller (ADF)	Phillips- Perron (PP)
Price index (IPCA)				
Since July 1994	-3.2 **	-6.0 ***	-6.7 ***	-7.6 ***
Total avail. series	-2.2	-3.9 ***	-1.5	-1.7
Base money				
Since July 1994	-2.7 *	-3.5 ***	-6.4 ***	-8.4 ***
Total avail. series	-4.2 ***	-7.4 ***	-2.8 *	-3.9 ***
M2				
Since July 1994	-3.1 **	-5.4 ***	-18.4 ***	-16.6 ***
Total avail. series	-4.8 ***	-10.9 ***	-3.6 ***	-3.0 **
Exchange rate				
Since July 1994	0.5	0.4	-11.0 ***	-8.2 ***
Total avail. series	-3.8 ***	-6.3 ***	-4.6 ***	-3.5 **
Wages				
Since July 1994	-4.6 ***	-4.9 ***	-15.3 ***	-15.4 ***
Total avail. series	-3.4 **	-6.7 ***	-1.8	-1.9
Unemployment				
Since July 1994	-1.1	-0.7	-4.5 ***	-4.2 ***
Total avail. series	-2.0	-2.4	-6.9 ***	-5.5 ***
Primary deficit				
Since July 1994	-4.2 ***	-7.1 ***	-8.0 ***	-19.1 ***
Total avail. series	-5.3 ***	-9.1 ***	-10.2 ***	-27.8 ***

Source: Fund staff estimates.

1/ All variables are expressed in log-form, except for the primary deficit. All ADF and PP regressions contain an intercept and 2 lags of the dependent variable. The sample period for the total series depends on data avaibility, as indicated in the appendix. The null hypothesis is that there is a unit root; *, **,*** indicate rejection of the null hypothesis at significance levels of 10, 5, and 1 percent, respectively.

Table 1.4. Brazil: Correlation Matrices 1/

	Price level	Base money	M1	M2	Exchange rate	Salaries	Unem-ployment	Primary balance
From July 1994								
Levels								
Price index (IPCA)	1.000							
Base money	0.879	1.000						
M1	0.926	0.979	1.000					
M2	0.963	0.947	0.948	1.000				
Exchange rate	0.737	0.781	0.771	0.787	1.000			
Wages	0.992	0.902	0.943	0.967	0.711	1.000		
Unemployment	0.757	0.786	0.799	0.799	0.813	0.749	1.000	
Primary deficit	0.402	0.308	0.340	0.368	0.201	0.398	0.147	1.000
First order difference								
Price index (IPCA)	1.000							
Base money	0.276	1.000						
M1	0.168	0.901	1.000					
M2	0.705	0.524	0.414	1.000				
Exchange rate	0.267	-0.064	-0.079	0.111	1.000			
Wages	0.025	0.253	0.235	0.179	-0.323	1.000		
Unemployment	-0.234	-0.422	-0.360	-0.373	0.097	-0.261	1.000	
Primary deficit	0.034	-0.034	0.103	0.038	-0.052	0.090	-0.025	1.000
From January 1994								
Levels								
Price index (IPCA)	1.000							
Base money	0.964	1.000						
M1	0.956	0.992	1.000					
M2	0.989	0.986	0.980	1.000				
Exchange rate	0.954	0.938	0.933	0.959	1.000			
Wages	0.989	0.971	0.974	0.993	0.955	1.000		
Unemployment	0.319	0.452	0.502	0.414	0.446	0.404	1.000	
Primary deficit	0.113	0.150	0.181	0.146	0.079	0.154	0.143	1.000
First order difference								
Price index (IPCA)	1.000							
Base money	0.748	1.000						
M1	0.764	0.931	1.000					
M2	0.933	0.831	0.852	1.000				
Exchange rate	0.848	0.664	0.710	0.871	1.000			
Wages	0.858	0.768	0.816	0.935	0.832	1.000		
Unemployment	0.018	-0.177	-0.106	0.020	0.165	0.086	1.000	
Primary deficit	-0.017	-0.061	0.027	-0.028	-0.056	-0.015	-0.024	1.000

Source: Fund staff estimates.

1/ All series are log-transformed, except for the primary balance.

The results of the ***Granger causality tests on the levels of the variables*** in question are reported in Table 1.5.[17] The results are somewhat inconclusive as they suggest strong Granger causalities between M2, wages, and prices running in both directions.[18] Still, some interesting tentative conclusions for the relationship between prices and the other variables can be drawn from these results. First, the *F-statistics* for Granger causality running from ***M2*** to prices are significantly higher than for the reverse hypothesis, for all lags, although the test results do not allow to reject the possibility that price levels may Granger-cause M2. Second, the hypothesis that ***wages*** do not Granger-cause prices can be rejected at the 1 percent level of significance at all lags, whereas the hypothesis that prices do not Granger cause wages can only be rejected at the 1 percent level of significance for lags 1, 5, and 6.[19] Third, Granger causality clearly seems to run from the ***exchange rate*** to prices, and not in the other direction. Fourth, there is little evidence of any Granger causality between prices (or any of the other variables) and ***unemployment*** or the ***primary deficit*** in any direction.[20] The Granger causality tests also yield some other interesting results. For example, there seems to be strong evidence that Granger causality runs from wages to M2, but not the other way around.

29. Given the strong contemporaneous correlation between the levels of different variables, we also carried out ***Granger causality tests on first-order differences of the variables*** in question, which are reported in Table 1.6. The results are slightly more conclusive, although there continues to be strong bi-directional causality between some of the variables. The main results can be summarized as follows. First, there is clear evidence of Granger causality running from ***changes in M2*** to price changes, except for the two- and three-month lags, where causality seems to run in both directions. Similarly to the previous

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[17] Causalities for which no strong economic rationale could be established are excluded from the presentation; overwhelmingly these were also not significant, and none was significant at the 1 percent level.

[18] For base money, there appears to be strong evidence of Granger causality running from money to prices, but not the other way around.

[19] Note, also, the much higher values for the *F-statistics* for Granger causalities running from wages to prices.

[20] The positive contemporaneous relation between unemployment rates and prices that was shown in the correlation matrices seems counter-intuitive and is probably spurious. In general, these results should not be taken to suggest that fiscal or economic slack variables are unimportant for the inflationary process. They are certainly important, and the inclusion of different variables that were not explored in this study may have yielded different results.

Table 1.5. Brazil: Granger Causality Tests on Levels, 1994-99 1/

	Lag length in number of months					
	1	2	3	4	5	6
Impact of money						
Base money ==> price level (IPCA)	0.3	6.6 ***	12.3 ***	9.8 ***	9.0 ***	7.2 ***
Base money ==> wage levels	3.1 *	8.5 ***	4.9 ***	2.8 **	1.9	1.1
Base money ==> exchange rate	2.6	3.1 *	0.3	2.9 **	2.0	0.9
Base money ==> primary deficit	1.8	1.0	1.4	2.6 **	3.7 ***	3.5 ***
M2==> price level (IPCA)	4.4 **	63.5 ***	64.3 ***	52.3 ***	38.6 ***	27.1 ***
M2 ==> wage levels	6.6 **	1.7	1.5	0.7	0.4	1.8
M2 ==> exchange rate	4.8 **	2.4 *	0.1	1.8	1.6	1.8
M2 ==> primary deficit	1.7	1.0	3.0 **	3.1 **	3.1 **	2.3 *
Impact of price levels						
Price level (IPCA) ==> base money	0.5	4.1 **	1.9	1.2	1.1	3.6 ***
Price level (IPCA) ==> M2	8.8 ***	3.4 **	5.0 ***	7.3 ***	3.9 ***	1.3
Price level (IPCA) ==> wage levels	12.7 ***	0.1	2.3 *	1.9	3.8 ***	3.4 ***
Price level (IPCA) ==> exchange rate	20.5 ***	1.8	1.7	2.1 *	1.2	2.5 **
Price level (IPCA) ==> primary deficit	0.7	1.0	1.1	2.5 *	2.1 *	1.9
Impact of exchange rates						
Exchange rate ==> base money	8.1 ***	2.3	0.9	0.9	1.6	0.7
Exchange rate ==> M2	4.7 **	2.6 *	1.8	3.8 ***	2.2 *	1.3
Exchange rate ==> price level (IPCA)	18.0 ***	14.4 ***	10.3 ***	16.0 ***	17.3 ***	16.1 ***
Exchange rate ==> wage levels	0.5	2.4	3.7 **	3.8 ***	7.3 ***	2.6 **
Impact of wages						
Wage levels ==> base money	5.7 **	3.6 **	4.0 **	4.5 ***	3.5 ***	2.0 *
Wage levels ==> M2	13.7 ***	5.2 ***	4.4 ***	4.1 ***	1.5	1.1
Wage levels ==> price level (IPCA)	40.8 ***	86.9 ***	57.8 ***	71.5 ***	56.1 ***	58.8 ***
Wage levels ==> exchange rate	1.5	5.7 ***	0.8	0.9	1.7	1.4
Wage levels ==> unemployment	0.7	2.8 *	1.7	1.3	1.2	4.1 ***
Wage levels ==> primary deficit	1.2	0.5	0.8	0.7	2.8 **	2.6 **
Impact of primary deficit						
Primary deficit ==> base money	1.0	1.6	1.2	1.7	1.5	1.6
Primary deficit ==> M2	1.6	1.2	0.8	1.8	0.6	0.7
Primary deficit ==> price level (IPCA)	0.0	0.4	0.3	0.3	0.3	0.2
Primary deficit ==> wage levels	0.6	0.3	0.3	0.6	0.6	0.7
Primary deficit ==> exchange rate	1.3	1.2	0.7	1.0	0.6	0.4
Primary deficit ==> unemployment	0.0	3.9 **	4.2 ***	3.4 **	2.6 **	2.2 **
Impact of unemployment						
Unemployment ==> price level (IPCA)	5.3 ***	2.7 *	1.9	1.6	1.3	1.2
Unemployment ==> wage levels	8.6 ***	5.7 ***	3.3 **	2.3 *	1.9	1.7
Unemployment ==> exchange rate	14.9 ***	3.3 **	4.6 ***	2.0	1.7	0.6
Unemployment ==> primary deficit	1.5	0.7	0.7	0.5	0.3	0.2

Source: Fund staff estimates.

1/ Results of Standard F-tests for the null hypothesis that there is no Granger causality, where "==>" indicates the direction of causality. (*), (**), (***) indicate rejection of the null hypothesis at significance levels of 10, 5, and 1 percent, respectively. For example, in the above results, the null hypothesis that the exchange rate does not "Granger cause" the price level is rejected at the 1 percent level of significance at all lags that were tested (1-6 months). At the same time, the null hypothesis that the price level does not "Granger cause" the exchange rate can not be rejected at the one percent level of significance at any lag, except for the one-month lag. All variables are log-transformed from the original data, with the exception of the primary deficit.

Table 1.6. Brazil: Granger Causality Tests on First-Order Differences, 1994-99 1/

	Lag length in number of months					
	1	2	3	4	5	6
Impact of changes in base money						
D base money ==> D price level (IPCA)	9.1 ***	14.2 ***	9.3 ***	6.7 ***	7.2 ***	1.5
D base money ==> D wage levels	8.4 ***	7.4 ***	5.1 ***	3.6 **	1.6	1.2
D base money ==> D exchange rate	0.0	0.5	0.3	0.3	0.4	0.5
D base money ==> D primary deficit	0.2	0.7	1.5	1.6	1.1	2.0 *
D M2==> D price level (IPCA)	120.8 ***	107.7 ***	67.5 ***	62.4 ***	35.2 ***	2.5 **
D M2 ==> D wage levels	0.1	1.0	1.6	1.3	2.4 *	2.0 *
D M2 ==> D exchange rate	0.9	3.3 **	0.5	1.7	1.9	1.7
D M2 ==> D primary deficit	0.3	1.5	1.7	1.6	1.6	1.8
Impact of changes in price levels						
D price level (IPCA) ==> D base money	35.9 ***	10.3 ***	5.1 ***	3.5 **	3.5 ***	3.2 ***
D price level (IPCA) ==> D M2	0.8	6.0 ***	4.9 ***	3.4 **	1.8	1.3
D price level (IPCA) ==> D wage levels	2.7	3.9 **	2.5 *	4.4 ***	2.9 **	2.9 **
D price level (IPCA) ==> D exchange rate	0.0	5.0 **	2.2	1.3	1.0	1.6
D price level (IPCA) ==> D primary deficit	0.7	0.4	1.1	1.4	1.2	1.3
Impact of changes in exchange rates						
D exchange rate ==> D base money	11.8 ***	3.9 **	2.5 *	2.1 *	1.1	2.3 *
D exchange rate ==> D M2	3.1 *	1.1	1.1	1.3	0.9	1.0
D exchange rate ==> D price level (IPCA)	30.7 ***	18.7 ***	17.3 ***	14.2 ***	11.1 ***	3.0 **
D exchange rate ==> D wage levels	0.9	0.2	0.1	4.2 ***	1.6	1.8
Impact of changes in wages						
D wage levels ==> D base money	28.4 ***	13.6 ***	8.6 ***	6.7 ***	1.8	4.3 ***
D wage levels ==> D M2	19.2 ***	13.9 ***	11.2 ***	3.3 **	1.3	0.9
D wage levels ==> D price level (IPCA)	179.0 ***	87.8 ***	92.6 ***	68.4 ***	74.2 ***	59.7 ***
D wage levels ==> D exchange rate	7.9 ***	8.3 ***	2.4 *	2.9 **	1.4	1.6
D wage levels ==> D unemployment	0.8	1.0	1.7	1.2	4.3 ***	2.7 **
D wage levels ==> D primary deficit	0.1	0.6	0.5	2.1 *	1.8	1.8
Impact of changes in primary deficit						
D primary deficit ==> D base money	2.7	1.7	1.7	1.3	1.8	1.7
D primary deficit ==> D M2	0.1	0.1	0.3	0.4	0.8	0.7
D primary deficit ==> D price level (IPCA)	0.1	0.1	0.0	0.0	0.1	0.1
D primary deficit ==> D wage levels	0.0	0.0	0.1	0.1	0.2	0.4
D primary deficit ==> D exchange rate	0.4	0.2	0.2	0.6	0.5	0.5
D primary deficit ==> D unemployment	2.8 *	1.6	1.2	0.8	0.7	1.0
Impact of changes in unemployment						
D unemployment ==> D price level (IPCA)	4.1 **	1.6	1.4	1.0	1.8	1.5
D unemployment ==> D wage levels	5.8 **	4.0 **	3.3 **	2.7 **	1.8	1.9
D unemployment ==> D exchange rate	0.1	0.0	0.2	0.3	0.5	0.5
D unemployment ==> D primary deficit	0.0	1.2	1.1	0.7	0.5	0.6

Source: Fund staff estimates.

1/ Results of Standard F-tests for the null hypothesis that there is no Granger causality, where "==>" indicates the direction of causality. (*), (**), (***) indicate rejection of the null hypothesis at significance levels of 10, 5, and 1 percent, respectively. For example, in the above results, the null hypothesis that wage increases do not "Granger cause" price increases is rejected at the 1 percent level of significance at all lags. The reverse hypothesis (Ho: price increases do not "Granger cause" wage increases) can not be rejected at the 1 percent level of significance at any lag, except for the four-month lag. All variables are log-transformed from the original data, with the exception of the primary deficit. "D" denotes first-order differences of the different variables.

exercise on the levels of these variables, the *F-statistics* for causality running from M2 changes to price changes is much higher than for the reverse causality.[21] Second, there is strong evidence that ***wage changes*** Granger-cause price changes, except for the four-month lag, where causality seems to run in both directions. Third, Granger causality clearly runs from ***exchange rate changes*** to price changes, but not in the other direction. Fourth, there is little evidence of any Granger causality between ***changes in unemployment*** or ***changes in the primary deficit*** and the other variables included, with the exception of some Granger causality running from changes in unemployment to changes in wages for lags 1–4 and from changes in wages to changes in unemployment for lags 5–6. The results also provide strong evidence of Granger causality running from changes in wages to changes in M2.

30. Next, the VAR was estimated using the causal ordering money, prices, wages, and the exchange rate.[22] The rationale for this particular ordering is that this seems consistent both with intuition and the general results from the Granger causality tests, where monetary aggregate affect price levels, which in turn feed through to wages and the exchange rate; the same holds for changes in these variables.[23]

31. The results from the ***variance decomposition exercises*** of the VAR estimates are presented in Tables 1.7 (levels) and 1.8 (first order differences). The variance decomposition exercise decomposes variation in an endogenous variable into the component shocks to the other endogenous variables in the VAR. The variance decomposition gives information about the relative importance of each random innovation to the variables in the VAR.

32. There are four results from the variance decomposition exercises that are of particular interest for this study. First, money and wages explain much of the innovation in prices, except for the shortest (one month) horizon. Second, M2 seems to be a far better variable to explain variations in prices and wages than base money. Third, the contribution of the exchange rate in explaining the variations in any of the other variables is fairly small at any of the forecasting horizon that were explored (one–nine months). While, to some extent, this may reflect the fact that most of the data in the sample come from the period when the *Real* was closely managed under the pegged exchange rate regime that prevailed until January this year, the results did not change qualitatively when the variance decomposition exercise was

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[21] In contrast, for base money, Granger causality between money and prices are now less clear than under the tests on levels.

[22] Given the lack of causality between unemployment and the primary deficit and all other variables, these two variables were excluded from the different VARs. Including these two variables did not change the qualitative results.

[23] Various other orderings were tried out for comparison. In general, separating prices and monetary aggregates in the variable ordering tended to weaken somewhat the statistical relationship.

Table 1.7. Brazil: Variance Decomposition on Levels of Variables, 1994-99 1/
(in percent of total variance)

Variance of Variable	Variance period (months)	Explained by				Explained by			
		M2	Prices	Wages	FX Rate	Base Money	Prices	Wages	FX Rate
M2 /	1	100	0	0	0	100	0	0	0
Base	2	95	1	4	0	95	0	3	2
Money	3	84	2	14	1	88	1	9	2
	6	55	8	37	1	68	12	17	3
	9	45	17	37	1	62	19	14	4
Prices	1	1	99	0	0	9	91	0	0
	2	55	30	10	4	12	39	41	8
	3	53	17	24	6	6	19	66	9
	6	30	8	58	4	3	15	76	6
	9	24	7	61	8	3	17	68	12
Wages	1	48	1	51	0	18	0	82	0
	2	35	1	65	0	8	2	90	0
	3	26	1	74	0	5	6	89	0
	6	16	3	78	2	3	16	78	3
	9	15	8	73	3	5	19	70	5
FX rate	1	16	0	0	83	11	0	3	85
	2	18	1	1	80	15	2	6	77
	3	17	3	2	78	16	4	9	71
	6	14	9	11	66	18	12	14	56
	9	13	14	12	61	18	15	14	53

Source: Fund staff estimates.

1/ Variable ordering is as shown; all variables are log-transformed from the original data.

Table 1.8. Brazil: Variance Decomposition on First-Order Differences, 1994-99 1/
(in percent of total variance)

Variance of Variable	Variance period (months)	Explained by				Explained by			
		M2	Prices	Wages	FX Rate	Base Money	Prices	Wages	FX Rate
M2 /	1	100	0	0	0	100	0	0	0
Base	2	89	1	9	1	88	0	11	1
Money	3	66	8	24	1	79	4	15	2
	6	52	20	26	1	63	4	31	3
	9	51	21	27	2	60	4	34	3
Prices	1	0	100	0	0	3	97	0	0
	2	75	12	10	3	13	21	60	6
	3	63	13	19	5	8	12	74	6
	6	45	25	27	3	6	12	78	4
	9	44	25	27	3	6	11	78	4
Wages	1	66	2	32	0	9	3	88	0
	2	55	11	33	0	8	3	88	0
	3	48	17	34	0	7	5	87	0
	6	44	22	33	1	6	5	88	1
	9	43	22	33	1	6	5	88	1
FX rate	1	21	1	3	75	4	0	19	77
	2	22	2	10	66	2	0	34	64
	3	21	6	19	53	3	1	45	51
	6	19	14	20	47	3	3	48	45
	9	19	14	20	48	3	3	48	45

Source: Fund staff estimates.

1/ Variable ordering is as shown; all variables are first- order differences of log-transformed original data.

carried out for different periods (e.g., restricting the data only to the period of the crawling peg exchange rate regime or using the entire period that also includes data from before and after the crawling peg).[24] Fourth, the results are fairly robust across specifications (levels versus first order differences); for the first order differences, money (M2) is the dominant variable in explaining innovations in prices over any forecasting horizon (except for the one-month horizon).

33. The results from the ***impulse response functions*** of the VAR estimates are presented in Figures 1.7–1.10. The impulse response functions employ the same causal ordering as the variance decomposition exercise. An impulse response function traces the effect of a one standard deviation shock to one of the innovations on current and future values of the endogenous variables. A shock to the i-th variable directly affects the i-th variable, and is also transmitted to all of the endogenous variables through the dynamic structure of the VAR. While variance decomposition decomposes variation in an endogenous variable into the component shocks to the endogenous variables in the VAR, impulse response functions trace the effects of a shock to an endogenous variable on the variables in the VAR.

34. There are five main results from the impulse response functions that are of particular interest for this study. First, most of the innovations in different variables work themselves through the system fairly rapidly: after nine months, the effects on other variables of innovations in any given variable are insignificantly different from zero for most pairs of variables considered. Second, the results are qualitatively fairly similar, regardless of whether the VAR was speficied in levels or first-order differences. Third, innovations to M2 have a much stronger impact on prices than innovations in base money. Prices respond the innovations in M2 with a two-three-month lag; for innovations to changes in M2, the impact on changes in the price level is strongest after two months, and the effect drops off thereafter over a nine-month time horizon. Fourth, innovations to wages have a significant impact on prices, although with a slightly longer lag than money. Finally, the effects on prices of innovations to the exchange rate are fairly small. While, to some extent, this can be attributed to the fact that much of the data comes from a period when the *Real* was closely managed under the pegged exchange rate regime, the impulse responses for the exchange rate did not change qualitatively when estimating the model for different time periods.

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[24] Initially, on July 1, 1994, the *Real* was introduced with a floating exchange rate with respect to the U.S. dollar. The float of the *Real* was continued for the first three months after its introduction. Between October 1994 and February 1995, the *Real* remained in a narrow band around R$0.85 per U.S. dollar. In March, 1995, the authorities announced that the exchange rate would be left to fluctuate within a band of R$0.88 to R$0.93 to the U.S. dollar for an unspecified period. Periodic adjustments to the band (and the bandwidth) in which the *Real* was managed were carried out thereafter, until the *Real* was left to float on January 15, 1999. Also see SM/95/299 for some background on the *Real* plan.

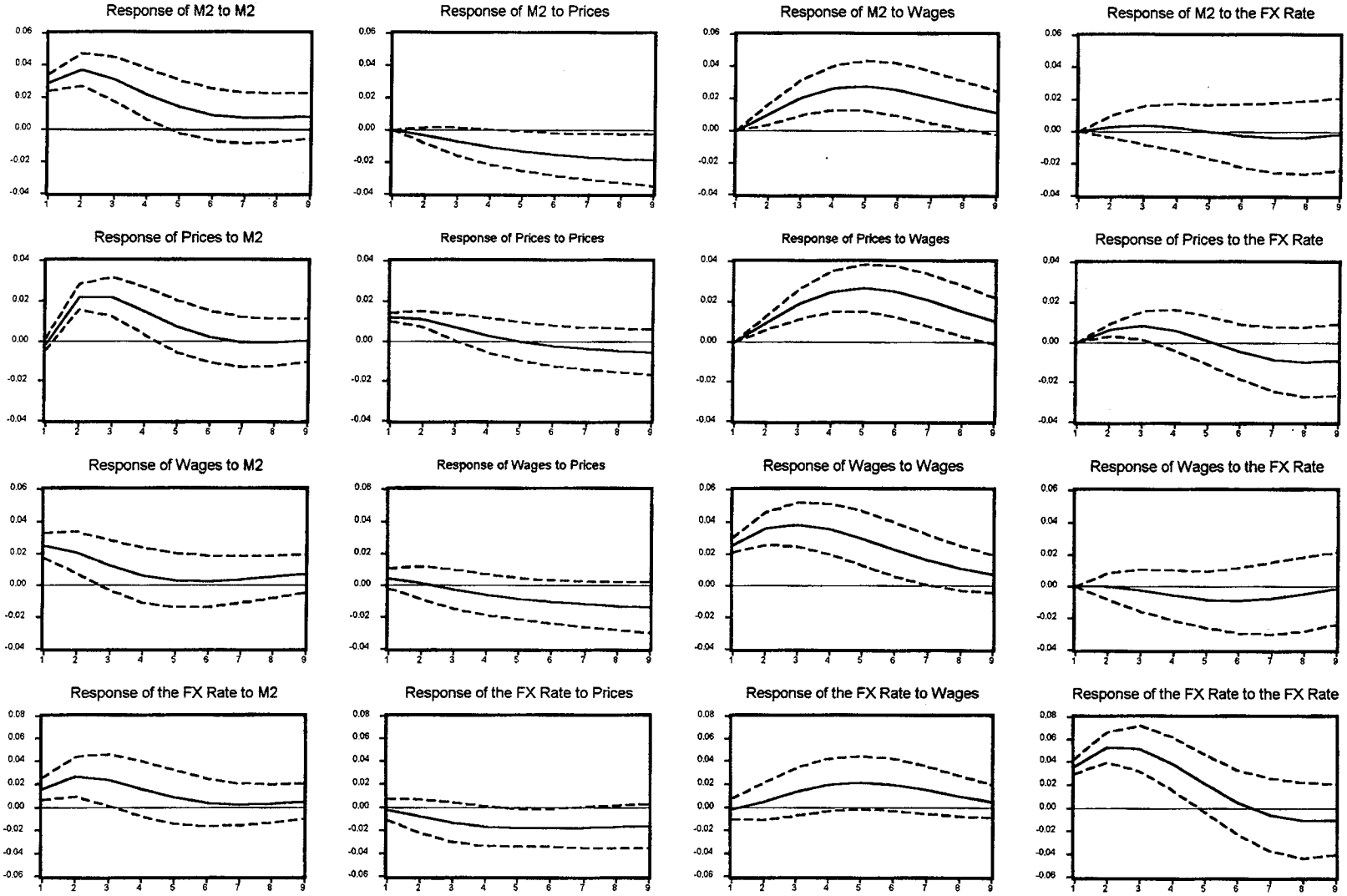
D. Conclusions

35. This chapter has argued that four main elements have contributed to the positive inflation outcome since the *Real* was left to float in mid-January this year: (i) an economy that does not rely on imported inputs to the extent of other economies; (ii) tight monetary and fiscal policies; (iii) sluggish consumption that has resulted in profit margin reductions at different stages of the production process; and (iv) a number of exceptional factors, like a good harvest and the slow adjustment in some administered prices (such as electricity tariffs), that have dampened upward pressure on prices in different subsectors of the economy (e.g., food and energy). To the extent that the latter two elements may be expected to be temporary, underlying inflation may be expected to be higher in the future.

36. With the relatively high real interest rates that have been maintained since the floating of the *Real* and the moderate growth of monetary aggregates, monetary policy has remained fairly tight. Similarly, notwithstanding a number of setbacks, the government has continued to deliver on the fiscal performance it promised in its adjustment program from late 1998. There is ample evidence that profit margins have indeed been squeezed in various industries, with wholesale price increases outrunning consumer price increases by a significant margin. This may be attributed, at least initially, to producers adopting a "wait-and-see" attitude in light of what was perceived as an overshooting of the exchange rate. The main goal seems to have been to preserve market share, in light of an already fairly depressed domestic demand. This was helped by the fact that only few industries have an extensive reliance on imported inputs; many industries experience the effect of exchange rate changes mainly indirectly, by buying inputs from other producers who rely on imported inputs. This, to some extent, may have slowed down the passthrough from the depreciation of the *Real*, even though, in general, a shock to any of the variables that were analyzed (i.e., money, wages, prices, the exchange rate, (primary) fiscal balances, and economic slack indicators) can be expected to work itself through the system during six-nine months, much faster than in most industrialized economies.

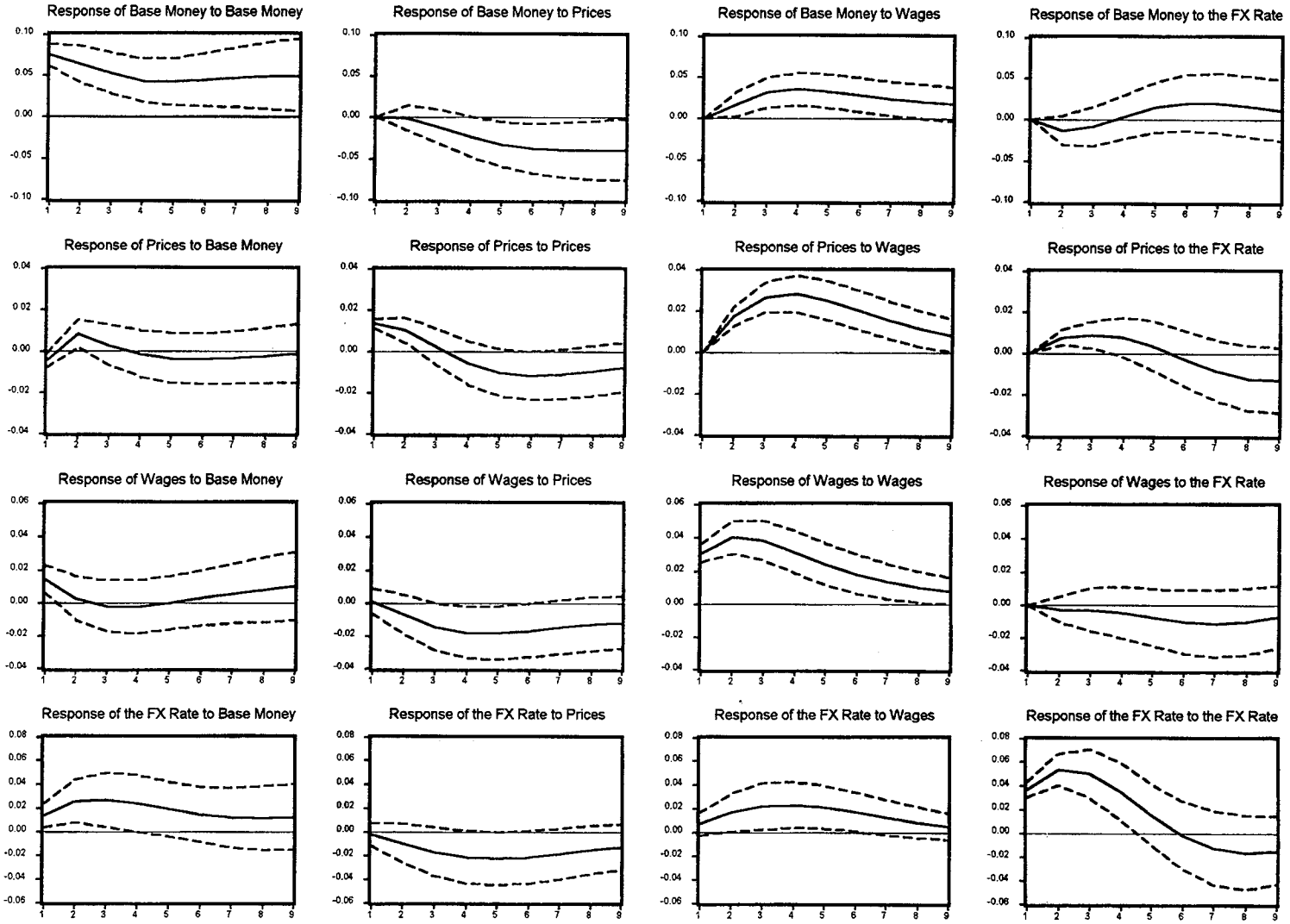
37. The VAR exercise has suggested that the impact of the exchange rate on prices may be significant, but that its magnitude is relatively small compared to other variables, particularly broad money (M2) and wages. In fact, M2 and wages help to explain much of the innovations in prices for all time periods that were tried. Changes in M2 have their strongest influence on price changes with a two-four-month lag; changes in wages have their strongest impact on price changes with a lag of about three-five months. In addition,wages seem to have a strong effect on M2. While the small effect of exchange rates on prices may, to some extent, reflect the fact that exchange rates were closely managed under the pegged exchange rate regime that prevailed until January 1999, this result was surprisingly robust across different time periods (e.g., when restricting the data only to the period of the pegged exchange rate regime or when including data from before and after as well).

Figure 1.7. Brazil: Response to One Standard Deviation Innovations (± 2 S.E.): Variable Levels (Using M2), 1994-99 1/



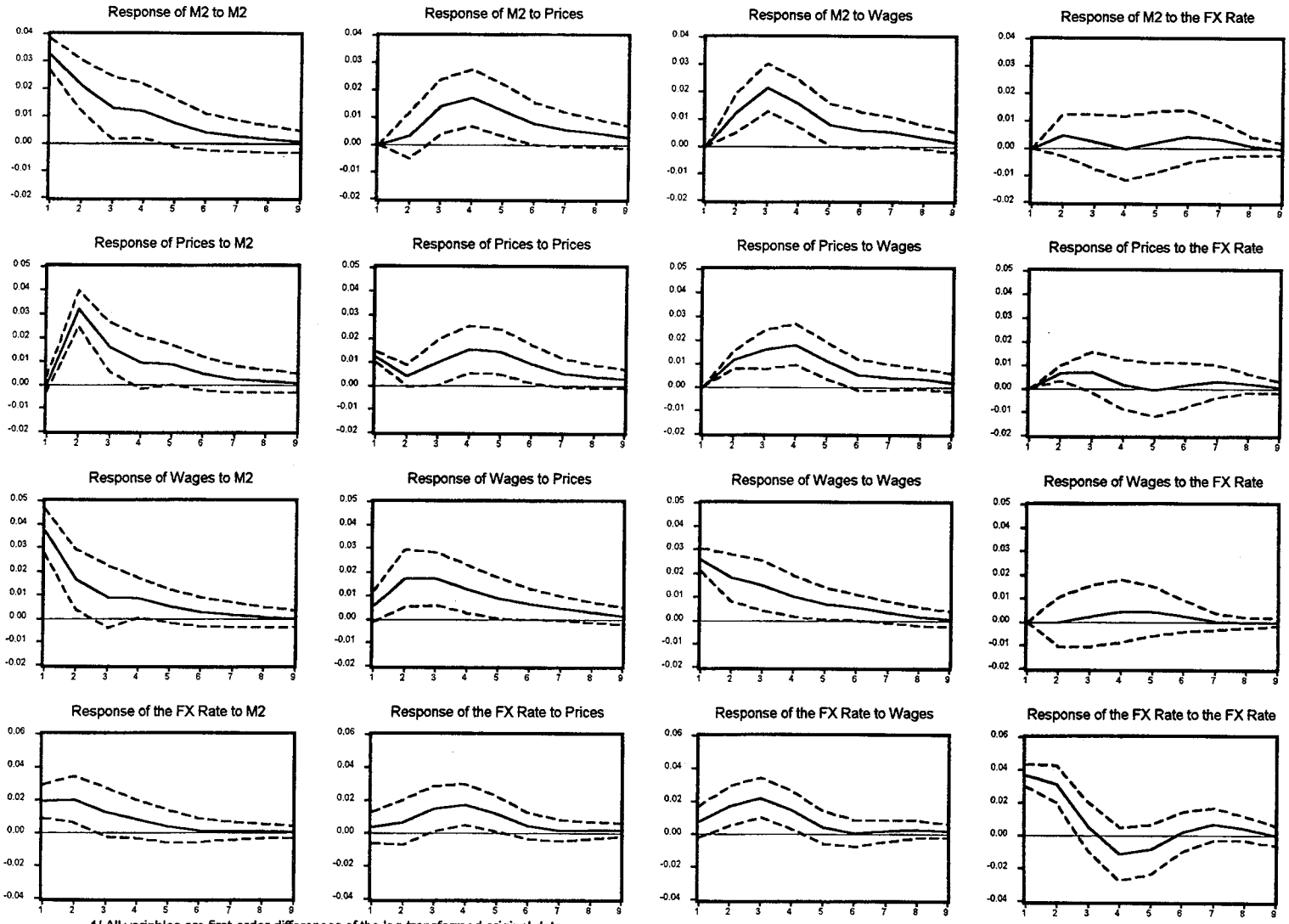
1/ All variables are log-transformed from the original data.

Figure 1.8. Brazil: Response to One Standard Deviation Innovations (± 2 S.E.): Variable Levels (Using Base Money), 1994-99 1/



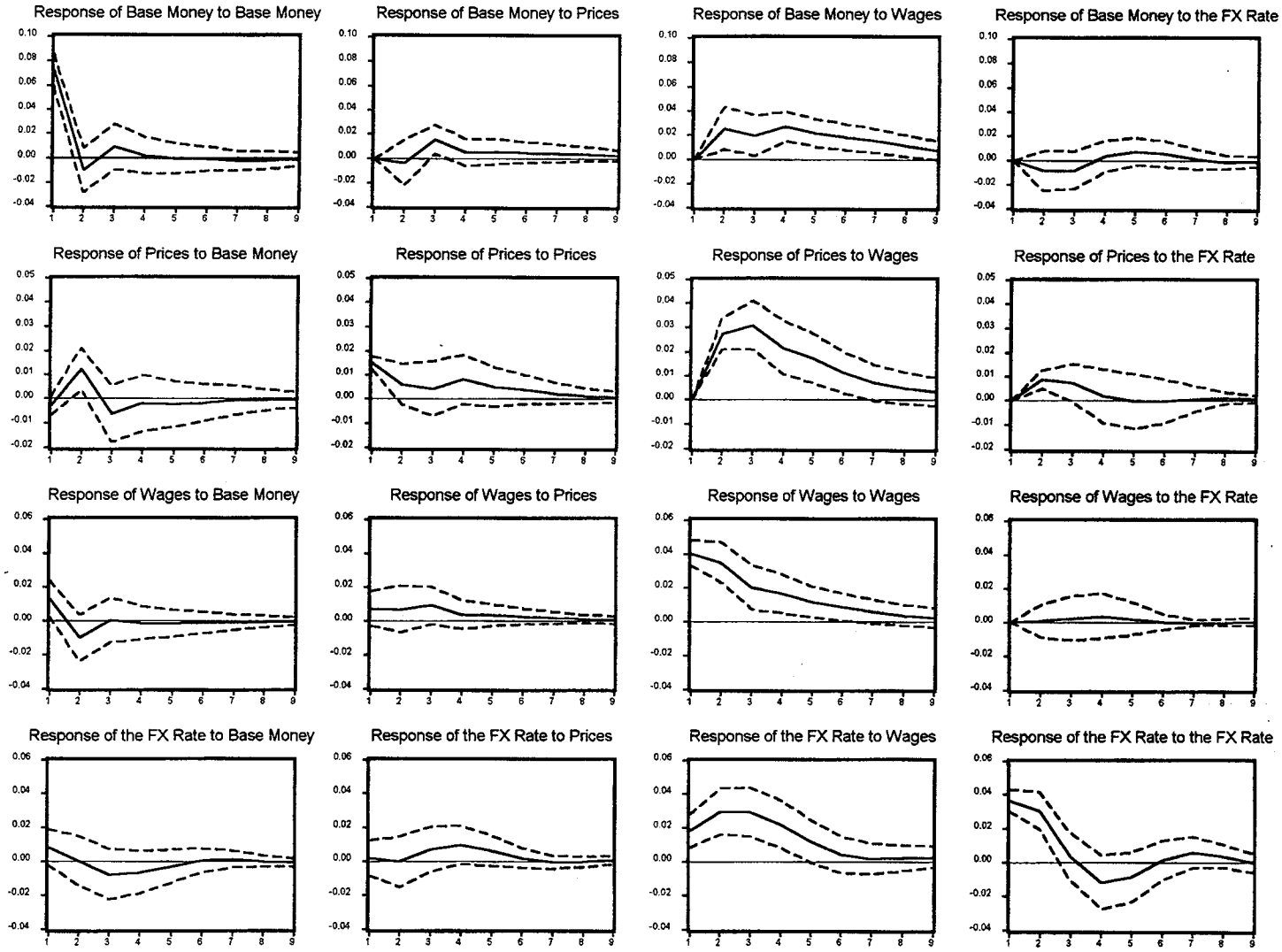
1/ All variables are log-transformed from the original data.

Figure 1.9. Brazil: Response to One Standard Deviation Innovations (± 2 S.E.): First-Order Differences (Using M2), 1994-99 1/



1/ All variables are first-order differences of the log-transformed original data.

Figure 1.10. Brazil: Response to One Standard Deviation Innovations (± 2 S.E.): First-Order Differences (Using Base Money), 1994-99 1/



1/ All variables are first-order differences of the log-transformed original data.

38. What policy recommendations would come out of this analysis? Given the preliminary nature of this study, a very tentative conclusion would be that containing wage pressures and maintaining a tight fiscal and monetary policy stance that would help to contain the growth in broad monetary aggregates can be expected to have a strong impact on mitigating inflationary pressures, and this already over a fairly short time horizon given the lags involved. The study also suggests that, given the relatively small effect of exchange rates on other variables (money, wages, and prices), a further weakening of the exchange rate per se should not necessarily generate concerns about renewed inflation. Given, however, the large impact of monetary aggregates and wages on the exchange rate, this conclusion would clearly hinge on the reasons behind a weakening of the exchange rate.

Data and Data Sources

1. This appendix presents an overview of the variables used in estimating the VAR. The VAR exercise uses log-transformations of all variables, except for the primary deficit of the federal government, which was used untransformed. The following variables were used.

2. ***Base money***, ***M1***, and ***M2***, where base money and M1 are measured as the daily average of a given month, and M2 reflects the end-of-month data. Data are available from the central bank; data for all variables were collected from January 1994 onward.

3. ***Prices***, as measured by the consumer price index (***IPCA***) published by the Brazilian Statistical Institute (IBGE). The IPCA provides information on prices in 11 metropolitan regions for families earning between 1 and 40 minimum wages. The IPCA is the main index for the Brazilian Central Bank's inflation targeting framework; data were collected from January 1991.

4. ***Wages***, as measured by the nominal salary index for São Paulo, published by FIESP. Data were collected from January 1993.

5. The *Real*/U.S. dollar ***exchange rate,*** specified as the daily average exchange rates prevailing over a given month, as reported by the Brazilian central bank. Using end-period exchange rates yielded similar results. Data for both variables were collected from January 1994.

6. The ***unemployment rate***, as measured by DIEESE for total (open and hidden) unemployment in São Paulo; data were collected from January 1992. Using the official unemployment rate reported by IBGE yielded fairly similar results; data for IBGE's unemployment rate were collected also from January 1992.

7. The ***primary deficit of the central government***, as reported by the federal treasury. Data were available from January 1991, although there were some structural breaks concerning coverage of the data. While in most months Brazil generated primary surpluses, it also experienced primary deficits; given that this variable may be either positive (for a deficit) or negative (for a surplus) it was not possible to log-transform this variable.

II. Competitiveness and Export Performance[1]

A. Competitiveness

Macroeconomic indicators

1. **After the inception of the *Real* Plan in mid-1994, most indices showed an immediate loss of competitiveness owing to the constraints of the nominal exchange rate anchor and the remaining price inertia.** In the 12 months following the inception of the Real Plan, real effective exchange rates (REER) based on the consumer price index (CPI) showed a 26 percent appreciation over the preceding 12 months (Figure 2.1). Similarly, REER based on unit labor cost (ULC) showed a 12 percent appreciation over the same period.[2] This appreciation was mostly due to an increase in dollar denominated unit labor costs (and therefore real incomes) that outstripped productivity gains. As the prices of traded goods stabilized, the ratio of nontraded prices to traded prices showed a 13 percent appreciation over the 12 months following the *Real* Plan relative to the preceding 12 months. In contrast, the terms of trade showed a 13 percent improvement in the 12 months following the start of the *Real* Plan relative to the preceding 12 months.

2. **From 1995 through mid-1998, most indices of competitiveness remained fairly constant with the exception of the ratio of nontraded prices to traded prices; it registered a further 39 percent appreciation over the period**. The initial real appreciation, and loss in competitiveness, of the *Real* Plan was maintained during this period, or in the case of the ratio of nontraded to traded prices, further exacerbated. The latter appreciated due to a rapid rise in the prices of nontraded goods (67 percent) relative to the prices on traded goods (20 percent) as stabilization took hold and real incomes rose.

3. **In mid-1998, competitiveness began to improve reflecting the low rate of inflation, the recessionary phase of the business cycle, and also the nominal effective depreciation under the crawling peg**. By December 1998, the CPI-based REER showed a 10 percent real depreciation over December 1997. The ULC-based REER showed an 18 percent depreciation over the same period. However, the ratio of nontraded prices to traded prices continued to register a slight but decelerating appreciation (about 1 percent) at the end of 1998 compared to the end of 1997. Conversely to competitiveness, the terms of trade showed a 4.5 percent deterioration in December 1998 relative to December 1997.

4. **By February 1999, after the devaluation and float of the *Real*, the gain in competitiveness was sizable.** The CPI-based REER registered a 40 percent depreciation over February 1998 and the ULC-based REER registered a 47 percent depreciation over the

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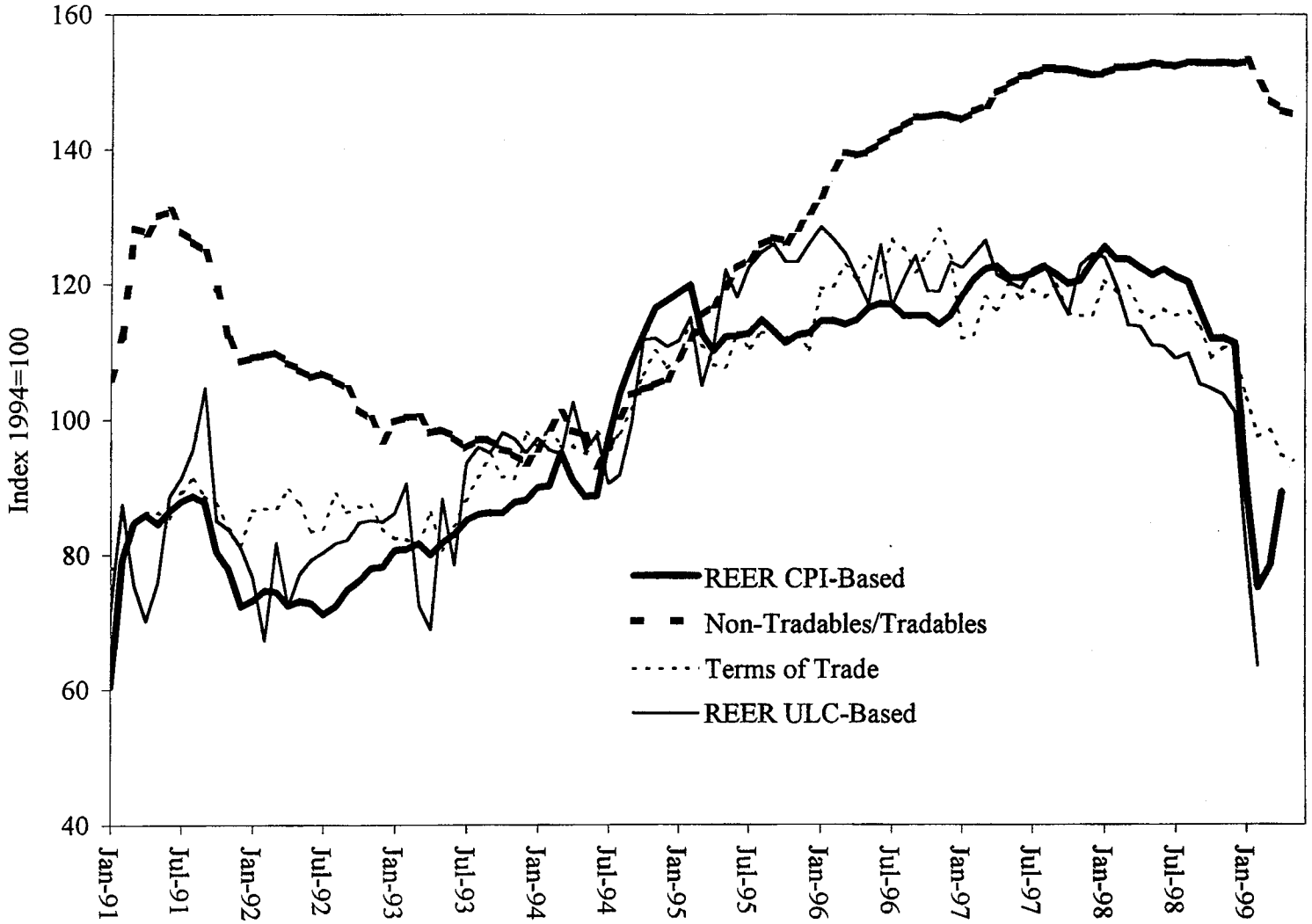
[1] Prepared by Alberto Musalem.

[2] The ULC-based REER is calculated relative to 21 industrial countries.

Figure 2.1. Brazil: Indicators of Competitiveness, January 1991-May 1999



same period. The ratio of nontraded/traded prices also adjusted, although at a much slower rate. The slow adjustment of this measure of competitiveness is a result of the very limited pass-through of the nominal depreciation onto traded and nontraded prices. By April 1999, the ratio of nontraded to traded prices had only depreciated by 5 percent over April 1998.

5. **The gain in competitiveness, stemming from the devaluation and float of the *Real*, has been accompanied by a substantial deterioration in the terms of trade.** The terms of trade deteriorated by about 18 percent in the first quarter of 1999 relative to the first quarter of 1998.[3] Although causality is not certain, the close relation between the terms of trade and measures of the REER suggests that owing to its size, Brazil's terms of trade deteriorate when the country's competitiveness improves. The inverse relationship derives from Brazil being a large exporter of certain commodities; this perversely influences the prices of Brazil's commodity exports when the country's competitiveness improves.

6. **More recently, since the devaluation of January 1999, the dollar profitability of Brazilian exports has risen by about 22 percent over the period January–April 1999, compared to the same period in 1998 (Figure 2.2)**. This measure of profitability takes into account the entire cost structure of exports, not just ULC, using an input-output matrix.[4] It also takes into account the movement in export prices and input prices for which the exchange rate is a factor for exports with import content; the import content of Brazilian exports is reportedly around 7–10 percent. It is worth noting that profitability is very closely related to competitiveness.

Microeconomic Indicators

7. **Taking a closer look at the evolution of competitiveness across industries, between 1994 and 1998, clear winners and losers emerge**. While the ULC of some industries has remained low relative to that of others, some industries have shifted from being winners to losers. Because 1994 was normalized as the base year, industries with ULC above 100 in 1998 experienced a loss of competitiveness among Brazilian manufactures while the contrary is the case for industries with ULC that dropped below 100 in 1998. At the extremes are toiletries with a relative loss of competitiveness of 48 percent over the four-year period from 1994 to 1998 and machine tools with a relative gain in competitiveness of 20 percent (Figure 2.3). The real depreciation resulting from the devaluation of January 1999, and business cycle during 1998–99, will likely affect the relative competitiveness across industries; however, data is not yet available for this period.

8. **Data on export profitability by industry show that some sectors benefited more from the devaluation than others and that the devaluation is not the only influence on**

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[3] The terms of trade are calculated using Funcex export and import price indices.

[4] Calculated by Funcex using IBGE's 1992 input-output matrix.

Figure 2.2. Brazil: Profitability of Exports, January 1991-April 1999

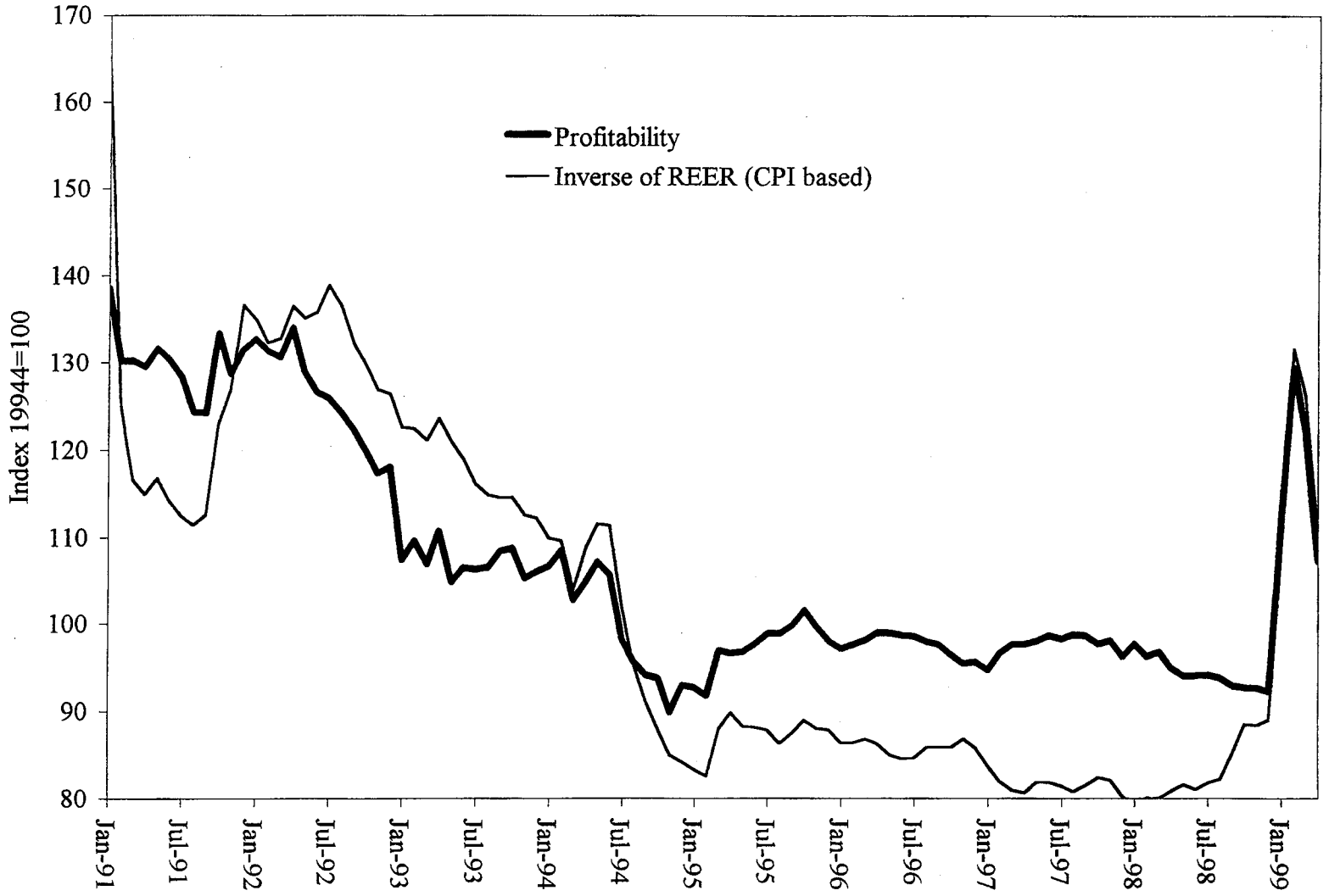
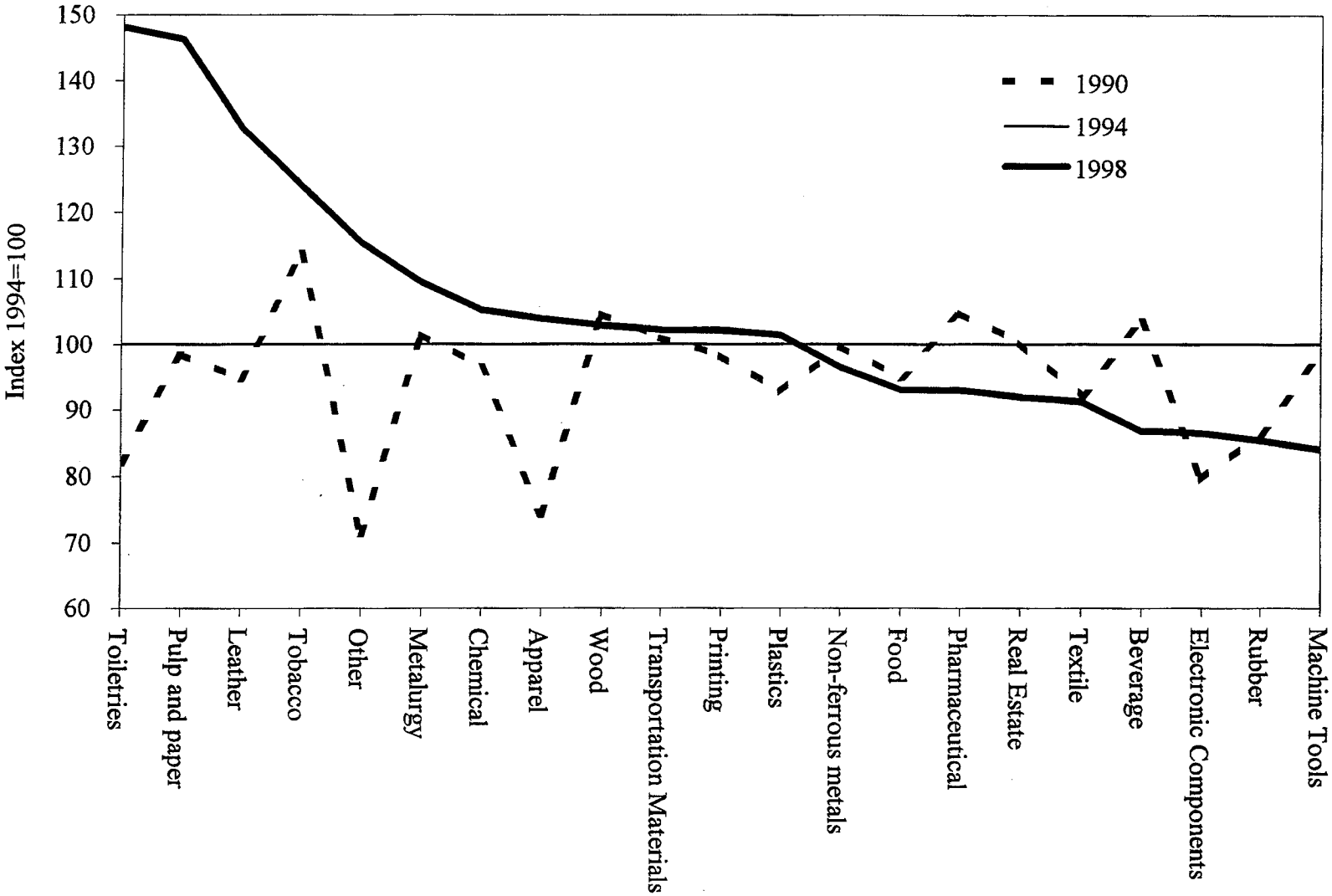


Figure 2.3. Brazil: Unit Labor Cost By Industry



profitability. For example, low commodity prices and low prices for manufactured exports in 1999 have mitigated the positive effects of the devaluation in the first quarter of 1999 relative to the first quarter of 1998 for some sectors. For example, the export profitability of agriculture increased by 15 percent over the period, that of oil increased by 4.7 percent, that of electronic equipment increased by 9.6 percent, and that of metallurgy increased by only 3.9 percent (Figure 2.4). In contrast, the export profitability of auto parts increased by 44 percent, that of machine tools increased by 53 percent, and that of mineral extraction increased by 44.5 percent increase. In relation to 1994, it is also clear that some sectors have benefited more than others from the devaluation. The export profitability of all sectors has risen above 1994 levels after the devaluation.

B. Export Performance

Export market share

9. **Brazil's export share of GDP has traditionally been low relative to that of other countries.** On average, the export share of GDP has remained above 20 percent for a sample of 35 countries, whereas Brazil's export share has only occasionally breached the 10 percent mark (Figure 2.5). More recently since 1994, the export share of GDP for the sample of 35 countries has increased substantially, while Brazil's export share of GDP has fallen to its lowest level since 1980.

10. **The world market share of Brazilian exports hovered above 1 percent over the 1980s, but trended downward during the 1980s and 1990s**. A similar trend can be observed for the Brazilian export market share of the Asian and North American markets. Over the 1990s Brazilian exports gained market shares in Europe and Latin America, the latter gain reflecting a growing market share in Mercosur. Between 1991, when Mercosur was created, and 1998 the share of Brazilian exports to the common market rose from 19.3 to 23.2 percent. Since the devaluation, Argentine imports have declined at about 24.5 percent in value over the first five months of 1999, relative to the same period in 1998. Argentine imports from Mercosur (mostly Brazilian exports) have declined by about 26.5 percent over the first five months of 1999, relative to the same period in 1998 (Figure 2.6). The relative decline in the value of Argentine imports suggests a small loss in market share for Brazilian exports to Mercosur over the first five months of 1999.

Figure 2.4. Brazil: Profitability of Exports by Industry

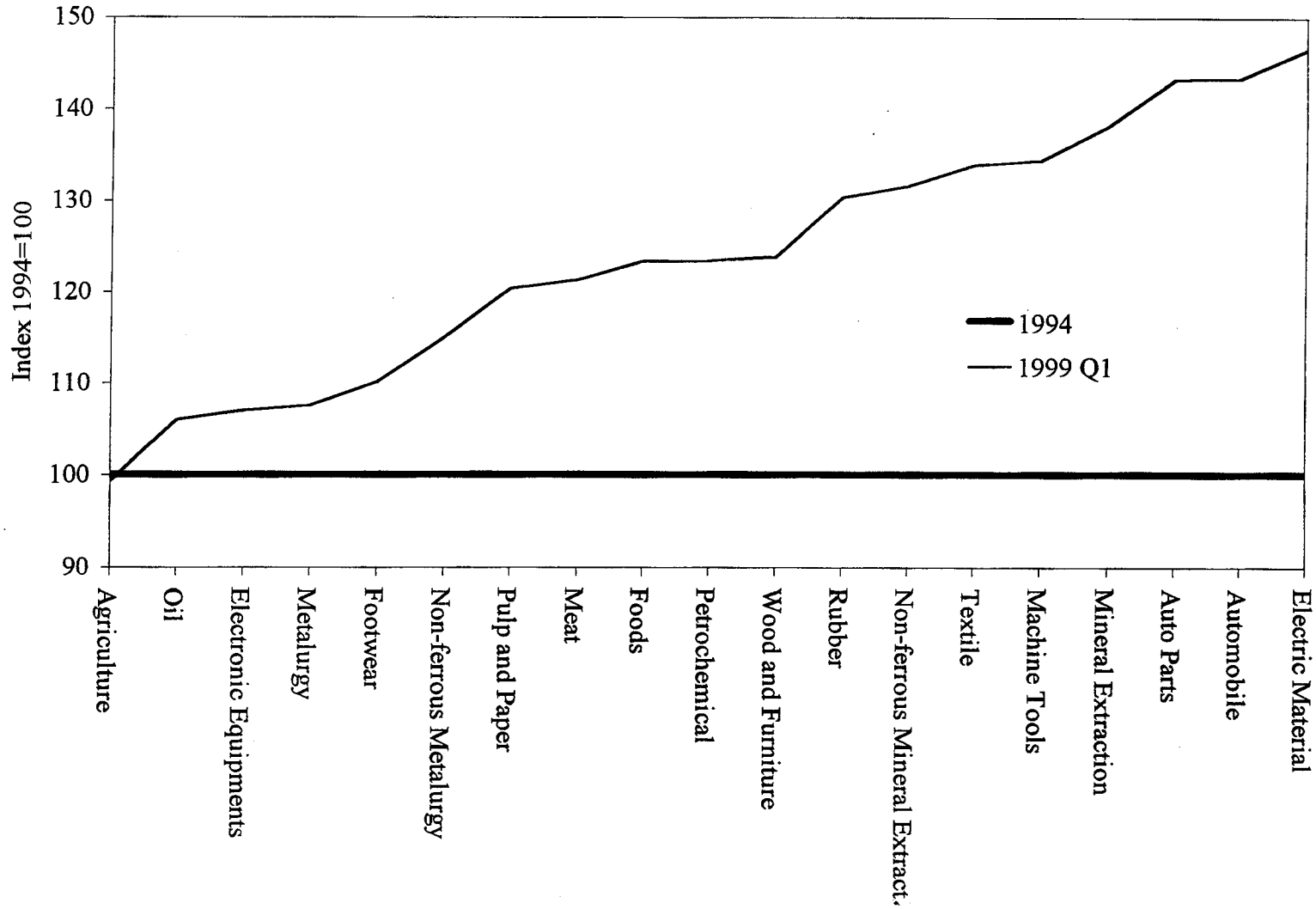


Table 2.5. Brazil: Export Share of GDP, 1980-1998

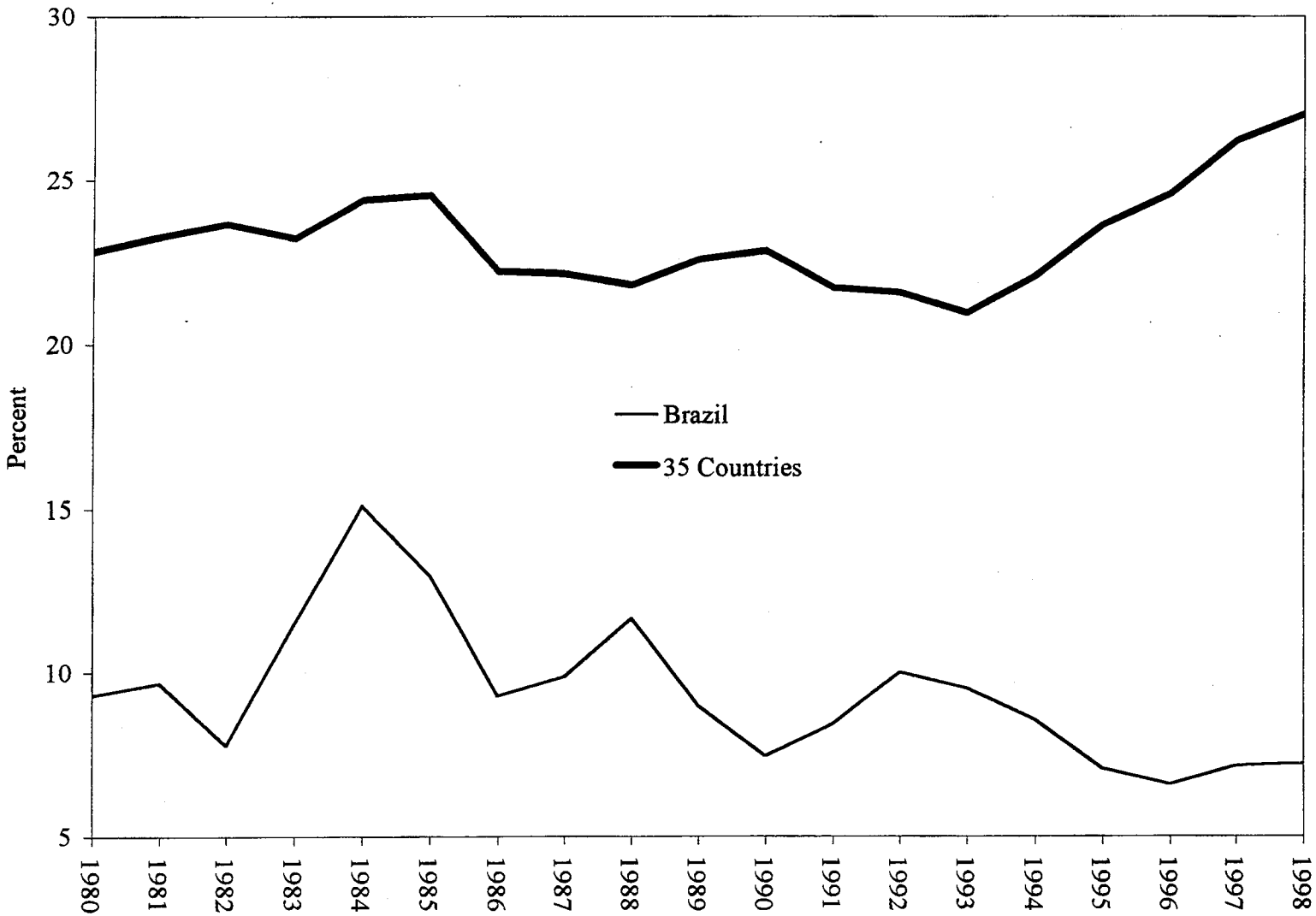
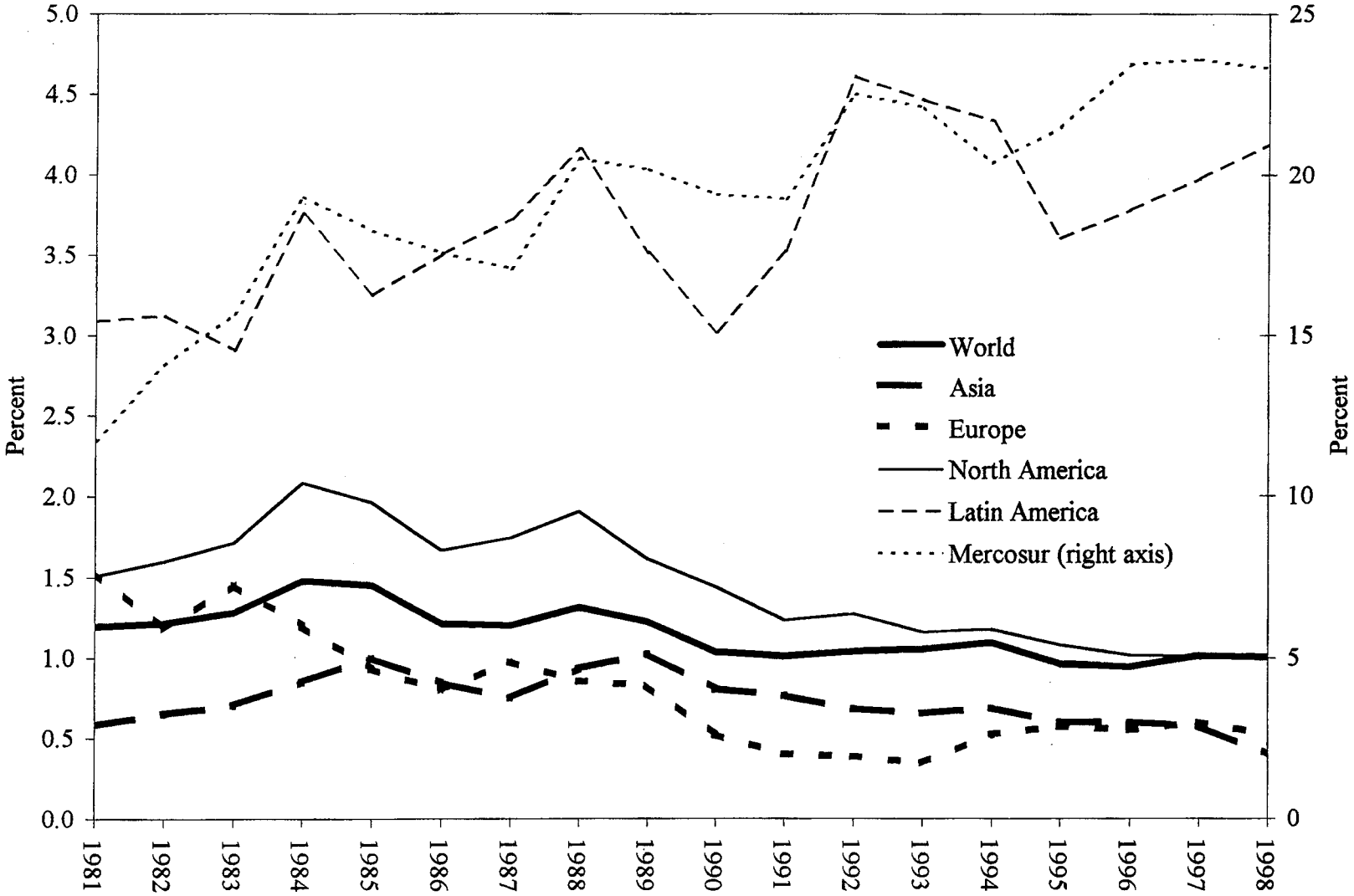


Figure 2.6. Brazil: Export Market Share, 1981-1998



11. **Brazilian manufactured exports are not concentrated in the most dynamic world product markets and are therefore not competitive in product markets with expanding market share.**[5] Dynamic product markets are defined as those which grew in relation to the volume of trade in manufactures over the period 1989–95, while super-dynamic product markets are defined as those in which relative growth exceeded 10 percent. Over the period, Brazil's share in dynamic world products dropped from 0.50 percent to 0.38 percent (-24 percent), while the share in super-dynamic world product markets dropped from 0.30 percent to 0.19 percent (-37 percent). In contrast, the share of dynamic products in Brazilian exports increased from 29.4 percent over the period to 34.4 percent (17 percent), while the share of super-dynamic exports increased from 8.8 percent to 9.4 percent (7 percent). Although the share of dynamic exports in total Brazilian exports is increasing, it is not increasing at a fast enough rate to result in an increased market share in strategic product markets.

Export volumes

12. **Data through April 1999 suggest that trade volumes are beginning to react favorably to the devaluation.**[6] Import volumes continue to decline, although the three-month rolling rate of decline seems to have stabilized at around 25 percent over April and May. Export volumes are now beginning to increase after a period of decline. Specifically, export volumes declined on average by 2.5 percent during the period February–May relative to the same period in 1998. This decline can be explained by substantive cuts in external trade financing in the second half of 1998 and the first quarter of 1999, and by significantly lower levels of economic activity in the region, namely in Mercosur and especially Argentina. However, in May 1999, as financing constraints eased and economic activity showed signs of recovery in Southeast Asia, export volumes began to show incipient signs of recovery. On a three-month rolling basis, export volume increased by 1.6 percent in May 1999 relative to May 1998; on a year-over-year basis, export volume increased by 9 percent in May 1999 (Figure 2.7).

13. **The response of exports and imports to the devaluation has varied according to product types.** Semimanufactured exports have been the most buoyant, followed by basic (mostly agricultural commodities) exports (Figure 2.8). The response of manufactured

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[5] R. Fonseca and E. Velloso (1998), "Desempenho Exportador da Indústria Brasileira", Confederação Nacional de Indústria. Although the study is based on data through 1995 it provides insights into the strategic positioning of exporting industries in world markets and their loss of export market share.

[6] Trade volume data from Boletim de Comercio Exterior, Fundação de Comercio Exterior (Funcex), June 1999.

Figure 2.7. Brazil: Trade Volumes, January 1995-April 1999

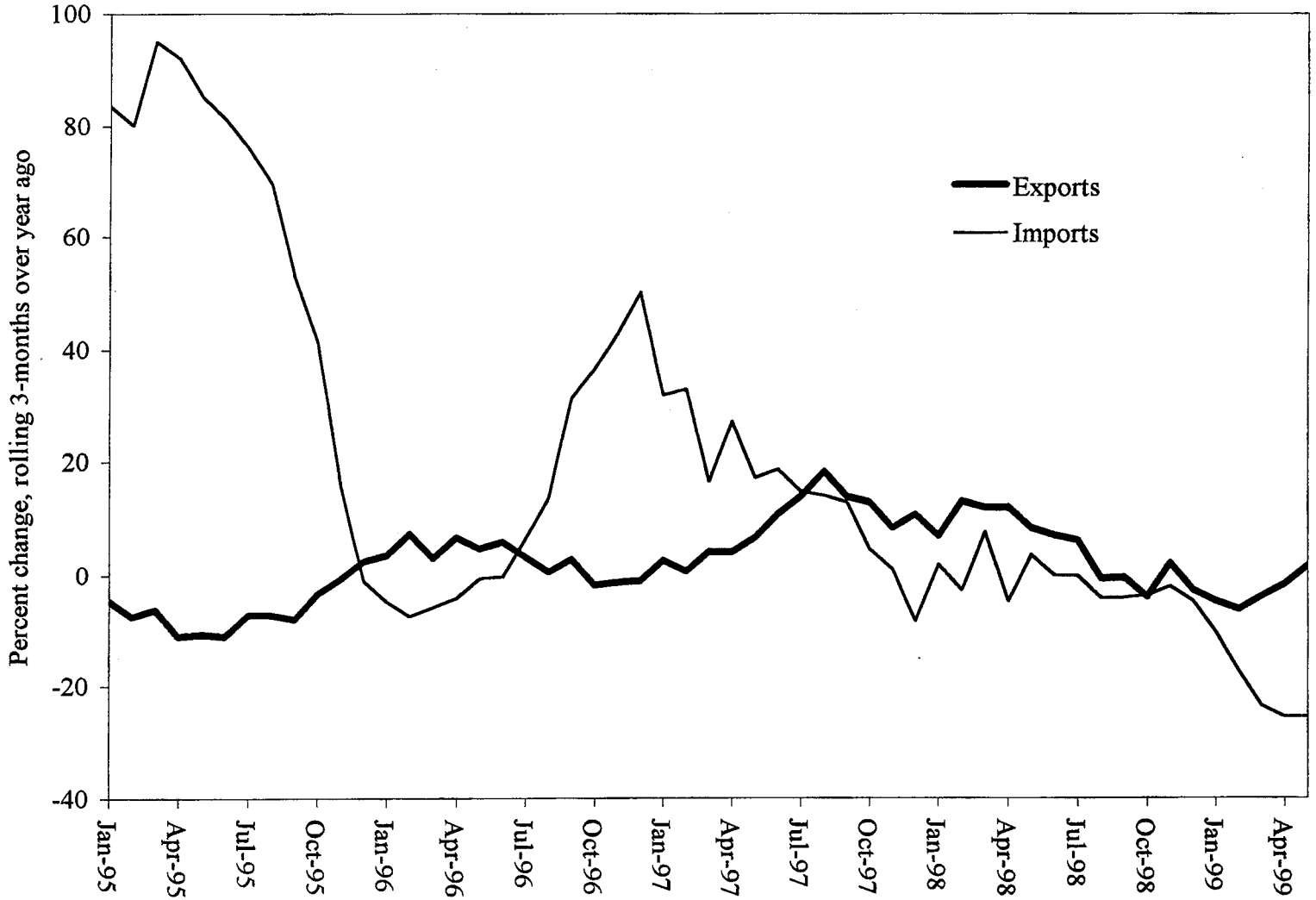
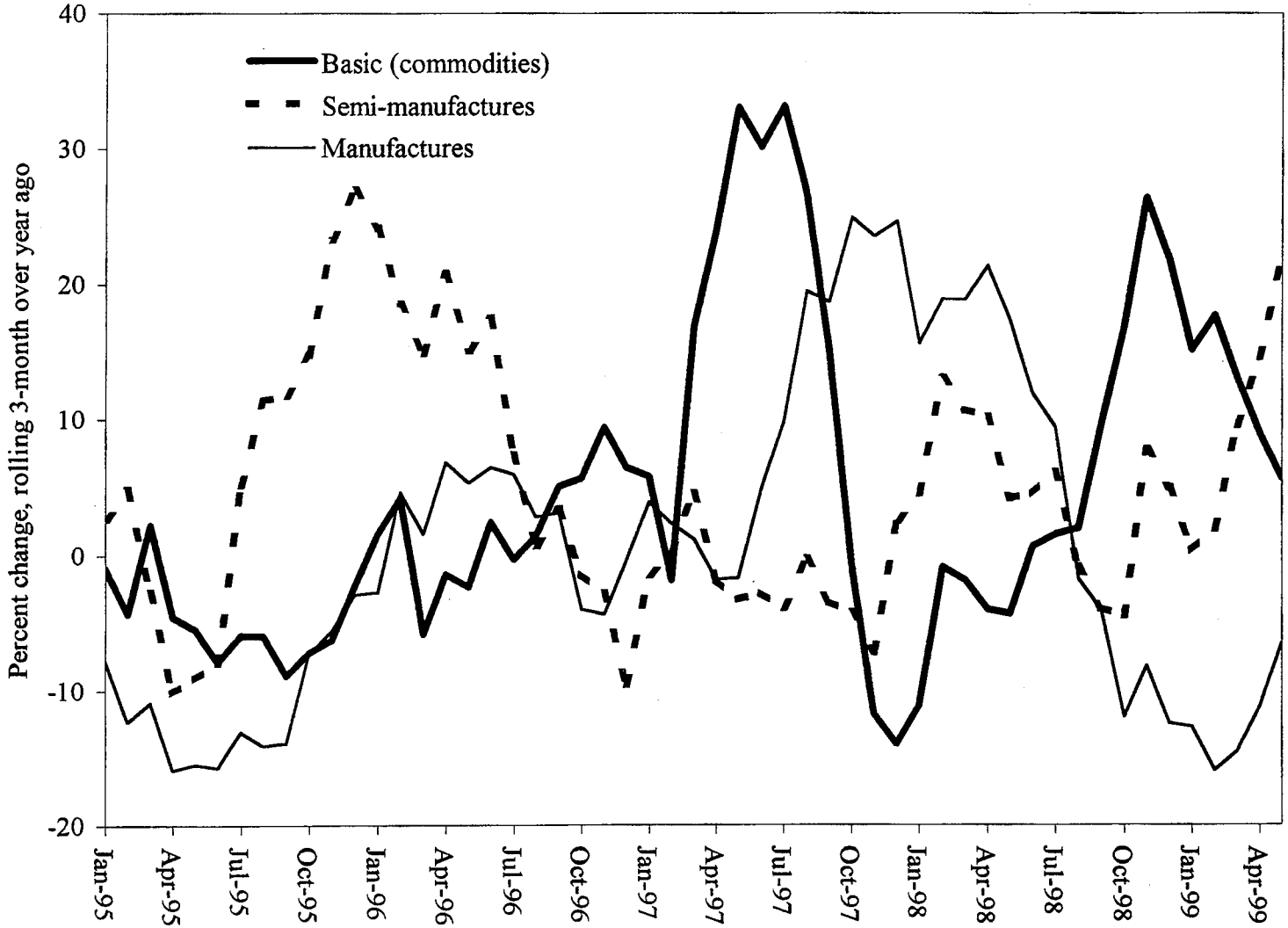


Figure 2.8. Brazil: Export Volumes by Type of Export, January 1995-April 1999



exports has been more lethargic. Thus, semimanufactured export volumes increased by 22 percent over the period March–May 1999 relative to the same period in 1998, basic export volumes increased by 5.6 percent over the same period, while manufactured export volumes declined by 6.5 percent over the period. On a year-over-year basis, semimanufactured export volumes increased by 44.5 percent, basic export volumes increased by 12 percent, while manufactured export volume declined by 1 percent in May 1999. While manufactured export volumes have been the slowest to respond, their rate of decline has decelerated sharply over the first five months of 1999 and is expected to turn positive in the second half of the year as market share is gradually regained in world markets. Among imports, the fastest decline is observed in consumer durables (Figure 2.9). There is also anecdotal evidence of a high degree of import substitution in the production of manufactures, especially auto parts.

C. Export Financing and Promotion

14. **The government's export promotion strategy (Programa Especial de Exportaçoes) has the objective of increasing exports to US$100 billion by 2002**. This is to be accomplished by increasing the export share of small and medium enterprises with high value added, thus diversifying the export base away from large enterprises and basic exports. To achieve this goal, the registry system for exports (Siscomex) is being greatly simplified and red tape is being reduced. In addition, several formal and informal official export financing schemes are indirectly geared at export promotion. These schemes are managed either by BNDES or the Banco do Brasil. The BNDES operates an Exim facility (BNDES-Exim) which provides pre- and post-embarkation export financing and buyers credits. The BNDES, in conjunction with the Association of Small and Medium Enterprises (SEBRAE), has instituted a guarantee fund (FGPC) to increase access to trade financing by small and medium enterprises. The Banco do Brazil manages the government's PROEX scheme; PROEX has both a financing component and an interest equalization component.[7] The Banco do Brasil is also informally and almost entirely responsible for providing export financing through ACC ("adiantamento de contrato de cambio") to small and medium enterprises. The dollar value of the PROEX budget has shrunk significantly in 1999 after the devaluation and the dollar value of ACC (including but not exclusively from Banco do Brazil) has increased since the devaluation. The latter signals some further recuperation in export volumes (Table 2.1).

D. Taxation and Competitiveness

15. Brazil's complex tax system and heavy tax burden (above 30 percent of GDP) have been frequently highlighted as a hindrance to competitiveness. The complicated tax system implies that companies, whether exporters or not, must incur large administrative costs to

[7] A recent ruling by the WTO on the interest equalization component of PROEX classified it as a de facto subsidy. After the appeals process, the continuation of this component of Proex will be decided on the basis of the final WTO ruling.

Figure 2.9. Brazil: Import Volumes, January 1995-April 1999

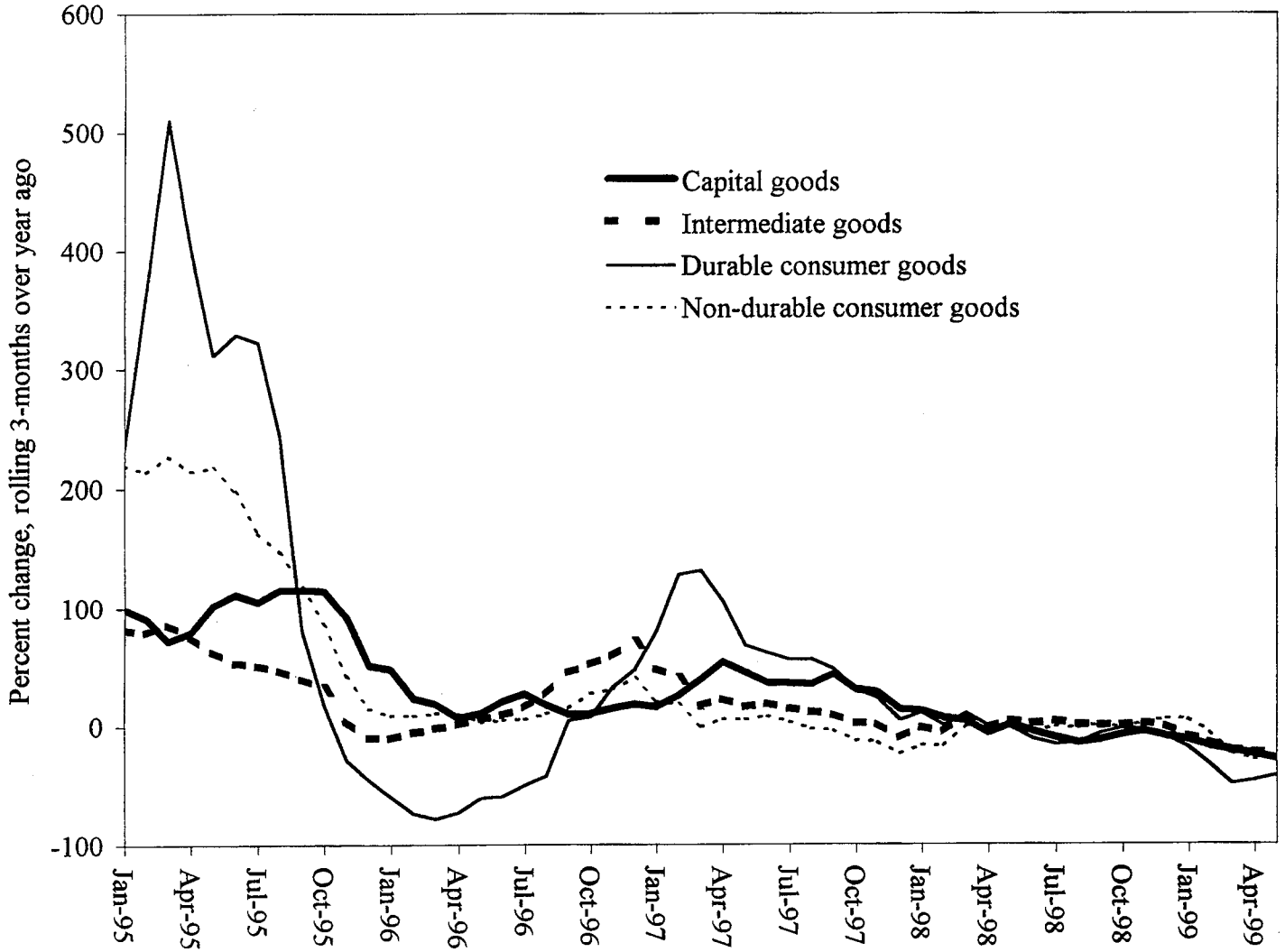


Table 2.1. Brazil. Proex Budget
(In millions of US dollars)

	Financing			Equalization			Total		
	Budget	Executed	Percent of Budget Executed	Budget	Executed	Percent of Budget Executed	Budget	Executed	Percent of Budget Executed
1995	216.4	84.1	38.9	1074.7	98.2	9.1	1291.1	182.4	14.1
1996	52.5	45.6	86.9	442.7	139.1	31.4	495.2	184.7	37.3
1997	289.4	98.9	34.2	643.5	262.6	40.8	932.9	361.6	38.8
1998	404.9	181.6	44.9	845.5	531.0	62.8	1250.4	712.6	57.0
1999	459.1	--	--	477.8	--	--	936.9	--	--

Source: Ministry of Budget and Planning

keep up with the changes made to the system even if they do not alter its basic structure. In addition, several taxes including ICMS, PIS, COFINS, IPI, and, more recently, the CPMF, have a cascading effect over the production chain, thus distorting the relative pattern of production. Tax concessions are granted to exporters in an effort to allow them to compete abroad on a level fiscal playing field. Reimbursement may be obtained for the IPI, COFINS, and PIS/PASEP taxes for the purchase of intermediate goods used in export products. More recently, primary and semimanufactured exports have been relieved, through rebates, of the value-added tax imposed by the states. In addition, exporters benefit from a drawback system by which import and other taxes are rebated, or reduced, if imports are to be used as inputs for re-export. Nevertheless, the tax system remains a structural hindrance to the competitiveness of Brazilian exports; it is impossible to purge, through rebates and exemptions, all of the indirect taxes levied on Brazilian exports.

III. Effects of High Interest Rates and Currency Depreciation on Brazilian Enterprises[1]

A. Overview

1. This chapter looks at the effects on Brazilian nonfinancial enterprises of high real interest rates and the depreciation of the Brazilian *Real* following the abandonment of the crawling peg exchange regime. Its basic premise is that the generally high real interest rates that have prevailed in Brazil for many years now, as well as the two decades of high and variable inflation that preceded the introduction of the *Real* Plan in mid-1994, encouraged Brazilian enterprises to reduce their reliance on debt financing and to rely more on retained earnings. This reliance on self-financing has been particularly important for small and medium enterprises, which have often lacked access to credit markets.

2. With the overall level of enterprise indebtedness being relatively smaller than in other Latin American countries, so was the indebtedness of Brazilian enterprises in foreign currencies. In general, only larger firms had access to foreign currency financing. Most firms with foreign currency liabilities either had a natural hedge in the form of foreign currency receivables, or hedged themselves in other ways, for example by acquiring U.S. dollar-indexed government securities. Those few enterprises that were unhedged or only partially hedged tended to be Brazilian subsidiaries of foreign conglomerates that may be assumed to provide sufficient financial backing.

3. The consequence of the relatively low gearing of Brazilian companies and their limited exposure to foreign currency risk is that the nonfinancial corporate sector was not seriously affected by the depreciation of the *Real* since January nor by the continuing relatively high level of interest rates. The impact of the devaluation was further attenuated by a ruling from the Federal Revenue Secretariat that allowed enterprises to write off losses stemming from the devaluation over a period of four years. As a result of these various factors, widespread loan defaults or enterprise bankruptcies are unlikely to occur.

B. High Interest Rates and the Financial Structure of Brazilian Enterprises

4. Brazilian enterprises are generally considered to have much stronger balance sheet positions than companies in other Latin American economies. The high and volatile inflation that prevailed during much of the 1980s and early 1990s made Brazilian managers cautious in taking on debt. As a result, Brazilian companies entered the 1990s with balance sheets that looked fairly underleveraged when compared to companies in other countries. Frequently, balance sheets of Brazilian enterprises showed working capital financed by expensive short-term local currency financing, and fairly large positions in real assets (such as real

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[1] Prepared by Gerd Schwartz.

estate) that were used to hedge against inflation, but were not used in the production process.[2]

5. The disinflation brought about by the *Real* Plan has led to considerable corporate restructuring. This entailed two complementary strategies: reducing debt by liquidating unproductive (real) assets; and replacing expensive short-term bank debt with medium-term capital raised in either local, or increasingly, international capital markets. Despite the restructuring that has taken place over the past few years, the level of indebtedness of Brazilian nonfinancial enterprises still compares favorably with those of other Latin American countries. Sample data from over 300 Brazilian (nonfinancial) stock companies for 1998 show that their debt-equity ratios are significantly lower than those of their Argentine, Mexican, and Chilean counterparts.[3] Specifically, the sample of Brazilian firms had a ratio of total debt to liquid assets of 0.42, compared with ratios of 0.79 in Argentina, 1.01 in Chile, and 0.59 in Mexico.

6. Although the advent of low inflation under the *Real* Plan in and of itself probably encouraged an increase in the supply of loanable funds, the demand for borrowing has been discouraged by the high real interest rates that have prevailed over the last several years. Real overnight interest rates, which constitute the floor for interest rates in Brazil, averaged 1.7 percent per month (22.9 percent per year) during mid-1994 to end-1998. With these high real rates, banks were content to invest in government debt instruments, the total stock outstanding of which increased from 25.8 percent of GDP in December 1994 to 38.2 percent of GDP in December 1998.[4] At the same time, lending to the private sector has stagnated over the last several years, suggesting a classical case of crowding out: from end-1995 to end-1998 the total volume of loans outstanding to the private sector fell from 29.5 percent of GDP to 27.4 percent of GDP, although it increased slightly during 1996–98.

7. The profitability of Brazilian enterprises has remained low over the last several years.[5] In part, this may be due to insufficient investments in light of existing credit

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[2] See Jack Glen and Brian Pinto (1994), "Debt or Equity? How Firms in Developing Countries Choose," *Discussion Paper No. 22*, International Finance Corporation (Washington, DC).

[3] On the basis of data provided by Economática; these data do not include privately held companies or enterprises that are fully state-owned.

[4] Not all of this increase was the result of the government deficit; a significant part reflects debt that was issued in the context of restructuring/recapitalizing public banks.

[5] While basic theory suggests that a more highly geared enterprise should (on average) have a higher return on equity (where the higher return compensates shareholders for the greater risk of insolvency or low earnings that results from the higher gearing) it could also have been expected that, starting from an initial position of low indebtedness, the improved

(continued...)

constraints. During 1996–98, the return on equity of Brazilian firms has remained significantly below that of their Argentine, Chilean, Mexican, and U.S. counterparts. In 1998, for example, the return on equity of a sample of 260 Brazilian stock companies averaged 5.3 percent, compared to 7.1 percent in Argentina, 7.9 percent in Chile, 7.6 percent in Mexico, and 16.9 percent in the United States. In contrast, even Brazilian savings accounts offered a real return of 12.5 percent in 1998.

8. With the lower level of indebtedness, net interest expenditures affected the profitability of Brazilian enterprises to a slightly lesser extent than they did effect companies in other Latin American countries that had much lower interest rates. In 1998, for example, net interest expenditures reduced the operational result (gross profit minus operational expenditures) of Brazilian enterprises by 24 percent, whereas they reduced the operational result of Argentine firms by 30 percent, of Chilean firms by 29 percent, and of Mexican firms by 31 percent.

9. These results reflect not only the low leverage of Brazilian enterprises, but also the fact that financial revenues of Brazilian enterprises are higher than in other Latin American countries: for example, in 1998, they exceeded the average financial revenues of Mexican companies by about 50 percent. This again reflects the high real interest rates that have prevailed over the last several years: Brazilian companies have often found it more profitable to "invest" in Certificates of Deposit (CDs) than in their own business operations.[6]

10. In contrast, the pure operating margins of Brazilian enterprises—that is, net production receipts (gross receipts from the sale of products less tax payments) less the cost of production inputs—are already fairly compressed. Whereas in Brazil, production costs amount to 72 percent of net receipts, they were below 70 percent in all other Latin American countries.

11. Their low operational profitability, in turn, has resulted in Brazilian companies to be relatively "cheap buys" compared to companies in other Latin American countries. In the stock market, most Brazilian companies are negotiated at a value of about 50 percent below their total asset value (book value).

C. Foreign Currency Exposure and Effects of the Devaluation on Different Sectors

12. The foreign currency (FX) exposure of Brazilian enterprises has generally remained modest and is mainly concentrated among larger enterprises. Information on the aggregate

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macroeconomic environment during the initial years of the *Real* Plan would have helped Brazilian enterprises to improve their profits, particularly when compared to their more highly geared counterparts in other Latin American countries.

[6] See "Rentabilidade Baixa, Mesmo Sem o Peso dos Juros" (Low profitability, even without the burden of interest) in *Gazeta Mercantil,* April 23, 1999.

FX exposure of Brazilian enterprises can be obtained from different sources, but the information is only partial and somewhat conflicting. Nonetheless, the general view is that the existing FX exposure of Brazilian enterprises is usually fully or at least largely hedged.

13. Information provided by the government suggests that the balance sheet FX exposure of the overall private sector in January 1999 amounted to US$95 billion, of which US$71 billion were hedged through various assets, including indexed securities and FX derivatives.[7]

14. Data obtained from Economática show that only 98 of over 300 Brazilian stock companies in the nonfinancial sector have issued debt in foreign currencies; by far the largest single foreign currency debtors were Petrobrás, the state oil conglomerate, and "Light," a recently privatized utility company.

15. Data compiled by CSFB/Garantía show the total FX debt of Brazilian enterprises (including in the financial sector) as amounting to US$39.7 billion; most of this matures in 1999 (Figure 3.1).[8] Of the total, 38 percent (US$15.1 billion) was owed by the financial sector; another 10.3 percent (US$4.1 billion) was considered "quasi-sovereign" as it either had an explicit official guarantee or was owed by enterprises owned by the states or municipalities (Figure 3.2).

16. Still, the immediate recognition of all FX losses that occurred in January would have had a significantly adverse impact on several key financial ratios of Brazilian companies under Brazilian accounting procedures (Brazilian GAAP).[9] To reduce this impact, the government announced, on March 25, 1999, Provisional Measure 1818, which allows enterprises to defer, for up to four years (with amortizations of 25 percent per year), the FX losses resulting from the devaluation.[10] Supporters of this measure argue that it has the benefit of mitigating a deterioration in risk perception and reducing the likelihood of early

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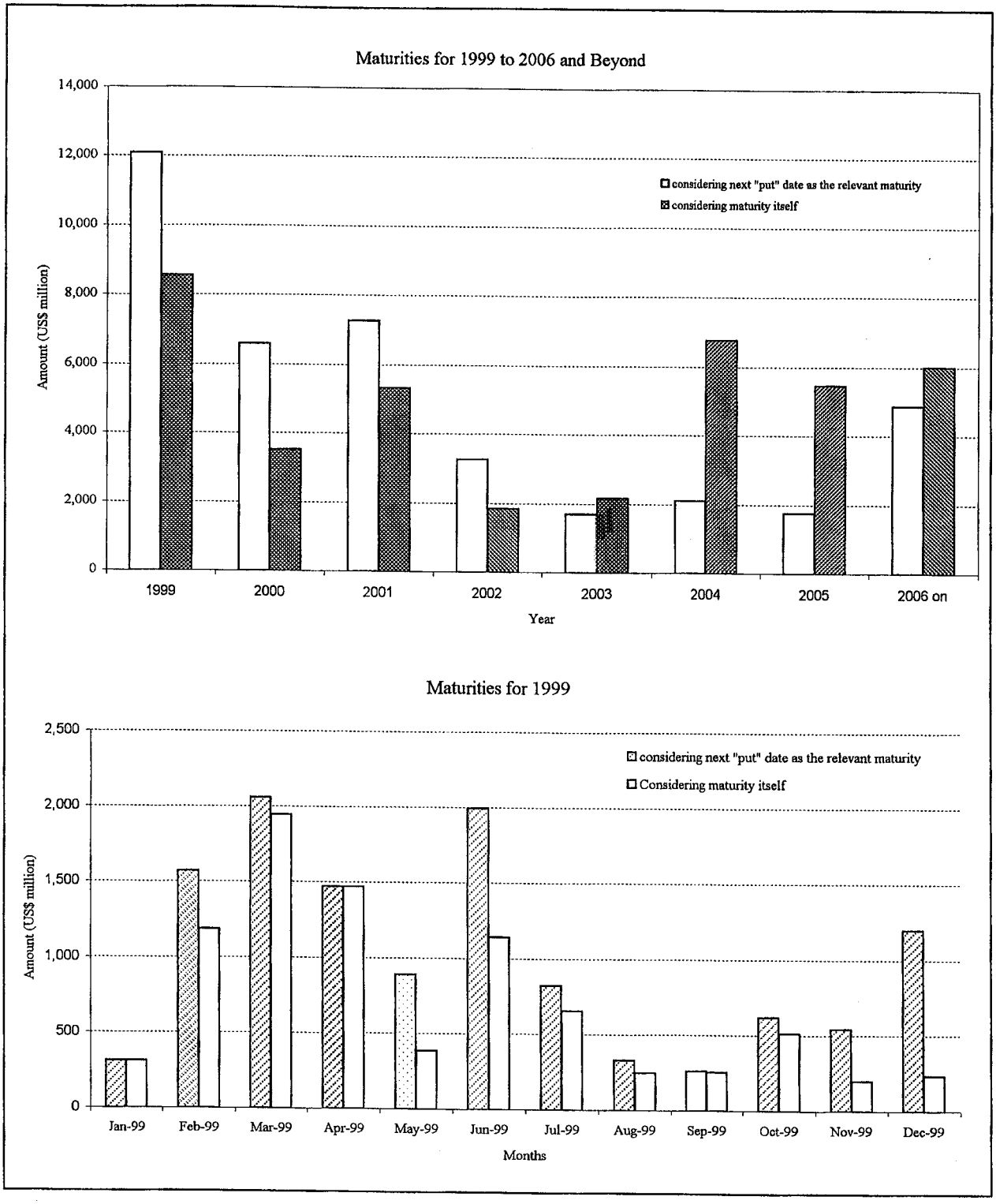
[7] See Federal Republic of Brazil, *Brazil's Macroeconomic Stability Program, 1999–2001*; March 1999.

[8] These data are thought to represent about 90 percent of the FX debt of the enterprise sector. The data comprise only securitized debt, and exclude some bridge loans and syndicated loans. Both bridge loans and syndicated loans were used heavily to raise large amounts of money during the privatization process; in general, they are difficult to track. Bank commercial papers (CPs), although securitized, are also excluded, since they are difficult to track as well. The CSFB/Garantia data focus on the euro market (euro bonds and notes); they also exclude trade finance and intercompany loans.

[9] See Table 3.1 for an illustration for different companies.

[10] Also see "Artifício Contábil Esconde Perdas Com Câmbio" (Artificial Accounting Hides Exchange Rate Losses) in *Gazeta Mercantil*, May 11, 1999.

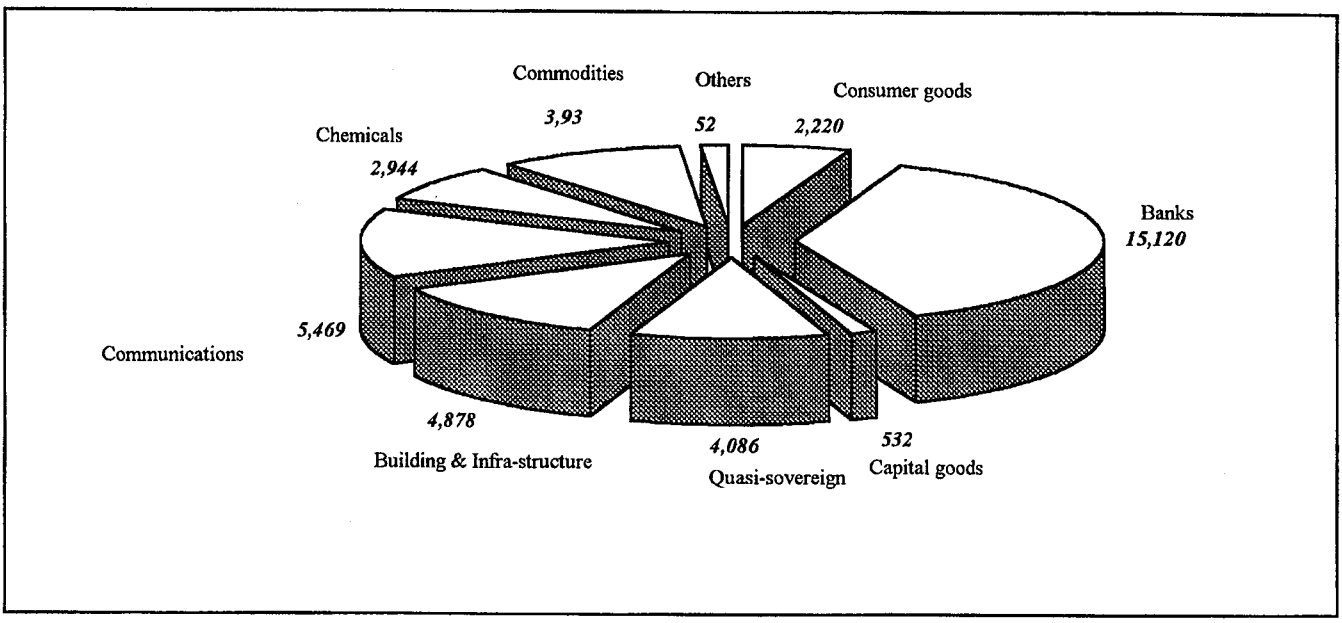
Figure 3.1. Brazil: Maturities of Non-Sovereign FX Debt 1/



Source: CSFB/Garantia

1/ Estimates, on the basis of data availabilities in the first quarter of 1999.

Figure 3.2. Brazil: Non-Sovereign FX Debt Outstanding By Sector
(US$ million)



Source: Estimated by CSFB/Garantia on the basis of Bloomberg, Anbid, and Brazilian newspapers.

Table 3.1. Brazil: Effect of a Depreciation of the *Brazilian Real(R$)* on the Ratio of (Short-term debt + Net Interest)/(EBITDA + Cash) of Various Enterprises under Different Devaluation Scenarios 1/

	Depreciation of the R$ in 1999 (in percent) 2/			
Sector/Enterprise	**20**	**30**	**40**	**50**
Electricity				
Enterprise 1	0.10	0.10	0.09	0.09
Enterprise 2	3.64	3.87	4.17	4.59
Enterprise 3	3.66	4.13	4.76	5.64
Enterprise 4 3/	0.07	0.07	0.07	0.06
Enterprise 5 3/	0.73	0.75	0.77	0.81
Telecommunications				
Enterprise 1	1.17	1.31	1.49	1.75
Media & Pay TV				
Enterprise 1 4/	0.84	0.88	0.94	1.02
Exporters				
Enterprise 1	0.91	0.91	0.91	0.91
Other				
Enterprise 1 3/	0.45	0.49	0.54	0.61
Enterprise 2 3/	2.31	2.60	3.01	3.60
Enterprise 3 3/	1.02	1.12	1.26	1.45
Enterprise 4	0.35	0.39	0.44	0.51
Enterprise 5	0.93	1.02	1.14	1.31
Enterprise 6	0.54	0.58	0.64	0.72
Enterprise 7	0.27	0.31	0.36	0.43
Enterprise 8	1.18	1.25	1.34	1.46
Enterprise 9 4/	0.37	0.42	0.48	0.58
Enterprise 10 3/	3.09	3.36	3.72	4.21
Enterprise 11	2.46	2.72	3.06	3.55
Enterprise 12	6.74	7.37	8.20	9.37
Enterprise 13	0.22	0.25	0.30	0.39

Source: Calculations by CSFB/Garantia on the basis of data for December 1998, except where noted.

1/ Assuming an inflation rate of zero, so as to isolate the effect of the exchange rate; EBITDA refers to earnings before interest, tax, depreciation, and amortization. The data in the table show the estimated increase in the ratio.

2/ The percentages refer to changes in the R$/US$ rate; e.g., a 50 percent devaluation of the R$/US$ rate would imply a change of the exchange rate from R$1.21 (the level prevailing at end-December 1998) to R$1.82.

3/ On the basis of data for September 1998

4/ On the basis of data for December 1997.

forced redemptions of debt as a result of financial covenant noncompliance of Brazilian corporate debt issues.[11] Hence, while this measure does not necessarily affect the fundamental financial soundness of Brazilian companies, it has to be kept in mind that substantial expenses from the total recognition of FX losses, even if only in an accounting sense, would have significantly affected the standard accounting ratios for the year 1999 (such as coverage and leverage ratios). However, the deferral of losses tends to distort financial statements and complicate their interpretation.

17. In the short-run, enterprises with FX debt will feel the impact of the devaluation mostly through interest payments they have to make on this debt. Only about US$8 billion of the total FX debt matures in 1999; although this would increase to about US$12 billion if debt holders were to exercise the put options embedded in some of this debt at the next possible put-date. Of the total FX debt outstanding in January and maturing in 1999, about 57 percent already matured in January-April (45 percent if the put dates are considered the relevant maturity date).

18. Using the data by CSFB/Garantía and Economática, it is possible to analyze the general effects of the devaluation on enterprises in different sectors of the Brazilian economy.[12]

- **Industrial exporters.** Large industrial exporters (e.g., pulp and paper, chemicals, and steel) with ample liquidity should benefit from the devaluation. In particular, these companies should experience an improved operational performance because of local-currency denominated cost structure, and hard-currency denominated cash flows and inventories. While some industrial exporters reportedly experienced short-term liquidity problems because of relatively high levels of short-term debt, they are likely to finance a shortfall in working capital with export securitization, if needed.

- **Electric utility companies.** In general, companies in this sector are thought to be hard hit by the devaluation because many had FX-denominated debt, whereas their revenues are local-currency denominated. As a result of regulatory controls, tariff increases have been somewhat encumbered. Recently utilities that sought external funding to increase their domestic market share by acquiring other electricity distributors are thought to be the ones that are affected most.

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[11] Also see "Brazil—Overcoming the Devaluation Impact on Brazilian Companies' Financial Statements," by CSFB/Garantía, April 15, 1999. Also, many corporate debt issues have embedded put options that, if exercised, could substantially reduce maturities.

[12] Also see "Private Sector Implications of the Real Devaluation," by *CSFB/Garantía*, January 22, 1999.

- **Telecommunication sector.** There are basically two types of companies in this market: the fixed-line (or A-band) operators, i.e., the 13 holding companies that resulted from the split of Telebrás; and the wireless operators, i.e., the seven companies that purchased so-called "B-band" licenses. The impact of the devaluation on the fixed-line operators is thought not to be substantial for three main reasons. First, their FX exposure is minimal when compared to their earnings before interest, taxes, depreciation, and amortization (EBITDA). Second, fixed-line telecommunication use is fairly inelastic to economic swings, although receivables may grow. Third, all 13 companies are owned by strong international companies, like MCI, Telecom Italia, Portugal Telecom, or Telefónica de España. As a result, most of the 13 telecommunication companies have robust balance sheets and are effectively considered "cash cows" by market analysts.

  The seven wireless operators are in a somewhat different position, also because most sought external funding in the form of FX bridge loans. While six of the seven companies are controlled by international companies (such as Bell South, Bell Canada, and Telecom Italia), they have only recently begun operations or are still in a pre-operational phase. Hence, their revenue base is still rather small. The economic slowdown, although not as deep as originally thought, is expected to have an adverse impact on increasing market penetration in the short run. However, with wireless penetration being fairly low in Brazil compared to other countries with a similar per-capita GDP, the long-run potential is considered large, and it is unlikely that the consortia that acquired the wireless licenses will simply walk away in light of the devaluation and the economic slowdown.

- **Pay-TV and media companies.** Many companies in this sector have substantial FX-denominated debt (although they are considered to have been somewhat better hedged than the electric utilities), and their revenue is strongly dependent on domestic demand, which, in turn, is fairly elastic to the business cycle. With the devaluation and the likely increase in receivables, many companies in this sector are likely to face heavy liquidity pressures; some of the smaller Pay-TV operators may require equity injections or debt restructuring.

- **Consumer goods producers and others.** Companies in this sector also had substantial FX-debt exposure, they are sensitive to the business cycle, and their receivables are likely to have increased with the economic slowdown; this could bring about substantial liquidity pressures. Some companies in this sector already experienced financial problems prior to the floating of the *Real* . While there have been vast productivity improvements in this sector (e.g., through better inventory management at manufacturers and retail levels), the industry is expected to struggle in the near term.

19. These analyses, which were carried out just after the *Real* was left to float in January, are now being corroborated to a large extent by first quarter results that are being published by various companies. The results show that the devaluation experiences even within a single

sector have been very different, as the examples from the energy sector illustrate. Eletrobrás, the state energy enterprise, tripled its profits in the first quarter of 1999 compared to the same period of 1998, as the company had 51 percent of its receivables (créditos) indexed to the U.S. dollar, which had a positive balance impact of R$3.3 billion in the quarter.[13] In contrast, Light, a recently privatized electric utility, registered losses of R$1.0 billion due to the devaluation, which are being recognized in the company's balance sheet over a period of four years; reportedly, the company (which had recently acquired a São Paulo energy distributor) had left its U.S. dollar or U.S. dollar indexed liabilities largely unhedged. These losses forced Light to seek an aggressive restructuring of its cost structure in which it cut personnel expenditures by 18 percent, expenditure on materials by 54 percent, and other costs by 28 percent.[14] Another company in the same sector, registered losses of R$65.3 million that were attributable to the January devaluation, and will also be recognized over a period of four years.

D. How Do Brazilian Enterprises Judge Their Near-Term Prospects?

20. With the recent reduction of interest rates and the strengthening of the *Real* after the pressures that were encountered in early 1999, Brazilian entrepreneurs are cautiously optimistic concerning the short-term economic outlook, as evidenced by a survey that was carried out by the National Industry Confederation (CNI) at end-March.[15] The main conclusions of the CNI survey of 807 enterprises (of which 72 were large enterprises) are summarized below.[16] Specifically, Brazilian entrepreneurs expect:

- the exchange rate to stabilize more or less at the actual level, that is in a range between R$1.60 to R$1.80 per U.S. dollar;

- cost increases to be likely, and be passed on to consumers only in part;

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[13] See "Eletrobrás triplica lucro no primeiro trimestre" (Eletrobrás triples profits in first quarter), in *Gazeta Mercantil*, May 21, 1999.

[14] See "Light prorroga perda de R$1 bilhão" (Light prolongs loss of R$1 billion), in *Gazeta Mercantil*, May 19, 1999.

[15] *Sondagem Industrial-Sondagem Trimestral da Confederação National da Indústria*, (Industry Survey-Quarterly CNI Survey); January/March 1999.

[16] The detailed results of this survey are shown in Tables 3.2 to 3.5. They are interesting in that they attest to a significant degree of confidence of Brazilian enterprises in an economic environment that, at the time, was characterized by a significantly higher degree of uncertainty than now. They are also in contrast to similar surveys that were carried out in other countries following a significant exchange rate adjustment.

- the share of imported inputs to decrease, particularly in large enterprises;
- a reduction in import competition, particularly for large enterprises;
- favorable developments for exports to materialize over the next during March–September this year.

E. Conclusions

21. Brazilian enterprises have generally coped well with the depreciation of the *Real* since January and their financial structure is well adapted to operating in an environment of high real interest rates. Widespread loan defaults or enterprise bankruptcies are unlikely to occur.

22. Brazilian enterprises finance themselves less through debt and more through retained earnings than their Latin American counterparts, particularly the small and medium enterprises, which often have lacked access to credit markets. Indebtedness in foreign currencies was also fairly low and, most firms with foreign currency liabilities either had a natural hedge in the form of foreign currency receivables, or had acquired different forms of hedge (for example by acquiring U.S. dollar-indexed government securities) well in advance of the *Real* was let to float in January. The few unhedged or insufficiently hedged enterprises mostly were Brazilian subsidiaries of foreign conglomerates that may be assumed to provide sufficient financial backing. Also, enterprises have been allowed to write off over four years, losses resulting from the devaluation. These conclusions seem generally in line with the cautiously optimistic assessment enterprises have of their near-term prospects.

Table 3.2. Brazil: Results of CNI's March 1999 Survey of Industrial Enterprises

Questions	Average Score (-2 to 2) unless noted otherwise		Explanations/Observations
	SME 1/	LE 1/	
In comparison with the last 6 months, would you say that, in the first quarter of 1999, the general conditions of the Brazilian economy	-1.04	-0.99	Perception of worsened general economic conditions
In comparison with the last 6 months, would you say that, in the first quarter of 1999, the general conditions in your sector of activity	-0.74	-0.80	Perception of worseneed sectoral conditions, albeit worsening is perceived as somewhat less for the sector than for the economy
In comparison with the last 6 months, would you say that, in the first quarter of 1999, the actual conditions for your company	-0.46	-0.30	Perception of worsened company conditions, albeit worsening is perceived as less for the company than for the sector.
What is your expectation for the next six months with respect to the Brazilian economy	0.20	0.26	Cautious optimism that economy will improve.
What is your expectation for the next six months with respect to your sector of activity	0.29	0.24	Cautious optimism that the sectoral situation will improve.
What is your expectation for the next six months with respect to your company	0.48	0.49	Cautious but slightly stronger optimism that the company situation will improve.
During the first quarter of 1999, the volume of production of your company	-0.58	-0.47	Production volumes dropped in the first quarter of 1999.
During the first quarter of 1999, the average level of capacity utilization in your company was	less than 50%	81-90%	Most frequent response; indicates strong differences between small- & medium and large enterprises.
During the first quarter of 1999, the stocks of final products in your company	-0.20	-0.01	Stocks remained fairly unchanged.
During the first quarter of 1999, the stocks of final products in your company were above or below the desired/planned level	-0.16	0.24	Stocks were slightly below the planned levels in SMEs and slightly above in LEs.
During the first quarter of 1999, total employment in your company	-0.31	-0.38	Employment dropped slightly.
During the first quarter of 1999, the total amount billed by your company	-0.59	-0.32	Amounts billed dropped slightly, more so in SMEs.
During the first quarter of 1999, the price/cost ratio of your company	-0.10	-0.10	Prices dropped only very slightly relative to cost.
During the first quarter of 1999, the liquidity of your company	-0.48	-0.35	The liquidity situation of enterprises worsened somewhat.
During the first quarter of 1999, the financial situation of your company	-0.42	-0.26	The financial situation of enterprises worsened somewhat.
If your company exports, do you expect exports to increase/decrease over the next six months	0.57	0.76	The financial situation of enterprises worsened somewhat.

Table 3.2. (concluded). Brazil: Results of CNI's March 1999 Survey of Industrial Enterprises

Over the last six months, the share of exports in the total amount billed by your company was, on average	Does not export	Less than 10 percent	Most frequent response; export earnings are frequently small or insignificant.
Over the last six months, the share of imported inputs in the total cost of production in your company was, on average	Does not import	Less than 10 percent	Most frequent response; expenditures on imports are frequently small or insignificant.
During the first quarter of 1999, what were main obstacles encountered by your enterprise			
High level of taxes	62%	41%	Percent of all responses;
High level of interest rates	48%	63%	SMEs perceive high taxes as their
Redution in the profit margin	46%	37%	bigges obstacle, whereas LEs
Lack of demand	45%	56%	most frequently cite high interest
Uncompromising market competition	41%	41%	rates. LEs also cite lack of demand
Lack of availability of short-term financing	34%	29%	as a major obstacle. Financing
Lack of availability of long-term financing	17%	30%	issues rank only 6th and 7th in
Productive capacity	5%	3%	the list of obstacles.
Other	4%	3%	
Distribution of products	3%	3%	

Source: National Industry Confederation; Sondagem Industrial-Sondagem Trimestral da CNI; Jan.-Mar. 1999.

1/ SME denotes small and medium enterprises; LE denotes large enterprises.

Table 3.3. Brazil: Results of CNI's March 1999 Survey of Industrial Enterprises--Large Enterprises

Questions	Percentage of all responses						Average (Scale -2 to +2)	Comments
In comparison with the last 6 months, would you say that, in the first quarter of 1999, the general conditions of the Brazilian economy	worsened a lot 19%	worsened 68%	are unchanged 6%	improved 7%	improved a lot 0%		-0.99	
In comparison with the last 6 months, would you say that, in the first quarter of 1999, the general conditions in your sector of activity	worsened a lot 17%	worsened 59%	are unchanged 11%	improved 13%	improved a lot 0%		-0.80	
In comparison with the last 6 months, would you say that, in the first quarter of 1999, the actual conditions for your company	worsened a lot 10%	worsened 31%	are unchanged 37%	improved 21%	improved a lot 0%		-0.30	
What is your expectation for the next six months with respect to the Brazilian economy	very pessimistic 0%	pessimistic 21%	unchanged 32%	confident 47%	very confident 0%		0.26	
What is your expectation for the next six months with respect to your sector of activity	very pessimistic 1%	pessimistic 23%	unchanged 27%	confident 49%	very confident 0%		0.24	
What is your expectation for the next six months with respect to your company	very pessimistic 0%	pessimistic 17%	unchanged 26%	confident 48%	very confident 9%		0.49	
During the first quarter of 1999, the volume of production of your company	dropped a lot 14%	dropped 38%	was unchanged 29%	increased 19%	increased a lot 0%		-0.47	
During the first quarter of 1999, the average level of capacity utilization in your company was	less than 50% 6%	50-60% 17%	61-70% 20%	71-80% 22%	81-90% 23%	over 90% 12%		
During the first quarter of 1999, the stocks of final products in your company	dropped a lot 3%	dropped 21%	was unchanged 51%	increased 24%	increased a lot 1%		-0.01	

Table 3.3 (concluded). Brazil: Results of CNI's March 1999 Survey of Industrial Enterprises--Large Enterprises

During the first quarter of 1999, the stocks of final products in your company were above or below the desired/planned level	much below 0%	below 11%	as planned 55%	above 33%	much above 1%		0.24	Average period for stock turnover was 38 days
During the first quarter of 1999, total employment in your company	dropped a lot 4%	dropped 41%	was unchanged 44%	increased 11%	increased a lot 0%		-0.38	
During the first quarter of 1999, the total amount billed by your company	dropped a lot 8%	dropped 39%	was unchanged 30%	increased 23%	increased a lot 0%		-0.32	
During the first quarter of 1999, the price/cost ratio of your company	was reduced a lot 4%	was reduced 39%	was unchanged 23%	increased 31%	increased a lot 3%		-0.10	
During the first quarter of 1999, the liquidity of your company	was reduced a lot 3%	was reduced 39%	was unchanged 48%	increased 10%	increased a lot 0%		-0.35	
During the first quarter of 1999, the financial situation of your company	worsened a lot 1%	worsened 41%	are unchanged 41%	improved 17%	improved a lot 0%		-0.26	
If your company exports, do you expect exports to increase/decrease over the next six months	decrease a lot 0%	decrease 2%	no change 23%	increase 74%	increase a lot 2%		0.76	
Over the last six months, the share of exports in the total amount billed by your company was, on average	do not export 3%	less than 10% 32%	10-20% 20%	21-30% 19%	31-50% 9%	over 50% 17%		
Over the last six months, the share of imported inputs in the total cost of production in your company was, on average	do not import 10%	less than 10% 40%	10-20% 18%	21-30% 15%	31-50% 16%	over 50% 1%		

During the first quarter of 1999, what were main obstacles encountered by your enterprise (percent of all respondents)	
High level of taxes	41%
High level of interest rates	63%
Redution in the profit margin	37%
Lack of demand	56%
Uncompromising market competition	41%
Lack of availability of short-term financing	29%
Lack of availability of long-term financing	30%
Productive capacity	3%
Other	3%
Distribution of products	3%

Table 3.4. Brazil: Results of CNI's March 1999 Survey of Industrial Enterprises--Small and Medium Enterprises

Questions	Percentage of all responses						Average (Scale -2 to +2)	Comments
In comparison with the last 6 months, would you say that, in the first quarter of 1999, the general conditions of the Brazilian economy	worsened a lot 25%	worsened 59%	are unchanged 11%	improved 5%	improved a lot 0%		-1.04	
In comparison with the last 6 months, would you say that, in the first quarter of 1999, the general conditions in your sector of activity	worsened a lot 17%	worsened 51%	are unchanged 21%	improved 11%	improved a lot 0%		-0.74	
In comparison with the last 6 months, would you say that, in the first quarter of 1999, the actual conditions for your company	worsened a lot 9%	worsened 44%	are unchanged 33%	improved 12%	improved a lot 2%		-0.46	
What is your expectation for the next six months with respect to the Brazilian economy	very pessimistic 2%	pessimistic 22%	unchanged 31%	confident 44%	very confident 1%		0.20	
What is your expectation for the next six months with respect to your sector of activity	very pessimistic 2%	pessimistic 19%	unchanged 29%	confident 48%	very confident 2%		0.29	
What is your expectation for the next six months with respect to your company	very pessimistic 2%	pessimistic 15%	unchanged 23%	confident 53%	very confident 7%		0.48	
During the first quarter of 1999, the volume of production of your company	dropped a lot 16%	dropped 42%	was unchanged 28%	increased 12%	increased a lot 2%		-0.58	
During the first quarter of 1999, the average level of capacity utilization in your company was	less than 50% 25%	50-60% 23%	61-70% 20%	71-80% 16%	81-90% 12%	over 90% 4%		
During the first quarter of 1999, the stocks of final products in your company	dropped a lot 7%	dropped 28%	was unchanged 44%	increased 20%	increased a lot 1%		-0.20	

Table 3.4 (concluded). Brazil: Results of CNI's March 1999 Survey of Industrial Enterprises--Small and Medium Enterprises

During the first quarter of 1999, the stocks of final products in your company were above or below the desired/planned level	much below 7%	below 27%	as planned 43%	above 21%	much above 2%		-0.16	Average period for stock turnover was 28 days
During the first quarter of 1999, total employment in your company	dropped a lot 5%	dropped 31%	was unchanged 54%	increased 10%	increased a lot 0%		-0.31	
During the first quarter of 1999, the total amount billed by your company	dropped a lot 16%	dropped 45%	was unchanged 23%	increased 14%	increased a lot 2%		-0.59	
During the first quarter of 1999, the price/cost ratio of your company	was reduced a lot 7%	was reduced 34%	was unchanged 24%	increased 32%	increased a lot 3%		-0.10	
During the first quarter of 1999, the liquidity of your company	was reduced a lot 10%	was reduced 37%	was unchanged 45%	increased 7%	increased a lot 1%		-0.48	
During the first quarter of 1999, the financial situation of your company	worsened a lot 9%	worsened 37%	are unchanged 42%	improved 11%	improved a lot 1%		-0.42	
If your company exports, do you expect exports to increase/decrease over the next six months	decrease a lot 0%	decrease 7%	no change 36%	increase 50%	increase a lot 7%		0.57	
Over the last six months, the share of exports in the total amount billed by your company was, on average	do not export 47%	less than 10% 23%	10-20% 20%	21-30% 16%	31-50% 12%	over 50% 4%		
Over the last six months, the share of imported inputs in the total cost of production in your company was, on average	do not import 34%	less than 10% 25%	10-20% 15%	21-30% 9%	31-50% 9%	over 50% 8%		

During the first quarter of 1999, what were main obstacles encountered by your enterprise (percent of all respondents)	
High level of taxes	62%
High level of interest rates	48%
Redution in the profit margin	46%
Lack of demand	45%
Uncompromising market competition	41%
Lack of availability of short-term financing	34%
Lack of availability of long-term financing	17%
Productive capacity	5%
Other	4%
Distribution of products	3%

Table 3.5. Brazil: Results of CNI's March 1999 Industry Survey on the Impact of Devaluation (Percent of all Responses)

Question/Alternatives	SME 1/	LE 1/
The devaluation of the Real caused production costs in your company to		
increase a lot	33%	55%
increase somewhat	60%	3%
remain unchanged	7%	42%
Under the assumption that costs increase due to the devaluation, what should be the policy for forming prices		
Pass cost increases through to prices entirely	14%	10%
Pass cost increases through to prices only in part, and reduce profit margins	30%	12%
Pass cost increases through to prices only in part; try to reduce other costs and/or increase productivity	41%	66%
Do not pass cost increases through to prices, but reduce profit margins	4%	3%
Do not pass cost increases through to prices; try to reduce other costs and/or increase productivity	11%	9%
Given that imports are now more expensive, imported inputs in your company will		
be completely substituted by domestic inputs	2%	2%
be completely substituted by domestic inputs	25%	57%
remain unchanged	43%	37%
The company does not use imported inputs	30%	5%

Question/Alternatives	SME 1/	LE 1/
Given that imports are now more expensive, competition with these products in your sector will		
decrease a lot	12%	13%
decrease a little	28%	44%
remain unchanged	32%	32%
no competition from imports in sector	28%	10%
The devaluation of the real caused exports of your company to increase/decrease		
Increase a lot	8%	22%
Increase a little	26%	64%
Remain unchanged	10%	5%
The company does not export but will seek to export now	17%	5%
The company does not export and will continue not to export	39%	5%
In case your company expects to increase exports or seeks to export now, this will occur over the next		
3 months	13%	29%
3-6 months	24%	35%
6-12 months	20%	24%
12 months and more	2%	6%
does not apply	41%	6%

Source: National Industry Confederation; Sondagem Industrial-Sondagem Trimestral da CNI; January-March 1999.

1/ SME denotes small and medium enterprises; LE denotes large enterprises.

IV. BRAZIL: THE FISCAL RESPONSIBILITY LAW[1]

1. In April 1999 the government submitted to congress a draft of the Fiscal Responsibility Law (FRL) which sets general principles and rules to guide budgetary planning and execution for all levels and branches of government. The authorities expect the draft FRL to be enacted into law by the end of 1999. The FRL is expected to improve the management of the public finances and ensure fiscal sustainability. In particular, the FRL establishes limits on the level of public indebtedness and budget deficits, and establishes corrective steps to be taken in cases of deviations from fiscal objectives and targets. The FRL also contains mandatory rules to enhance fiscal transparency and responsibility, such as the publication of fiscal objectives, goals and results according to standard accounting rules. Also public officials are subject to sanctions and penalties for nonobservance of specific norms, rules, and limits.

2. **Limits on the consolidated net debt of each level of government** are to be established as a proportion of its net tax revenues,[2] by the Senate on recommendations from the President of the Republic. There are two limits for each level of government, a maximum ceiling and a prudential limit that is always set at a level below the maximum ceiling. If the maximum debt ceiling is exceeded, the stock of debt would need to be reduced to the maximum limit by the end of the second quarter after the quarter where the excess occurs, with at least half of the adjustment taking place in the first quarter. The nonobservance of the timeframe to get under the maximum debt limit by states and municipalities would trigger the suspension of voluntary transfers of the central government to states or of the states to municipalities. During the time the maximum limit is exceeded, all borrowing operations will be stopped, except for debt refinancing, and all available cash balances will be transferred to a special account at the central bank or another official financial institution where drawings on the account will be permitted only for essential expenses. While the prudential limit is exceeded, total expenses are required to be below total revenues.

3. The **limits on borrowing operations** envisaged in the FRL are generally governed by the golden rule that stipulates that the level of borrowing operations is limited by the level of capital expenditures. In addition, central bank financing to the federal, state and municipal governments is strictly prohibited. Also, short-term revenue anticipation loans (AROs) from banks are permitted only to bridge possible temporary cash shortfalls and must be fully

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[1] Prepared by Rogerio Zandamela.

[2] On recommendations from the President of the Republic, the Senate can establish other limits, for each sphere of government, in terms of their net worth or other fiscal or macroeconomic variables.

repaid by December 15 of each year.[3] In cases of unlawful credit operations, the law requires that they be cancelled or that a compensatory reserve be created. The sanctions for noncompliance with the relevant cancellation requirements include the ineligibility to receive voluntary transfers and the preclusion to undertake any borrowing, except for debt refinancing.

4. The FRL contains a number of **rules and limits that discipline expenditures** for all entities of the federation. A general rule that applies to all categories of expenditure is a compensation mechanism that stipulates that any long-term increase in expenditure (more than three years) has to be fully offset by a reduction in other expenses or by an increase in revenues.[4] For social security expenses, there is a specific rule that prohibits the creation of benefits or services without identification of the corresponding source of funding. In addition, the compensating principle is reinforced through the requirement that any permanent increase in social security benefits has to be offset fully within the framework of the social security system itself.[5] In particular, the accounts and funding for the social security system have to be separated from the treasuries of each entity of the federation and its resources can only be used for the payments of social security benefits.

5. For **personnel expenses**, the FRL would strengthen the restrictions of the Camata Law II, passed in June 1999, by introducing maximum and prudential limits for each entity of the federation. The maximum limits, determined as a proportion of net tax revenues, are 60 percent for the central government, 80 percent for the states, and 70 percent for the municipalities.[6] Within each government level, the maximum limit on personnel expenses as a proportion of net tax revenues has been assigned in line with the current distribution among the legislative, judiciary, and executive branches.[7] There will be no increases in personnel expenses of the executive or legislative in the six-month period prior to the end of the legislature, or of the term of office the executive. Prudential limits are set at 90 percent of the

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[3] In the last year of the term of office of the government, the deadline is anticipated to end-June.

[4] However, severance payments and related outlays resulting from layoffs or the voluntary dismissal program will not count for the purposes of compliance with this limit.

[5] The exceptions are the additional benefits that are contemplated in the existing legislation, namely the ones that result from an increase in the number of beneficiaries or the inflation adjustment in benefits.

[6] In terms of net current revenues, these are equivalent to the limits of 50 percent for the federal government and 60 percent for the states and municipalities embodied in the Camata Law.

[7] An alternative limit for the judiciary and the legislative is 30 percent of their own tax revenues (net of transfers), with the lower of the two being valid.

maximum limit. In the event the prudential limit is exceeded, following the Lei Camata II, the FRL stipulates that it is prohibited to grant additional benefits to civil servants, including wage increases, create new positions, and grant overtime payments. After mid-2001 (when the transition period ends for Lei Camata II), when the maximum limit is exceeded, a period of two quarters is allowed to eliminate the excess, where half of the adjustment is to be done in the first quarter. If adjustment is not completed within the specified period of time, federal and state transfers will be suspended, borrowing operations will be precluded, except for debt refinancing, and in the case of the prosecutor's office, the budget allocation will be transferred to a special account where they can only be used upon confirmation of compliance with the limit.

6. Other restrictions on expenditures include **limits on unspent commitments (restos a pagar)**. Only expenditures already committed and executed by the last day of the fiscal year and liquidated (i.e., approved for payment) by January 31 will be included in the category of *restos a pagar*. Their level will be limited by the amount of cash balances available on the last day of the fiscal year plus 5 percent of total expenditures effectively paid during the fiscal year, so that in cases of excess, the budgetary allocations of the following fiscal year will be reduced accordingly. In the last year of the legislature or term of office of the government, the amount of *restos a pagar* cannot exceed the amount of available cash balances.

7. The FRL requires the multiyear development plan *Plano Plurianual (*PPA), the budget guideline law Lei de Diretriz Orcamentaria, (LDO) and the annual budget **to define rolling fiscal objectives and targets** for three-year periods. When it is estimated that the fiscal targets will not be met at any level of government, automatic cutbacks in expenditure will need to be effected until attainment of the fiscal targets is ensured. In the event this is not done in the case of states and municipalities, the federal government is authorized to withhold transfers to them.[8]

8. The FRL also includes **mandatory rules for fiscal transparency and responsibility**, such as the publication and dissemination of the objectives, goals and expected fiscal results, that will be reported according to standard accounting rules, explicitly including the potential risks for fiscal policy. The federal government is required to consolidate the accounts of all members of the federation. Heads of governments are also required to sign a fiscal responsibility statement and to publish a quarterly and an annual economic and fiscal performance report assessing compliance with the relevant limits and targets; establishing accountability; justifying deviations and indicating corrective actions; and defining the estimated period for the adoption of corrective actions. There are also a number of rules that govern intergovernmental relations. Specifically, the granting of new intergovernmental

[8] Exceptions to the application of the automatic cutbacks in expenditures will be allowed in situations of state of war, internal disturbances or calamity, and deceleration or negative rate of growth of GDP.

credits is strictly prohibited even for purposes of renewal or refinancing of outstanding debt; and official financial institutions cannot grant credit to entities that control them.

9. Managers that fail to observe the provisions of the FRL will be liable to criminal charges that are in a separate legislation—the **Fiscal Criminal Law**—that was submitted to congress on the same date of submission of the FRL. The Fiscal Criminal Law defines as a crime subject to imprisonment of up to four years, the nonobservance of the principles, norms and rules governing the FRL.

V. Reform of Brazil's Public Pension System[1]

Basic characteristics of Brazil's pension system prior to the recent reforms[2]

1. The basic tier of the Brazilian pension system—hereafter, the public pension system—is made up of a very large number of plans. No one plan, like OASDI in the United States covers the whole population. There is one plan for private sector workers, the RGPS (Regime Geral de Prevêdencia Social, or General Social Security Regime), which is run by the National Social Security Institute (for which the Portuguese acronym is INSS), and over a thousand plans for civil servants at the federal, state and municipal levels of governments. Actual contributors to the RGPS number approximately 22 million, and contributors to the federal plan number about 1 million, compared with a labor force of about 75 million.

2. The public sector plans are governed by the terms of the Regime Jurídico Unico (RJU). The federal government's plan is the largest of these, but is rivaled in size by the plans of the large states. There are substantial differences between the RGPS and the public sector plans as regards generosity of benefits, and conditions of eligibility. Even within the private sector, there is, or has been, a considerable lack of uniformity in the treatment of contributors in different occupations.

3. Until recently, the public sector plans were noncontributory, and current contributions by civil servants still cover only a small part of the cost of current benefits.[3] Given the size of general government in Brazil, and the generosity of benefits, it is not surprising that the public sector plans taken together are already running large cash flow deficits (see Table 5.1). The private sector plan moved from a small cash flow surplus to a deficit in the early 1990s. The combined cash flow deficit of public and private sector plans exceeded 4.4 percent of GDP in 1998. Despite the much smaller coverage of the public sector plans, their total expenditure is about ¾ that of the RGPS, and they account for more than ¾ of the total deficit of the public pension system.

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[1] Prepared by G.A. Mackenzie and Christian Keller.

[2] This section's account of the existing public pension system and the proposed reforms draws on "O Novo Modelo Previdenciário Brasileiro: Uma Fase de Transição" (Brazil's New Model of Social Security: a Transitional Phase) by Waldeck Ornélas, available on the website of the Ministerio de Previdência e Assistencia Social, (www.mpas.gov.br) and on the guide "Como Você fica com a Reforma da Previdência" (How do you fare under the Pension Reform), at the same site.

[3] Public sector pensions were not initially even conceived of as a pay-as-you-go plan, much less a savings plan, but simply as a vehicle for deferred compensation.

Table 5.1. Brazil: Summary Financial Indicators for the Brazilian Public Pension System, 1998

(In billions of reais)

	Federal	State and Municipal	General Government	INSS (Private Sector)	Total (Private and Public)
Contributions	2.5	4.3	6.8	46.6	53.4
Expenditure	19.4	19.6	39	53.8	92.8
Balance (-deficit)	-16.9	-15.3	-32.2	-7.2	-39.4
Balance (as percent of GDP)	-1.9	-1.7	-3.6	-0.8	-4.4

4. The private sector plan has high *statutory* contribution rates (20 percent for employers and, until the recent reform, progressive rates with a top rate of 11 percent on a maximum salary of 10 minimum wages for employees).[4] However, evasion is high, and *effective* rates (actual collections as a share of the contributory base) are much less than statutory ones, in large part because benefits have not been tied to actual contributions, due to the lack of individual accounting of the history of contributions by plan participants' contributors.

5. Both public and private sector plans bestow remarkably generous benefits (see Tables 5.2 and 5.3, which summarize the basic terms of the plans for the private sector and federal public sector). Plan participants become eligible for a pension at an early age, and enjoy a very high replacement ratio (the ratio of the pension to income during the contributor's working life). Until the recent reforms, there was no minimum age requirement for a retirement pension in either the public or the private sector. Instead, a full pension could be had with 35 years of plan participation (which did not necessarily imply 35 years of contributions) for men and 30 years for women in both public and private sectors. A full pension was 100 percent of pensionable income. In the private sector pensionable income was the average of the last three years of income (indexed in current reais).[5] In the public sector, it was the last paycheck, which meant that civil servants could retire with a pension greater than their take-home pay. In common with other countries in Latin America and elsewhere, life expectancies in Brazil have increased dramatically in the last 30 years. As a result, the period over which a pension would be drawn could easily exceed the period of

[4] These rates also finance disability, old-age and survivors pensions.

[5] Certain occupations have enjoyed even more generous treatment (see Table 5.2), although this treatment has not always been justified by the nature of the work they were performing.

Table 5.2 Brazil: Outline of Main Features of the Basic RGPS Program

Former Regime	Present Regime 1/	Future Regime
Contributions		
Employee: progressive rates of 8, 9, 11 percent of up to R$1,200 monthly wage (adjusted for inflation).	Employee: unchanged.	Employee: uniform 11 percent of up to R$1,200 monthly wage (adjusted for inflation); contribution earmarked for notional pension account.
Employer: proportional rate of 20 percent of wage payments.	Employer: unchanged.	Employer: unchanged rate earmarked for notional pension account; contribution above R$1,200 used for general expenses and reduced as permitted by declining deficit of program.
Old-age benefits		
Eligibility: 65/60 years of age (male/female), with minimum contribution period; 2/ rural workers may retire 5 years earlier.	Eligibility: 65/60 years of age (male/female), with minimum contribution period; 2/ rural workers may retire 5 years earlier.	Eligibility: at retirement age selected by contributor, subject to a minimum age.
Benefit: 70 percent (plus 1 percent yearly increment above minimum contribution period, up to 100 percent) of inflation-adjusted average wage of last 3 years.	Benefit: unchanged, but based on average of lifetime wage earnings to be phased in with yearly additions to average wage calculation--and linked to R$1,200 monthly, adjusted for inflation.	Benefit: determined by inflation-adjusted accumulated lifetime contributions in notional pension account and by life expectancy at retirement; alternatively, a social minimum pension at 70 years of age or above.
Length-of-service/contribution benefits		
Eligibility: minimum service period 30/25 years (male/female).	Eligibility: for a proportional pension transition for current contributors, at 53/48 years of age, with 30/25 years of contribution (male/female) plus a charge of 40 percent of period remaining until retirement at time of the reform for a full pension-unchanged.	Eligibility: after 30/35 years of contribution and subject to minimum retirement age.
Benefit: 70 percent (plus 6 percent yearly increment above minimum service period, up to 100 percent) of inflation-adjusted average wage of last 3 years of employment.	Benefit: 100 percent of inflation-adjusted average lifetime wage earnings--to be phased in with yearly additions to reference period--and limited to R$1,200 monthly, adjusted for inflation.	Benefit: determined by inflation-adjusted accumulated lifetime contributions in notional pension account and by life expectancy at retirement.
Occupation-specific benefits		
Eligibility: for aircraft crews, journalists, veterans, teachers after 30/25 years of service (male/female); for hazardous occupations 5, 10, or 15 years earlier, depending on occupation.	Eligibility: primary and secondary teachers after 30/25 years of service (male/female); for specific hazardous activities 5, 10, or 15 years, limited to actual performance of hazardous activity.	Eligibility: primary and secondary teachers after 30/25 years of service (male/female); others determined by actual performance of hazardous activity.
Benefit: 100 percent of inflation-adjusted average wage over last 3 years of employment.	Benefit: 100 percent of inflation-adjusted average lifetime wage earnings--to be phased with yearly additons to average wage calculation--and limited to R$1,200 monthly, adjusted for inflation.	Benefit: determined by inflation-adjusted accumulated contributions in notional pension account, enhanced by additional risk-related employer contributions, and by life expectancy at retirement.
Disability benefits		
Eligibility: certified temporary or permanent, and full or partial disability.	Eligibility: certified temporary or permanent, and full or partial disability.	Eligibility: revised criteria for determining temporary and permanent disability.
Benefit: up to 100 percent of inflation-adjusted average wage of last 3 years.	Benefit: up to 100 percent of inflation-adjusted average lifetime wage earnings --to be phased in with yearly additions to the average wage calculation.	Benefit: determined by inflation-adjusted accumulated lifetime contributions in notional pension account and by life expectancy.
Survivors' benefits		
Eligibility: death of beneficiary.	Eligibility: unchanged.	Eligibility: unchanged.
Benefit: 100 percent of inflation-adjusted average wage of last 3 years if deceased still working; continuation of pension benefit otherwise.	Benefit: unchanged.	Benefit: unchanged, but subject to age limit and means test for survivor.

1/ After December 16, 1998.

2/ Minimum contribution period for eligibility is 9 years at present--phased in from 5 years in 1991 to 15 years effective 2011.

Table 5.3 Brazil: Outline of Main Features of the Basic Federal RJU Program

Former Regime	Present Regime 1/	Future Regime
Contributions		
Employee: uniform rate of 11 percent of wages.	Employee: progressive rate of 11, 20, 25 percent of wages.	Employee: rate determined by retirement age selected by contributor, applied on monthly wage up to R$1,200 (adjusted for inflation); contribution earmarked for notional pension account and calibrated to yield a benefit equivalent to last monthly wage to a maximum of R$1,200. (For supplementary pension, voluntary defined contribution on monthly wage above R$1,200.)
Employer: government finances deficit of the program.	Employer: unchanged.	Employer: equivalent to twice the employee contribution, earmarked for notional account. (For supplementary pension, contribution is at most equivalent to employee contribution.)
	Pensioner: progressive rate of 0, 11, 20, 25 percent of pension; disabled or above 70 years of age, with monthly pension less than R$3,000 are exempt.	
Old-age benefits		
Eligibility: voluntary retirement at 65/60 years of age (male/female); mandatory at 70 years of age.	Eligibility: voluntary retirement at 65/60 years of age (male/female), subject to minimum tenure of 10 years in government and 5 years in the position in which retirement occurs.	Eligibility: at retirement age selected by contributor, subject to minimum tenure of 10 years in government and 5 years in position in which retirement occurs.
Benefit: 100 percent of last monthly wage, adjusted for subsequent wage increases in same position.	Benefit: unchanged, but limited by salary of supreme court judges.	Benefit: Unchanged.
Length-of-service/contribution benefits		
Eligibility: after 30/25 years of service (male/female).	Eligibility: transition for current contributors, at 53/48 of age, with 30/25 years of contribution (male/female), plus a charge of 40 percent of period remaining until retirement at time of the reform, or alternatively, with 35/30 years, charge is reduced to 20 percent of remaining period.	
Benefit: 70 percent (plus 6 percent yearly increment above minimum service period, up to 100 percent) last monthly wage, adjusted for subsequent wage increases in same position.	Benefit: unchanged, but limited by salary of supreme court judges.	Benefit: maximum R$ 1,200. (For supplementary pension, defined contribution.)
Occupation-specific benefits		
Eligibility: for teachers 5 years earlier than for other government employees.	Eligibility: unchanged.	Eligibility: unchanged.
Benefit: 100 percent of last monthly wage, adjusted for subsequent wage increases in same position.	Benefit: unchanged, but limited by salary of supreme court judges.	Benefit: maximum R$ 1,200. (For supplementary pension, defined contribution.)
Disability benefits		
Eligibility: certified temporary or permanent, and full or partial disability.	Eligibility: unchanged.	Eligibility: revised criteria for determining temporary and permanent disability.
Benefit: 100 percent of last monthly wage, adjusted for subsequent wage increases in same position.	Benefit: unchanged, but limited by salary of supreme court judges.	Benefit: maximum R$ 1,200. (For supplementary pension, defined contribution.)
Survivors' benefits		
Eligibility: death of beneficiary	Eligibility: unchanged.	Eligibility: unchanged.
Benefit: 100 percent of last monthly wage, adjusted for subsequent wage increases in same position.	Benefit: unchanged.	Benefit: maximum R$ 1,200, but subject to age limit and means test for survivor. (For supplementary pension, defined contribution.)

1/ After December 16, 1998.
2/ Minimum contribution period for eligibility is 9 years at present--phased in from 5 years in 1991 to 15 years effective 2011.

plan participation and contribution, particularly in the case of women. Among recent retirees from the federal government, almost 40 percent were aged 50 or less.[6]

6. Pensions are also subject to indexation. In periods of very high inflation, lags in indexation could effectively reduce their real value, but this cannot occur to any significant extent when inflation is low. A "proportional" or early retirement pension, with a replacement ratio of 70 percent—a generous rate for a full pension by international standards—was available after 30 years for men, and just 25 for women. These eligibility conditions created strong incentives to retire very early.

7. Studies of pension systems around the world typically a country's pension system in approximate cash flow equilibrium, but facing deficits that will only grow in the future unless action is taken. This usually results from the increase in a country's dependency ratio—basically, the ratio of pensioners to working age population, and to the phenomenon of pension plan maturation—whereby benefits tend to grow in relation to wages because the proportion of retirees with a full pension grows as the plan matures. In Brazil's case, the cash flow deficit is already very large, and demography, if not plan maturation, is working against it.

The reforms of late 1998–early 1999

8. To understand how the reform package consisting of the Constitutional Amendment of December 16, 1998 and the Ordinary Law of January 1999 will affect Brazil's public pension system, it is useful to bear three distinctions in mind. First, the Constitutional Amendment makes a fundamental distinction between changes to the permanent rules of the system—which affect only those who begin to contribute to the public and private system after December 16, 1998—and so-called transitional rules, which apply to those already contributing to one of the plans. Second, the reform includes measures whose effect, although modest to begin with, grows over time, and others whose effect is immediate, but without a strong cumulative element. Third, some changes apply to both the RJU and the RGPS; others apply to one but not the other.

The Ordinary Law of January 1999

9. This law imposes contributions at progressive rates varying from 11 to 25 percent on civil service retirees. This measure, unlike those that make up the constitutional amendment, is not phased in, and affects the current generation of retirees, not just future retirees. It complements the more gradualist approach embodied in the Constitutional Amendment. From both a distributional point of view, and the need to address the urgent problem of the public sector system's finances, it is easy to justify.[7]

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[6] MARE, Boletim Estadístico de Pessoal No. 36, April 1999.

[7] Each is currently the object of court actions.

The Constitutional Amendment of December 16, 1999

10. From the point of view of their impact on the finances of the public pension system over the next 30 years, the two most important elements of the reform were these:

- The introduction of minimum retirement ages of 53 years for men, and 48 years for women, as a transitional rule. This rule applies to civil servants seeking to retire on either a proportional or a full pension, and to private sector plan participants intending to retire on a proportional pension. For civil servants, minimum retirement ages of 60 and 55 are introduced as a part of the permanent regime. No minimum age requirement applies to private sector plan participants retiring on a full pension, however.

- A lengthening of the required contribution period for either a proportional or full pension for civil servants who had not yet qualified for a pension when the Constitutional Amendment was ratified. The required contribution period for a full pension is not lengthened for private sector plan participants, however; it remains 35 years for men and 30 for women.

11. The way in which contribution periods have been lengthened is a little complex. Specifically, the *increase* in the required period of contribution is determined by the *shortfall* in the number of years of contributions as of the date of introduction of the new law from the minimum contribution period required for a pension. (The former minimum contribution periods for a full pension were 35 years from men and 30 years for women, and for a "proportional" pension were 30 years for men and 25 years for women). In the case of a full pension, an additional period of time (a "toll") of ***2.4 months for each year of shortfall*** is added to the required contribution period (for civil servants only). For the proportional pension, the toll is ***4.8 months per year of shortfall***. Consequently, someone who had contributed for 30 years, five short of the minimum required for a full pension when the reform was introduced would have to work for 5 years plus 1.0 years to qualify for a full pension.

12. These provisions are transitional, inasmuch as they apply only to persons now in the labor force and contributing to one system or another, and they must both be satisfied to qualify a contributor for retirement. Their combined effect is to increase both the average retirement age of new pensioners and the average period over which they must contribute to the system. Persons joining the labor force *after* December 16, 1998, when the reform was passed, and working in the private sector are not subject to a minimum age requirement.

13. A number of other important changes affected only the RGPS, and affect both current and future contributors:

- The three-year pre-retirement period used in the calculation of the pensionable base is to be phased out, and a lifetime income base gradually phased in.

- The special regimes applying to certain occupations were eliminated.

- A cap of R$1,200 (now R$1,255) was imposed on RGPS pensions.

14. Apart from the impact of the minimum age requirement (discussed below), the reform has an effect on the number of retirees in a given year and the average age of retirement as a result of the increase in the minimum contribution period. The way the increase in the contribution period works is to increase the effective retirement age of contributors in an inverse relation to the number of years they had contributed when the Amendment was ratified. For example, a male civil servant who is exactly 51 years old and has contributed for 33.0 years as of December 16, 1998 when the reform was implemented would have to work an additional 4.8 months (20 percent of 2 years) to qualify for a full pension. If he has worked for 31 years, he must work for an additional 9.6 months. (His private sector counterpart with the same age and work experience does not have to work this additional period to qualify for a full pension, and can retire at age 53). The toll thus works to lengthen gradually the minimum contribution period for each successive generation, and it is a means of achieving de facto a substantial increase in the effective retirement age, albeit a very gradual increase that leaves retirement ages below those of most countries.

15. The toll's effect on the age of retirement is more pronounced in the case of proportional retirement. Someone who has just entered the labor force and so would have 30 years to go before being eligible to retire with a pension of 70 percent of the maximum without the toll would have to work an additional 12 years with the toll before qualifying, or for 42 years in all. This effect makes the proportional retirement option irrelevant in practical terms for the cohorts who just entered the labor force and have not accumulated any years of contributions yet. As can be seen from Table 5.4 with the 42 years of work necessary to receive a proportional pension at 70 percent, the same person also qualifies for the full retirement with a 100 percent replacement rate.

Table 5.4. The Relationship Between Years of Contribution and the Addition to the Required Period of Contribution (for men)

Years of Contributions When Reform Passes	Additional Years for Full Retirement (100 Percent Replacement Rate After 35 Years)	Additional Years for "Proportional" Retirement (70 Percent Replacement Rate After 30 Years)
34	1 + 0.2	
33	2 + 0.4	
30	5 + 1	
25	10 + 2	5 + 2
20	15 + 3	10 + 4
15	20 + 4	15 + 6
10	25 + 5	20 + 8
5	30 + 6	25 + 10
0	35 + 7	30 + 12

16. The minimum age requirement also has an effect on the age of retirement, but only in the case of participants who entered the labor force and began contributing at a relatively early age, and has no effect in the case of private sector workers retiring on a full pension. A man beginning work at age 20 will not have satisfied the contribution period of a full pension by the time he reaches age 53. In his case, the minimum age requirement is not binding. On the other hand, someone beginning work at age 16 will have satisfied the contribution period for a full pension by the time he has reached age 51, but will have to work an additional two years if he is a civil servant. The minimum age retirement can thus increase the average retirement age of new retirees. It will, however, also increase the value of the pension that a contributor may draw, if the contributor satisfies the minimum contributory period for a proportional or reduced pension before he reaches age 53 (age 48 in the case of a woman). Since the value of the pension increases by 6 percent of its maximum value with each additional year of work, this effect may actually work to worsen the finances of the pension system.[8]

17. The mechanism of the toll works to obviate the minimum age requirement for pensions in the middle of their working life. For example, a person who entered the labor force at age 20 and was 40 when the reform became effective would have to work 14 more years—until he was 54—to qualify for a pension of 70 percent of the maximum. Previously,

[8] It has been argued that this effect means that reform will actually worsen the system's finances overall (i.e., relative to a no-reform baseline) *Gazeta Mercantil*, 5/21/99 "Reforma da previdência é criticada."

he would have had to work only 10 additional years. If he were seeking a full pension, however, he would have to work 18 years, instead of 15, and would not be able to retire before 58. Put another way, as time passes, the minimum age requirement is less and less relevant; i.e., it has less and less of an effect on the retirement decision. Before too many years have passed, it will be completely irrelevant, and the system will have (for the current generation of contributors) only a minimum contribution period.

Impact on the system's finances

18. Simulations by the recent FAD technical assistance mission shed light on the orders of magnitude of the impact of the measures just introduced, as well as some that have not yet been adopted. FAD staff simulated the impact of three sets of measures on the finances of the RGPS and the federal RJU:

- introduction of a contribution by retired civil servants of 11 percent; and a similar increase for contributors to the RGPS system
- the gradual phasing-in of a life-time income base for pensions
- a gradual increase in the retirement age (as would tend to occur with the toll mechanism)

19. The following tables show the results of the simulations, which are presented cumulatively—i.e., the first line below the baseline shows the impact of the contribution increase, the second line shows the combined impact of the contribution increase and the that of the phasing-in of a lifetime average wage, while the third adds the impact of an increase in the average retirement age.

RGPS Primary Balance

(As percent of GDP)

	1999	2000	2001	2002	2003	2004	2005	2010	2015	2020	2030
Baseline	-1.2	-1.4	-1.41	-1.42	-1.45	-1.5	-1.56	-2.2	-3.3	-4.75	-7.95
Contribution Increase	-0.63	-0.52	-0.5	-0.5	-0.51	-0.54	-0.58	-1.1	-2.07	-3.38	-6.3
Phase-in of Lifetime average wage	-0.63	-0.52	-0.5	-0.49	-0.5	-0.51	-0.53	-0.83	-1.33	-1.91	-2.84
Increase average Retirement age	-0.63	-0.46	-0.38	-0.32	-0.27	-0.23	-0.2	-0.24	-0.48	-0.77	-1.57

Federal RJU Primary Balance

(As percent of GDP)

	1999	2000	2001	2002	2003	2004	2005	2010	2015	2020	2030
Baseline	-1.83	-1.89	-1.94	-2	-2.05	-2.11	-2.16	-2.45	-2.73	-2.94	-3.15
Contribution Increase	-1.57	-1.44	-1.48	-1.53	-1.58	-1.63	-1.68	-1.93	-2.18	-2.36	-2.55
Phase-in of Lifetime average age	-1.57	-1.44	-1.48	-1.53	-1.57	-1.61	-1.65	-1.83	-1.92	-1.91	-1.68
Increase average Retirement age	-1.57	-1.44	-1.48	-1.53	-1.57	-1.61	-1.59	-1.46	-1.3	-1.12	-0.84

20. Notwithstanding the significant positive impact of the reforms, it can be seen that even the cumulative effect of all three measures brings neither the RGPS nor the RJU into financial balance. Two basic features of the reform may explain why it is not enough to arrest the tendency to growing deficits:

- the reform affects only the flow of new pensioners, not the stock of earlier retirees, and because the increase in retirement age is a gradual one, the number of pensioners retiring in a given year is not greatly reduced;

- there is no measure to affect the value of the pensions the RJU federal is now paying, apart from contribution increases for retirees under the RJU, and these increases are not enough to reduce the RJU's deficit substantially;

21. It should also be noted that its largest effects take place in the initial post-reform years, when the minimum age requirement is a binding constraint on the retirement decision of many plan participants, obliging them to postpone retirement; and although retirement is postponed, there is a substantial rise in the pensions earned by persons whose retirement is postponed by the minimum age requirement.

22. The toll mechanism reduces the flow of new retirees, although this effect is not a drastic one. Everyone who was intending to retire in 1999 would have reached the minimum contribution period at some point during the year—on average, mid-way through the year. This means that on average they were seven months from qualifying when the reform was made law. Persons seven months shy of qualifying for a full pension would have to work an additional 1½ months; persons seven months shy of a proportional pension would have had to work an additional three months. The toll's thus has the effect of reducing the flow of new retirees by about 20 percent. If the toll simply added a constant number of months onto everyone's working life and age retirement, it would have basically a one-time impact on the flow of retirees, and a permanent but small impact on the stock. Since the toll's effect grows

over time, however, it should continue to have an impact on the stock, although not a particularly large one.

23. In any case, the reforms of 1998–99 are in fact somewhat less ambitious than the ones embodied in the simulations. RGPS pensioners are not subject to a contribution, and the pensionable base for government employees remains their last month's wage. Similarly, although the toll will achieve an increase in average retirement age, its effect on private sector plan participants is muted by the fact that it does not affect those who choose a full, rather than a proportional pension.

The need for additional reform

24. The gradualist philosophy that underlies the recent reforms is appropriate for a government trying to cushion the impact of reform on current beneficiaries of the public pension system. The way the toll mechanism works requires a gradual adjustment from current contributors; persons already nearing retirement are not suddenly required to put it off for many years. By its nature, however, gradualism by itself will not address the financial problems of Brazil's pension system adequately. Consequently, the reforms that will be presented to congress later this year are of great importance.

25. The proposed system of notional accounts (a defined contributions system for the private sector, and a defined benefits system allowing a trade-off between retirement age and contribution rate for the public sector) can put the pension system on a sustainable path provided that its parameters are well-chosen. For the **private system**, the intention is that the contributions an employee now makes and the employer's contribution, up to a salary equal to 10 minimum wages would be earmarked for a notional individual account. This account would earn a "notional" return set by the government and expressed in real terms, (which the government could change from time to time)—and the value upon retirement of an individual's accumulated contributions and the return they have earned, together with the person's age at retirement would determine the value of the pension. With the parameters now under discussion, it would no longer be possible to earn a pension equal to 100 percent of pensionable income. In fact, depending on the return, replacement rates for persons retiring relatively young could fall substantially, even if they have a substantial period of contributions. This would be an important step toward a system that is actuarially balanced. Unlike the present system, pensions would bear a reasonable relationship with life expectancy at retirement.

26. For the **public sector**, the system would remain a defined benefits system. Civil servants would be able to chose, with certain limits, the age at which they retire, but their contribution rate would be set (and presumably adjusted after the fact) to ensure actuarial fairness (the younger the age of retirement, the higher the rate of contribution).

27. The success of the private sector system would depend critically on two things: first the notional rate of return chosen for the individual accounts; second, the proper functioning of the individual accounts system, and its impact on the effective, as opposed to the statutory

rate of contributions. The latter is especially important because of the high rate of evasion of contributions from which the system suffers.

28. The choice of the right notional rate of return is of great importance. Replacement rates are very sensitive to small changes in the rate. Perhaps even more important is insuring that. pensions be based on what is actually paid in, accumulated at the appropriate notional rate. They must not be based on an after the fact estimate of what ought to have been paid in.

29. Evasion is a major problem with the present private sector system. To the extent that the notional accounts system functions well, and makes benefits a function of actual contributions, it should be possible to reduce statutory contribution rates, which are very high for wage and salary earners earning ten times the minimum wage or less. The combination of lower rates and the adoption of a notional accounts system could substantially reduce the incentive for evasion. A reduction in statutory rates might then not be inconsistent with an increase in the effective rates, while at the same time allowing for a reduction in future benefits.

30. It is hard to over-emphasize the importance of proper administration for a well-functioning notional accounts system (or for a well-functioning PAYG system that bases pensions, as they should be based, on lifetime earnings). The test of efficient administration will be its ability to ensure that the full amount of contributions actually withheld or paid on behalf of a given contributor is credited to his or her account. Inter alia, this requires a well-functioning taxpayer ID, or INSS contributor ID. The government took an important step in the direction of improved administration of the INSS with the introduction of a system of individual accounts for the current system in January, 1999.

31. For the public sector, successful reform requires that the government will have to introduce the kinds of changes now being proposed for the RGPS. In particular, retirement ages will need to increase, without any increase in average pensions. Reforms along the lines discussed above may also need to be supplemented by measures that address the current cash-flow disequilibrium of the public pension system. The system's finances will also be improved by measures that will rationalize its treatment of rural workers and the self-employed.

VI. INFLATION TARGETING IN THE BRAZILIAN SETTING[1]

1. With the adoption of a floating exchange rate regime early this year, the Brazilian authorities indicated their intention to put in place as rapidly as possible a formal inflation targeting framework. Though they moved quickly to put this framework into place, they followed a careful and well-organized plan to meet the particular institutional, economic, and financial market circumstances of Brazil. This included outreach consultations and discussions with central banks that have experience with this kind of framework, analytical and empirical work to ascertain key macroeconomic relations in the Brazilian economy, and several actions to ensure an institutional and operational framework suitable for an effective monetary policy under inflation targets. This section describes the preparatory steps taken by the Brazilian authorities in adopting an inflation targeting framework, as well as the recent actions to bring it into effect formally.

A. Outreach Consultations: Lessons from the International Experience

2. In their preparatory work for adopting an inflation targeting framework, the Brazilian authorities sought the benefit of an outreach consultative seminar that would permit open and wide discussions on experiences with this kind of framework. For these purposes, a ***Seminar on Inflation Targeting***, jointly organized by the Central Bank of Brazil and the IMF's Monetary and Exchange Affairs Department took place in Rio de Janeiro during May 3–5, 1999. The seminar aimed at reviewing the experience of a number of developed and emerging economies in implementing inflation targeting frameworks and providing an opportunity for Brazilian economists and policymakers to discuss their plans to implement a similar framework in Brazil. Experts from Australia, Canada, Chile, Israel, Mexico, New Zealand, Sweden, the United Kingdom, and the United States made presentations on their country experiences. Also, technical staff from the Central Bank of Brazil made a presentation on their preliminary work and plans for the adoption of an inflation targeting framework in Brazil. These presentations were subjected to review and comments by experts from the attending foreign central banks and from several Brazilian universities and institutions.

3. A wide consensus emerged from these discussions on the key aspects of a successful implementation of inflation targeting. Low and stable inflation was singled out as the primary long-run objective of monetary policy, and inflation targeting was regarded as an effective framework for guiding monetary policy. In particular, inflation targeting was seen as providing a nominal anchor both for monetary policy and inflation expectations, making this anchor identical to the long-run objective of monetary policy; providing more transparency and accountability to the design and implementation of monetary policy; facilitating its communication, understanding, and assessment; and providing effective policy guidance by focusing policymakers' attention on the long-run consequences of short-term policy actions.

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[1] Prepared by Alfredo M. Leone.

4. ***Inflation targeting was seen to dominate alternative nominal anchors***, particularly monetary anchors because of the observed instability of money demand in most industrial and emerging economies, as well as because of the unstable relationship between money aggregates and inflation resulting from a number of factors, including domestic financial liberalization, capital account opening and growing international financial diversification, currency substitution, and technological innovation. ***Also, an inflation targeting regime was seen to be consistent only with reasonably flexible exchange rate regimes***. In this context, the predominant view was that effective inflation targeting is inconsistent with the targeting of other nominal variables. If inflation is chosen as the nominal anchor, all other competing nominal anchors (such as monetary aggregates, the exchange rate, or wages) should preferably be eliminated or, at a minimum, be relegated to a subsidiary nonbinding status. In particular, exchange rate movements are important to the extent that they threaten the achievement of the inflation target.

5. Instrument independence and absence of fiscal dominance were singled out as key preconditions for a successful implementation of an inflation targeting framework. In particular, inflation targeting was seen to be inconsistent with weak fiscal policies, and with the monetary financing of nonfinancial public sector deficits, the financing of public or private financial sector deficits, and the accommodation of public-sector increases of tariffs, government services, and wages.

6. ***The key operational requirements for a monetary policy framework based on inflation targeting were identified***. These include, an explicit quantitative target for future inflation, a framework for producing official inflation forecasts, a timely use of effective monetary policy instruments, the selection of a price index, the tolerance interval (range, ceiling, or point), the target horizon, the speed of convergence to the long-term desired levels (gradualism versus quick convergence), exemptions or escape clauses,[2] and the transparency and accountability framework. It was particularly important that the central bank be able to make full use of its monetary policy instruments in a timely and forward-looking way whenever monetary policy action was called for. Taking into account the uncertain lags observed between policy actions and their intended macroeconomic effects and making an unconstrained use of an effective policy instrument, usually a short-term monetary policy or interbank interest rate, were seen as key requirements in this regard. The representatives of countries that have experience with inflation targeting noted the need to have several models in place (including, structural and vector autoregression models) and use them for consistency checking against each other. They also emphasized the need to rely on private

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[2] Several countries that rely on a consumer price index in specifying their inflation targets have introduced various caveats (or escape clauses) to enable temporary deviations in the event that these are caused by factors beyond the control of the central bank. Substantial increases in indirect taxes, changes in government-controlled prices, and the effects of natural disasters are the most common among such factors.

sector forecasts and on inflation expectations derived from market-based financial instruments.

B. Technical Underpinnings: The Mechanism of Monetary Policy Transmission in Brazil

7. To guide the implementation of inflation targeting and against the background of the outreach consultations, the Research Department of the Central Bank of Brazil has developed some tools to help guide monetary policy decisions. These include some simple structural models of the transmission mechanism of monetary policy to prices, complemented with short-term inflation forecasting models, and surveys of market expectations of inflation, growth and other relevant economic variables.

8. **A family of structural models was estimated aimed at identifying and simulating the mechanism of monetary policy transmission in Brazil, including the main channels of transmission as well as the lags involved.** This family of models can be summarized by a simple structural model with the following basic equations: (i) an aggregate demand equation expressing the level of aggregate demand as a function of lagged aggregate demand, the real interest rate (ex-ante or ex-post), and the real exchange rate; (ii) a Phillips curve expressing the rate of inflation as a function of the lagged inflation rate, the output gap, and the nominal exchange rate (and imposing a condition of long-term neutrality of the output gap on inflation); (iii) an uncovered interest parity condition relating the differential between international and domestic interest rates with the expected rate of devaluation of the domestic currency (the *Real*), and the risk premium; and (iv) an interest rate rule, alternatively fixed rules on nominal or real interest rates, Taylor-type rules (with weights for contemporaneous deviations in inflation and output), or forward-looking rules (with weights for deviations of expected inflation from target inflation).

9. Several channels of transmission of monetary policy are recognized as relevant for the Brazilian economy. These include the interest rate (a policy instrument), the exchange rate, asset prices, expectations, credit or money aggregates, wages, and wealth. In the context of the simplified models estimated by the Central Bank of Brazil two main transmission channels were identified: (i) an indirect channel: by affecting the output gap, the interest rate affects the inflation rate with a minimum lag of two quarters; and (ii) a direct channel; changes in the nominal exchange rate affect the inflation rate contemporaneously.

10. **The estimation of structural models was complemented by a set of short-term models aimed at ascertaining the mechanism of formation of inflation expectations.** The development of **reliable forecasts of inflation** is a key element because the inflation targeting framework is necessarily forward-looking given the lagged effects of monetary policy. These complementary models include Vector Autoregressive (VAR) models and Autoregressive Moving Average (ARMA) time-series models and serve two main purposes: (i) providing an alternative short-term forecast for the inflation rate and, therefore, permitting a consistency check with the forecasts resulting from the structural models, and (ii) permitting the use of the inflation forecast resulting from these models for the purposes of

estimating (with the structural model) the "ex-ante" interest rate (which is an explanatory variable in the aggregate demand equation in some of the estimated structural models) as well as in the forward-looking interest rate rule (which is one of the equations in the structural models).

11. Simulations of the models require definitions on: (i) the interest rate rule (a fixed nominal rate or a Taylor-type rule or a rule based on the deviations of expected inflation from target or a predetermined trajectory for nominal or real rates); (ii) the inflation target whenever the interest rate rule does not involve a fixed nominal rate; and (iii) a mechanism for the formation of inflation expectations. Once these definitions are provided the following results are obtained from the models: (i) inflation forecasts (central path and confidence intervals around the median) with definitions of a measure of dispersion (variance) and of risks (asymmetries); (ii) forecasts for output; (iii) the trajectory for interest rates (both, nominal and real) resulting from the various predetermined reaction functions; and (iv) dynamic simulations of exogenous shocks.[3] Simulations permit the visualization of the mechanism of transmission of monetary policy implicit in these simplified models, with the interest rate affecting the nominal exchange rate contemporaneously and the output gap with a lag; the nominal exchange rate affecting the real exchange rate and the inflation rate contemporaneously; the real exchange rate affecting the output gap; and the output gap affecting the inflation rate with a lag. The simulation of the structural models is based on the selection of a core scenario which involves the most likely hypothesis and a set of alternative scenarios representing the perceived risks of departure from the basic hypothesis. A careful assessment of the various hypotheses is a necessary condition for balanced decisions on the instrument of monetary policy.

12. **The output from these models is but one of several elements that are taken into account in making policy decisions. In particular, forecasts cannot be limited to those produced by models.**[4] Alternative sources such as the yield curve, and market surveys and forecasts need also be taken into account. In this regard, the Central Bank of Brazil conducts a Survey on Market Expectations and regularly publish the medians of several market forecasts on prices, GDP growth, trade and current account balances, and primary and nominal fiscal balances. The surveys include forecasts for the national consumer price index (IPCA)—which, as explained below has been chosen as the reference index for the inflation targeting—and other price indexes (IGP-DI, IGP-M, IPC-FIPE, and INPC); the median

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[3] External, aggregate demand and aggregate supply shocks are seen as the most relevant for Brazil. Given the aggregate nature of the simple structural models, the stylization of the shocks require a careful work to reflect their intensity and timing in the simulations.

[4] The authorities are well aware of the limitations of the estimates and forecasts from these models given that the economy underwent a number of radical structural changes in the last years.

forecast for the GDP; and the expectations for the trade balance, the current account, and the fiscal primary and nominal balances.

13. **Inflation targeting involves an explicit strategy for monetary policy consistent with the observed lags existing between adjustments in the monetary policy instruments and their effects on inflation and output.** The central bank is expected to act in a pre-emptive way to influence the future trajectory of the inflation rate in order to meet the pre-established targets. The question is to determine when pre-emptive policy action is necessary and how aggressive it should be. In deciding on these matters, the Central Bank of Brazil as well as other central banks face important risks. For instance, if the central bank waits until rising inflation becomes a public concern, then it could be too late because inflation will most likely became entrenched in people's expectations and decisions. On the other hand, poorly timed policy tightening could have adverse effects on employment and output. Against this background, the Central Bank of Brazil plans to inform the public on the expected path of inflation envisaged by the Monetary Policy Committee. To reflect the uncertainty involved in the forecasts, it would be helpful that the information released to the public includes the expected central path as well as various intervals reflecting differing degrees of uncertainty around the central path.[5]

C. The Main Monetary Policy Instrument

14. ***In Brazil, the interest rate is the most important instrument of monetary policy available to the central bank.***[6] Specifically, the central bank influences directly the interest rate in the interbank market (known as the primary rate or SELIC rate). It is through changes in this particular interest rate that the central bank affects indirectly other interest rates in the economy as well as the output gap and the inflation rate. In Brazil, the banks' demand for reserves has two main components: the reserve requirements on deposits (particularly, on demand deposits) and the excess reserves that banks keep to satisfy their normal operations. In principle, open market and rediscount operations by the central bank are the main sources of funds in the market for banks' reserves, even though the latter has not been used for several months now.

15. The control of liquidity through open market operations consists of the buying and selling of treasury bonds, either from the central bank's portfolio or new issuance, or bonds issued by the central bank. In executing monetary policy, the central bank selling

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[5] This is known in the literature on inflation targeting as the *fan chart approach.*

[6] Other instruments include reserve requirements, and financial assistance for liquidity. Through the use of its monetary policy instruments, the Central Bank of Brazil influences the availability and cost of the bank reserves, ultimately determining the prevailing credit and monetary conditions of the economy.

(purchasing) of bonds to the banking system leads to a reduction (increase) in the banks' liquidity. There are two types of buying (selling) of bonds by the central bank: swaps and final operations. In the ***swaps***, the central bank lends (borrows) funds for a specified term—frequently one day (overnight)—buying (selling) bonds under the commitment to resell (repurchase) them at a future date and at a predetermined price. In this type of operation (called informal auction or ***"go-around"***), the central bank taps the market through selected dealers, periodically assigned by the central bank and selected among those more active in the financial system. In the ***final operations***, the bond becomes part of the portfolio of the buyer. This final purchase (sale) by the central bank is done through formal and informal auctions, in which all financial institutions can participate.[7] At present, the formal auctions of central bank bonds are held weekly, typically on the business day before Wednesday. The treasury bonds auctions are also held weekly, frequently on Thursdays. The central bank places in the formal auctions the newly issued bonds (primary market) as well as maturing bonds held in its portfolio. The central bank is withdrawing gradually from the primary market.

16. The central bank monitors the bank reserves market so as to adjust the liquidity in the banking system daily. The daily liquidity settlement is done through repeated go-arounds. Before the market opens, the central bank estimates if there is an excess/lack (the central bank is undersold/oversold) of reserves in the banking system. This estimate is based on operations that affect the banks' reserves and obtained through consultations with various sources, among which are the dealers. ***Considering conditions in this market as well as other factors, such as interest rates in the forward market, the rate of inflation and its forecast and the current monetary policy, a desired interest rate is established, which is normally conveyed to the market through a "go-around."*** In the execution of monetary policy, all the open market operations, backed by public bonds, are done through the Special System of Clearance and Custody (SELIC), a data processing system set up to register all transactions involving public securities on the open market. Operations not conducted directly with the central bank, involving private and some state bonds, are settled through the Bond Custody and Financial Clearance Center (CETIP), a system analogous to the SELIC.

D. Institutional and Operational Issues

17. **Recently, the President of Brazil issued a decree[8] adopting an inflation targeting framework as the guide for monetary policy.** Key points in this decree are:

- The inflation targets will be established on the basis of variations of a widely known price index;

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[7] Informal auctions are held over the telephone only with the dealers.

[8] Decree No. 3088 of June 21, 1999.

- The inflation targets as well as the tolerance intervals will be set by the National Monetary Council on the basis of a proposal by the Minister of Finance;

- Inflation targets for the years 1999, 2000, and 2001 will be set no later that June 30, 1999; for the year 2002 and subsequent years targets will be set no later than June 30, two years in advance;

- The Central Bank of Brazil is given the responsibility to implement the policies necessary to achieve the targets;

- The price index that would be adopted for the purposes of the inflation targeting framework will be chosen by the National Monetary Council on the basis of a proposal presented by the Minister of Finance;

- The targets will be considered to have been met whenever the observed accumulated inflation during the period January-December of each year (measured on the basis of variations in the price index adopted for these purposes) falls within the tolerance intervals;

- In case the targets are breached, the President of the Central Bank of Brazil will need to issue an open letter addressed to the Minister of Finance explaining the causes of the breach, the measures to be adopted to ensure that inflation returns to the tolerated levels, and the period of time that will be needed for these measures to have an effect; and

- The Central Bank of Brazil will issue a quarterly inflation report which will provide information on the performance of the inflation targeting framework, the results of the monetary policy actions, and the perspectives regarding inflation.

18. **The national consumer price index IPCA was chosen for the purposes of inflation targeting**.[9] And specific targets and tolerance intervals for inflation were set as follows:

[9] The IPCA survey is made in nine metropolitan areas (Rio de Janeiro, São Paulo, Porto Alegre, Belo Horizonte, Recife, Belem, Fortaleza, Salvador and Curitiba), plus the city of Goiania and the Federal District. It covers families with income between 1 and 40 minimum wages. It is thus considered the broadest consumer price index available, both in geographic terms and in coverage of income ranges.

Targets for Accumulated Inflation During the Year
(In percent)

Year	Lower Bound	Center Path	Upper Bound
1999	6	8	10
2000	4	6	8
2001	2	4	6

E. Challenges Ahead

19. The Brazilian authorities have demonstrated their commitment to low inflation in the last several years. By adopting a ***formal inflation targeting framework*** they have reaffirmed their intention to keep it low in the years to come. They have put in place, in a relatively short period of time, a sound framework based on the institutions and operating techniques of countries with a substantial experience with inflation targeting.

20. The Brazilian authorities have decided that ***monetary policy should give priority to price stability***. This is so because, on the one hand, accumulated experience shows that central banks actually have the power to guarantee price stability in the long run. Also, a monetary policy aimed at controlling inflation encourages employment and economic growth. This is a valid objective in view of both the international experience (of developed and emerging economies) and the particular experience of Brazil (which has faced frequent bouts with disruptive high and volatile inflation), both of which show that the costs of inflation are significant and varied. These costs are considerable, and vary not only with the rate of inflation, but also with its volatility.

21. Implementing inflation targeting is not free of considerable challenges. In the first place, there will be a need to deal with the ***shifting balance of public concerns between inflation and unemployment***. Experience in this regard shows that central banks have, at times, been inclined to give considerable weight to the public's mood regarding the balance between inflation and unemployment. Though an inflation target does not prevent a central bank from implementing policy actions that take into account conditions regarding employment as well as developments in the financial markets, the lessons that have been learned from the experience call for extreme caution. When central banks did not tighten policy early enough to pre-empt inflationary outbursts, inflation usually moved above its previous trend. Restoring inflation to its trend would then require a more aggressive increase in short-term rates, and entail a higher risk of recession.

22. Also, **maintaining low inflation requires maintaining a mutual understanding between the markets and the central bank on the reasons behind and the effects of monetary policy actions.** If there is a breakdown of this mutual understanding, then the public will not be able to predict what a given policy action imply for the future and, thus, the central bank will not be able to predict how the economy will respond to its policy actions. A central bank that has consistently acted to defend a low inflation objective is likely to have

gained enough credibility to maintain this understanding. But a central bank that has not a tradition of aiming at low inflation will be susceptible to a sudden loss of credibility and will usually require some time to restore it. **A credible commitment to low inflation is essential for an effective monetary policy.**

23. ***Implementing inflation targeting involves also difficult tactical issues.*** One such an issue is to determine when pre-emptive policy action is necessary and how aggressive it should be. If the central bank waits until rising inflation becomes a public concern, then it could be too late because inflation will most likely became entrenched in people's expectations and decisions. On the other hand, poorly timed policy tightening could have adverse effects on employment and output. There is also a need to deal with mistakes. An inflation targeting framework is not free of the possibility of mistakes, because the models on which the projections are based as well as the available information on the economy will always be imperfect. And these are the key elements on which central bankers base their judgement. Central bankers should not be afraid of making mistakes, but they should be accountable for not correcting them as soon as they are identified. Allowing for mistakes to accumulate will allow inflation to move significantly higher and will turn expectations in pricing behavior from a stabilizing anchor into a destabilizing force. Clear procedures have been adopted in Brazil to ensure accountability in this respect.

24. The accumulated experience of other inflation targeting central banks show that there is no need for a central bank to be independent in that it will be free to choose the inflation target. Rather, ***it appears to be sufficient that the inflation target is legislatively mandated or set by the government, but the central bank is endowed with the authority to choose the necessary policy actions to achieve this target independently of the government.*** The framework adopted in Brazil is consistent with this approach, but it would be desirable to strengthen instrument independence of the central bank in pursuing its inflation targets through a legislative reform. In particular, it would be important to incorporate into the law: (i) procedures to establish the annual inflation targets; (ii) procedures for the central bank to report to congress on monetary policy and, in particular, on the pursuit of the inflation targets; (iii) fixed terms of office for the president and the directors of the central bank, and appropriate limitations on the types of subsequent employment for departing Board members of the central bank.

25. In addition, this **operational independence should be accompanied by increased accountability and by a commitment to keeping the public well informed on how the central bank operates and, particularly, how new information causes the central bank to update its views of future prospects and to modify its policy stance.** To a great extent, the quarterly *Inflation Report* that the Brazilian authorities have begun to publish is expected to play a key role in information and accountability. It would be the vehicle to provide a flow of information that permit the central bank to explain its policy actions and expectations as well as to foster credibility in the monetary policy.

VII. Banking Sector Developments and Issues[1]

A. Introduction

1. This chapter provides an update on developments and issues affecting Brazil's banking system.[2] The sections that follow are the overview (Section B), an update on the system's structure and performance emphasizing events following the devaluation (Section C); a discussion of issues surrounding the publicly owned banks (Section D); developments in BCB's supervision and regulation functions (Section E); and, issues in accounting and transparency (Section F).

B. Overview

2. The Brazilian financial system has weathered well the difficult economic environment of the second half of 1998 and the first quarter of 1999. Most banks remain well capitalized, and though showing continued high nonperforming loan ratios, they remain well provisioned. Prior to the devaluation, most banks were positioned to benefit and subsequently elected to use some of their foreign exchange gains to build further provisions for loan and security losses. Two small investment banks were caught unprepared for the devaluation, with large short positions in foreign exchange futures contracts. In the aftermath, one failed outright. A second remained solvent, but is being liquidated under the close supervision of the BCB.

3. The Global Consolidated Inspection (GCI) program, whereby the BCB conducts intensified inspections of financial institutions on a consolidated basis has recently been expanded to include the publicly owned financial institutions. Staffing constraints, however, will have an impact on the effectiveness of this initiative. A large number of supervisory personnel have departed in the wake of recent changes in the social security system, which prompted a spate of early retirements. Moreover, budgetary constraints have delayed the hiring and training of replacements. The pace of GCI inspections has been slowed by staff shortages and priority now needs to be given to institutions that are large and/or have a history of problems.

4. Progress has been made in developing new regulations to control market risk and in the development of a forward-looking loan classification system that emphasizes the borrower's ability to repay. The new loan classification system is to be integrated with the BCB's risk bureau (Central de Riesgo), which is used to monitor loan quality. Considerable

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[1] Prepared by Michael Moore.

[2] For background and more details, see the discussion of Brazil's financial system in Chapter V of the IMF staff country report No. 98/24, April 1998.

progress has been made with the risk bureau, which is becoming an effective tool to improve credit portfolio monitoring for both the BCB and the individual banks.

5. The BCB has also made substantial progress toward meeting the Basle Committee's 25 core principles for effective banking supervision. Moreover, the BCB is working to provide more information to market participants through the distribution of nonconfidential financial statement information from SISBACEN, the BCB's information system.

C. Structure and Recent Performance of the Banking System

6. With assets of R$720 billion (US$420 billion) and about 200 banks at the end-March 1999, Brazil's banking system is one of the largest among emerging market countries. The banking system is dominated by large publicly (both federal and state governments) and privately owned banks, and is highly concentrated, with the 50 largest banks holding more than 90 percent of the banking system's assets. Foreign-owned banks have come to have a sizeable share of the market for both retail and wholesale financial services. At end-March 1999, foreign banks represented 20 percent of banking system assets, which is up from 12 percent at end-June 1997. Table 7.1 provides market share information for assets, loans and deposits of the various institution categories as of end-March 1999.

Table 7.1 Brazil: Banking System

(In billions of Reais, as of March 1999)

	Number of BIs		Total Assets		Total Deposits	
		Percent of		Percent of		Percent of
Type of Banking Institution (BIs)	Number	Total	Amount	Total	Amount	Total
Federal banks	5	3	276.7	38.5	173.2	52.6
State banks	14	7	31.7	4.4	20.9	6.3
Domestic private banks	102	51	207.9	28.9	75.8	23.0
Foreign private banks	60	30	142.2	19.8	38.7	11.7
Private banks w/ minority foreign share	18	9	60.8	8.5	20.7	6.3
All banking institutions	199	100	719.3	100.0	329.2	100.0

Source: Central Bank of Brazil.

Effects of the devaluation

7. The January 1999 exchange rate devaluation appears to have been anticipated by most financial institutions. In particular, banks experienced a boost to income from the devaluation, because on balance they held more dollar-denominated assets than dollar-denominated liabilities, and because those involved in derivatives operations were well positioned. Most banks elected to use part of these once-off gains to increase provisions against loan losses, with the result that the ratio of provisions to nonperforming loans increased from 120 percent at end-December to 131 percent at end-March. There were two main reasons for this choice. First, banks expect that some extra provisioning is appropriate given the expected deterioration in the quality of assets over the coming year as the higher interest rates and slower economic growth of late 1998–early 1999 adversely affect borrowers. Second, because of a mandatory dividend payout requirement if net income is reported, banks elected to offset the foreign exchange gain in order to preserve their cash flow. For the latter, if the devaluation resulted in a noncash gain, and if it were to be taken to earnings, (e.g., because banks did not elect to increase their provisioning) the banks would have suffered a net drain in cash resources from the dividend payment.

8. Nonperforming loans have been increasing as a proportion of total loans in recent years as a consequence of high interest rates and low growth. The ratio of nonperforming to total loans increased from 6.0 percent at end-1997 to 9.5 percent at end-1998 before declining to 9.2 percent at end-March 1999 (Table 7.2).

9. Given the high rate of return on government securities and the presumption of lower risk, most banks have shown a strong preference for the holding of liquid government securities, as well as short-term interbank placements. Typically, the sum of these two categories of earning assets has been comparable to loans. For the banking system, securities and interbank placements make up a high 37 percent of total assets. This relatively high share proved important in the second half of 1998 and the first quarter of 1999, as many foreign banks withdrew credit lines to Brazilian financial institutions. By virtue of the large holdings of liquid, dollar-indexed government securities, most banks were able to meet the withdrawal without suffering severe liquidity problems, and without having to call on the BCB to provide emergency liquidity. Liquidity conditions were generally eased in the third quarter of 1998 and again in the first quarter of 1999, as the central bank sterilized a large part of the outflow of international reserves. The central bank absorbed the liquidity it created by borrowing in the overnight market.

10. The external financing constraint has also eased. The large domestic banks have recently returned to international debt markets. Banks Bradesco, Itaú, and Safra placed a combined US$600 million in Eurobonds in April and May.

Table 7.2 Brazil: Indicators of Banking System Soundness, 1997–99

	1997		1998		1999
	June	Dec.	June	Dec.	Mar.
Number of institutions	223	210	210	199	199
Balance sheet indicators			(Percent)		
Total loans to total deposits ratio	101.1	88.3	90.0	90.3	86.8
Securities to total assets	15.8	23.2	19.9	24.2	21.5
Interbank placements to total assets	21.5	18.8	16.9	15.3	15.5
Total loans to total assets	45.7	40.4	40.4	42.9	39.7
Total equity to total assets	8.2	7.7	7.7	9.8	9.1
Asset quality indicators			(Percent)		
Nonperforming loans to total loans	6.0	7.0	7.9	9.5	9.2
Provisions for loan losses to total loans	7.8	10.0	10.9	11.4	12.1
Provisions to nonperforming loans	130.3	143.0	136.5	120.4	131.4
Balance sheet items			(In billions of reais)		
Total securities	96.8	152.6	134.3	158.8	154.9
Interbank placements	131.6	123.5	114.3	100.5	111.3
Total loans	280.2	265.7	272.8	281.4	285.9
Total assets	613.0	658.4	675.5	656.2	719.3
Total deposits	277.2	300.9	303.1	311.7	329.2
Total equity	50.3	50.5	52.2	64.4	65.7

Source: Central Bank of Brazil.

Results of a stress test

11. A stress test was performed to assess the vulnerability of the banking system to deterioration in asset quality based on financial information of the 50 largest banks as of March 31, 1999. The test simulates that nonperforming loans will increase by an amount equal to 8 percent of normal loans and that profits in 1999 will be same as those in 1998. As a result, aggregate nonperforming loans would increase from about 10 percent to about 18 percent of total loans. Under the test, regulatory capital is reduced by the additional provisions that would be needed to sustain full coverage of nonperforming loans.

12. The result of the stress test is that 18 banks would become under-capitalized and would need R$8.8 billion of new capital to meet the regulatory minimum (Table 7.3). The capital shortfall would represent 1 percent of 1998 GDP. The outcome of the simulation is skewed substantially by the effects of the five publicly-owned banks, which together represent 38 percent of the assets of the 50 largest banks and would need R$7.0 billion in new capital. Ten foreign-owned banks make up the next largest segment that would need new capital as a result of the simulation. These ten represent about 9 percent of the assets of the group of 50 largest banks and would need about R$1.5 billion to restore capital adequacy.

13. Overall, the private banks (including those with partial foreign ownership) demonstrate considerable resilience to deterioration from the simulation exercise. Only three relatively small banks, with assets representing 3 percent of the total, would become undercapitalized.

D. Developments Involving the State-Owned Banks

14. The restructuring of the state-owned banking system was implemented through the federal government's PROES program (Provisory Measure 1514). Under PROES, the federal government committed itself to financing 100 percent of the costs of restructuring provided that the state-owned banks were either privatized, converted into developmental agencies, or liquidated. In the event that none of these three alternatives was chosen, the federal government would provide only 50 percent of the restructuring costs, with the remainder to come from the states. Under the terms and conditions of the program, the federal government provided a low-cost 30 year loan, payable monthly at an interest rate equivalent to the variation in the general price index (IGP-DI) plus 6 percent per year.

15. At the time of the establishment of PROES in August 1996 there were a total of 35 state-owned banks, of which 23 were either commercial banks or multiple banks. The latest privatization was the State Bank of Bahia (Baneb) which was privatized in late June 1999. Table 7.4 summarizes the progress of the restructurings through June 1999.[3]

16. The PROES program was amended in July 1998 (Provisory Measure 1702–26). In light of the continued financial difficulties of individual states, the revised program mandated that further federal financing would only be available for restructuring of state-owned banks that transfer control of the institution to the federal government. In turn, the federal government would either privatize the institution or liquidate it. States were requested to indicate interest to participate in the program by January 15, 1999 (Provisory Measure 1773–32).

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[3] The total number in Table 7.4 exceeds 35 as several of the banks have been divided into separate parts for privatization, conversion into a developmental agency, and liquidation.

Table 7.3. Brazil: Summary of Stress Test Results

Distribution of Undercapitalized Institutions - Fifty Largest Banking Institutions

(as of March 31, 1999)

I. Number of Institutions that Would Become Undercapitalized

Capital range	Publicly-owned banks	Domestic banks	Domestic with foreign bank participation	Foreign-owned banks	'Total
Less than 0 percent	1	0	0	1	2
0 to 3 percent	1	0	0	2	3
3 to 6 percent	0	0	0	2	2
6 to 9 percent	3	2	1	2	8
9 to 11 percent	0	0	0	3	3
Total	**5**	**2**	**1**	**10**	**18**

II. Assets in Institutions that Would Become Undercapitalized (In millions of reais)

Capital range	Publicly-owned banks	Domestic banks	Domestic with foreign bank participation	Foreign-owned banks	'Total
Less than 0 percent	7,072	0	0	2,632	9,704
0 to 3 percent	117,322	0	0	4,740	122,062
3 to 6 percent	0	0	0	21,977	21,977
6 to 9 percent	153,236	20,916	3,096	16,850	194,098
9 to 11 percent	0	0	0	22,178	22,178
Total	**277,630**	**20,916**	**3,096**	**68,377**	**370,019**

III. Capital Needed to Reach 11 Percent Risk-Based Capital (In millions of reais)

Capital range	Publicly-owned banks	Domestic banks	Domestic with foreign bank participation	Foreign-owned banks	'Total
Less than 0 percent	898	0	0	189	1,088
0 to 3 percent	3,905	0	0	268	4,174
3 to 6 percent	0	0	0	685	685
6 to 9 percent	2,185	271	42	280	2,777
9 to 11 percent	0	0	0	118	118
Total	**6,988**	**271**	**42**	**1,540**	**8,841**

Sources: Central Bank of Brazil; and Fund staff estimates.

Table 7.4 Brazil: Progress with The Restructuring of State-Owned Banks
(As of end-June 1999)

Option Adopted	Number of Banks	State (Name of Bank)
Not participating in PROES	3	Paraíba (Paraiban), Espírito Santo (Bandes), and Federal District (BRB).
Restructuring by the State	6	Pará (Banpará), Sergipe (Banese), Espírito Santo (Banestes), Santa Catarina (Besc), Rio Grande do Sul (Banrisul), and São Paulo (Nossa Caixa-Nosso Banco).
Privatization[4]	8	Bahia (Baneb), Maranhão (Bem), Minas Gerais (Credireal and Bemge), Paraná (Banestado), Pernambuco (Bandepe), Rio de Janeiro (Banerj), and São Paulo (Banespa).
Federalized	4	Amazonas (Bea), Ceará (Bec), Goiás (Beg), and Piauí (Bep).
Transformed into Developmental Agencies	14	Acre, Alagoas, Amapá, Amazonas, Bahia (Desenbanco), Mato Grosso, Minas Gerais (BMDG), Paraná, Pernambuco, Rio Grande do Norte, Rio Grande do Sul (Sulcaixa), Rondônia, Roraima, and Santa Catarina (Badesc).
Liquidation	10	Acre (Banacre), Alagoas (Produban), Amapá (Banap), Mato Grosso (Bemat), Minas Gerais (Minas Caixa), Goiás (Caixego), Rio Grande do Norte (Bandern and BDRN), Rondônia (Beron), and Roraima (Baner).

Source: Central Bank of Brazil.

17. Except for the states of Mato Grosso do Sul and Tocantins, which did not have official financial institutions, only the Federal District (BRB), and the state of Paraíba (Paraiban) did not participate in the program. In addition, the state of Espírito Santo chose not to participate for one of its banks (Bandes).

18. The federal government expects to privatize the State Bank of São Paulo (Banespa) in 1999, possibly as early as October. Previously, Banespa was the system's largest state-owned

[4] BEMGE, CREDIREAL, BANDEPE, BANERJ and BANEB are already privatized. The federal government has taken over BANESPA and expects to privatize it in the last quarter of 1999. Paraná is to be privatized during the first half of 2000.

bank, and with assets of R$24 billion is the seventh largest commercial bank overall. Banespa represented about half of the state-owned banking system. There is substantial interest among the larger domestic banks in acquiring Banespa, as it will be important to building market share in a period of expected consolidation within the banking system. The acquisition of Banespa is likely to put pressures on other banks (particularly, the medium and small banks) to consider merging.

E. Supervision and Regulatory Developments

Onsite supervision

19. Beginning in the second half of 1997, the BCB put in place its Global Consolidated Inspection (GCI) program, whereby the BCB conducts intensified inspections of financial institution on a consolidated basis. The GCI program includes specialized inspection teams that review information systems and treasury and market risk. Historically, the BCB has directed its supervisory resources to the private banks, but of late has turned greater attention to the federal and state-owned institutions. BCB is now conducting GCI inspections of these two types of publicly owned institutions.

20. The BCB has experienced substantial turnover of personnel in the wake of recent changes in the social security system and budgetary constraints have slowed the hiring and training of replacements. The staffing constraints have affected effectiveness of the GCI program. Presently, the BCB's pace for GCI inspections is less than 30 per year. Priority selecting banks for inspection is given to larger institutions or those with a history or evidence of problems. Given the pace of inspections, the period between inspections can in some cases exceed 24 months. Strengthening the staff in an environment of greater budgetary constraints, will be an important challenge for the supervisory function.

21. The BCB is making progress with the implementation of the risk bureau credit information system, which functions to provide information on the quality of loans to individuals and economic groups. The system receives monthly information on all borrowers with exposures to banks in excess of R$50,000 (about US$28,000). Information provided by the system includes debts forgiven, collateral protection and internal loan grading information. The BCB has devoted considerable effort to ensuring that banks are accurately filing borrower information in the risk bureau system. Banks have been able to incorporate information from the risk bureau into credit scoring models for use in evaluating prospective borrowers. The high utility of the system stems from the fact that most borrowers have loans with more than one bank.

Prudential regulations

22. Progress has been made in the development of new prudential regulations for foreign exchange and market risk, as well as the development of a forward-looking loan classification system that emphasizes the borrower's ability to repay. The new loan classification system is to be integrated with the BCB's risk bureau.

Foreign exchange regulation

23. As part of the efforts to upgrade capital regulation to take adequate account of market risk, the BCB issued a regulation dealing with foreign exchange risk. The regulation was issued in May and became effective on July 1, 1999. It mandates a progressively higher capital charge, as banks elect to take on larger foreign exchange positions. The foreign exchange position is defined to be the sum of the net on-balance sheet asset-liability exposure, the notional value of derivatives and the delta for options contracts. The regulations subject the position to two quantitative limits:

- The foreign exchange position is subject to a maximum limit of 60 percent of tier 1 plus tier 2 capital.

- For positions that exceed 20 percent, the institution needs to have additional capital equal to 50 percent of that excess position. The additional capital would be on top of that needed to meet the 11 percent risk-based capital requirement for credit risk.

24. The result of the regulation is that banks with moderate foreign exchange exposure below 20 percent do not have to hold additional capital beyond that needed for credit risk, but to the extent that a bank wants to take on additional position risk, there is a progressively increasing capital charge. Because of the regulation, certain banks will need to constrain their foreign exchange activities or increase their capital base.

Market risk regulation

25. The BCB is making progress towards putting in place an interest-rate regulation for the trading book that mandates an add-on capital charge based on a standardized interest-rate model.[5] In many respects, the standardized model is similar to the approach used under the Market Risk Amendment to the Basle Capital Accord.[6] Still under development are additional components to the market risk framework that consider equity and commodities risk in the trading book.

Forward-looking loan classification system

26. The BCB is developing a new regulation for loan classification and provisioning that will replace Resolution 1748, which was introduced in 1990. The new approach will classify

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[5] Currently, many banks use internal models to consider their capital requirements. In time, the BCB will consider allowing the use of internal models as an alternative to the standardized model.

[6] Basle Committee on Banking Supervision, 1996, Amendment to the Basle Capital Accord to Incorporate Market Risks (Basle: Bank of International Settlements).

loans according to a borrower's ability to repay and places special emphasis on the payment status, the borrower's financial factors (e.g., cash flow, guarantees, collateral) and the evaluation of the borrower by other banks in the central bank's credit risk bureau. To be included with the new regulation will be controls on the rescheduling of loans, which has been a weakness of the current system.

F. Accounting Issues and Transparency

27. Brazil's National Monetary Council delegates to the BCB the authority to set accounting principles for financial institutions. Accordingly, the BCB has imposed extensive reporting and publishing requirements on these institutions. By internationally accepted accounting standards, these requirements are fairly conservative. Two areas where accounting practices allowed in Brazil may lead to distortions that impede the ability of market participants to interpret the performance of individual banks are the reporting of tax credits and rules for the consolidation of certain types of subsidiaries. These two areas are discussed below.

Tax credits

28. Common to many Brazilian financial institutions are large tax credits (créditos tributários). The accounting basis for the origin of tax credits is not unique to Brazil and their treatment resembles reporting practices used in many other countries. Where Brazil's accounting practice differs is in the amount that is allowed as an asset. In the context of standards in common practice internationally[7] the amount of a tax credit that is eligible needs to be based on what is realizable in the foreseeable future. For some Brazilian financial institutions tax credits are very significant, and given the size of the credits and the income potential for the institution, there is doubt as to whether the tax credit will ever be realized. If there is substantial doubt, the value of the tax credit should be written down or a valuation allowance should be established.

29. The tax credits arise from two sources (i) temporary differences between when an expense can be deducted for accounting purposes and when it can be recognized for tax purposes, and (ii) the carry-forward of tax losses. Temporary differences result from the recognition of certain expenses that are not deductible for income tax purposes in the current year and need to be deferred to a future year. The latter is generated when revenues are less than tax-deductible expenses.

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[7] Standards accepted internationally are U.S. Generally Accepted Accounting Principles (U.S. GAAP) as promulgated by the U.S. Financial Accounting Standards Board and International Accounting Standards (IAS) as promulgated by the International Accounting Standards Committee.

30. Temporary differences result primarily from the provision expenses for loan losses that are not deductible for tax purposes until later years.[8] The difference between the actual expense and that allowable for tax purposes results in a deferred tax asset with an offsetting amount that is included as current period revenue. The amount included in the deferred tax asset and recorded as a revenue is equal to the provision expense multiplied by the tax rate. In future years, the deferred tax asset is reduced through a current period expense as the provision can be realized for the purpose of offsetting taxable revenue.

31. Tax losses are created when taxable revenues are less than tax deductible expenses. The tax losses can be carried forward indefinitely and be used to offset taxes in future periods; however, the amount of tax expense that can be offset by the tax loss is limited to 30 percent of the current period taxable income. For example, in the current year, if taxes owed are R$100, and the value of the tax loss carry-forwards is R$100, only R$30 of the carry-forward amount can be used to offset taxes leaving R$70 available for future years. Effectively, the tax loss carry-forward represents a contingent asset, as it only has value if the institution is sufficiently profitable. In many countries, tax loss carry-forwards expire.

Consolidation requirements

32. The BCB's rules allow certain types of wholly owned subsidiaries to be carried as investments without line-by-line consolidation. Instead, there is the requirement that financial institutions discuss and provide details about investments in unconsolidated subsidiaries through notes to their financial statements, which are issued twice a year. This special treatment affects primarily those institutions not regulated by the BCB, which includes bank-owned insurance and credit card companies. Both of these types of financial companies are becoming more important in terms of their contribution to the consolidated earnings of banks.

33. To the extent that a subsidiary is not consolidated, income flows to the parent organization through either dividends or as a result of the revaluation of the investment. For many Brazilian financial institutions, income from unconsolidated subsidiaries makes up a substantial portion of net income. Although these investments are discussed in the notes to the financial statements, the information is not sufficient to explain the true nature of the source of the earnings.

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[8] Law 9430 of 1996 determines the tax deductibility of provision expenses. Provisions are deductible depending upon the loan balance, whether secured or unsecured, and the number of days overdue as follows: loans up to R$5,000 after 180 days, unsecured credits over R$5,000 after one year and secured credits in any amount after two years. For loans over R$30,000, the financial institution needs to have begun judicial proceedings against the borrower for provisions to be deductible. Furthermore, provisions for loans to borrowers that are temporarily protected from creditors are deductible only when the courts declare the borrower bankrupt.

34. An example of the distortion that could occur because reporting rules do not require line-by-line consolidation would be the exclusion from the bank's consolidated accounts of nonperforming loans of a credit-card subsidiary as well as the adequacy of provisions for loan losses that have been made by the subsidiary. As a result, the user of financial statements may be left unaware of potential loss contingencies, since they are not reported in the consolidated results. The BCB reviews the credit quality of subsidiaries in the course of the GCI inspections, but given the extended periods of time that can pass between inspections, there can be substantial deterioration in the credit portfolios.

VIII. The Year 2000 Information System Compliance[1]

Overview

1. Official efforts to prepare the Brazilian financial system for the Year 2000 began with the creation of the central bank's year 2000 committee in the second half of 1997. Today, the central bank reports that nearly all financial institutions are Y2K compliant. This conclusion is based on the responses to questionnaires filed by individual financial institutions and on the results of on-site reviews performed by the central bank's inspections department.

2. An important test of Brazil's Y2K preparedness took place on June 12, 1999, when the central bank participated successfully in a global payment systems experiment along with the Banco do Brasil, Bank of New York, Euro Banking Association, Hong Kong Interbank Clearing Ltd., New York Clearing House, and the Society for Worldwide Interbank Financial Telecommunications. This test of Brazil's integration with the global payment system follows a March 1999 test of the internal payments system involving 20 financial institutions and coordinated by the bankers association, Febraban. The 20 institutions accounted for 81 percent of Brazil's banking assets, 81 percent of checks cleared and 83 percent of interbank volume. Besides the major commercial banks, other participants were the central bank, Tecban, Credicard (Brazil's largest credit card company), Cetip (Clearing House for the Custody and Financial Settlement of Securities), and Banco do Brazil's check clearing house.

The central bank's Y2K strategy

3. In December 1997, the central bank and the National Monetary Council directed that all financial institutions needed to assess individual systems and prepare action plans explaining how they would make those systems compatible for the year 2000.[2] The action plans had to be operational by end-1998. To track developments by individual institutions in implementing action plans, the following three requirements were established:

- Management had to report to shareholders semiannually on progress in overcoming the year 2000 computer problem. At a minimum, the report was to detail the diagnosis and planning for individual systems, adequacy of testing and status of implementation of systems that are Y2K compliant.

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[1] Prepared by Michel Moore.

[2] The directive applied to all financial institutions regulated by the central bank—commercial banks, development banks, investment banks, finance companies, credit unions, mortgage lenders, savings and loans, stock exchange dealers, leasing companies, stock exchange brokers, and consortium management institutions.

- External auditors were required to provide an opinion regarding the adequacy of procedures—including testing procedures—by the financial institution, and the state of development of contingency procedures. The auditor's evaluation of the year 2000 computer problem was required semiannually beginning with the audit report completed for the December 1997 financial date.

- Each financial institution had to designate a statutory director to be responsible for compliance with central bank directives.

4. At several points in 1998 and 1999, the central bank sent out detailed questionnaires to measure progress in achieving year 2000 compliance. The questionnaires were used to follow up on scheduled modifications and achievements. The progress of each individual institution was tracked through SISBACEN—the central bank's information system.[3] Through end-June 1999, virtually all Brazilian financial institutions have certified that their information systems would process correctly dates subsequent to the year 1999 (Table 8.1).

Table 8.1. Year 2000 Compatible Information Systems
(As of June 29, 1999)

Financial Institution Type	Number of Institutions	Percent of institutions certifying compliance (in percent)	
		by number	by assets
Commercial banks and Caixa Econômica	196	95.9	98.3
Development banks	6	83.3	99.1
Home loan associations	1,131	97.5	99.4
Investment banks	21	95.2	99.8
Leasing companies	81	93.8	92.7
Mortgage lender companies	4	100.0	100.0
Stock exchange brokers	193	93.8	99.7
Stock exchange dealers	230	96.5	88.6

Source: central bank.

[3] The central bank reports that SISBACEN was Y2K compliant by end-1998.

5. ***Onsite inspection process.*** Progress at individual financial institutions was also reviewed during the onsite inspections by the central bank's examiners. If needed, the central bank issued special supervisory actions to compel compliance. The inspections department classifies individual institution preparedness through a rating scheme of 1 to 3, with a rating of "1" denoting satisfactory achievement, "2" denoting specific efforts required and "3" denoting unsatisfactory performance. Supervisory staff have concentrated their efforts on institutions with low scores. As a first action against nonconforming financial institutions, the central bank summons the statutory director to sign a term of commitment. The term of commitment establishes strict conditions for the institution's compliance, including as minimum requirements: a systems inventory, assessment of required changes, system redesign, setting of target dates and conditions for each phase.

The next steps

6. The central bank has turned its concerns to infrastructure service providers, such as power and communications, as well as business partners to financial institutions, for instance, hardware and software service providers. The central bank intends to exert influence on those strategic sectors whose noncompliance could have adverse impacts on the financial system.

IX. STRENGTHENING SOCIAL POLICY INSTRUMENTS[1]

A. Background

1. The impact of the recent financial crisis in Brazil on output, formal sector employment, and prices turned out to be less severe than anticipated.[2] For instance, the GDP decline in 1999 is now expected to be around 1 percent—significantly smaller than the 3.8 percent projected in January. However, the effect of economic slowdown and real exchange rate depreciation on both poor and near-poor households—who mostly derive livelihood from the informal sector—is not yet known.[3] To meet the contingency of higher poverty as well as to alleviate existing poverty, social policy instruments should be strengthened and made more cost-effective. Brazil already allocates considerable resources to various social programs. Improving their cost-effectiveness is critical when fiscal retrenchment is the key element of ongoing economic reforms in Brazil.

B. The Poor and Their Characteristics

2. The latest available data for 1997 suggests that 22.6 percent of the Brazilian population (36 million) lives below the poverty line.[4] Poverty declined by roughly one-third from more than 30 percent of the population in 1993. Around 80 percent of the poor work but do not earn enough. They are found predominantly in rural areas, in the Northeast, and possess less than four years of formal education. About half of the population below the poverty line is in the informal sector.

3. The poverty situation in Brazil has to be evaluated in the context of the country's relatively high-income inequality. The income share of the richest 20 percent was 64.2 percent—26 times the share of the poorest. However, the initial years of the *Real* Plan appear to have benefited disproportionately low-income groups. The Gini coefficient was estimated at 0.61 in 1995, down from 0.63 in 1994. The improvement in the income position of low-income households, particularly in the nontraded sector, has been attributed to the fall in inflation and the appreciation of the real exchange rate, which increased the relative price

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[1] Prepared by S. Gupta, R. Gillingham, and L. De Mello.

[2] This report draws upon the two recent World Bank reports on social protection and social spending in Brazil: *Social Protection Special Sector Adjustment Loan,* Report No. 7281, December 16, 1998; and *Brazil—Fiscal Adjustment and Social Spending: "The Case of Education and Health in Four Brazilian States,"* Report No. BR-17763.

[3] The World Bank is currently undertaking surveys to monitor the poverty impact of the crisis.

[4] The poverty line is R$65 per capita income per month.

of nontradeables that are relatively more intensive in unskilled labor.[5] During 1994–97, the income gains of workers in the nontradeable sector (including those displaced from the formal sector and who found refuge in this sector) have been estimated to be significantly larger than those employed in the tradeable sector.[6]

4. Both the poverty headcount and Gini have begun to increase since 1997. The resources needed to eliminate poverty are estimated to be small, at around 1¼ percent of GDP, particularly in relation to spending on existing social programs of 19 percent of GDP.

C. Existing Social Policy Instruments

Overall spending on social programs

5. As noted earlier, a substantial share of consolidated government spending—over 19 percent of GDP in 1995—is devoted to social programs (Table 9.1).[7] However, the vast majority of this spending is not well targeted to the poor and do not focus primarily on countercyclical poverty reduction.

6. More than half of social spending is on the *two public social security programs*. The *Regime Geral da Previdência Social (RGPS)* covers workers in the formal, private sector; while the *Regime Jurídico Único (RJU)* covers public sector workers at all levels of government. Financial imbalances in the RGPS and RJU are at the core of Brazil's fiscal problems. The combined primary deficit in these two programs totaled 4.7 percent of GDP in 1998; including interest on accumulated deficits, the two programs account for more than the general government deficit. The primary goals of the ongoing reforms are to improve equity, and the fiscal and actuarial soundness of these programs.

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[5] See *Mercado de Trabalho: Balança de 1995*, Ministry of Labor and IPEA, 1996, IPEA, Brasília.

[6] Poverty and income inequality have been found to be procyclical in Latin America. For instance, a 1 percent fall in per capita in GDP has a stronger impact on the incidence of poverty and inequality than a 1 percent increase in per capita GDP. This result is based on the analysis of 53 spells of growth and recession in 12 countries, including Brazil, during the period 1970–94. See A. De Janvry and E. Sadoulet, *Growth, Poverty, and Inequality in Latin America: A Causal Analysis, 1970–94*, IDB Conference on Social Protection and Poverty, Washington, D.C., January 4, 1999.

[7] For the federal government alone, social outlays have increased from 10.5 percent of GDP in 1997 to 11.1 percent of GDP in 1998. For 1999, federal social outlays are expected to reach 12.0 percent of GDP.

Table 9.1. Consolidated Government Outlays on Social Programs, 1995

Program	Federal	States and Municipalities	Total
	(In millions of reais)		
Social insurance and social assistance	54.6	14.3	68.9
Social security (RGPS and RJU)	48.6	14.3	62.9
Unemployment insurance	3.5	0.0	3.5
Social assistance and other	2.5	0.0	2.5
Education and culture	5.5	23.1	28.5
Health	5.2	13.2	18.5
Housing and urbanization	0.6	7.1	7.7
Total	**65.9**	**57.8**	**123.6**
	(In percent of GDP)		
Social insurance and social assistance	8.4	2.2	10.7
Social security (RGPS and RJU)	7.5	2.2	9.7
Unemployment insurance	0.5	0.0	0.5
Social assistance and other	0.5	0.0	0.5
Education and culture	0.8	3.6	4.4
Health	0.8	2.0	2.9
Housing and urbanization	0.1	1.1	1.2
Total	**10.2**	**8.9**	**19.1**

Sources: IPEA; MARE; and IMF staff estimates.

7. Although the pension systems are not designed to fight poverty directly, the minimum pension in the RGPS can be an important source of income support for the poor. Roughly 70 percent of all beneficiaries—primarily rural workers, for whom special criteria apply, and urban workers, especially women, who meet the minimum length of service requirements for an old-age pension—receive this minimum benefit, which accounts for approximately 35 percent of total benefits. Included in this group are roughly 1 million beneficiaries who receive minimum benefits on the basis of age or disability, despite short length of service (the *Renda Mensal Vitalícia* program).[8]

[8] These benefits are being phased out because responsibility for this group has been shifted to the LOAS program, described below.

8. The *unemployment insurance program* provides countercyclical income smoothing for the same formal-sector workers who belong to the RGPS. Unlike the RGPS, however, the unemployment insurance program is adequately funded by *Fundo de Amparo ao Trabalhador* (FAT) through a turnover tax.[9] Since formal sector workers are better paid and have other sources of income for periods of unemployment (severance pay and a mandatory saving plan), they are much less likely to fall into poverty during the current economic slowdown.[10]

9. Brazil currently invests a larger than average share of its GDP on *health and education*, but with relatively poor results, especially in education. This is partly the outcome of institutional rigidities in financing mechanisms, and the mismatch between centralized financing and decentralized provision. Brazil is currently working with the World Bank to improve the efficiency and equity of spending in these sectors.[11] Given that states and municipalities control most current outlays, the federal government has little discretion to reprogram resources in the short term.

10. In summary, a cursory look at broad aggregate spending on social programs reveals that relatively few resources are available to counteract a short-term increase in poverty, especially if attention is restricted to spending at the federal level. Moreover, existing programs are subject to substantially greater scrutiny in the current fiscal situation; the benefits that accrue from any use of resources to counteract poverty will have to be weighed against the benefit of fiscal adjustment. Poverty alleviation can yield important benefits in the short term, but fiscal adjustment will pay long-term dividends for the poor in Brazil.

The core social programs

11. To ensure delivery of critical social services in the near term, the authorities, in collaboration with the World Bank and the IDB, have identified a set of 22 core social programs that are relatively cost-effective and should be protected while more

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[9] Workers with employment history of at least 16 months can apply for unemployment benefits. In the first year of unemployment, eligible beneficiaries receive between three to five compensation payments. Effective January 1, 1999, the government decided to provide three more compensation payments between 12 and 18 months of unemployment, taking the maximum number of compensation payments to 8.

[10] Preliminary analysis carried out by the World Bank shows that only a small proportion of unemployment benefits is actually received by poor households.

[11] Higher education spending has been shown to have a regressive impact on the poor. The two highest quintiles receive 63 percent of benefits from public spending on higher education, against 19 percent for the two lowest quintiles. See *Poverty Assessment,* World Bank, 14323–BR, 1995.

comprehensive restructuring of the social sector is undertaken. The 22 core programs are listed in (Table 9.2).[12] Several of these programs are recent innovations designed to improve the delivery of public services. Reflecting their value, the share of GDP devoted to them has increased from 1.1 percent in 1997 to roughly 1.2 percent in 1998–99, at the same time that spending on other programs was substantially cut.

12. Despite their long-term value, the 22 core programs provide limited protection against poverty during an economic downturn. Almost half of the money devoted to these programs goes to unemployment insurance. This program is obviously countercyclical, but focuses on relatively higher-income formal sector workers. Of the programs in education and health, the school lunch and health programs and the floor on financing of basic health services can provide needed nutrition and health care to those who are hardest hit by an economic downturn, provided they are adequately funded.[13] The social assistance programs—especially the LOAS, Bolsa Escola, and child-labor eradication programs, since they provide income support to the most needy—[14] have the greatest potential for mitigating poverty.

13. In conclusion, even taking account of a substantial share of resources spent on minimum pensions in the RGPS, total spending in programs that are likely to mitigate an increase in poverty over the short term is less than 1 percent of GDP. However, the most important gap in social policy instruments in Brazil is the absence of a program that directly addresses income losses of workers in the informal sector.

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[12] The budgetary allocation for unemployment benefit may turn out to be excessive, given the recent fall in unemployment rates. This suggests that actual spending on these programs may be different from that envisaged in the revised fiscal program.

[13] Analysis using household survey data for the metropolitan region of São Paulo (*Pesquisa de Condições de Vida*, PCV) shows that private health and education outlays are concentrated in the highest income quintile. The lowest quintile accounts for 2.1 percent of total private spending on primary education, against 60.2 percent for the highest quintile. In the case of private health spending, the lowest quintile accounts for 10.8 percent of total outlays, against 41.7 percent in the highest quintile.

[14] Bolsa Escola provides one minimum wage to parents if children are enrolled in primary schools. The child-labor eradication program transfers payments to families who take their children (7–14 years of age) out of the work place and enroll them in schools.

Table 9.2. Federal Spending on 22 Core Programs, 1997—99
(In millions of reais)

Program	1997	1998	Proj. 1999	Performance targets 1999
Education	1,305	1,949	2,283	
School lunch program	673	785	903	35.4 million students
National Education Development and Maintenance Fund	100	425	816	n/a
Provision of textbooks	288	370	255	60 million books
Fundescola	0	93	210	82,000 schools
Primary schools	229	252	83	51,000 schools
School health	15	24	16	1.8 million students
Health	2,448	2,571	2,718	
Floor on financing for basic health services	1572	1,722	1,780	5,500 municipalities
Family health program	162	226	379	100,000 providers (w/equip)
National immunization program	163	173	193	15.0 million vaccinations
Pharmaceutical assistance basic drug program	420	351	160	4,000 municipalities
Child nutrition	102	59	158	830,000 children
Women's health program	29	40	48	8 million women
Labor	4,436	5,159	5,275	
Unemployment insurance	3,549	4,182	4,323	(n/a)
Salary bonus	532	579	640	4.3 million workers
Labor training	355	399	312	1.7 million workers
Social Assistance	1,194	1,571	1,847	
LOAS (income support for the elderly and disabled)	792	1,140	1,435	712,000 beneficiaries
Support for children (in kind)	219	218	180	1 million children
Bolsa Escola (cash incentive to maintain school enrollment)	0	0	100	(to be defined)
Support for disabled (in kind)	59	61	49	88,000 disabled
Support for adolescents	83	86	31	84,000 beneficiaries
Child labor eradication	15	40	30	44,000 beneficiaries
Support for elderly (in kind)	26	26	22	189,000 aged
Total	**9,383**	**11,251**	**12,123**	
Memorandum item:				
Total as share of GDP	1.1	1.2	1.2	

Sources: Ministry of Planning and Budget; and Fund staff estimates.

D. Options for Strengthening Social Policy Instruments

14. Although formal sector unemployment has begun to fall, and the output decline has plateaued, it is important to strengthen social policy instruments to help the existing poor and near-poor to withstand income losses during 1999 and to ensure their access to critical social services. Such an approach would complement the ongoing economic adjustment and reforms. The following options would improve social protection at a low budgetary cost.

Implement a workfare program

15. A workfare program that seeks to transfer income principally to poor, informal sector workers would help to protect their consumption until the economy resumes strong growth. The program could focus on labor-intensive activities in poor communities (urban infrastructure, childcare and health, education). This type of program was implemented in 1998 in the Northeast in the aftermath of the drought, and benefited around 1 million people.[15] [16] It was financed by a loan from FAT.

16. The authorities have already responded to meet the short-term income needs of the poor. A workfare program along the lines of the program implemented by the municipality of São Paulo is under consideration by the federal government. The federal program would target 1 million workers and pay one minimum wage per month during six months. Beneficiaries would also attend retraining courses (two hours per day).[17] The cost of the program to the federal government is estimated at R$1.4–R$1.5 billion. As with the Northeast drought program, financing could be provided through FAT.[18]

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[15] In the program, the monthly wage rate was set at R$65 for a three-day week. This is equivalent to the daily minimum wage rate of roughly R$5.5 (the statutory minimum wage was R$130 for a 5.5 day-week).

[16] Argentina has also used workfare programs (*Programa Trabajar*) since 1995. Mexico's *Solidariedad* is another successful example of income support in Latin America. Chile provided income support to 11 percent of its labor force in the mid-1980s. All three countries in Asia affected by the crisis in 1997 (Indonesia, Korea, and Thailand) have implemented these programs.

[17] The World Bank is advising the Brazilian government on the implementation of a federal workfare program. One area of concern remains the wage level to be offered to those seeking employment under this program.

[18] FAT currently has assets totaling R$35 billion, that yield below-market return. Part of these assets are held in short-term securities to finance unexpected increases in the demand for unemployment benefits. These short-term securities could provide financing for workfare programs in Brazil, subject to approval by FAT's council (CONFAT).

Strengthen funding for Lei Orgânica da Assistência Social (LOAS)

17. As noted earlier, the *LOAS* program is the primary mechanism for providing cash support to the elderly and the disabled living in poverty.[19] Less than half of the applications for disability benefit are approved and their targeting is problematic. The funding for *LOAS* was increased in the revised fiscal program for 1999 from R$1,116 million to R$1,435 million to ensure timely payments to 33,000 beneficiaries estimated in November 1998 and any new beneficiaries due to the economic slowdown. However, the monitoring of eligibility and compliance should be improved to ensure that the program's resources are well targeted.[20]

Strengthen the Bolsa Escola Program (Programa de Garantia de Renda Mínima)

18. Bolsa Escola provides income support to poor families to maintain their children (7 to 14 years of age) at school. The national program was motivated by successful initiatives undertaken by a number of state governments. The 1999 budget provides R$100 million for this program, R$215 million less than in the initial budget proposal. Extending this program could prevent school drop out rates from increasing and also act as a countercyclical poverty alleviation measure.[21] Because funding is provided jointly by the federal and municipal governments, one difficulty with raising federal allocations is that contribution from the municipalities may not always be forthcoming.[22]

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[19] The program was implemented in 1996, and is gradually replacing the *Renda Mensal Vitalícia* program, which is closed to new entrants. *LOAS* has stringent eligibility requirements: for both the elderly and disabled, per capita household income cannot exceed 25 percent of the minimum wage; the elderly must be at least 67 years old and disabilities must be certified by the Instituto Nacional de Seguridade Social (INSS), the agency that administers the RGPS.

[20] The World Bank is assisting the authorities to improve the means testing of *LOAS* and other social assistance programs.

[21] The World Bank and the Brazilian government are currently involved in technical work on possible World Bank support for the *Programa de Garantia de Renda Mínima.*

[22] By April 1999, 106 municipalities had agreed to participate in the program, benefiting 62,000 households and 127,000 children.

Table 1. Brazil: Macroeconomic Flows and Balances

	1994	1995	1996	1997	Est. 1998
	(In percent of GDP)				
Total domestic expenditure	**99.6**	**101.8**	**102.1**	**102.2**	**101.9**
Consumption	**77.5**	**79.5**	**81.4**	**80.6**	**82.8**
General government	17.9	19.6	19.2	19.2	20.0
Private sector	59.6	59.9	62.2	61.4	62.8
Investment	**22.1**	**22.3**	**20.7**	**21.6**	**19.1**
General government	3.6	2.5	2.3	2.2	2.3
Private sector and public enterprises 1/	18.5	19.8	18.4	19.4	16.8
Saving	**22.1**	**22.3**	**20.7**	**21.6**	**19.1**
Gross national saving	21.8	24.9	23.6	25.8	23.4
External saving	0.3	-2.6	-3.0	-4.1	-4.3

Sources: Brazilian Institute of Geography and Statistics (IBGE); and Fund staff estimates.

1/ Includes changes in stocks.

Table 2. Brazil: GDP and Real GDP per Capita

	GDP in current reais	GDP in millions of 1998 reais	Real GDP per capita in 1998 reais	Implicit GDP deflator (per-cent change)	Population (millions)	Real GDP annual percent changes			
						Agriculture & livestock	Industry	Services	Total
1986	1,274	711,650.5	5,285.1	149.2	134,653	-8.0	11.7	8.1	7.5
1987	4,038	736,771.8	5,367.4	206.2	137,268	15.0	1.0	3.1	3.5
1988	29,376	736,329.7	5,266.3	628.0	139,819	0.8	-2.6	2.3	-0.1
1989	425,595	759,597.8	5,337.7	1,304.4	142,307	2.8	2.9	3.5	3.2
1990	11,548,795	726,555.3	5,042.3	2,737.0	144,091	-3.7	-8.2	-0.8	-4.3
1991	60,285,999	734,038.8	5,013.7	416.7	146,408	1.4	0.3	2.0	1.0
1992	640,958,768	730,075.0	4,910.2	969.0	148,684	4.9	-4.2	1.5	-0.5
1993	14,097,114,182	765,994.6	5,075.1	1,996.2	150,933	-0.1	7.0	3.2	4.9
1994	349,204,679,000	810,805.3	5,294.4	2,240.2	153,143	5.5	6.7	4.7	5.9
1995	646,191,517,000	845,021.3	5,440.6	77.6	155,319	4.1	1.9	4.5	4.2
1996	778,820,353,000	868,343.9	5,513.9	17.3	157,482	4.1	3.7	1.9	2.8
1997	866,827,479,000	900,299.0	5,639.7	7.4	159,636	2.7	5.5	1.2	3.7
1998	901,405,984,832	901,406.0	5,571.5	3.9	161,790	0.2	-0.9	0.8	0.1

Source: Brazilian Institute of Geography and Statistics (IBGE).

Table 3. Brazil: National Accounts at Current Prices

(In millions of *reais*)

	1994	1995	1996	1997	Est. 1998
Consumption expenditure	270,644	513,562	633,826	705,341	746,157
General government	62,388	126,652	149,601	157,084	180,515
Private sector	208,256	386,910	484,224	548,257	565,643
Gross capital formation	77,333	144,027	161,013	184,282	172,143
General government	12,609	16,382	17,895	20,481	21,003
Private sector and public enterprises	64,725	127,645	143,118	163,801	151,141
Total domestic expenditure	347,978	657,589	794,838	889,623	918,301
Net exports of goods and nonfactor services	1,227	-11,397	-16,018	-22,796	-16,895
Exports	33,220	49,917	55,469	65,491	64,980
Imports	31,993	61,314	71,486	88,287	81,875
GDP at market prices	349,205	646,192	778,820	866,827	901,406
Net factor payments abroad	-6,765	-11,192	-15,822	-19,486	-25,000
GNP at market prices	342,440	635,000	762,998	847,341	876,406
Net unrequited transfers received from abroad	2,588	3,974	2,899	2,376	2,204
Gross national income at market prices	345,028	638,974	765,897	849,717	878,610

Sources: Brazilian Institute of Geography and Statistics (IBGE); and Fund staff estimates.

Table 4. Brazil: National Accounts at Constant Prices

(In 1985 millions of *reais*)

	1994	1995	1996	1997	Est. 1998
Consumption expenditure	4,688.0	5,261.0	5,438.7	5,735.0	5,775.2
Percent change	8.6	12.2	3.4	5.4	0.7
Gross capital formation	892.7	957.8	978.2	1,092.6	1,046.7
Percent change	14.3	7.3	2.1	11.7	-4.2
Total domestic expenditure	5,580.6	6,218.7	6,416.9	6,827.6	6,821.9
Percent change	9.4	11.4	3.2	6.4	-0.1
Net exports of goods and nonfactor services (GNFS)	277.7	-113.2	-142.8	-321.4	-309.2
Percent change 1/	-2.8	-6.7	-0.5	-2.8	0.2
Exports of GNFS	1209	1163.1	1267.2	1415.8	1454.0
Percent change	3.2	-3.8	9.0	11.7	2.7
Imports of GNFS	931.3	1276.3	1410.1	1737.2	1763.2
Percent change	26.4	37.0	10.5	23.2	1.5
GDP at market prices	5,858.3	6,105.5	6,274.0	6,506.2	6,512.7
Percent change	5.9	4.2	2.8	3.7	0.1
Net factor payments abroad	-109.7	-103.8	-109.3	-135.1	-168.5
GNP at market prices	5,748.6	6,001.8	6,164.7	6,371.1	6,344.2
Percent change	6.8	4.4	2.7	3.3	-0.4

Sources: Brazilian Institute of Geography and Statistics (IBGE); and Fund staff estimates.

1/ Contribution to growth.

Table 5. Brazil: Industrial Production

(Annual percentage change)

	1994	1995	1996	1997	Est. 1998
Total	**7.6**	**1.8**	**1.7**	**3.9**	**-2.3**
Mineral extraction	4.7	3.3	9.8	7.2	12.4
Manufacturing industry	7.8	1.7	1.1	3.6	-3.5
Nonmetallic minerals	3.1	4.1	6.3	7.4	-0.5
Metallurgy	10.2	-1.8	1.6	6.0	-3.8
Machinery	21.1	-4.5	-12.8	7.2	-4.1
Electrical and communications equipment	19.0	14.6	4.7	-1.8	-10.1
Transportation equipment	13.4	4.1	-0.3	10.7	-15.1
Wood	-2.6	-3.4	2.1	3.9	-7.3
Furniture	1.2	6.2	13.7	-1.5	-8.2
Paper and cardboard	2.8	0.4	2.9	2.9	0.5
Rubber	4.0	-0.3	-0.5	4.1	-8.1
Leather and hides	-4.3	-16.7	-1.9	-1.7	-13.6
Chemicals	6.6	-0.5	5.0	5.1	3.7
Pharmaceuticals	-2.5	18.1	-8.6	11.4	4.3
Perfumes, soaps and candles	2.5	5.3	4.1	5.2	3.0
Plastics	4.1	9.7	11.3	3.6	-2.6
Textiles	3.8	-5.8	-5.8	-6.5	-7.0
Clothing, footwear and cloth goods	-2.1	-6.9	-2.5	-6.7	-4.8
Food products	2.2	7.7	5.3	1.0	1.3
Beverages	10.4	17.2	-3.3	-0.3	-2.6
Tobacco	-14.8	-5.1	12.5	22.2	-22.7
Memorandum items:					
Capital goods	18.7	0.3	-14.1	4.8	-1.8
Intermediate goods	6.5	0.2	2.9	4.6	-0.9
Consumer goods	4.4	6.2	5.3	1.2	-5.6
Durable	15.1	14.5	11.2	3.5	-20.2
Semidurable and nondurable	1.9	4.2	3.7	0.5	-1.2

Source: Brazilian Institute of Geography and Statistics (IBGE).

Table 6. Brazil: Retail Sales in the São Paulo Metropolitan Area

(Seasonally Adjusted)

(1988 average = 100)

	General Commerce	Consumer Goods 1/	Durable Goods	Semidurables	Nondurables	Automobile	Construction Materials
1994	74.3	70.8	76.6	51.5	77.2	102.7	46.8
1995	77.1	78.1	88.6	63.9	81.7	91.1	44.7
1996	71.8	75.9	87.3	58.1	78.8	76.3	38.5
1997	67.7	70.0	76.3	51.0	76.9	75.8	37.0
1998	64.7	72.3	75.7	41.8	84.7	56.6	31.4
1996							
January	68.5	74.0	81.7	61.5	78.7	63.7	38.8
February	69.7	73.7	85.5	55.7	76.4	73.9	38.7
March	71.9	76.9	92.6	57.1	78.9	73.1	39.2
April	71.0	75.1	86.7	58.7	78.1	72.4	38.7
May	71.8	76.3	88.6	57.0	78.5	75.9	37.6
June	70.6	75.0	86.5	56.1	77.8	73.0	38.8
July	74.5	78.5	91.0	61.1	80.3	77.1	37.9
August	72.7	76.2	87.4	57.7	78.9	76.8	37.6
September	73.4	76.8	90.6	57.6	78.2	83.1	38.1
October	72.9	76.8	87.1	59.4	80.0	83.0	37.9
November	74.2	77.6	87.7	57.7	80.3	81.2	39.4
December	70.5	73.9	82.6	57.5	79.5	82.9	39.0
1997							
January	73.6	72.8	83.3	53.8	76.6	90.0	39.2
February	71.3	72.9	85.5	52.5	74.7	83.0	39.6
March	71.3	73.5	79.9	57.2	82.4	80.0	37.6
April	73.2	72.5	81.8	58.5	75.3	86.8	42.0
May	69.8	73.1	82.4	53.2	77.8	78.6	37.1
June	68.2	70.0	75.6	54.6	77.9	78.4	37.4
July	65.3	68.2	71.0	51.6	76.9	71.7	34.5
August	65.5	68.0	72.2	47.3	76.3	68.6	36.6
September	66.1	68.1	72.6	46.0	76.1	77.9	36.1
October	65.7	67.4	72.3	46.7	75.5	76.9	35.6
November	63.0	67.1	70.1	48.4	75.7	65.7	34.7
December	60.0	66.0	68.9	42.5	77.0	52.0	33.1
1998							
January	63.7	69.9	75.8	45.1	78.6	59.3	33.8
February	64.0	70.0	71.1	49.2	80.7	60.9	32.6
March	63.1	68.9	74.9	44.1	80.2	61.2	31.5
April	64.6	70.7	73.2	40.5	82.8	58.7	31.5
May	64.6	71.4	73.4	43.6	84.1	59.3	32.7
June	65.4	73.8	79.0	40.5	85.8	56.6	31.5
July	64.8	72.2	74.2	39.9	85.7	57.8	31.3
August	67.6	74.3	78.9	41.2	86.9	59.7	33.4
September	63.7	73.1	71.5	43.1	87.4	51.8	30.3
October	64.5	74.8	77.1	39.0	88.7	50.3	29.8
November	64.5	73.9	77.2	38.0	88.9	50.7	30.1
December	66.2	75.0	82.6	37.9	86.8	53.0	28.9
1999							
January	66.9	77.1	82.7	37.2	90.0	47.4	28.6
February	64.0	76.4	78.8	39.3	89.5	30.1	27.9
March	64.3	76.1	79.8	38.1	90.2	38.5	28.4
April	64.1	75.7	76.6	38.2	90.5	37.5	28.0
May	63.9	77.0	79.7	39.7	92.2	34.4	28.8

Source: State of São Paulo Commerce Federation.

1/ Includes durable, semidurable and nondurable goods.

Table 7. Brazil: Price Statistics

(Monthly percentage change)

	General Price Index 1/ (IGP-DI)	Wholesale Price Index (IPA-DI)	Construction Cost Index (INCC)	Consumer Price Index (INPC)
1994				
January	42.19	41.28	45.93	41.32
February	42.41	43.23	39.14	40.57
March	44.83	43.65	55.71	43.08
April	42.46	40.20	45.60	42.86
May	40.95	38.47	45.60	42.73
June	46.58	45.50	44.74	48.24
July	5.47	4.41	3.58	7.75
August	3.34	4.40	0.14	1.85
September	1.55	1.79	0.38	1.40
October	2.55	2.71	1.32	2.82
November	2.47	2.18	2.36	2.96
December	0.57	0.17	1.32	1.70
1995				
January	1.36	0.87	3.50	1.44
February	1.15	0.58	2.09	1.01
March	1.81	1.08	3.30	1.62
April	2.30	1.99	2.30	2.49
May	0.40	-2.03	8.77	2.10
June	2.62	1.55	3.12	2.18
July	2.24	2.24	1.09	2.46
August	1.29	1.73	0.62	1.02
September	-1.08	-2.42	0.67	1.17
October	0.23	-0.14	0.86	0.63
November	1.33	1.49	0.73	1.51
December	0.27	-0.61	0.86	1.65
1996				
January	1.79	1.31	1.52	1.46
February	0.76	0.47	0.11	0.71
March	0.22	-0.07	0.98	0.29
April	0.70	0.41	0.25	0.93
May	1.68	1.34	2.16	1.28
June	1.22	0.94	1.54	1.33
July	1.09	1.38	0.75	1.20
August	0.00	-0.05	0.23	0.50
September	0.13	0.41	0.22	0.02
October	0.22	0.24	0.26	0.38
November	0.28	0.24	0.58	0.34
December	0.88	1.21	0.59	0.33
1997				
January	1.58	1.67	0.32	0.81
February	0.42	0.34	0.48	0.45
March	1.16	1.59	0.73	0.68
April	0.59	0.53	0.23	0.60
May	0.30	0.14	0.86	0.11
June	0.70	0.24	1.11	0.35
July	0.09	-0.09	0.51	0.18
August	-0.04	-0.15	1.18	-0.03
September	0.59	0.92	0.27	0.10
October	0.34	0.41	0.15	0.29
November	0.83	1.08	0.54	0.15
December	0.69	0.87	0.23	0.57

Table 7. Brazil: Price Statistics

(Monthly percentage change)

	General Price Index 1/ (IGP-DI)	Wholesale Price Index (IPA-DI)	Construction Cost Index (INCC)	Consumer Price Index (INPC)
1998				
January	0.88	0.75	0.33	0.85
February	0.02	-0.15	0.48	0.54
March	0.23	0.13	0.47	0.49
April	-0.13	-0.28	-0.50	0.45
May	0.23	0.13	0.98	0.72
June	0.28	0.17	0.39	0.15
July	-0.38	-0.61	0.34	-0.28
August	-0.17	-0.04	0.22	-0.49
September	-0.02	0.06	0.01	-0.31
October	-0.03	-0.19	0.01	0.11
November	-0.18	-0.20	-0.05	-0.18
December	0.98	1.74	0.05	0.42
1999				
January	1.15	1.58	0.55	0.65
February	4.44	6.99	0.99	1.29
March	1.98	2.84	0.55	1.28
April	0.03	-0.34	0.52	0.47
May	-0.34	-0.82	0.86	0.05
June	1.02	1.35	0.41	0.07

Sources: Brazilian Institute of Geography and Statistics (IBGE); and Getulio Vargas Foundation.

1/ A weighted average of the IPA-DI (weight of 0.6), INCC, (weight of 0.1), and the IPC-DI consumer price index (weight of 0.3).

Table 8. Brazil: Consumer Price Index

(IPC-FIPE) 1/

(Monthly percentage change)

	General	Food	Personal Expenses	Housing	Transpor-tation	Clothing	Health Care	Education
1994								
January	40.30	43.01	36.13	35.97	42.52	39.33	44.21	53.16
February	38.19	39.10	38.40	38.67	36.96	31.93	43.32	39.49
March	41.94	47.11	39.31	41.77	41.04	27.91	42.11	47.08
April	46.22	44.40	48.41	47.34	47.26	47.72	42.71	43.53
May	45.10	37.59	47.04	45.16	46.78	69.32	45.19	44.11
June	50.75	53.69	48.01	49.28	49.43	54.73	48.51	45.08
July	6.95	8.77	7.77	5.33	9.97	2.07	7.95	1.48
August	1.95	2.74	-0.27	3.71	0.51	0.60	1.54	-0.57
September	0.82	-0.27	-0.76	3.88	0.77	-1.82	0.99	-0.07
October	3.17	6.39	0.49	4.28	0.19	-0.54	1.15	0.19
November	3.02	4.75	0.87	3.80	-0.14	4.25	1.81	0.69
December	1.25	0.10	1.08	4.02	-0.13	-1.02	2.17	1.10
1995								
January	0.80	-0.82	1.53	2.71	-0.24	-0.41	3.53	1.54
February	1.32	0.59	2.29	3.23	-0.30	-1.38	2.75	0.96
March	1.92	0.74	1.02	4.11	0.14	-2.32	2.56	14.87
April	2.64	0.81	3.62	3.29	0.90	6.31	2.75	7.48
May	1.97	-1.33	2.03	3.83	0.57	8.06	2.45	6.84
June	2.66	-0.07	1.30	4.52	4.59	3.67	5.51	4.49
July	3.72	2.29	3.63	5.74	5.74	-1.29	6.19	3.51
August	1.43	1.31	2.49	4.11	-0.12	-5.46	2.28	1.08
September	0.74	-0.27	1.27	2.39	0.24	-0.48	0.61	0.46
October	1.48	0.64	2.47	1.84	3.34	-0.31	1.29	0.58
November	1.17	2.12	1.09	1.62	-0.02	-0.99	0.45	0.62
December	1.21	0.32	0.41	3.78	0.59	-1.80	2.88	0.57
1996								
January	1.82	1.76	0.18	2.67	-0.56	-1.18	2.77	16.24
February	0.40	-0.16	0.77	2.16	0.61	-4.89	0.92	2.56
March	0.23	-0.22	-0.21	2.31	0.16	-6.08	1.20	4.71
April	1.62	0.66	0.90	1.18	4.66	4.39	0.43	-0.02
May	1.34	0.05	1.67	1.11	0.30	7.96	1.90	0.64
June	1.41	0.34	0.71	1.25	5.42	1.25	1.35	0.56
July	1.31	1.08	-0.06	1.38	4.37	-1.60	4.39	0.11
August	0.34	-0.29	0.36	2.11	-0.27	-2.26	1.53	-0.25
September	0.07	-0.43	0.63	1.12	0.13	-2.30	0.59	-0.27
October	0.58	0.64	-0.04	0.62	1.14	0.73	0.32	-0.13
November	0.34	0.11	0.04	0.56	0.25	1.28	0.00	0.09
December	0.17	-1.41	0.50	0.44	2.40	0.33	1.40	0.75
1997								
January	1.23	1.51	1.34	0.33	2.75	-2.71	1.20	8.83
February	0.01	0.76	0.10	0.43	-0.22	-3.63	0.25	-0.18
March	0.21	1.59	-0.15	0.40	-0.05	-4.34	0.38	0.22
April	0.64	-0.37	-0.10	0.47	-0.07	7.70	1.04	0.21
May	0.55	-1.37	-0.41	1.96	0.02	5.30	1.22	0.12
June	1.42	0.93	-0.12	1.90	2.89	2.69	0.94	0.01
July	0.11	-0.28	-0.13	0.75	1.20	-1.75	0.50	-0.13
August	-0.76	-1.42	0.28	0.53	-0.30	-5.44	0.82	-0.33
September	0.01	-0.02	0.73	0.36	-0.22	-1.97	0.49	0.18
October	0.22	0.68	0.77	0.12	-0.28	-0.94	0.17	-0.08
November	0.53	0.79	0.07	0.46	0.79	0.23	0.26	0.48
December	0.57	0.81	0.26	0.34	1.12	0.30	0.47	0.03

Table 8. Brazil: Consumer Price Index

(IPC-FIPE) 1/

(Monthly percentage change)

	General	Food	Personal Expenses	Housing	Transpor-tation	Clothing	Health Care	Education
1998								
January	0.24	1.01	-0.43	-0.15	0.55	-2.59	0.17	4.39
February	-0.16	0.32	-1.85	-0.10	1.82	-3.21	1.28	-0.25
March	-0.23	0.79	-0.16	-0.20	0.24	-5.18	0.47	0.21
April	0.62	0.36	-0.03	0.07	-0.23	6.59	-0.61	-0.14
May	0.52	0.73	-0.36	-0.24	-0.32	5.34	-0.11	0.12
June	0.19	-0.19	-0.18	0.23	-0.02	2.20	0.26	0.22
July	-0.77	-1.48	-0.13	-0.26	-0.58	-1.90	0.04	0.21
August	-1.00	-1.37	-0.31	0.05	-1.87	-3.49	-0.10	-0.10
September	-0.66	-0.14	-0.36	-0.18	-0.73	-5.01	0.12	0.23
October	0.02	0.32	-0.11	-0.13	-0.43	0.17	0.14	0.17
November	-0.44	-0.52	-0.32	-0.35	-0.86	-0.49	0.26	-0.05
December	-0.12	-0.37	-0.05	0.06	0.71	-1.37	0.42	-0.06
1999								
January	0.50	0.79	0.23	0.18	2.51	-2.26	0.04	1.27
February	1.41	3.07	0.77	0.74	2.69	-1.94	-0.03	0.17
March	0.56	0.78	1.04	0.46	1.51	-1.01	-0.14	-0.80
April	0.47	-1.18	0.17	0.50	0.45	6.53	1.31	0.27
May	-0.37	-1.96	0.12	0.10	-0.15	1.91	1.21	-0.01
June	-0.08	-1.20	-0.06	0.02	0.69	2.03	0.58	0.23

Source: Brazilian authorities.

1/ Consumer price index of São Paulo, not seasonally adjusted.

Table 9. Brazil: Relative Public Sector Prices and Tariffs 2/
(Average 1991=100) 1/

			Petroleum Products				
	Electricity	Telecommu-nication	Gasoline	Diesel	Natural Gas	Alcohol	Mail
December 1991	110.7	99.7	96.0	103.0	95.7	98.0	94.5
December 1992	106.6	97.3	83.7	131.4	86.5	86.2	83.8
December 1993	125.7	111.8	83.3	135.6	119.3	152.1	101.6
December 1994	104.3	86.8	70.9	120.6	73.7	127.9	79.4
1995							
January	102.9	85.6	69.8	118.8	72.4	126.0	78.3
February	101.7	84.6	69.0	117.4	71.5	124.5	77.5
March	99.9	83.1	67.8	115.3	70.3	122.3	76.1
April	97.7	81.3	66.2	112.7	68.7	119.6	74.4
May	97.3	80.9	65.9	112.2	68.4	119.0	74.1
June	94.8	78.9	64.2	109.3	70.2	115.9	72.2
July	92.7	77.1	62.8	106.9	73.9	113.3	70.6
August	91.6	76.2	62.0	105.5	73.0	111.9	69.7
September	92.6	77.0	63.0	107.3	73.7	113.7	70.5
October	92.3	76.8	64.9	111.1	73.6	117.1	108.3
November	97.5	77.7	64.1	109.6	72.6	115.5	124.7
December	108.7	98.6	63.9	109.3	72.4	115.2	124.3
1996							
January	117.4	98.3	62.8	107.4	92.0	113.2	122.2
February	119.9	97.3	62.1	106.3	91.1	112.0	120.9
March	119.6	97.1	62.0	106.0	90.9	111.8	120.6
April	118.8	96.4	70.2	105.3	90.2	127.7	119.8
May	116.9	94.9	69.4	103.6	88.7	126.2	117.8
June	115.4	93.7	68.5	102.3	87.7	124.7	116.4
July	114.2	92.7	67.8	101.2	86.7	123.3	115.1
August	114.2	92.7	67.8	101.2	86.7	123.3	115.1
September	114.0	92.6	67.7	101.1	86.6	123.2	115.0
October	113.8	92.4	67.6	100.9	86.4	122.9	114.7
November	113.5	92.1	67.4	100.6	86.2	122.5	114.4
December	112.5	91.3	70.2	103.9	85.4	133.8	113.4
1997							
January	110.7	89.9	73.2	107.3	84.1	146.5	111.7
February	110.3	89.5	72.9	106.8	83.7	145.9	111.2
March	109.0	88.5	72.1	105.6	82.8	144.2	109.9
April	116.6	88.0	71.7	105.0	82.3	143.4	109.3
May	116.3	90.4	71.4	104.7	82.0	142.9	108.9
June	115.5	89.8	71.0	104.0	81.5	141.9	108.2
July	115.4	89.7	70.9	103.9	81.4	141.8	129.5
August	115.4	89.8	70.9	103.9	81.4	141.9	129.5
September	114.7	89.2	70.5	103.3	81.0	141.0	128.8
October	114.3	88.9	70.3	102.9	80.7	140.6	128.3
November	113.4	88.2	72.9	104.5	80.0	139.4	127.3
December	112.6	87.6	76.1	106.5	79.5	138.4	126.4
1998							
January	111.6	86.8	75.5	105.5	78.8	137.2	125.3
February	111.6	86.8	75.4	105.5	78.8	137.2	125.3
March	111.4	86.6	75.3	105.3	78.6	136.9	125.0
April	111.5	86.7	75.4	105.4	78.7	137.1	125.1
May	111.2	86.5	75.2	105.2	78.5	136.8	124.9
June	110.9	86.3	75.0	104.9	78.3	136.4	124.5
July	111.4	86.6	75.3	105.3	78.6	136.9	125.0
August	111.6	86.8	75.4	105.5	78.7	137.1	125.2

Source: Central Bank of Brazil.

1/ Deflated by the IGP-DI price index.
2/ The Central Bank stopped producing the above series since many of these prices have already been liberalized.

Table 10. Brazil: Open Unemployment Rate 1/

(In Percent)

	1994	1995	1996	1997	1998	1999
Annual average	**5.1**	**4.6**	**5.4**	**5.7**	**7.6**	**...**
January	5.5	4.4	5.3	5.2	7.3	7.7
February	5.4	4.3	5.7	5.6	7.4	7.5
March	5.9	4.4	6.4	6.0	8.2	8.1
April	5.4	4.4	6.0	5.8	7.9	8.0
May	5.2	4.5	5.9	6.0	8.2	7.7
June	5.4	4.6	5.9	6.1	7.9	...
July	5.5	4.8	5.6	6.0	8.0	...
August	5.5	4.9	5.5	5.9	7.8	...
September	5.1	5.2	5.2	5.7	7.6	...
October	4.5	5.1	5.1	5.7	7.5	...
November	4.0	4.7	4.6	5.4	7.0	...
December	3.4	4.4	3.8	4.8	6.3	...

Source: Brazilian Institute of Geography and Statistics (IBGE).

1/ Survey data from 6 metropolitan areas (Belo Horizonte, Porto Alegre, Recife, Rio de Janeiro, Salvador, São Paulo), using a seven-day reference period.

Table 11. Brazil: Employment and Real Wages in Industry in São Paulo

		(Average 1989 = 100)		(Monthly Percent Change)		(Annual Percentage Change)	
		Industrial Employment	Average Real Wage	Industrial Employment	Average Real Wage	Industrial Employment	Average Real Wage
1990	December	93.8	87.7	-2.2	-3.1	-8.2	-26.1
1991	December	88.7	95.8	-1.1	-0.5	-5.4	9.2
1992	December	81.5	109.5	-0.8	-2.5	-8.1	14.3
1993	December	80.4	114.6	-0.5	-1.7	-1.4	4.6
1994	January	80.2	107.6	-0.2	-6.1	-1.3	3.6
	February	80.0	107.7	-0.3	0.1	-1.6	4.8
	March	79.6	117.6	-0.4	9.2	-2.2	5.8
	April	79.4	121.8	-0.3	3.5	-2.7	11.5
	May	79.3	123.2	-0.2	1.2	-3.0	12.4
	June	79.2	120.4	-0.1	-2.3	-3.2	12.5
	July	79.1	113.0	-0.1	-6.1	-3.4	3.1
	August	78.8	115.3	-0.4	2.0	-3.5	7.9
	September	78.9	116.4	0.1	0.9	-3.0	11.4
	October	79.3	117.4	0.6	0.9	-2.2	10.7
	November	79.5	127.6	0.2	8.7	-1.5	9.5
	December	79.5	130.8	0.0	2.5	-1.1	14.2
1995	January	79.9	126.3	0.5	-3.4	-0.4	17.4
	February	80.3	124.6	0.5	-1.3	0.4	15.7
	March	80.7	128.5	0.5	3.1	1.3	9.3
	April	80.8	130.7	0.1	1.7	1.8	7.4
	May	80.6	132.0	-0.2	1.0	1.7	7.2
	June	80.0	129.5	-0.7	-1.9	1.0	7.6
	July	79.1	126.3	-1.1	-2.5	0.0	11.7
	August	77.2	127.4	-2.4	0.9	-2.0	10.5
	September	76.1	122.8	-1.4	-3.6	-3.5	5.5
	October	75.3	124.5	-1.1	1.4	-5.1	6.1
	November	74.8	133.5	-0.6	7.2	-5.9	4.6
	December	73.9	137.0	-1.1	2.7	-7.0	4.8
1996	January	73.3	134.1	-0.8	-2.1	-8.2	6.2
	February	72.8	134.2	-0.7	0.0	-9.4	7.7
	March	72.4	135.2	-0.5	0.8	-10.2	5.2
	April	72.2	135.7	-0.3	0.4	-10.6	3.8
	May	71.9	135.4	-0.4	-0.3	-10.8	2.5
	June	71.6	133.2	-0.5	-1.6	-10.5	2.9
	July	71.3	133.9	-0.4	0.5	-9.8	6.0
	August	70.8	135.4	-0.8	1.1	-8.3	6.3
	September	70.5	135.0	-0.3	-0.3	-7.3	9.9
	October	70.4	136.2	-0.2	0.9	-6.5	9.4
	November	70.2	138.6	-0.4	1.8	-6.2	3.8
	December	69.5	141.2	-0.9	1.9	-6.0	3.0
1997	January	69.4	140.6	-0.1	-0.4	-5.3	4.8
	February	69.3	138.8	-0.1	-1.3	-4.7	3.4
	March	69.3	141.0	0.0	1.6	-4.3	4.3
	April	69.2	142.4	-0.2	1.0	-4.2	4.9
	May	69.1	145.7	-0.1	2.3	-3.9	7.6
	June	69.1	141.6	0.0	-2.8	-3.5	6.2
	July	68.7	142.0	-0.5	0.3	-3.6	6.1
	August	68.3	144.0	-0.6	1.4	-3.4	6.4
	September	68.2	142.4	-0.2	-1.1	-3.4	5.5
	October	67.8	143.3	-0.6	0.6	-3.8	5.2
	November	67.4	146.9	-0.5	2.5	-3.9	6.0
	December	66.8	148.9	-0.9	1.4	-3.9	5.5

Table 11. Brazil: Employment and Real Wages in Industry in São Paulo

		(Average 1989 = 100)		(Monthly Percent Change)		(Annual Percentage Change)	
		Industrial Employment	Average Real Wage	Industrial Employment	Average Real Wage	Industrial Employment	Average Real Wage
1998	January	66.2	145.2	-0.9	-2.5	-4.7	3.3
	February	65.9	143.9	-0.4	-0.9	-4.9	3.7
	March	65.7	148.4	-0.4	3.2	-5.3	5.3
	April	65.6	147.2	-0.1	-0.8	-5.1	3.4
	May	65.6	150.0	0.0	1.9	-5.0	3.0
	June	65.5	146.9	-0.2	-2.1	-5.3	3.7
	July	65.3	149.5	-0.2	1.8	-5.0	5.3
	August	64.9	151.2	-0.6	1.1	-5.0	5.0
	September	64.8	149.4	-0.2	-1.2	-5.0	4.9
	October	64.4	150.2	-0.6	0.6	-5.0	4.9
	November	63.4	155.2	-1.5	3.3	-6.0	5.7
	December	62.5	159.7	-1.4	2.9	-6.4	7.3
1999	January	61.9	152.6	-1.0	-4.4	-6.5	5.1
	February	61.3	146.0	-0.9	-4.3	-7.0	1.5
	March	61.0	145.2	-0.6	-0.6	-7.2	-2.2
	April	60.9	145.9	-0.1	0.5	-7.2	-0.9

Source: Central Bank of Brazil.

Table 12. Brazil: Minimum Wage Statistics

	Nominal (R$ per month)	Real Index (1986=100) 1/	Percentage Change in Real Terms 2/
Annual averages			
1991	0.0	70.2	10.4
1992	0.1	65.2	-7.2
1993	2.4	71.9	10.3
1994	47.7	65.0	-9.6
1995	91.3	73.5	13.1
1996	108.0	75.5	2.7
1997	117.3	77.4	2.5
1998	126.7	80.6	4.0
Quarterly averages			
1993	0.5	75.4	10.1
	1.0	70.0	2.0
	2.4	72.2	10.0
	5.6	69.8	20.7
1994	15.2	70.3	-6.8
	39.2	59.4	-15.1
	66.5	65.7	-9.0
	70.0	64.6	-7.5
1995	75.0	66.0	-6.0
	90.0	74.4	25.3
	100.0	78.4	19.3
	100.0	75.2	16.5
1996	100.0	72.6	9.9
	108.0	76.3	2.5
	112.0	76.9	-1.8
	112.0	76.3	1.4
1997	112.0	75.0	3.3
	117.3	77.5	1.6
	120.0	78.9	2.5
	120.0	78.4	2.8
1998	120.0	77.0	2.6
	126.7	80.1	3.3
	130.0	82.5	4.6
	130.0	82.7	5.5
1999	130.0	80.9	5.1
	134.0	81.8	2.2

Source: Central Bank of Brazil.

1/ Deflated by the National Consumer Price Index (INPC).

2/ With respect to the corresponding period of the preceding year.

Table 13. Brazil: Nominal, Operational, and Primary Balances of the Nonfinancial Public Sector 1/2/

(In percent of GDP)

	1994	1995	1996	1997	1998
Total borrowing requirement	**44.2**	**7.1**	**5.9**	**6.1**	**8.0**
Central government 3/	16.8	2.3	2.6	2.6	5.5
States and municipalities	19.0	3.5	2.7	3.0	2.0
Public enterprises	8.5	1.3	0.6	0.4	0.5
Monetary correction	44.8	2.3	2.1	1.8	0.5
Operational balance (deficit -)	**0.5**	**-4.8**	**-3.8**	**-4.3**	**-7.5**
Central government	1.6	-1.6	-1.6	-1.8	-5.2
States and municipalities	-1.0	-2.3	-1.8	-2.2	-1.8
Public enterprises	-0.1	-0.8	-0.3	-0.3	-0.5
Interest payments (net) 4/	**3.8**	**5.1**	**3.7**	**3.3**	**7.6**
Central government	1.5	2.2	2.0	1.4	5.8
States and municipalities	1.5	2.1	1.3	1.5	1.6
Public enterprises	0.9	0.8	0.4	0.4	0.2
Primary balance (deficit -)	**4.3**	**0.3**	**-0.1**	**-1.0**	**0.0**
Central government	3.1	0.6	0.4	-0.3	0.6
States and municipalities	0.5	-0.2	-0.6	-0.7	-0.2
Public enterprises	0.8	-0.1	0.1	0.1	-0.4

Sources: Central Bank of Brazil; Ministry of Finance; and Fund staff estimates.

1/ Figures from 1992 to 1994 have been adjusted to eliminate the end-of-period bias.
2/ Proceeds from privatization, not included in revenue.
3/ Includes federal administration, central bank, decentralized agencies and social security system.
4/ Interest payments on external debt plus the real portion of interest payments on domestic debt.

Table 14. Brazil: Summary Operations of the Public Sector 1/

(In percent of GDP)

	1994	1995	1996	1997	1998
Nonfinancial revenue	**33.2**	**32.9**	**29.9**	**30.3**	**31.2**
Tax revenue	**24.2**	**24.3**	**21.9**	**21.7**	**22.2**
Direct taxes	3.8	4.2	4.0	3.9	4.8
Federal VAT (IPI)	2.1	2.0	2.0	1.9	1.8
State VAT (ICMS)	6.8	7.2	7.1	6.8	6.7
IOF	0.8	0.5	0.4	0.4	0.4
Financial transactions tax (CPMF)	--	--	--	0.8	0.9
Trade taxes	0.5	0.7	0.5	0.6	0.7
Earmarked social taxes	4.1	4.1	4.1	4.0	3.8
Social security contributions	5.3	4.9	5.2	5.1	5.1
Other tax revenue	3.1	2.2	0.5	0.4	0.4
Minus: public enterprise taxes	-2.2	-1.8	-1.9	-2.2	-2.3
Nontax revenue	**9.0**	**8.7**	**8.1**	**8.6**	**9.0**
Value added federal enterprises	5.3	4.2	4.5	4.8	4.4
Sales	8.7	7.0	7.6	7.4	6.8
Minus: purchases	-3.4	-2.8	-3.0	-2.6	-2.5
Other revenue from federal enterprises	1.3	0.9	1.2	1.0	0.5
Other	2.4	3.6	2.4	2.8	4.1
Nonfinancial expenditure	**28.9**	**32.6**	**30.0**	**31.2**	**31.2**
Current expenditure	22.2	25.6	**27.1**	**26.8**	**26.8**
Wages and salaries	12.7	13.6	12.5	12.0	12.2
Transfers	5.1	5.9	6.1	6.3	6.8
Pension benefits	4.7	4.9	5.3	5.4	6.0
Subsidies, grants, BNDES	0.5	0.9	0.8	0.9	0.9
Other current	4.3	6.1	8.5	8.5	7.8
Capital expenditure	**4.6**	**4.1**	**3.9**	**4.2**	**4.3**
Investment	4.2	3.8	2.9	3.1	3.4
Other	0.4	0.3	1.0	1.0	0.9
Primary deficit state and municipal enterprises	**0.9**	**0.5**	**0.2**	**0.2**	**0.2**
Float and adjustment	**1.2**	**2.4**	**-1.3**	**0.1**	**-0.1**
Of which:					
FAT adjustment	-0.4	-0.5	-0.4	-0.2	-0.2
Adjustment and float	1.5	3.0	-0.9	0.3	0.1
Primary balance (deficit -) 2/	**4.3**	**0.3**	**-0.1**	**-1.0**	**0.0**
Federal government	3.0	0.6	0.4	-0.3	0.6
State and municipal governments	0.5	-0.2	-0.6	-0.7	-0.2
Public sector enterprises	0.8	-0.1	0.1	0.1	-0.4
Net financial expenditure 3/	**3.8**	**5.1**	**3.7**	**3.3**	**7.6**
Domestic	3.1	4.6	3.2	3.0	7.3
Foreign	0.7	0.5	0.5	0.3	0.3
Operational balance (deficit -)	**0.6**	**-4.8**	**-3.8**	**-4.3**	**-7.6**
Federal government	1.6	-1.6	-1.6	-1.8	-5.2
State and municipal governments	-1.0	-2.3	-1.8	-2.2	-1.8
Public sector enterprises	-0.1	-0.8	-0.3	-0.3	-0.5
PSBR	**44.2**	**7.1**	**5.9**	**6.1**	**8.0**

Sources: Central Bank of Brazil; Ministry of Finance; and Fund staff estimates.

1/ Comprises federal government (including the operational result of the central bank), state and municipal governments, and public sector enterprises. Figures from 1992 to 1994 have been adjusted to eliminate the end-of-period effect.

2/ Excludes proceeds from privatization.

3/ Comprises interest payments on external debt, plus the real component of interest payments on domestic debt.

Table 15. Brazil: General Government 1/

	1994	1995	1996	1997	1998
Nonfinancial revenue	**28.8**	**29.6**	**26.1**	**26.7**	**28.6**
Tax revenue	**26.4**	**26.0**	**23.8**	**23.9**	**24.5**
Direct taxes	3.8	4.2	4.0	3.9	4.8
Value-added taxes	8.9	9.2	9.1	8.7	8.4
Social security taxes	5.3	4.9	5.2	5.1	5.1
Trade taxes	0.5	0.7	0.5	0.6	0.7
Other tax revenue	8.0	6.9	4.9	5.6	5.4
Nontax revenue	**2.4**	**3.6**	**2.4**	**2.8**	**4.1**
Nonfinancial expenditure	**25.3**	**29.2**	**26.3**	**27.7**	**28.2**
Current expenditure	**24.0**	**26.7**	**25.3**	**25.5**	**25.8**
Wages and salaries	11.0	12.2	11.2	10.9	11.2
Transfers	5.3	6.2	6.3	6.4	7.0
Pension benefits	4.7	4.9	5.3	5.4	6.0
Subsidies and grants	0.6	1.2	1.0	1.0	1.1
Other current expenditures	7.7	8.3	7.8	8.2	7.6
Capital expenditure	**2.9**	**2.7**	**1.9**	**2.2**	**2.6**
Float and statistical adjustment	**-1.6**	**-0.2**	**-0.9**	**0.0**	**-0.2**
Primary balance (deficit -)	**3.5**	**0.4**	**-0.2**	**-1.0**	**0.4**
Real net interest payments 2/	**2.9**	**4.3**	**3.3**	**3.0**	**7.4**
Operational balance (deficit -)	**0.6**	**-3.9**	**-3.4**	**-4.0**	**-7.1**
Public sector borrowing requirement	**35.8**	**5.8**	**5.3**	**5.6**	**7.5**

Sources: Central Bank of Brazil; Ministry of Finance; and Fund staff estimates.

1/ Comprises federal government (including the operational result of the central bank), and state and municipal governments.

2/ Comprises interest payments on external debt, plus the real component of interest payments on domestic debt.

Table 16. Brazil: Central Government Operations 1/

(In percent of GDP)

	1994	1995	1996	1997	1998
Revenue 2/	**18.6**	**19.2**	**17.8**	**18.6**	**20.4**
Taxes	**17.9**	**17.0**	**16.7**	**17.3**	**18.0**
Direct	3.8	4.2	4.0	3.9	4.8
Individual	2.6	2.8	2.3	2.4	3.3
Corporate	1.2	1.5	1.7	1.5	1.5
Indirect	3.8	2.5	2.3	3.2	3.0
IPI	2.1	2.0	2.0	1.9	1.8
IOF	0.8	0.5	0.4	0.4	0.4
IPMF/CPMF	1.0	0.0	0.0	0.8	0.9
Taxes on trade	0.5	0.7	0.5	0.6	0.7
Earmarked social taxes	4.1	4.1	4.1	4.0	3.8
Social security contributions	5.3	4.9	5.2	5.1	5.1
Other taxes	0.4	0.4	0.5	0.5	0.6
Nontax revenues	**0.7**	**2.2**	**1.2**	**1.3**	**2.4**
Expenditure	**15.6**	**18.6**	**17.5**	**18.9**	**19.7**
Current expenditure	**15.9**	**18.6**	**17.6**	**18.0**	**18.9**
Wages and salaries	5.1	5.2	5.0	4.9	5.1
Social security benefits	4.7	4.9	5.3	5.4	6.0
Transfers	3.9	4.2	3.7	3.8	4.1
States and Municipalities transfers.	3.4	3.2	3.0	3.1	3.4
Regional funds	0.2	0.3	0.2	0.2	0.2
Public enterprises	0.0	0.0	0.0	0.0	0.0
BNDES, regional funds	0.3	0.6	0.6	0.5	0.6
Subsidies and grants	0.1	0.3	0.3	0.4	0.3
Other current expenditure	2.1	4.0	3.3	3.5	3.4
Capital expenditure	**1.0**	**0.8**	**0.8**	**0.9**	**1.1**
Direct	1.0	0.8	0.8	0.9	1.1
Capital transfers to public enterprises	0.0	0.0	0.0	0.0	0.0
Float and adjustment	**-1.3**	**-0.7**	**-0.9**	**0.0**	**-0.2**
Of which:					
FAT adjustment	-0.4	-0.55	-0.4	-0.2	-0.2
Float	-0.9	-0.18	-0.6	0.2	0.0
Primary balance (deficit -)	**3.0**	**0.6**	**0.4**	**-0.3**	**0.6**
Net interest payments 3/	**1.5**	**2.2**	**2.0**	**1.4**	**5.8**
Operational balance (deficit -)	**1.6**	**-1.6**	**-1.6**	**-1.7**	**-5.2**
Nominal balance (deficit -)	**-16.8**	**-2.3**	**-2.6**	**-2.6**	**-5.5**

Sources: Central Bank of Brazil; ministry of finance; and Fund staff estimates.

1/ Includes the central administration, social security system, and central bank.

2/ Excludes proceeds from privatization.

3/ Comprises interest payments on external debt, plus the real component of interest payments on the domestic debt.

Table 17. Brazil: State and Municipal Governments

(In percent of GDP)

	1994	1995	1996	1997	1998
Revenue	**13.6**	**13.6**	**13.0**	**12.9**	**13.2**
Tax revenue	8.5	9.0	9.3	9.2	9.3
VAT and nonsales tax	6.8	7.2	7.5	7.4	7.5
Other	1.7	1.8	1.8	1.8	1.8
Nontax revenue	1.7	1.4	0.5	0.5	0.5
Transfers	3.4	3.2	3.3	3.3	3.5
Expenditure	**13.1**	**13.8**	**13.6**	**13.6**	**13.4**
Current expenditure	11.5	11.4	12.1	11.9	12.0
Wages and salaries	5.9	7.0	7.4	7.3	7.3
Materials and supplies	2.3	2.1	2.3	2.2	2.3
Other current expenditure	3.4	2.3	2.4	2.4	2.4
Capital expenditure	1.9	1.9	1.6	1.8	1.5
Float and adjustment	-0.3	0.6	0.0	0.0	0.0
Primary Balance (deficit -)	**0.5**	**-0.2**	**-0.6**	**-0.7**	**-0.2**
Net real interest payments 1/	**1.4**	**2.1**	**1.3**	**1.5**	**1.6**
Operational balance (deficit -)	**-1.0**	**-2.3**	**-1.9**	**-2.2**	**-1.8**
Nominal balance (deficit -)	**-19.0**	**-3.5**	**-2.7**	**-3.0**	**-2.0**

Sources: Central Bank of Brazil; Ministry of Finance; and Fund staff estimates.

1/ Comprises interest payments on external debt, plus the real component of interest payments on the domestic debt.

Table 18. Brazil: Nonfinancial Public Sector Enterprises

(In percent of GDP)

	1994	1995	1996	1997	Est. 1998
	I. Federal Enterprises				
Revenue	**9.9**	**7.9**	**9.0**	**8.8**	**7.9**
Sales of goods and services	8.7	7.0	7.8	7.6	7.0
Transfer receipts	0.0	0.0	0.0	0.0	0.0
Current	0.0	0.0	0.0	0.0	0.0
Capital	0.0	0.0	0.0	0.0	0.0
Other	1.3	0.9	1.2	1.2	0.9
Expenditure	**8.2**	**7.5**	**8.3**	**8.5**	**8.2**
Current expenditure	7.2	6.0	6.5	6.1	5.9
Wages and salaries	1.7	1.4	1.4	1.1	0.9
Materials and supplies	2.0	1.5	1.9	1.4	1.3
Services	0.9	0.8	0.8	0.7	0.7
Taxes	2.2	1.8	2.0	2.2	2.3
Other	0.5	0.5	0.4	0.6	0.7
Capital expenditure	1.7	1.5	2.0	2.0	1.7
Investment	1.6	1.3	1.6	1.6	1.3
Other	0.1	0.2	0.4	0.4	0.4
Float	-0.8	0.0	-0.2	0.4	0.6
Primary (deficit -)	**1.8**	**0.4**	**0.7**	**0.3**	**-0.3**
	II. Local Enterprises				
Primary (deficit -) 1/	**-0.9**	**-0.5**	**-0.6**	**-0.2**	**0.0**
	III. Total				
Primary (deficit -)	**0.8**	**-0.1**	**0.1**	**0.1**	**-0.3**
Net interest payments 2/	**0.9**	**0.8**	**0.4**	**0.4**	**0.2**
Operational (deficit -)	**-0.1**	**-0.8**	**-0.3**	**-0.3**	**-0.5**
Nominal balance (deficit -)	**-8.4**	**-1.3**	**-0.6**	**-0.5**	**-0.5**

Sources: Central Bank ; Ministry of Finance; Ministry of Planning and Budget; and Fund staff. estimates.

1/ Includes statistical discrepancy for data prior to 1997.

2/ Comprises interest payments on external debt plus the real component of interest payments on domestic debt.

Table 19. Brazil: Federal Treasury Cash Operations

	1994	1995	1996	1997	1998
	(In millions of reais)				
Cash revenue	**48,180**	**86,294**	**97,132**	**116,033**	**139,052**
Cash expenditures 1/	**46,810**	**90,256**	**106,257**	**121,675**	**148,333**
Earmarked	12,534	24,586	27,187	32,191	38,463
Of which:					
State and local government participation funds 2	9,053	18,320	20,830	23,406	27,011
Non-earmarked	32,307	62,227	76,707	86,963	107,478
Wages	17,935	35,497	40,505	42,849	47,298
Interest 3/	5,466	11,739	15,992	17,973	27,713
Other	8,906	14,991	20,216	26,141	32,467
Net lending	1,969	3,443	2,288	2,521	2,393
Cash surplus or deficit (-)	**1,370**	**-3,962**	**-9,125**	**-5,642**	**-9,282**
	(As a percent of revenue)				
Cash expenditures 1/	**97.2**	**104.6**	**109.4**	**104.9**	**106.7**
Earmarked	26.0	28.5	28.0	27.7	27.7
Of which:					
State and local government participation funds 2/	18.8	21.2	21.4	20.2	19.4
Non-earmarked	67.1	72.1	79.0	74.9	77.3
Wages	37.2	41.1	41.7	36.9	34.0
Interest 3/	11.3	13.6	16.5	15.5	19.9
Other	18.5	17.4	20.8	22.5	23.3
Net lending	4.1	4.0	2.4	2.2	1.7
	(As percent of GDP)				
Cash revenue	**13.8**	**13.4**	**12.5**	**13.4**	**15.4**
Cash expenditures 1/	**13.4**	**14.0**	**13.6**	**14.0**	**16.5**
Earmarked	3.6	3.8	3.5	3.7	4.3
Of which:					
State and local government participation of funds	2.6	2.8	2.7	2.7	3.0
Non-earmarked	9.3	9.6	9.8	10.0	11.9
Wages	5.1	5.5	5.2	4.9	5.2
Interest 3/	1.6	1.8	2.1	2.1	3.1
Other	2.6	2.3	2.6	3.0	3.6
Net lending	0.6	0.5	0.3	0.3	0.3
Cash surplus or deficit (-)	**0.4**	**-0.6**	**-1.2**	**-0.7**	**-1.0**
Memorandum item:					
GDP (R$ million)	349,205	646,192	778,820	866,827	901,406

Sources: Ministry of Finance; and Fund staff estimates.

1/ Excluding amortization.
2/ Constitutionally mandated.
3/ Includes gross interest payments on federal government bonded debt and other domestic and external debt.

Table 20. Brazil: Net Domestic Debt of the Public Sector 1/

(In percent of GDP, end-of-period stocks)

	1994	1995	1996	1997	1998
Total	**20.7**	**24.9**	**29.4**	**30.2**	**36.0**
By instrument					
Securities	16.2	21.4	27.8	32.7	37.8
Bank debt	3.4	4.8	4.9	0.6	1.4
Other (net)	1.1	-1.3	-3.3	-3.1	-3.2
By debtors					
Federal government 2/	6.4	9.8	14.3	16.8	21.1
Securities 3/	11.5	15.6	21.4	28.2	35.4
Other	-5.1	-5.8	-7.1	-11.4	-14.3
States and municipalities	9.4	10.3	11.2	12.5	13.7
Securities	4.7	5.8	6.4	4.5	2.4
Other	4.7	4.5	4.8	8.0	11.3
Public enterprises	5.0	4.9	3.9	0.9	1.3

Source: Central Bank of Brazil.

1/ Gross domestic debt minus domestic financial assets.
2/ Defined to include the federal government and the central bank.
3/ Includes only the bonded federal debt outside the central bank.

Table 21. Brazil: Federal Government Bonded Debt Outstanding (End-of-Period) 1/

	December 1994	December 1995	December 1996	December 1997	December 1998	May 1999
	(In millions of *reais*, end-of-period stocks)					
Total by issuer	**126,742**	**171,884**	**232,502**	**319,176**	**483,073**	**449,348**
Issued by the treasury	87,698	108,560	134,857	247,614	370,300	357,728
Held by the central bank	35,552	32,668	25,460	38,898	134,271	76,372
Held by the public	52,146	75,893	109,396	208,716	236,029	281,356
Issued by the central bank	39,044	63,324	97,645	71,562	112,773	91,620
Total held by the public	**91,190**	**139,217**	**207,042**	**280,278**	**348,802**	**372,975**
Nonindexed instruments	36,663	59,441	126,298	114,660	12,260	19,127
Indexed instruments	54,527	79,776	80,744	165,618	336,542	353,848
Indexed to the overnight interest rate	14,617	52,587	38,526	97,490	240,858	242,612
Indexed to the foreign exchange rate	7,563	7,350	19,425	43,043	73,244	92,517
Indexed to other indicators	32,347	19,839	22,793	25,085	22,441	18,718
	(In percent of total federal government bonded debt)					
Issued by the treasury	69.2	63.2	58.0	77.6	76.7	79.6
Issued by the central bank	30.8	36.8	42.0	22.4	23.3	20.4
Held by the central bank	28.1	19.0	11.0	12.2	27.8	17.0
Held by the public	71.9	81.0	89.0	87.8	72.2	83.0
	(In percent of total federal government bonded debt held by the public)					
Nonindexed instruments	40.2	42.7	61.0	40.9	3.5	5.1
Indexed instruments	59.8	57.3	39.0	59.1	96.5	94.9
Indexed to the overnight interest rate	16.0	37.8	18.6	34.8	69.1	65.0
Indexed to the foreign exchange rate	8.3	5.3	9.4	15.4	21.0	24.8
Indexed to other indicators	35.5	14.3	11.0	9.0	6.4	5.0
	(In percent of GDP)					
Total	36.3	26.6	29.9	36.8	53.6	...
Total held by the public	26.1	21.5	26.6	32.3	38.7	...
Memorandum item:						
Annual GDP	349,205	646,192	778,820	866,827	901,406	...

Sources: Central Bank of Brazil; and Fund staff estimates.

1/ Federal government is defined here as the treasury plus the central bank. Reflects valuation as of May 1999.

Table 22. Brazil: Outstanding Domestic Bonded Debt of the State and Municipal Governments

	Dec 1994	Dec 1995	Dec 1996	Dec 1997	Dec 1998	May 1999
	(In millions of *reais*, end-of-period stocks)					
Total outstanding	**36,776**	**50,705**	**60,769**	**45,014**	**24,793**	**24,765**
State governments 1/	**32,913**	**44,139**	**53,049**	**36,067**	**13,494**	**13,393**
Minas Gerais	6,650	8,831	10,308	11,970	0	0
Rio de Janeiro	4,534	5,975	6,973	8,099	10,204	10,644
Rio Grande do Sul	4,924	6,587	7,688	8,932	0	0
São Paulo	14,095	18,740	21,999	0	0	0
Others	2,709	4,006	6,080	7,066	3,290	2,749
Municipal governments	**3,863**	**6,565**	**7,721**	**8,947**	**11,299**	**11,372**
Rio de Janeiro	1,126	1,495	1,572	1,819	2,288	2,384
São Paulo 2/	2,737	5,070	5,900	6,847	8,660	8,620
Others	0	0	249	281	351	368
	(As a percent of total state and municipal government bonded debt)					
State governments 1/	**89.5**	**87.1**	**87.3**	**80.1**	**54.4**	**54.1**
Minas Gerais	18.1	17.4	17.0	26.6	0.0	0.0
Rio de Janeiro	12.3	11.8	11.5	18.0	41.2	43.0
Rio Grande do Sul	13.4	13.0	12.7	19.8	0.0	0.0
São Paulo	38.3	37.0	36.2	0.0	0.0	0.0
Others	7.4	7.9	10.0	15.7	13.3	11.1
Municipal governments	**10.5**	**12.9**	**12.7**	**19.9**	**45.6**	**45.9**
Rio de Janeiro	3.1	2.9	2.6	4.0	9.2	9.6
São Paulo 2/	7.4	10.0	9.7	15.2	34.9	34.8
Others	0.0	0.0	0.4	0.6	1.4	1.5
	(Percent of GDP)					
Total outstanding	**10.5**	**7.8**	**7.8**	**5.2**	**2.8**	...
State governments 1/	**9.4**	**6.8**	**6.8**	**4.2**	**1.5**	...
Minas Gerais	1.9	1.4	1.3	1.4	0.0	...
Rio de Janeiro	1.3	0.9	0.9	0.9	1.1	...
Rio Grande do Sul	1.4	1.0	1.0	1.0	0.0	...
São Paulo	4.0	2.9	2.8	0.0	0.0	...
Others	0.8	0.6	0.8	0.8	0.4	...
Municipal governments	**1.1**	**1.0**	**1.0**	**1.0**	**1.3**	...
Rio de Janeiro	0.3	0.2	0.2	0.2	0.3	...
São Paulo 2/	0.8	0.8	0.8	0.8	1.0	...
Others	0.0	0.0	0.0	0.0	0.0	...
Memorandum item:						
GDP	349,205	646,192	778,820	866,827	901,406	...

Source: Central Bank of Brazil.

1/ Reductions of state debt in 1997-99 reflect the effects of the state debt accords with the federal governme

2/ Reflects debt of the municipalities of Campinas, Guarulhos, and Osasco.

Table 23. Brazil: Monetary Aggregates

(In millions of *reais*, end-of-period)

		Base Money 1/	M1 1/	FIF FRF-CP DER 2/	Savings and Time Deposits 3/	M2 4/	Public Sector Securities 5/	M4 6/
1994	Jan.	568	848	1,735	11,390	13,972	7,295	21,267
	Feb.	774	1,228	2,486	15,961	19,675	10,389	30,064
	Mar.	1,035	1,658	3,436	22,821	27,915	15,085	43,000
	Apr.	1,562	2,488	4,818	32,010	39,316	21,445	60,761
	May	2,284	3,665	6,647	49,526	59,837	31,733	91,570
	Jun.	3,177	6,458	10,509	69,272	86,239	47,541	133,780
	Jul.	7,533	9,567	11,847	80,027	101,441	47,558	148,999
	Aug.	9,414	11,731	12,247	84,570	108,548	46,474	155,022
	Sept.	12,789	14,201	12,554	86,729	113,484	41,484	154,968
	Oct.	12,999	14,885	12,780	92,592	120,256	41,358	161,614
	Nov.	13,256	16,055	12,667	96,892	125,614	40,234	165,848
	Dec.	17,685	20,621	12,791	100,001	133,413	36,975	170,388
1995	Jan.	16,737	16,202	15,780	110,282	142,263	34,413	176,676
	Feb.	15,821	18,025	16,480	112,856	147,361	35,545	182,906
	Mar.	15,582	15,285	16,556	116,855	148,696	34,394	183,090
	Apr.	13,828	15,315	16,437	118,471	150,223	35,302	185,525
	May	13,812	14,364	16,635	120,106	151,105	36,709	187,814
	Jun.	13,943	15,626	16,900	122,594	155,120	39,407	194,527
	Jul.	15,034	15,949	17,660	126,824	160,433	46,238	206,671
	Aug.	15,614	16,085	18,456	130,757	165,298	52,657	217,955
	Sept.	13,454	16,900	15,047	134,176	166,123	57,720	223,843
	Oct.	15,352	17,867	11,573	136,840	166,280	61,885	228,165
	Nov.	15,559	19,768	13,549	137,476	170,793	65,187	235,980
	Dec.	21,682	25,074	13,200	139,862	178,135	65,463	243,598
1996	Jan.	22,434	20,725	14,958	145,783	181,466	70,271	251,737
	Feb.	17,007	20,487	15,785	146,241	182,513	75,281	257,794
	Mar.	16,186	20,594	16,071	146,703	183,368	79,216	262,584
	Apr.	15,002	20,786	16,543	145,735	183,064	83,176	266,240
	May	16,272	20,444	16,921	144,775	182,140	90,371	272,511
	Jun.	16,807	21,026	17,534	145,497	184,057	93,075	277,132
	Jul.	18,748	20,864	18,082	144,137	183,083	99,274	282,357
	Aug.	15,687	21,127	18,889	143,741	183,757	101,996	285,753
	Sept.	20,638	22,617	19,385	145,978	187,980	104,308	292,288
	Oct.	15,565	20,919	19,743	149,676	190,338	107,359	297,697
	Nov.	15,676	22,024	21,505	151,749	195,278	111,312	306,590
	Dec.	19,796	26,411	22,832	152,305	201,548	114,048	315,596

Table 23. Brazil: Monetary Aggregates

(In millions of *reais*, end-of-period)

		Base Money 1/	M1 1/	FIF FRF-CP DER 2/	Savings and Time Deposits 3/	M2 4/	Public Sector Securities 5/	M4 6/
1997	Jan.	23,860	30,116	14,271	148,027	192,414	126,076	318,490
	Feb.	20,285	33,027	10,115	148,239	191,381	131,818	323,199
	Mar.	22,324	34,030	8,318	150,236	192,584	135,443	328,027
	Apr.	27,291	33,235	7,191	150,280	190,706	140,830	331,536
	May	21,740	33,350	6,567	152,968	192,885	142,354	335,239
	Jun.	24,688	34,331	6,015	158,107	198,453	144,195	342,648
	Jul.	24,216	32,845	5,595	159,308	197,748	151,521	349,269
	Aug.	21,868	34,685	5,412	162,782	202,879	151,399	354,278
	Sept.	24,700	35,842	5,464	168,165	209,471	154,875	364,346
	Oct.	26,147	36,332	6,567	174,393	217,292	154,141	371,433
	Nov.	22,972	36,596	6,772	180,767	224,135	148,754	372,889
	Dec.	31,828	43,077	6,262	183,721	233,060	148,807	381,867
1998	Jan.	30,564	39,159	7,083	189,703	235,945	150,805	386,750
	Feb.	29,091	38,864	7,094	191,567	237,525	157,236	394,761
	Mar.	29,985	38,288	7,459	193,623	239,370	167,472	406,842
	Apr.	30,655	38,594	7,834	193,555	239,983	171,356	411,339
	May	31,099	38,826	8,157	195,239	242,222	175,674	417,896
	Jun.	37,221	40,702	7,840	196,995	245,537	178,704	424,241
	Jul.	32,986	40,447	7,997	197,204	245,648	185,681	431,329
	Aug.	35,413	41,120	8,109	196,801	246,030	185,826	431,856
	Sept.	32,002	40,952	7,735	194,287	242,974	172,980	415,954
	Oct.	32,826	40,185	7,389	196,410	243,984	177,083	421,067
	Nov.	39,738	42,994	7,768	197,501	248,263	187,211	435,474
	Dec.	39,184	46,631	7,441	196,494	250,566	193,875	444,441
1999	Jan.	39,635	46,098	7,462	197,212	250,772	204,157	454,929
	Feb.	37,856	44,265	7,326	204,134	255,725	208,066	463,791
	Mar	37,232	42,212	6,915	208,209	257,336	213,163	470,499
	Apr	36,352	40,961	6,537	205,918	253,416	218,196	471,612
	May	40,435	40,911	6,539	206,786	254,236	224,000	478,236
	June	33,178	...	...	...	...	...	...

Sources: Central Bank of Brazil; and Fund staff estimates.

1/ Currency in circulation plus sight deposits (excluding sight deposits of public sector entities).

2/ Short-term Financial Investment Funds (FIF), Short-Term Fixed-Income Funds (FRF-CP), and Special Remunerated Deposits (DER). Excludes demand deposits held in FIFs.

3/ Excludes deposits in the portfolios of financial institutions, FIFs and FRF-CPs.

4/ Equals M1 plus FIF, FRF-CP, DER, and savings and time deposits.

5/ Includes securities of the federal, state, and municipal governments. Excludes securities in the portfolios of financial institutions, FIFs and FRF-CPs.

6/ Equals M2 plus public sector securities.

Table 24. Brazil: Summary Accounts of the Financial System 1/

(In millions of *reais*, end-of-period)

	1994	1995	1996	1997	1998
	I. Central Bank				
Net foreign assets	**33,214**	**53,728**	**68,216**	**64,217**	**51,516**
Net international reserves	31,600	49,614	62,278	57,628	45,374
Net other foreign assets	1,614	4,114	5,938	6,589	6,142
Net domestic assets	**49,597**	**50,240**	**77,187**	**76,360**	**126,069**
Net claims on public sector	14,412	8,448	2,385	-4,311	78,600
Net central administration	14,412	8,448	2,385	-4,311	78,600
Net state and local governments	0	0	0	0	0
Net social security	0	0	0	0	0
Net official enterprises	0	0	0	0	0
Credit to deposit money banks	20,556	34,572	67,639	68,011	40,367
Credit to rest of banking system	5	5	3	902	0
Credit to nonbanking institutions	0	0	6	7	1,926
Credit under repurchase agreements	13,908	3,227	1	1,051	0
Blocked financial assets	-306	-190	-125	-12	-10
Credit to private sector	3	5	5	5	0
Nonmonetary international organizations	469	639	801	962	1,125
Official capital and surplus	-556	-890	-3,654	-3,658	-3,199
Net unclassified assets	1,106	4,424	10,126	13,403	7,260
Counterpart unrequited foreign exchange	1,366	-890	-3,654	-3,658	-2,034
Medium- and long-term foreign liabilities	4,449	4,450	2,637	2,455	7,305
Mutual funds deposits	2,552	5,154	11,632	3,726	4,545
Liabilities to deposit money banks	24,377	22,370	22,275	43,549	33,438
Liabilities to rest of banking system	211	382	379	1,211	21
Liabilities to nonbanking institutions	96	2	31	4	2
Central bank securities outstanding	39,289	52,457	83,106	65,724	104,709
Liabilities under repurchase agreements	4,501	5,741	6,368	2,104	4,290
Liabilities to private sector	**8,702**	**12,522**	**15,321**	**18,146**	**21,241**
Currency in circulation	8,697	12,515	15,314	18,139	21,233
Other liabilities	5	7	7	7	8

Table 24. Brazil: Summary Accounts of the Financial System 1/

(In millions of *reais*, end-of-period)

	1994	1995	1996	1997	1998
	II. Deposit Money Banks				
Net foreign assets	**-3,610**	**-10,050**	**-16,311**	**-16,729**	**-10,690**
Assets	17,602	18,159	21,130	21,810	21,230
Liabilities	21,212	28,209	37,441	38,539	31,920
Monetary reserves and currency holdings	22,956	22,126	22,035	42,494	32,324
Other claims on monetary authorities	5,192	6,578	18,932	11,603	37,542
Net domestic assets	**178,221**	**241,287**	**285,321**	**321,075**	**318,587**
Net claims on public sector	25,114	25,046	84,356	115,191	92,502
Net central administration	-6,769	7,764	22,574	83,852	65,215
Net state and local governments	25,687	17,967	53,239	36,419	16,569
Net social security	-3,669	-6,316	-9,424	-9,730	-1,087
Net official enterprises	9,865	5,631	17,967	4,650	11,805
Credit to rest of banking system	873	770	1,078	3,353	3,282
Blocked financial assets	0	0	0	0	0
Credit to private sector	158,826	199,138	204,681	225,197	255,736
Official capital and surplus	-18,824	-21,478	-33,069	-50,966	-58,966
Net unclassified assets	12,232	37,811	28,275	28,300	26,033
Medium- and long-term foreign liabilities	9,823	13,095	15,976	22,547	29,030
Liabilities to monetary authorities	20,455	23,407	39,025	30,272	11,234
Liabilities to rest of banking system	11,914	9,396	22,017	21,973	24,546
Liabilities to private sector	**160,475**	**213,932**	**232,899**	**283,417**	**312,796**
Demand deposits	11,808	11,255	10,871	24,132	24,903
Quasi-monetary liabilities	119,979	159,901	173,714	203,992	222,404
Savings deposits	42,537	58,562	68,856	90,804	101,482
Time deposits	55,391	78,438	78,848	84,236	88,086
Other deposits	22,051	22,901	26,010	28,952	32,836
Other liabilities	3,418	6,550	7,256	10,283	8,863
Private capital and surplus	25,270	36,226	41,058	45,010	56,626

Table 24. Brazil: Summary Accounts of the Financial System 1/

(In millions of *reais*, end-of-period)

	1994	1995	1996	1997	1998
	III. Monetary System				
Net foreign assets	**29,604**	**43,678**	**51,905**	**47,488**	**40,826**
Assets	51,711	72,365	89,489	86,194	80,435
Liabilities	22,107	28,687	37,584	38,706	39,609
Net domestic assets	**167,344**	**216,256**	**252,701**	**309,883**	**360,851**
Net claims on public sector	39,526	33,494	86,741	110,880	171,102
Net central administration	7,643	16,212	24,959	79,541	143,815
Net state and local governments	25,687	17,967	53,239	36,419	16,569
Net social security	-3,669	-6,316	-9,424	-9,730	-1,087
Net official enterprises	9,865	5,631	17,967	4,650	11,805
Credit to rest of banking system	878	775	1,081	4,255	3,282
Credit to nonbanking institutions	0	0	6	7	1,926
Blocked financial assets	-306	-190	-125	-12	-10
Credit to private sector	158,829	199,143	204,686	225,202	255,736
Nonmonetary international organizations	469	639	801	962	1,125
Official capital and surplus	-19,380	-22,368	-36,723	-54,624	-62,165
Net unclassified assets	-16,544	-12,736	-51,072	-25,074	-75,706
Net interbank float	3,872	17,499	47,306	48,287	65,561
Counterpart unrequited foreign exchange	1,366	-890	-3,654	-3,658	-2,034
Medium- and long-term foreign liabilities	14,272	17,545	18,613	25,002	36,335
Mutual funds deposits	2,552	5,154	11,632	3,726	4,545
Liabilities to rest of banking system	12,125	9,778	22,396	23,184	24,567
Liabilities to nonbanking institutions	188	113	91	238	159
Liabilities to private sector	**169,177**	**226,454**	**248,220**	**301,563**	**334,037**
Monetary liabilities	20,505	23,770	26,185	42,271	46,136
Currency in circulation	8,697	12,515	15,314	18,139	21,233
Demand deposits	11,808	11,255	10,871	24,132	24,903
Quasi-monetary liabilities	119,979	159,901	173,714	203,992	222,404
Savings deposits	42,537	58,562	68,856	90,804	101,482
Time deposits	55,391	78,438	78,848	84,236	88,086
Other deposits	22,051	22,901	26,010	28,952	32,836
Other liabilities	3,423	6,557	7,263	10,290	8,871
Private capital and surplus	25,270	36,226	41,058	45,010	56,626

Table 24. Brazil: Summary Accounts of the Financial System 1/

(In millions of *reais* , end-of-period)

	1994	1995	1996	1997	1998
IV. Rest of Banking System					
Net foreign assets	**1,030**	**339**	**-515**	**-391**	**-310**
Assets	1,269	382	184	159	88
Liabilities	239	43	699	550	398
Monetary reserves and currency holdings	1,526	611	768	1,174	880
Other claims on monetary authorities	113	459	1,195	3,015	733
Net domestic assets	**12,689**	**13,232**	**16,033**	**19,694**	**24,573**
Net claims on public sector	-6,284	-6,372	-8,256	-7,432	-5,703
Net central administration	-9,907	-10,675	-12,963	-12,643	-11,362
Net state and local governments	918	931	1,160	2,400	2,461
Net social security	0	0	0	0	0
Net official enterprises	2,705	3,372	3,547	2,811	3,198
Credit to deposit money banks	11,506	15,624	19,438	22,749	26,982
Blocked financial assets	0	0	0	0	0
Credit to private sector	25,796	27,332	31,802	41,440	51,369
Official capital and surplus	-12,816	-16,461	-12,624	-14,397	-14,241
Net unclassified assets	-5,513	-6,891	-14,327	-22,666	-33,834
Medium- and long-term foreign liabilities	1,638	2,141	2,636	4,356	10,964
Liabilities to monetary authorities	778	1,035	1,065	2,020	354
Liabilities to deposit money banks	958	1,162	1,152	3,804	1,235
Liabilities to private sector	**11,984**	**10,303**	**12,628**	**13,312**	**13,323**
Demand deposits	0	0	0	0	0
Quasi-monetary liabilities	7,865	5,298	6,339	7,281	7,503
Savings deposits	2,466	3,305	3,807	5,208	5,542
Time deposits	5,036	1,692	2,228	1,824	1,432
Other deposits	363	301	304	249	529
Other liabilities	179	143	563	.497	357
Private capital and surplus	3,940	4,862	5,726	5,534	5,463

Table 24. Brazil: Summary Accounts of the Financial System 1/

(In millions of *reais*, end-of-period)

	1994	1995	1996	1997	1998
	V. Banking System				
Net foreign assets	**30,634**	**44,017**	**51,390**	**47,097**	**40,516**
Assets	52,980	72,747	89,673	86,353	80,523
Liabilities	22,346	28,730	38,283	39,256	40,007
Net domestic assets	**167,811**	**218,583**	**246,084**	**304,758**	**360,881**
Net claims on public sector	33,242	27,122	78,485	103,448	165,399
Net central administration	-2,264	5,537	11,996	66,898	132,453
Net state and local governments	26,605	18,898	54,399	38,819	19,030
Net social security	-3,669	-6,316	-9,424	-9,730	-1,087
Net official enterprises	12,570	9,003	21,514	7,461	15,003
Credit to nonbanking institutions	0	0	6	7	1,926
Blocked financial assets	-306	-190	-125	-12	-10
Credit to private sector	184,625	226,475	236,488	266,642	307,105
Nonmonetary international organizations	469	639	801	962	1,125
Official capital and surplus	-32,196	-38,829	-49,347	-69,021	-76,406
Net unclassified assets	-22,057	-19,627	-65,399	-47,740	-109,540
Net interbank float	4,034	22,993	45,175	50,472	71,282
Counterpart unrequited foreign exchange	1,366	-890	-3,654	-3,658	-2,034
Medium- and long-term foreign liabilities	15,910	19,686	21,249	29,358	47,299
Mutual funds deposits	2,552	5,154	11,632	3,726	4,545
Liabilities to nonbanking institutions	188	113	91	238	159
Liabilities to private sector	**181,161**	**236,757**	**260,848**	**314,875**	**347,360**
Monetary liabilities	20,505	23,770	26,185	42,271	46,136
Currency in circulation	8,697	12,515	15,314	18,139	21,233
Demand deposits	11,808	11,255	10,871	24,132	24,903
Quasi-monetary liabilities	127,844	165,199	180,053	211,273	229,907
Savings deposits	45,003	61,867	72,663	96,012	107,024
Time deposits	60,427	80,130	81,076	86,060	89,518
Other deposits	22,414	23,202	26,314	29,201	33,365
Other liabilities	3,602	6,700	7,826	10,787	9,228
Private capital and surplus	29,210	41,088	46,784	50,544	62,089

Table 24. Brazil: Summary Accounts of the Financial System 1/

(In millions of *reais*, end-of-period)

	1994	1995	1996	1997	1998
VI. Nonbank Financial Institutions					
Net foreign assets	**76**	**87**	**71**	**-131**	**-138**
Assets	76	87	93	45	44
Liabilities	0	0	22	176	182
Monetary reserves and currency holdings	3	6	31	14	2
Other claims on monetary authorities	405	154	350	364	656
Net domestic assets	**9,510**	**16,349**	**22,520**	**26,892**	**30,982**
Net claims on public sector	413	380	1,511	1,344	1,235
Net central administration	17	42	1,089	1,227	1,156
Net state and local governments	360	330	408	103	68
Net social security	0	0	0	0	0
Net official enterprises	36	8	14	14	11
Credit to deposit money banks	1,405	1,709	3,062	2,810	4,063
Credit to rest of banking system	14	5	12	35	20
Blocked financial assets	0	0	0	0	0
Credit to private sector	2,074	2,458	3,599	3,601	3,561
Official capital and surplus	0	0	0	0	0
Net unclassified assets	5,604	11,797	14,336	19,102	22,103
Medium- and long-term foreign liabilities	1,529	2,293	2,972	3,552	4,041
Liabilities to monetary authorities	0	0	0	0	0
Liabilities to deposit money banks	0	0	0	0	0
Liabilities to rest of banking system	1,517	1,619	3,670	4,093	5,176
Liabilities to private sector	**6,948**	**12,684**	**16,330**	**19,494**	**22,285**
Demand deposits	0	0	0	0	0
Quasi-monetary liabilities	0	0	0	0	0
Savings deposits	0	0	0	0	0
Time deposits	0	0	0	0	0
Other deposits	0	0	0	0	0
Other liabilities	1,181	3,901	5,482	8,307	9,243
Private capital and surplus	5,767	8,783	10,848	11,187	13,042

Table 24. Brazil: Summary Accounts of the Financial System 1/

(In millions of *reais*, end-of-period)

	1994	1995	1996	1997	1998
	VII. Financial System				
Net foreign assets	**30,710**	**44,104**	**51,461**	**46,966**	**40,378**
Assets	53,056	72,834	89,766	86,398	80,567
Liabilities	22,346	28,730	38,305	39,432	40,189
Net domestic assets	**176,024**	**233,360**	**265,224**	**327,697**	**387,186**
Net claims on public sector	33,655	27,502	79,996	104,792	166,634
Net central administration	-2,247	5,579	13,085	68,125	133,609
Net state and local governments	26,965	19,228	54,807	38,922	19,098
Net social security	-3,669	-6,316	-9,424	-9,730	-1,087
Net official enterprises	12,606	9,011	21,528	7,475	15,014
Blocked financial assets	-306	-190	-125	-12	-10
Credit to private sector	186,699	228,933	240,087	270,243	310,666
Nonmonetary international organizations	469	639	801	962	1,125
Official capital and surplus	-32,196	-38,829	-49,347	-69,021	-76,406
Net unclassified assets	-16,453	-7,830	-51,063	-28,638	-87,437
Net interbank float	4,156	23,135	44,875	49,371	72,614
Counterpart unrequited foreign exchange	1,366	-890	-3,654	-3,658	-2,034
Medium- and long-term foreign liabilities	17,439	21,979	24,221	32,910	51,340
Mutual funds deposits	2,552	5,154	11,632	3,726	4,545
Liabilities to private sector	**188,109**	**249,441**	**277,178**	**334,369**	**369,645**
Monetary liabilities	20,505	23,770	26,185	42,271	46,136
Currency in circulation	8,697	12,515	15,314	18,139	21,233
Demand deposits	11,808	11,255	10,871	24,132	24,903
Quasi-monetary liabilities	127,844	165,199	180,053	211,273	229,907
Savings deposits	45,003	61,867	72,663	96,012	107,024
Time deposits	60,427	80,130	81,076	86,060	89,518
Other deposits	22,414	23,202	26,314	29,201	33,365
Other liabilities	4,783	10,601	13,308	19,094	18,471
Private capital and surplus	34,977	49,871	57,632	61,731	75,131

Sources: Central Bank of Brazil; and Fund staff estimates.

1/ Beginning with end-1994, the data exclude information on the state banks of São Paulo and Rio de Janeiro and some small financial institutions.

Table 25. Brazil: Financial System Loans 1/

	1994	1995	1996	1997	1998	April 1999
	(In millions of *reais*, end of period)					
Total loans outstanding	**187,495**	**244,543**	**260,709**	**265,744**	**281,425**	**283,216**
Unimpaired loans	182,280	221,982	243,734	247,176	254,771	258,138
Impaired loans	5,215	22,561	16,975	18,568	26,654	25,078
In arrears 2/	4,517	5,550	3,922	3,478	6,709	4,580
Under liquidation 2/	698	17,011	13,053	15,090	19,945	20,498
Provisions	**4,733**	**22,395**	**19,843**	**26,543**	**32,097**	**33,360**
Total loans outstanding	**187,495**	**244,543**	**260,709**	**265,744**	**281,425**	**283,216**
Lent to government sector 3/	46,725	54,045	63,617	36,781	33,347	34,162
Lent to nongovernment sector	140,770	190,498	197,092	228,963	248,078	249,054
Unimpaired loans	**182,280**	**221,982**	**243,734**	**247,176**	**254,771**	**258,138**
Lent to government sector	41,627	50,918	61,408	37,302	33,072	33,762
Lent to nongovernment sector	140,653	171,064	182,326	209,874	221,699	224,376
Industry	34,947	45,489	50,220	56,627	59,872	66,496
Housing	40,957	51,485	51,625	55,957	60,881	61,704
Rural sector	14,700	21,359	18,220	22,009	20,645	21,859
Commerce	16,867	20,145	21,242	21,741	18,086	18,599
Consumer loans	13,705	12,077	19,558	29,749	30,194	29,240
Other services	19,477	20,509	21,461	23,791	32,021	26,478
	(In percent of total loans outstanding)					
Unimpaired loans	97.2	90.8	93.5	93.0	90.5	91.1
Impaired loans	2.8	9.2	6.5	7.0	9.5	8.9
Provisions as percent of total impaired loans	90.8	99.3	116.9	143.0	120.4	133.0
Lent to public sector 3/	24.9	22.1	24.4	13.8	11.8	12.1
Lent to private sector	75.1	77.9	75.6	86.2	88.2	87.9
Unimpaired loans	**97.2**	**90.8**	**93.5**	**93.0**	**90.5**	**91.1**
Lent to government sector	22.2	20.8	23.6	14.0	11.8	11.9
Lent to nongovernment sector	75.0	70.0	69.9	79.0	78.8	79.2
Industry	18.6	18.6	19.3	21.3	21.3	23.5
Housing	21.8	21.1	19.8	21.1	21.6	21.8
Rural sector	7.8	8.7	7.0	8.3	7.3	7.7
Commerce	9.0	8.2	8.1	8.2	6.4	6.6
Consumer loans	7.3	4.9	7.5	11.2	10.7	10.3
Other services	10.4	8.4	8.2	9.0	11.4	9.3

Sources: Central Bank of Brazil; and Fund staff estimates.

1/ Excludes information on the former state banks of São Paulo (which is now federalized and awaiting privatization) and Rio de Janeiro (which has been privatized).

2/ Excluding penalties. In general, loans are considered in arrears if they are more than 60 days overdue; they are considered under liquidation, if they are more than 180 days overdue (when they have insufficient guarantees) or if they are more than 360 days overdue (when they have sufficient guarantees).

3/ Shifts in the sectoral composition, reflect, among others, the effects of the state debt accords, in the context of which outstanding state liabilities were federalized, and paid off with federal debt titles.

Table 26. Brazil: Monthly Rates of Return on Selected Financial Instruments

(In percent)

	Nominal interest rates			Real rates 1/		
	Overnight	Time deposits	Savings deposits	Overnight	Time deposits	Savings deposits
1990 average	**25.4**	**25.9**	**26.6**	**-2.3**	**-1.9**	**-1.4**
1991 average	**17.0**	**18.4**	**15.6**	**0.9**	**2.1**	**-0.3**
1992 average	**26.3**	**26.2**	**24.1**	**2.3**	**2.2**	**0.5**
1993 average	**33.4**	**33.3**	**31.8**	**1.0**	**0.9**	**-0.2**
1994 average	**25.2**	**26.0**	**24.0**	**1.8**	**2.5**	**0.8**
Jan	42.8	46.8	42.1	0.4	3.3	0.0
Feb	42.0	43.9	40.6	-0.3	1.1	-1.3
Mar	46.4	44.9	42.6	1.1	0.1	-1.6
Apr	46.5	49.5	46.7	2.8	4.9	3.0
May	48.0	48.4	47.2	5.0	5.3	4.4
Jun	50.6	53.7	47.6	2.8	4.9	0.7
Jul	6.9	5.2	5.6	1.3	-0.3	0.1
Aug	4.2	3.6	2.6	0.8	0.2	-0.7
Sep	3.8	4.0	3.0	2.2	2.4	1.4
Oct	3.6	3.9	3.1	1.0	1.3	0.5
Nov	4.1	4.3	3.4	1.6	1.8	0.9
Dec	3.8	3.5	3.4	3.2	2.9	2.8
1995 average	**3.6**	**3.5**	**2.8**	**2.4**	**2.4**	**1.7**
Jan	3.4	3.6	2.6	2.0	2.2	1.2
Feb	3.3	3.1	2.4	2.1	2.0	1.2
Mar	4.3	4.6	2.8	2.4	2.7	1.0
Apr	4.3	4.3	4.0	1.9	2.0	1.6
May	4.2	4.1	3.8	3.8	3.7	3.3
Jun	4.0	4.1	3.4	1.4	1.4	0.8
Jul	4.0	3.9	3.5	1.7	1.7	1.2
Aug	3.8	3.5	3.1	2.5	2.2	1.8
Sep	3.3	3.1	2.4	4.5	4.2	3.6
Oct	3.1	2.9	2.2	2.9	2.6	1.9
Nov	2.9	2.9	1.9	1.5	1.5	0.6
Dec	2.8	2.5	1.8	2.5	2.3	1.6
1996 average	**2.0**	**2.0**	**1.3**	**1.3**	**1.2**	**0.5**
Jan	2.6	2.6	1.8	0.8	0.7	0.0
Feb	2.4	2.3	1.5	1.6	1.5	0.7
Mar	2.2	2.1	1.3	2.0	1.9	1.1
Apr	2.1	2.0	1.2	1.4	1.2	0.5
May	2.0	2.0	1.1	0.3	0.3	-0.6
Jun	2.0	1.9	1.1	0.7	0.7	-0.1
Jul	1.9	1.8	1.1	0.8	0.7	0.0
Aug	2.0	1.9	1.1	2.0	1.9	1.1
Sep	1.9	1.8	1.2	1.8	1.7	1.0
Oct	1.9	1.8	1.2	1.6	1.6	1.0
Nov	1.8	1.8	1.3	1.5	1.5	1.0
Dec	1.8	1.6	1.4	0.9	0.7	0.5

Table 26. Brazil: Monthly Rates of Return on Selected Instruments

(In percent)

	Nominal interest rates			Real rates 1/		
	Overnight	Time deposits	Savings deposits	Overnight	Time deposits	Savings deposits
1997 average	**1.9**	**1.8**	**1.3**	**1.3**	**1.2**	**0.7**
Jan	1.7	1.7	1.2	0.1	0.2	-0.3
Feb	1.7	1.9	1.2	1.2	1.4	0.7
Mar	1.6	1.6	1.1	0.5	0.4	0.0
Apr	1.7	1.6	1.1	1.1	1.0	0.5
May	1.6	1.6	1.1	1.3	1.3	0.8
Jun	1.6	1.6	1.2	0.9	0.9	0.5
Jul	1.6	1.6	1.2	1.5	1.5	1.1
Aug	1.6	1.6	1.1	1.6	1.7	1.2
Sep	1.6	1.6	1.2	1.0	1.0	0.6
Oct	1.7	1.7	1.2	1.3	1.3	0.8
Nov	3.0	2.9	2.0	2.2	2.0	1.2
Dec	3.0	2.6	1.8	2.3	1.9	1.1
1998 average	**2.1**	**2.0**	**1.1**	**2.0**	**1.9**	**1.0**
Jan	2.7	2.7	1.7	1.8	1.8	0.8
Feb	2.1	2.0	0.9	2.1	2.0	0.9
Mar	2.2	2.1	1.4	2.0	1.9	1.2
Apr	1.7	1.6	1.0	1.8	1.7	1.1
May	1.6	1.6	1.0	1.4	1.4	0.7
Jun	1.6	1.6	1.0	1.3	1.4	0.7
Jul	1.7	1.7	1.1	2.1	2.1	1.4
Aug	1.5	1.5	0.9	1.6	1.7	1.0
Sep	2.5	2.3	1.0	2.5	2.3	1.0
Oct	2.9	2.7	1.4	3.0	2.8	1.4
Nov	2.6	2.2	1.1	2.8	2.4	1.3
Dec	2.4	2.3	1.2	1.4	1.3	0.3
1999 average	**2.5**	**2.4**	**1.3**	**1.0**	**1.0**	**-0.1**
Jan	2.2	2.4	1.0	1.0	1.3	-0.1
Feb	2.4	2.6	1.3	-2.0	-1.7	-3.0
Mar	3.3	3.2	1.7	1.3	1.2	-0.3
Apr	2.4	2.1	1.3	2.3	2.0	1.3
May	2.0	1.8	1.3	2.4	2.2	1.6

Sources: Central Bank of Brazil; and Fund staff estimates.

1/ Real interest rates are nominal rates deflated by the IGP-DI Index, end-of-period.

Table 27. Brazil: Total Loans by Sector 1/

(In percent of total loans)

	Public Sector			Private Sector							
	Federal government	States and municipalities	Subtotal	Industry	Mortgage	Agriculture	Commerce	Individual	Other services	Subtotal	Total
1993 Dec	4.2	16.6	20.8	30.8	20.7	7.5	7.0	3.1	10.0	79.2	100.0
1994 Dec	4.4	17.3	21.8	20.8	21.1	8.7	9.4	7.1	11.1	78.2	100.0
1995 Dec	3.1	15.7	18.7	23.1	19.5	9.8	10.7	5.5	12.7	81.3	100.0
1996 Dec	1.9	21.8	23.6	22.7	18.2	8.1	8.0	4.4	15.0	76.4	100.0
1997 Jan	1.8	21.0	22.8	23.0	17.7	8.0	8.3	4.6	15.5	77.2	100.0
Feb	1.7	20.6	22.3	23.3	17.1	7.9	8.5	4.8	16.1	77.7	100.0
Mar	1.6	20.0	21.6	23.4	17.1	7.8	8.7	4.8	16.5	78.4	100.0
Apr	1.5	19.7	21.2	23.6	16.5	7.7	9.0	4.9	17.1	78.8	100.0
May	1.2	19.2	20.4	24.1	16.0	7.4	9.4	5.0	17.9	79.6	100.0
Jun	1.1	19.4	20.5	24.2	15.3	7.0	9.6	4.9	18.5	79.5	100.0
Jul	1.0	18.9	19.9	24.5	14.8	6.8	9.9	4.9	19.1	80.1	100.0
Aug	1.0	18.3	19.3	24.9	14.2	6.7	10.2	4.9	19.7	80.7	100.0
Sep	0.9	17.8	18.7	25.2	13.5	6.6	10.5	4.9	20.4	81.3	100.0
Oct	1.0	17.0	18.0	25.6	12.7	6.7	10.9	4.9	21.1	82.0	100.0
Nov	0.9	16.5	17.4	25.9	12.0	6.5	11.4	4.8	21.9	82.6	100.0
Dec	0.9	8.6	9.5	28.3	13.1	5.9	12.3	5.2	25.8	90.5	100.0
1998 Jan	0.9	8.0	8.9	28.6	12.3	5.7	13.0	5.1	26.5	91.1	100.0
Feb	0.8	7.7	8.5	28.8	11.6	5.5	13.4	5.2	27.0	91.5	100.0
Mar	0.8	7.2	8.0	28.9	10.9	5.3	13.8	5.4	27.7	92.0	100.0
Apr	0.7	6.9	7.5	29.1	10.2	5.1	14.4	5.4	28.3	92.5	100.0
May	0.7	6.5	7.2	29.2	9.5	4.9	14.8	5.5	29.0	92.8	100.0
Jun	0.7	6.1	6.7	29.4	9.0	4.6	15.3	5.4	29.6	93.3	100.0
Jul	0.6	5.6	6.2	29.7	8.5	4.3	15.9	5.4	30.1	93.8	100.0
Aug	0.6	4.8	5.4	29.8	8.0	4.1	16.5	5.5	30.7	94.6	100.0
Sep	0.9	6.9	7.9	28.7	12.0	5.9	5.1	6.0	34.5	92.1	100.0
Oct	0.9	6.5	7.4	29.3	11.4	5.6	5.1	6.0	35.3	92.6	100.0
Nov	0.8	5.7	6.6	29.2	10.7	5.3	5.0	5.9	37.4	93.4	100.0
Dec	0.8	5.2	6.1	29.6	10.1	5.1	4.8	5.6	38.7	93.9	100.0
1999 Jan	0.8	5.1	6.0	31.4	9.9	5.1	4.9	5.8	36.9	94.0	100.0
Feb	1.6	9.9	11.5	27.0	18.9	9.9	7.9	15.6	9.4	88.5	100.0
Mar	1.6	9.6	11.2	26.5	18.6	9.8	8.1	10.0	15.8	88.8	100.0
Apr	1.6	9.5	11.1	26.1	18.4	9.9	8.2	10.5	15.8	88.9	100.0

Source: Central Bank of Brazil.

1/ Total loans include unimpaired loans and loans in arrears and in liquidation (incl. accumulated penalties). Shifts in composition, e.g., in Dec. 1997, reflect, among others, the effects of the state debt accords, in the context of which outstanding state liabilities were assumed by the federal government, and replaced by negotiable debt instruments issued by the federal government.

Table 28. Brazil: Exports by Principal Commodity Groups

	1994	1995	1996	1997	1998
	(In millions of U.S. dollars)				
Total exports	**43,545**	**46,506**	**47,747**	**52,986**	**51,120**
Primary products	**11,058**	**10,969**	**11,900**	**14,474**	**12,970**
Coffee beans	2,219	1,970	1,719	2,745	2,330
Raw sugar 1/	173	408	0	0	0
Soybeans and soybran	3,296	2,767	3,749	5,133	3,925
Cocoa beans	108	25	47	8	9
Tobacco leaf	694	769	1,029	1,091	940
Iron ore	2,294	2,548	2,695	2,846	3,251
Other	2,274	2,482	2,661	2,651	2,515
Industrial products	**31,852**	**34,711**	**35,026**	**37,668**	**37,494**
Semi-manufactures	**6,893**	**9,146**	**8,613**	**8,478**	**8,112**
Raw sugar 1/	615	1,042	1,191	1,045	1,095
Cocoa products	173	92	115	108	131
Tin	88	57	67	62	35
Soybean oil	828	1,031	685	532	720
Paper paste	840	1,447	954	958	993
Iron products	734	838	871	876	887
Steel products	1,072	1,369	1,294	1,359	1,217
Leather hides	459	566	678	739	665
Other	2,084	2,704	2,758	2,799	2,369
Manufactures	**24,959**	**25,565**	**26,413**	**29,190**	**29,382**
Soluble coffee	340	456	376	349	246
Refined sugar	195	366	421	726	846
Electric machinery	1,395	1,503	1,584	1,783	1,712
Nonelectric machinery	3,660	3,904	4,180	4,531	4,338
Transport equipment	3,727	3,211	3,721	5,620	6,457
Of which:					
Total automobiles	1,404	1,040	1,247	2,488	2,829
Airplanes	140	182	284	681	1,159
Footwear	1,624	1,499	1,650	1,594	1,387
Fruit juices	1,019	1,132	1,453	1,058	1,306
Steel products	2,678	2,471	2,622	2,714	2,596
Processed beef	300	302	243	239	314
Cotton fabrics and yarn	291	299	278	246	224
Other textiles	1,112	1,142	1,014	1,021	889
Petroleum derivatives	1,139	839	949	988	865
Other	7,479	8,441	7,922	8,321	8,202
Other exports	**635**	**826**	**821**	**844**	**656**
	(Annual percentage change)				
Memorandum items:					
Total exports	12.9	6.8	2.7	11.0	-3.5
Primary products	18.1	-0.8	8.5	21.6	-10.4
Semi-manufactures	26.6	32.7	-5.8	-1.6	-4.3
Manufactures	6.5	2.4	3.3	10.5	0.7
Excl. automobiles and airplanes	5.3	4.0	2.2	4.6	-2.4
Total automobiles	28.7	-25.9	19.9	99.5	13.7

Source: Secex-MICT.

1/ Raw sugar (primary) and crystal sugar (semi-manufactures), from 1996 and on, included in raw sugar (semi-manufactures).

Table 29. Brazil: Imports by End-Use

	1994	1995	1996	1997	1998
	(In millions of U.S. dollars)				
Total Imports, f.o.b.	**33,079**	**49,972**	**53,301**	**59,838**	**57,711**
Consumer goods	**5,540**	**10,927**	**9,721**	**11,011**	**10,702**
Foodstuffs	2,014	3,514	3,279	3,290	3,057
Apparel	296	804	862	979	791
Automobiles	1,469	3,040	1,562	2,641	2,796
Others	1,761	3,569	4,018	4,101	4,058
Raw materials	**15,607**	**22,382**	**24,646**	**27,132**	**26,811**
Grains	1,408	1,665	2,103	1,583	1,865
Of which:					
Wheat	749	914	1,288	822	814
Fertilizers	634	661	860	1,021	954
Chemical products	4,961	7,349	7,958	8,926	9,263
Inorganic chemical products	495	639	566	553	543
Organic chemical products	2,202	2,990	3,179	3,488	3,446
Other chemical products	2,263	3,720	4,214	4,884	5,273
Cast iron and steel	432	699	793	1,254	1,375
Nonferrous metals	571	1,096	938	1,127	1,091
Coal	677	764	755	807	774
Others	6,924	10,148	11,239	12,414	11,489
Fuels and lubricants	**4,356**	**5,217**	**6,228**	**5,597**	**4,110**
Crude oil	2,339	2,587	3,459	3,220	1,967
Refined products	2,017	2,630	2,769	2,377	2,143
Capital goods	**7,576**	**11,446**	**12,706**	**16,098**	**16,088**
Transport equipment and components	1,927	3,001	2,948	3,741	3,996
Automotive vehicles, tractors etc.	1,697	2,539	2,417	2,723	2,869
Others	230	462	531	1,018	1,127
Machines and electric materials	5,649	8,445	9,758	12,357	12,092
	(In percent)				
Total imports	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Consumer goods	16.7	21.9	18.2	18.4	18.5
Automobiles	4.4	6.1	2.9	4.4	4.8
Other	12.3	15.8	15.3	14.0	13.7
Raw materials	47.2	44.8	46.2	45.3	46.5
Fuels and lubricants	13.2	10.4	11.7	9.4	7.1
Capital goods	22.9	22.9	23.8	26.9	27.9
Transport equipment and components	5.8	6.0	5.5	6.3	6.9
Machines and electric materials	17.1	16.9	18.3	20.7	21.0
	(Annual percentage change)				
Total imports	**31.0**	**51.1**	**6.7**	**12.3**	**-3.6**
Consumer goods	72.6	97.2	-11.0	13.3	-2.8
Automobiles	109.9	106.9	-48.6	69.1	5.9
Other	62.2	93.7	3.4	2.6	-5.5
Raw materials	21.3	43.4	10.1	10.1	-1.2
Fuels and lubricants	6.4	19.8	19.4	-10.1	-26.6
Capital goods	48.9	51.1	11.0	26.7	-0.1
Transport equipment and components	37.3	55.7	-1.8	26.9	6.8
Machines and electric materials	53.3	49.5	15.5	26.6	-2.1

Source: Secex - MICT.

Table 30. Brazil: International Reserves of the Central Bank 1/

(In millions of U.S. dollars)

	1993	1994	1995	1996	1997	1998	End Feb 1999	End May 1999
Net reserves	**24,948**	**37,438**	**51,042**	**59,951**	**51,655**	**34,600**	**25,674**	**24,742**
Gross reserves	**31,711**	**38,487**	**51,533**	**60,089**	**51,729**	**43,971**	**34,966**	**43,687**
Gold	1,107	1,418	1,767	1,381	903	1,353	1,304	1,130
SDRs	2	7	1	1	1	40	34	23
Foreign exchange	30,602	37,062	49,765	58,707	50,825	42,578	33,628	42,534
Liabilities	**6,763**	**1,049**	**491**	**138**	**74**	**9,371**	**9,292**	**18,945**
Use of Fund credit	304	186	141	68	31	4,802	4,660	9,469
Arrears	6,449	796	286	0	0	0	0	0
Others liabilities	10	67	64	70	43	4,569	4,632	9,476

Source: Central Bank of Brazil.

1/ Adjusted liquidity ("reservas líquidas ajustadas") concept.

Table 31. Brazil: Detailed Balance of Payments

(In millions of U.S. dollars)

	1994	1995	1996	1997	1998
Current account balance	**- 1.69**	**- 18.09**	**- 23.14**	**- 30.92**	**- 33.61**
As a percentage of GDP	- 0.31	- 2.56	- 2.98	- 3.84	- 4.33
Trade balance (f.o.b.)	**10.47**	**- 3.47**	**- 5.55**	**- 6.85**	**- 6.59**
Exports	43.55	46.51	47.75	52.99	51.12
Imports	- 33.08	- 49.97	- 53.30	- 59.84	- 57.71
Services and transfers	**- 12.15**	**- 14.62**	**- 17.58**	**- 24.07**	**- 27.02**
Services (net)	**- 14.74**	**- 18.59**	**- 20.48**	**- 26.28**	**- 28.80**
Interest payments	- 6.34	- 8.16	- 9.17	- 10.39	- 11.95
Revenues	1.80	2.49	3.59	4.02	3.89
Expenditures	- 8.14	- 10.64	- 12.76	- 14.41	- 15.84
Other services	- 8.41	- 10.44	- 11.31	- 15.89	- 16.85
Revenues	4.86	6.22	6.79	7.87	9.33
Expenditures	- 13.27	- 16.66	- 18.10	- 23.76	- 26.18
International travel	- 1.18	- 2.42	- 3.60	- 4.38	- 4.15
Revenues	1.05	0.97	0.84	1.07	1.59
Expenditures	- 2.23	- 3.39	- 4.44	- 5.45	- 5.73
Transports	- 2.44	- 3.01	- 2.75	- 3.51	- 3.26
Revenues	1.70	1.72	1.43	1.41	1.87
Expenditures	- 4.14	- 4.73	- 4.19	- 4.92	- 5.12
Insurance	- 0.13	- 0.12	- 0.06	0.07	0.08
Revenues	0.14	0.19	0.24	0.41	0.39
Expenditures	- 0.27	- 0.31	- 0.30	- 0.34	- 0.31
Profits and dividends	- 2.57	- 2.97	- 2.90	- 5.75	- 7.30
Revenues	0.40	0.91	1.47	0.91	0.49
Expenditures (inludes reinvestments)	- 2.97	- 3.88	- 4.37	- 6.66	- 7.79
Government	- 0.33	- 0.34	- 0.30	- 0.35	- 0.39
Revenues	0.09	0.13	0.20	0.50	0.55
Expenditures	- 0.42	- 0.47	- 0.51	- 0.85	- 0.93
Other	- 1.76	- 1.57	- 1.69	- 1.98	- 1.84
Revenues	1.47	2.31	2.61	3.57	4.45
Expenditures	- 3.23	- 3.88	- 4.29	- 5.55	- 6.29
Unrequited transfers	**2.59**	**3.97**	**2.90**	**2.22**	**1.78**
Credits	2.75	4.23	3.17	2.54	2.22
Debits	- 0.16	- 0.25	- 0.27	- 0.33	- 0.44
Capital account balance	**14.63**	**31.57**	**32.15**	**23.07**	**16.33**
Investment (net)	**8.21**	**5.05**	**16.07**	**20.81**	**20.88**
Abroad by brazilians (net)	- 1.04	- 1.56	0.06	- 1.57	- 3.40
In Brazil by nonresidents	9.25	6.61	16.02	22.38	24.28
Debt conversion	0.14	0.31	0.29	0.66	2.17
FDI	1.74	3.61	9.12	16.22	23.74
Credit	2.36	4.78	9.64	17.88	26.35
Debit	- 0.62	- 1.16	- 0.52	- 1.66	- 2.61
Portfolio investments	7.28	2.29	6.04	5.30	- 1.85
Credit	25.14	24.84	26.08	39.55	31.83
Debit	- 17.86	- 22.54	- 20.04	- 34.25	- 33.68
Reinvested profits	0.08	0.38	0.53	0.15	0.12
Other	0.01	0.01	0.03	0.05	0.10

Table 31. Brazil: Detailed Balance of Payments

(In millions of U.S. dollars)

	1994	1995	1996	1997	1998
Long-term capital	**4.42**	**6.55**	**12.73**	**18.56**	**26.48**
Multilateral	- 0.67	- 0.13	1.17	1.63	2.71
Disbursement	1.13	1.65	2.88	3.15	4.17
Amortization	- 1.80	- 1.78	- 1.71	- 1.52	- 1.46
Bilateral	- 0.69	- 1.64	- 2.10	- 0.55	- 0.92
Inflow	0.31	0.40	0.39	1.26	1.14
Amortization	- 1.00	- 2.04	- 2.49	- 1.81	- 2.06
Suppliers/buyers	- 0.55	- 0.43	- 1.08	12.71	1.95
Disbursement	0.95	1.45	1.25	15.84	18.10
Amortization	- 1.50	- 1.89	- 2.32	- 3.13	- 16.15
Banks	- 0.90	- 0.03	- 3.08	- 0.14	3.15
Disbursement	2.03	1.43	0.56	2.43	5.75
Amortization	- 2.93	- 1.46	- 3.64	- 2.57	- 2.60
Intercompany	0.18	0.73	1.22	2.57	5.78
Disbursement	0.63	1.13	1.58	3.06	6.66
Amortization	- 0.45	- 0.40	- 0.35	- 0.49	- 0.88
Bonds and notes	4.90	7.88	15.44	4.10	19.89
Disbursement	7.13	10.41	18.50	18.34	26.37
Amortization	- 2.23	- 2.53	- 3.06	- 14.25	- 6.48
Other	- 0.46	0.53	1.11	0.54	- 1.07
Disbursement	0.62	1.45	1.94	2.79	2.90
Amortization	- 1.09	- 0.92	- 0.84	- 2.25	- 3.96
Refinancing	3.07	0.31	0.25	- 0.45	0.00
Brazilian lending abroad	- 0.45	- 0.68	- 0.21	- 1.84	- 5.02
Short-term capital (net)	**0.91**	**18.83**	**5.75**	**- 17.53**	**- 27.29**
Other (including errors & omissions)	**1.08**	**1.14**	**- 2.40**	**1.22**	**- 3.74**
Overall balance	**12.94**	**13.48**	**9.02**	**- 7.85**	**- 17.29**
Gross reserves (- = increase)	**- 7.22**	**- 12.92**	**- 8.67**	**7.91**	**7.97**
Liabilities	- 5.72	- 0.56	- 0.35	- 0.06	9.31
IMF	- 0.12	- 0.04	- 0.07	- 0.04	4.76
Bilateral support	0.00	0.00	0.00	0.00	4.54
Monetary authority and short-term liabilities	- 5.61	- 0.52	- 0.28	- 0.03	0.01

Source: Central Bank of Brazil.

Table 32. Brazil: Direction of Trade 1/

	1994	1995	1996	1997	1998
	(In millions of U.S. dollars)				
Total exports f.o.b.	**43,545**	**46,506**	**47,747**	**52,986**	**51,120**
Latin America 2/	10,163	10,399	11,322	14,210	13,873
MERCOSUL	5,921	6,154	7,306	9,044	8,877
Argentina	4,136	4,041	5,170	6,767	6,747
Paraguay	1,054	1,301	1,325	1,406	1,249
Uruguay	732	812	811	870	881
Other	4,242	4,245	4,016	5,166	4,996
EU 3/	12,202	12,912	12,836	14,513	14,744
United States 4/	8,951	8,798	9,312	9,407	9,865
Japan	2,574	3,102	3,047	3,068	2,202
Oil exports 5/	847	1,078	1,142	1,281	1,611
CMEA 6/	534	985	1,056	1,313	1,163
Other	8,274	9,232	9,032	9,194	7,662
Total imports f.o.b.	**33,079**	**49,972**	**53,301**	**59,838**	**57,711**
Latin America 2/	6,411	10,039	11,661	13,178	12,413
MERCOSUL	4,583	6,831	8,267	9,517	9,427
Argentina	3,662	5,581	6,784	8,032	8,033
Paraguay	352	514	551	518	351
Uruguay	569	737	932	967	1,042
Other	1,827	3,208	3,394	3,661	2,986
EU 3/	8,972	13,754	14,120	15,874	16,831
United States 4/	6,787	10,513	11,865	13,902	13,688
Japan	2,412	3,296	2,761	3,534	3,274
Oil exporters 5/	2,534	2,248	2,665	2,775	2,132
CMEA 6/	810	1,044	978	838	810
Other	5,153	9,078	9,252	9,737	8,563
	(In percent)				
Total exports f.o.b.	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Latin America 2/	23.3	22.4	23.7	26.8	27.1
MERCOSUL	13.6	13.2	15.3	17.1	17.4
Argentina	9.5	8.7	10.8	12.8	13.2
Paraguay	2.4	2.8	2.8	2.7	2.4
Uruguay	1.7	1.7	1.7	1.6	1.7
Other	9.7	9.1	8.4	9.7	9.8
EC 3/	28.0	27.8	26.9	27.4	28.8
United States 4/	20.6	18.9	19.5	17.8	19.3
Japan	5.9	6.7	6.4	5.8	4.3
Oil exporters 5/	1.9	2.3	2.4	2.4	3.2
CMEA 6/	1.2	2.1	2.2	2.5	2.3
Other	19.0	19.9	18.9	17.4	15.0
Total imports f.o.b.	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Latin America 2/	19.4	20.1	21.9	22.0	21.5
MERCOSUL	13.9	13.7	15.5	15.9	16.3
Argentina	11.1	11.2	12.7	13.4	13.9
Paraguay	1.1	1.0	1.0	0.9	0.6
Uruguay	1.7	1.5	1.7	1.6	1.8
Other	5.5	6.4	6.4	6.1	5.2
EC 3/	27.1	27.5	26.5	26.5	29.2
United States 4/	20.5	21.0	22.3	23.2	23.7
Japan	7.3	6.6	5.2	5.9	5.7
Oil exporters 5/	7.7	4.5	5.0	4.6	3.7
CMEA 6/	2.4	2.1	1.8	1.4	1.4
Other	15.6	18.2	17.4	16.3	14.8

Source: Secex-MICT.

1/ Imports are shown by country of origin.

2/ Including ALADI, Central American Common Market and others from Latin America.

3/ As from 1995, Austria, Finland, and Sweden joined the European Union. The series was rearranged in accordance with the present composition.

4/ Including Puerto Rico.

5/ Algeria, Iran, Iraq, Kuwait, Lybia, Nigeria, Qatar, and Saudi Arabia.

6/ Council for Mutual Economic Assistance (COMECON).

Table 33. Brazil: Total External Debt

(In millions of U.S. dollars)

	1993	1994	1995	1996	1997	1998 End-March	1999 End-March
Registered debt	**114,270**	**119,668**	**129,313**	**144,092**	**167,760**	**210,458**	**198,515**
Public sector 1/	83,515	86,864	87,168	84,229	76,205	...	...
Banks	44,016	6,212	6,138	5,642	5,348	...	...
Brazilian	6,749	1,912	1,967	910	954	...	...
Foreign	37,267	4,300	4,171	4,732	4,394	...	...
Multilateral	9,014	8,870	8,837	8,880	9,236	...	...
Bilateral (Paris Club included)	19,226	19,264	18,480	15,089	12,518	...	...
Debt bond from banks	8,363	51,538	51,451	51,239	41,930	...	...
Others	2,896	980	2,262	3,379	7,173	...	...
Private sector	30,755	32,804	42,145	59,863	91,555	...	...
Banks	18,910	22,004	30,252	46,673	67,759	...	...
Brazilian	2,683	3,013	3,808	5,448	8,863	...	...
Foreign	16,227	18,991	26,444	41,225	58,896	...	...
Multilateral	1,852	1,789	1,984	2,513	3,150	...	...
Bilateral	607	413	700	916	1,996	...	...
Others	9,386	8,598	9,209	9,761	18,650	...	...
Nonregistered debt	**31,456**	**28,627**	**29,943**	**35,843**	**32,238**	**22,780**	**19,207**
Public sector 1/	7,098	466	287	70	42	28	0
Arrears	6,449	386	286	0	0	...	...
Banks	6,379	386	286	0	0	...	...
Others	70	0	0	0	0	...	...
Paris Club	0	0	0	0	0	...	...
Credit lines	1	0	0	0	0	...	...
Banco Central do Brasil	648	80	1	70	42	...	...
New money trade	600	0	0	0	0	...	...
Others	48	80	1	70	42	28	0
Private sector	24,358	28,161	29,656	35,773	32,196	22,752	19,207
Credit lines	2,377	2,586	3,421	5,162	5,695	4,276	3,652
Commercial banks (liabilities)	21,981	25,575	26,235	30,611	26,501	18,476	15,555
Total external debt	**145,726**	**148,295**	**159,256**	**179,935**	**199,998**	**235,058**	**219,478**
Public sector 1/	90,613	87,330	87,455	84,299	76,247	...	...
Private sector	55,113	60,965	71,801	95,636	123,751	...	...
International reserves	32,211	38,806	51,840	60,110	52,173	43,971	33,227
Commercial banks assets	8,424	15,035	8,930	11,675	9,639	...	...
Net total external debt	105,091	94,454	98,486	108,150	138,186	...	...
Memorandum items:							
Total external debt (percent of exports of G&NFS)	349.7	316.9	320.6	353.0	348.8	418.7	495.5
Total external debt (percent of GDP)	33.2	26.6	22.3	23.2	24.9	30.0	43.1
Short-term debt (percent of gross international reserves)	97.7	73.8	57.8	62.9	71.0	54.7	66.5
Foreign banks	82,268	48,945	57,510	78,106	92,267	...	...
Registered	53,494	23,291	30,615	45,957	63,290	...	...
Nonregistered	28,774	25,654	26,895	32,149	28,977	...	...
Brazilian banks	11,994	7,818	8,822	9,982	13,078	...	...
Registered	9,432	4,925	5,775	6,358	9,817	...	...
Nonregistered	2,562	2,893	3,047	3,624	3,261	...	...

Source: Central Bank of Brazil.

1/ Nonfinancial public sector. Excludes Petrobrás and Vale do Rio Doce.