Anchors Away: The Cost and Benefits of Brazil's Devaluation

Edmund Amann
University of Illinois at Urbana−Champaign

Werner Baer
The University of Illinois at Urbana−Champaign

Abstract

This paper analyses the impact of Brazil's devaluation in 1999. This event represents an abandonment of the exchange rate anchor which had been used as a stabilisation plan since the introduction of the Real Plan in 1994. The reasons surrounding the abandonment of the exchange rate anchor are determined as well as the explanation for its benign impact.

Published: 2002
URL: http://www.business.uiuc.edu/Working_Papers/papers/02−0122.pdf

Anchors Away: The Cost and Benefits of Brazil's Devaluation

By Edmund Amann and Werner Baer[1]

Abstract: This paper analyses the impact of Brazil's devaluation in 1999. This event represents an abandonment of the exchange rate anchor which had been used as a stabilisation plan since the introduction of the *Real* Plan in 1994. The reasons surrounding the abandonment of the exchange rate anchor are determined as well as the explanation for its benign impact.

With the floatation and subsequent devaluation of the Brazilian *Real* in January 1999 what had seemed one of the central planks of a five-year old stabilisation plan had come to an end.[2] In the four and a half years up to the beginning of 1999, the *Real* through its relative strength against the US Dollar had provided the authorities with what they believed to be a potent anti-inflationary instrument – generally referred to as an *exchange rate anchor*. Without such an anchor, it was feared, the Brazilian economy would once again revert to the habits of the past embarking on a phase of uncontrolled inflation and stagnation. As this article will show, such dire predictions have thus far proved unfounded. This article will not only demonstrate why this has been the case, but also suggests that, had such an anchor been maintained, the long-term economic costs would have almost certainly exceeded the benefits.

In arguing our case we have adopted the following approach. First, we very briefly refer to the theoretical arguments which underpinned the emergence of Brazil's acceptance of the exchange rate anchor as an important instrument for maintaining stability. Second, we then focus on the evolution of the Brazilian macro

[1] School of Economic Studies, University of Manchester and University of Illinois at Urbana-Champaign. The authors would like to thank Marcelo Carvalho, Donald Coes and Claudio Paiva for many helpful suggestions.

[2] See Amann & Baer (2000)

economy and policy regime in the four-year period leading up to the floatation and resulting devaluation of the Real in January 1999. We then turn to the core of the paper, describing and analysing the impacts of the devaluation on a number of key macroeconomic variables including inflation, growth and the balance of payments. We shall conclude by considering the implications of the Brazilian experience for those countries trying to pursue long-term post stabilisation programmes based on exchange rate anchors of one type or another.

The theoretical basis for exchange rate anchors

Already by the beginning of the 1980s economists had begun to look at the exchange rate as a crucial stabilisation tool. For instance, Carlos Diaz Alejandro called attention to the fact that, according to the new, monetarist-inspired orthodoxy, "the exchange rate should be assigned the task of stabilising the price level while domestic credit creation should be assigned the target of balance of payments equilibrium"[3]. For Fischer (1985) the selection of the exchange rate, rather than the quantity of money as the anchor for monetary policy had clear advantages. According to Fischer, "Both the credibility of policy and the need to prevent a real appreciation at the start of the stabilization argues strongly for an exchange rate based approach"[4]. The theoretical case for the use of the exchange rate as an anti-inflationary device influenced increasing numbers of policy makers throughout the world over the next two decades.

The basic arguments in favour of an exchange rate anchor are as follows. In first place, it influences expectations. Properly supported by foreign reserves the adoption of an anchor is designed to dissuade agents from speculating against the currency. In second place, if accompanied by a liberalised trade regime, an anchor

[3] Diaz Alejandro (1981) p.221
[4] Fischer (1985) p.83

should place a brake on the domestic price of tradable goods. Although some may question the wisdom of the use of an overvalued exchange rate due to its negative impact on the balance of trade (i.e. hurting the competitiveness of exports and increasing the demand for imports), others have refuted this contention pointing to the competitive impetus such a policy has for the productive sector. That is, foreign competition would force domestic producers to increase their productivity in order to survive import competition and to maintain or expand their place in the international market. Third, given the need to maintain the anchor the authorities will feel obliged to adopt fiscal and monetary policies which are well received in foreign exchange markets. A variety of anchors have been advocated and implemented in recent years, ranging from the total exchange rate rigidity of the currency board to the more flexible crawling peg arrangements. The latter may consist of pegs lagging behind inflation in order to act as a brake on general price increases.

While exchange rate anchors have found support many quarters[5] they have not been without their critics, especially in the past five years. Influenced by the Asian, Russian and Latin American currency crises of the late 1990s, a current of opinion seems to be emerging which specifically excludes the use of anchors as a long-term instrument of stabilisation. This was best represented by Andres Velasco (2000) who argued that "revocable pegs whether of the crawling, adjusting or constant variety, appear indefensible in a world of high and mobile capital mobility. If this was true for rich countries with large reserves (Europe in 1991-2), it is even more true for middle-income, reserve-constrained, developing countries"[6]. In the light of Argentina's abandonment of its decade old currency board even seemingly irrevocable currency pegs now appear to lack the lustre they once had. More generally, Dornbusch et.al.

[5] Two of the most prominent such advocates has been the former President of the Brazilian Central Bank, Gustavo Franco (Franco, 1995; Franco 1999) and Jacob Frenkel (1982).
[6] Velasco (2000) p.2

(1995), after having surveyed the experience of a number of countries even question the extent to which the exchange rate can effectively function as a useful policy tool[7].

The *Real* Plan and Exchange Rate Overvaluation

Brazil's *Real* stabilisation plan was introduced in July 1994. One of its basic features was the introduction of a new currency, the *Real*, which was based on an already indexed virtual currency linked to the Dollar on a one-to-one basis. This 'currency' was increasingly used by economic agents throughout the economy to price their products simultaneously with prices in the old currency. The habit of using this virtual currency was such that by the end of June 1994 the government felt that the public was ready to use it in their daily transactions. Although the previous virtual currency had been linked to the Dollar on a one-to-one basis, the new currency, the *Real*, was allowed to fluctuate freely against the US currency. The policy of opening up the economy which had started in the early 1990s was continued. To discourage speculation and to prevent an explosion in consumption, the government adopted a policy of high interest rates. As a result, net capital inflows accelerated substantially pushing up the value of the *Real* to 84 centavos per Dollar by the end of 1994[8].

By the beginning of 1995 the anti-inflationary potential of the new currency had become clear to the authorities. Among most policymakers of the time the maintenance of an overvalued currency came to be seen as an "anchor" to ensure continued price stability.[9] The combination of an overvalued exchange rate with an increasingly open economy (average nominal tariffs had fallen from 32.2% in 1990 to

[7] Dornbusch et. al. (1995) p.277
[8] Amann & Baer (2000) p.1806
[9] Some economists would dispute the use of the term "overvaluation". If a currency is allowed to become appreciated within the context of a more open economy, and the resulting foreign competition will drive local producers to become more efficient, then it would be questionable to call the currency "overvalued."

14.2% in 1994) began to exert a strong influence on general domestic price formation. Despite the anti-inflationary bias inherent in exchange rate policy, the authorities were not unaware of the long-term need for systemic fiscal adjustment. However, since basic fiscal adjustment meant drastic and politically controversial institutional reforms[10] the government opted for a series of short-term temporary measures to augment revenues. Also contributing to fiscal adjustment and the inflow of foreign revenues was a dramatic acceleration of the privatisation programme (Baer, 2001, Ch.12).[11]

In terms of price stability there is no doubt that the *Real Plan* has been very successful. As can be seen in Table 1, the inflation rate came down from four digits in 1993 to two digits in 1994, steadily declining, reaching 1.7% in 1998. Turning to economic activity, the *Real Plan* ensured positive GDP growth in the years between 1995 and 1998. However, the average growth rate during this period (2.8%) can hardly be considered spectacularly high.

Table 1

a) Yearly Inflation Rates: 1990 –2000

	Consumer Price Index (IPCA)	General Price Index
1990	1,621	1477
1991	473	480
1992	1119	1158
1993	2477	2708
1994	916	1094
1995	22	15
1996	10	9
1997	5	7
1998	1.7	1.7
1999	8.9	20.0
2000	6.0	9.8
2001	7.7	10.4

Source: Conjuntura Economica.

[10] For example reform of the indirect taxation and public sector social security systems which required constitutional amendments.

[11] A more critical view of privatisation would assert that it did not result in a basic fiscal adjustment, but rather in a postponement of a long-term fiscal adjustment.

b) Monthly Inflation Rate : 1998-2001

	Consumer Price Index (ICPA)	General Price Index		Consumer Price Index (ICPA)	General Price Index
1998			1999		
January	0.71	0.88	January	0.70	1.15
February	0.46	0.02	February	1.05	4.44
March	0.34	0.23	March	1.10	1.98
April	0.24	-0.13	April	0.56	0.03
May	0.50	0.23	May	0.30	-.34
June	0.02	0.28	June	0.19	1.02
July	-0.12	-0.38	July	1.09	1.59
August	-0.51	-0.17	August	0.56	1.45
September	-0.22	-0.02	September	0.31	1.47
October	0.02	-0.03	October	1.19	1.89
November	-0.12	-0.18	November	0.95	2.53
December	0.33	0.98	December	0.60	1.23

	Consumer Price Index (ICPA)	General Price Index		Consumer Price Index (ICPA)	General Price Index
2000			2001		
January	0.62	1.02	January	0.57	0.49
February	0.13	0.19	February	0.46	0.34
March	0.22	0.18	March	0.38	0.80
April	0.42	0.13	April	0.58	1.13
May	0.01	0.67	May	0.41	0.44
June	0.23	0.93	June	0.52	1.46
July	1.61	2.26	July	1.33	1.62
August	1.31	1.82	August	0.70	0.90
September	0.23	0.69	September	0.28	0.38
October	0.14	0.37	October	0.83	1.45
November	0.32	0.39	November	0.71	0.76
December	0.59	0.76	December	0.65	0.18

Source: Conjuntura Economica.

Despite these benefits of the *Real Plan*, there were some serious costs. Some of these were related to the country's balance of payments position, which deteriorated throughout the second half of the decade. As can be seen in Table 2, the trade balance which had been positive since 1981 turned negative from 1995, while the current

account deficit also worsened. This seemed not to have been a problem so long as the inflow of portfolio or foreign direct investment was substantial. At the heart of the deteriorating external balance lay the fact that the overvalued *Real* restrained export growth while dramatically encouraging the growth of imports. The accelerating absorption of imports was also propelled by the widening fiscal deficit, a direct result of the authorities' inability to implement long-awaited reforms. As the financing of the resulting growing external imbalance relied on the continued inflow of foreign capital either in the form of direct or portfolio investment, the Asian and Russian crises of 1997/8 called this state of affairs into question.

Table 2
a) Brazil: Monthly exports
(Millions of US$)

	1998	1999	2000	2001	2002
January	3,916	2,949	3,453	4,538	3,972
February	3,715	3,267	4,123	4,083	3,658
March	4,273	3,829	4,472	5,167	
April	4,576	3,707	4,181	4,730	
May	4,609	4,386	5,063	5,367	
June	4,886	4,313	4,861	5,042	
July	4,970	4,117	5,003	4,965	
August	3,985	4,277	5,519	5,727	
September	4,537	4,187	4,724	4,755	
October	4,014	4,304	4,638	5,002	
November	3,702	4,002	4,390	4,500	
December	3,944	4,673	4,659	4,346	

Source: Ministerio do Desenvolvimento, Industria e Comercio, Scretaria do Comercio Exterior (MDIC/SECE

b) Brazil: Monthly Imports.
(millions of US$)

	1998	1999	2000	2001	2002
January	4,647	3,645	3,569	5,017	3,797
February	3,943	3,164	4,045	4,003	3,398
March	5,166	4,052	4,430	5,446	
April	4,629	3,669	3,998	4,610	
May	4,734	4,078	4,671	5,156	
June	4,702	4,459	4,605	4,765	
July	5,395	4,027	4,885	4,857	
August	4,153	4,461	5,422	5,102	
September	5,724	4,243	5,044	4,161	
October	5,453	4,458	5,161	4,754	
November	4,726	4,530	5,020	4,212	
December	4,458	3,569	4,872	3,490	

Source: same as a).

c) Brazil: Quarterly Trade Balance
(millions of US$)

1997		1999		2001	
1 Q	-831	1 Q	-839	1 Q	-681
2 Q	-1,321	2Q	182	2 Q	603
3 Q	-1,693	3Q	-160	3 Q	1,325
4Q	-2,904	4 Q	-466	4 Q	1,394
1998		2000		2002	
1 Q	-1,851	1 Q	-18	1Q	
2 Q	5	2 Q	804	2 Q	
3 Q	-1781	3 Q	-114		
4Q	-2,982	4 Q	-1,401		

Source: same as a).

Table 3
Current Account Balance

	Exports	Imports	Trade Balance	Net Interest	Profit Remittance	Services Total	Current Account
1980	20133	22954	-2821	-6311		-10152	-12807
1981	23292	22092	1200	-9161	-370	-13135	-11734
1982	20176	19395	781	-11353	-585	-17083	-16311
1983	21899	15429	6469	-9555	-758	-13415	-6837
1984	27006	13916	13088	-10203	-796	-13215	45
1985	25642	13154	12487	-9659	-1057	-12877	-242
1986	22349	14045	8305	-9327	-1350	-13695	-5304
1987	26224	15053	11171	-8792	-909	-12678	-1436
1988	33789	14605	19184	-9832	-910	-15103	4175
1989	34383	18263	16120	-9633	-2383	-15331	1033
1990	31414	20661	10753	-9748	-1591	-15369	-3782
1991	31620	21041	10579	-8621	-665	-13542	-1407
1992	35862	20554	15308	-7253	-574	-11339	6144
1993	38597	25659	12938	-8280	-1831	-15585	-592
1994	43545	33105	10440	-6338	-2483	-14743	-1689
1995	46506	49664	-3158	-8158	-2590	-18594	-17972
1996	47747	53301	-5554	-8778	-2830	-20350	-23502
1997	52990	61347	-8357	-9483	-5443	-25866	-30791
1998	51120	57594	-6484	-11437	-6855	-28299	-33445
1999	48006	49212	-1206	-14876	-4115	-25825	-25396
2000	55086	55722	-636	-14649	-3316	-25460	-24669
2001	58223	55581	2642	-14881	-4961	-27496	-23217

Source: Conjuntura Economica, various issues

Graph 1
EMBI Risk Index, Brazil 1997-2002
(Source: Crédit Suisse First Boston)

The impact of these two crises was felt keenly in Brazil where the bond market risk index rose dramatically over the second half of 1998 (see Graph 1). With the rise of the risk index, net inward portfolio investment declined sharply from US$6bn in 1996 to US$5.3bn in 1997 with a net outflow of portfolio investment of US$1.8bn occurring in 1998 (Table 4). The withdrawal of portfolio investment was prompted not only be growing concerns over the direction of the Brazilian economy but also by the need of international financial institutions to compensate for their losses in both Asia and Russia. Accompanying the outflow of portfolio investment, Brazil experienced a serious depletion of reserves from 1996 onwards as can be seen in Table 4. This was partly due to capital flight associated with a fear of either default or a possible big devaluation of the *Real*. Although, partly thanks to privatisation, direct investment rose sharply, this was not sufficient to compensate fully the US$ 10 billion increase in the current account deficit between 1996 and 1998**,** for the decline in portfolio inflows and for capital flight.

Table 4
Brazil: Balance of Payments Items, Debt and International Reserves

	Amortization	Capital Account	Net Portfolio Investment	Net Direct Investment	Balance of Payments	Gross Debt	International Reserves
1993	-9978	12524	6651	6170	11932	145.00	32.21
1994	-50411	14294	7280	8131	12939	149.00	38.81
1995	-11023	29359	2294	4663	13480	159.00	51.84
1996	-14271	33968	6040	15482	8666	180.00	60.11
1997	-28701	25795	5300	22234	-7907	199.00	52.17
1998	-33587	29730	-1851	24042	-7970	243.00	44.56
1999	-49,120	17381	1360	31347	-7822	225.91	36.34
2000	-34,690	19358	2722	33103	-2262	216.92	33.01
2001		*26799		22640	3307	*211.71	35.87

Source: Conjuntura Economica, various issues* November 2001

Concerned at the accelerating exit of portfolio capital, the authorities tightened monetary policy in an attempt to compensate investors for the growing risk premium

attaching to Brazilian financial instruments. Between 1997 and 1998 Table 5 indicates that annual average real interest rates increased by approximately 10 percentage points. With the rise in interest rates, however, the authorities in trying to stem the outflow of portfolio investment – and hence lessen pressure on the *Real* -, the government placed itself in an increasingly difficult fiscal position as the public debt increased dramatically from 34.4% of GDP in 1997 to 41.7% of GDP in 1998 and 49.4% a year later. Unfortunately, with little progress being made in the field of fiscal adjustment, the poor performance of the primary balance in 1997 and 1998 offered little assistance in remedying increasing public sector indebtedness. Finally, with the *Real* experiencing strong downward pressure, the authorities in November 1998 signed an agreement with the IMF aimed at accelerating progress on fiscal adjustment (Amann & Baer, 2000 p.1813)[12]. As well as mandating a series of tough fiscal targets, the agreement provided the authorities with access to a credit line totalling US$ 41.5bn. However, despite this effort, the burden of public debt increased relentlessly and adverse market sentiment continued to bear down heavily on the *Real*. As investors continued to withdraw funds from Brazil reserves began to haemorrhage, falling from US$75bn in August 1998 to less than US$ 35bn in January 1999.

[12] In tightening fiscal policy the IMF package of measures attempted to restore some balance to the macroeconomic policy mix which hitherto had been strongly skewed towards the use of monetary policy. Placing more emphasis on fiscal policy it was hoped that appropriate conditions would be created for a faster (though controlled) depreciation of the Real. This, it was hoped, would both reduce the external imbalance and stimulate growth.

Table 5
Brazil: Exchange Rate, Minimum Wage, Inflation and Interest Rate

	Exchange Rate R$/US$	Real Minimum Wage (Growth Rate)	Inflation Rate	Interest Rate (nominal)	Interest Rate (real)
1989	1.03E-06		1783.00	14998.43	
1990	2.48E-05		1476.71	1033.22	
1991	0.0001		480.23	2576.82	
1992	0.0016		1157.84	1059.15	
1993	0.0322		2708.17	3488.45	7.1
1994	0.6387	9.5	1093.89	56.76	24.4
1995	0.9174	8.7	14.78	34.54	33.1
1996	1.0051	5.4	9.34	22.73	16.6
1997	1.1134	5.5	7.48	37.19	16.4
1998	1.2054	4.6	1.70	29.00	26.5
1999	1.8428	-1.2	8.90	19.00	4.7
2000	1.8300	2.7	6.00	15.75	10.5
2001	2.3500--	5.6	7.70	19.00	

Source: Banco Central do Brasil; Conjuntura Economica, various issues

Finally, by mid-January 1999 it had had become clear that it would be impossible for the authorities to sustain their support for the *Real*. With very high real interest rates depressing economic activity, and net portfolio investment becoming negative, a decision within the Central Bank was made on the 15th January to abandon the currency band and thus to give up the exchange rate anchor as the policy instrument. Following this decision, the *Real* sharply fell in value against the US Dollar, devaluing by 64% between mid-January and the beginning of March.

Abandoning the anchor: the impact of devaluation

The considerable efforts made by the authorities to maintain the exchange rate anchor in place prior to January 15th 1999 stemmed from real concern that the devaluation which would inevitably follow would rekindle the hyperinflation of the past. In addition, to the extent that the government would have to restrict the scale of devaluation and inflationary pressure through additional tightening of monetary

policy, there was a fear that economic activity would be further dampened[13]. Moreover, this tightening of monetary policy was viewed as deeply prejudicial to the government's attempts to bring about reductions in the scale of public indebtedness and the public sector borrowing requirements. This, of course, would make it even more difficult for the authorities to meet their IMF-agreed targets[14], further undermining the confidence of investors. Finally, many feared that as in the previous Asian currency crises there would be a financial meltdown as institutions buckled under the strain of a mismatch between foreign currency denominated liabilities and domestic currency denominated assets.

Fortunately, to the surprise of everyone, these grim predictions turned out to be very wide of the mark. In first place there was no sustained inflationary explosion. Although monthly consumer price inflation rose from 0.7% in January 1999 to 1.1% in March 1999, it generally declined markedly thereafter (see Table 1b). Thus, although on an annual basis, the consumer price index rose from 1.7% in 1998 to 8.9% in 1999, it subsequently declined to 6% in 2000 and then rose only slightly to 7.7% in 2001. Second, while there was an initial tightening of monetary policy, by the middle of 1999 interest rates had commenced a downward path which was to be sustained for a further two years. Given the increasingly accommodative nature of monetary policy after mid 1999, economic activity began to pick up. Whereas GDP had contracted by 0.12% in 1998, by 1999 growth in GDP growth was back in positive territory reaching 0.54% for the year as a whole and 4.39% in 2000. As might

[13] The extent of the dampening would, of course, be partly determined by the extent to which increases in the nominal interest rate translated into real interest rate increases. With inflation remaining in check following devaluation, the tightening of monetary policy did in fact result in the generation of much higher real interest rates.

[14] Accelerating growth of the PSBR and Public Sector Debt as a percentage of GDP were not the only fiscal difficulties presented by high interest rates. By containing the expansion of GDP (and hence public sector revenues) high interest rates presented the authorities with a tough challenge in their attempts to raise the scale of the primary surplus.

have been expected, the implications of devaluation for the trade balance were broadly favourable. However, the scale of the improvement registered was not spectacular, at least for the first year (see Table 2c). In addition, the external accounts benefited from an improvement in investment inflows following devaluation. Table 4 indicates that between 1998 and 2000 net inward portfolio investment rose from a negative US$1851m to a positive US$2722m. Over the same period net inward direct investment increased from US$ 24042m to US$ 33103m.

Stability without an anchor: the reason why

In explaining why the expected inflationary explosion resulting from devaluation did not occur it is necessary examine the circumstances under which devaluation took place and the policy measures implemented in its aftermath. First of all, the country found itself in a recession, with the 1998 GDP growth rate being negative and ample capacity in the economy remaining unutilised (Table 6). In particular, over the 1997-1998 period manufacturing production declined while the labour market remained relatively slack with unemployment oscillating between 7 and 8%. In addition, it is important to note that throughout the 1990s the economy had been undergoing a general process of de-indexation (references), which by the time of devaluation, was completed.

Table 6 Brazil: Industrial Capacity Utilization

	Capacity Utilization
1988	
January	80
April	82
July	83
October	82
1999	
January	79
April	80
July	80
October	83
2000	
January	81
April	83
July	83
October	84
2001	
January	82
April	84
July	81
October	80
2002	
January	79

Source: Conjuntura Economica

The second set of factors accounting for the relatively benign performance of the Brazilian economy after devaluation relates to the swift monetary and fiscal responses by the authorities. In the initial few weeks following devaluation as the *Real* plunged in value against the Dollar, the Central Bank dramatically tightened its monetary policy, sending its interest rates to as high as 43% by March 1999. This tightening in monetary policy, allied to a market perception that the *Real* had significantly undershot its equilibrium value, soon proved sufficient to induce a recovery in the valuation of the Brazilian currency. By the end of 1999, this development in tandem with a modest rise in inflation was sufficient to ensure that the real devaluation of the

currency stood at only 22% (Giambiagi & Averburg, 2000). Also contributing to the counter-inflationary pressures was the impact of fiscal adjustment. Some of the institutional changes which had been promoted in previous years were finally instituted such as new rules for retirement and a Law of Fiscal Responsibility which severely limited the ability of state and municipal governments to increase spending beyond available revenues.

The authorities' ultimately successful attempts to institute these reforms derived in part from added external pressure. Under the terms of the November 1998 agreement with the IMF (and its revised successors) the government committed itself to the generation of increasing primary surpluses. As can be seen in Table 7, the primary surplus rose from 0.02% of GDP in 1998 to 3.24% in 1999, 3.53% in 2000 and 3.70% in 2001.Finally, Brazil adopted inflation targeting as the guiding framework for its macroeconomic policy formulation. The former encompassed progressively more stringent annual targets for consumer price inflation: for 1999 the target (with a plus or minus 2% margin of tolerance) was set at 8%, 6% in 2000 and 4% in 2001 (EIU, 1999).

Table 7
Fiscal Indicators, 1994-2001

	Primary Balance (% GDP)	Nominal PSBR (%GDP)	Public Sector Indebtedness (%GDP)	Nominal Public Sector Interest Payments (%GDP)
1994	5.21	26.97	28.5	32.18
1995	0.27	7.27	29.9	7.54
1996	-0.09	5.86	34.4	5.78
1997	-0.97	6.07	34.4	5.16
1998	0.02	7.87	41.7	7.94
1999	3.24	10.00	49.4	13.20
2000	3.53	4.59	49.3	8.05
2001	3.70*	5.89*	53.4	
2002			55.2	

Source: Banco Central do Brasil *estimate

Unlike the economies of East and South East Asia just over a year previously, the maxi-devaluation of the Real in January 1999 did not lead to the development of a financial crisis in Brazil. There are two explanations for this. In first place, the degree of financial depth in Brazil's economy is much smaller than that in many Asian countries. For instance, the ratio of private credit to GDP in Brazil amounted to about 31% while it was over 100% in most Asian countries[15]. Secondly, substantial reforms occurred in Brazil in the years immediately following the years of the Real Plan. For example through the auspices of PROER, a Central Bank initiative launched in November 1995 a series of tax incentives and credit facilities was put into place to promote a series of efficiency enhancing mergers and acquisitions (Amann & Baer, 2000 p.1816).

The reforms resulted in a substantial increase in the concentration of the banking industry. For instance, in late 1994 the 10 largest Brazilian banks accounted

[15] According to the *Economist* of March 16th 2002, p.94, the bank lending to GDP ratio in Brazil stood at just 52% compared to 161% in the U.S. and 75% in Chile.

for about 63% of the total assets of the financial system. This rose to 68% in December 1998. In addition, over the course of the late 1990s, several of the largest public sector banks were privatised a process which was invariably proceeded by substantial balance sheet-strengthening Central Bank capital injections. The growing prominence of foreign banks also contributed greatly to the strengthening of the financial system over the period (Baer, 2001 Ch.13). Perhaps the most significant factor of all in explaining why devaluation did not result in a financial crisis was the fact that the devaluation itself was foreseen for so long by so many institutions. As the government struggled to prop up the Real throughout 1997 and 1998 financial market participants took active steps to hedge against devaluation with the result that, when it finally arrived, there were very few casualties.

The impact on growth

What were the positive and negative expectations of the devaluation on growth? On the negative side one could expect the high interest rates which were pursued discouraging investment and the sale of many manufactured goods. In addition, the initial uncertainty surrounding devaluation (in particular its likely extent) would inhibit investment. Moreover, it must be recognised that the period leading up to devaluation was one of GDP contraction rather than upward momentum, a situation in which economic agents might have interpreted devaluation in a more positive light. On the positive side, the devaluation could have stimulated exports and import substitution activities leading to a rise in aggregate demand. In addition, it might be argued, once the perceived overvaluation of the currency had been corrected and a long-term equilibrium was perceived by agents to have been established, the scene would be set for a more stable expectational environment. In these circumstances a

situation conducive to monetary loosening and an upturn in investment would be created.

Table 8
Brazil: Growth Rates

	GDP	Industry	Agriculture	Services
1990		-8.7	-2.8	-1.1
1991	1.10	0.3	1.4	0.3
1992	-0.90	-4.2	4.9	0.3
1993	4.20	7.0	-0.1	1.8
1994	5.70	6.7	5.4	1.8
1995	4.20	1.9	4.1	1.3
1996	2.90	3.3	3.1	2.3
1997	4.22	4.6	-0.8	2.5
1998	-0.12	-1.0	1.9	0.9
1999	0.**81**	-2.5	8.0	2.2
2000	4.3**6**	4.9	3.0	3.7
2001	1.51	-0.58	5.1	2.5

Source: Conjuntura Economica.

As will be seen in Table 8 GDP growth rates which had been negative in 1998 became slightly positive in 1999 and jumped to over 4% in 2000. This acceleration in growth was underpinned mainly by an expansion in agricultural and services output. By contrast, industrial output continued to decline over 1999 but recovered dramatically in the following year, becoming the lead growth sector in 2000. Thus the response of industry to the changing policy environment was more lagged than for the other sectors. The resurgence in economic activity over the course of 1999 and 2000 occurred as a consequence of a number of developments.

In first place, with the strengthening of the *Real* after March 1999 the authorities felt themselves able to embark on a programme of monetary loosening. Between March and August of 1999, the benchmark Selic interest rate fell by more than 20 percentage points to 19.5% p.a. As interest rates fell, so activity picked up in a

number of key industrial sub-sectors[16] while foreign direct investment rose substantially (see Table 4) partially as a result of a number of significant privatisations in the public utilities sector. Table 4 also demonstrates that portfolio investment which was negative in 1998 became positive in the two subsequent years. This reflected renewed confidence by the international investment community in Brazil having successfully resolved its economic adjustments. This is corroborated by the performance of the EMBI risk index (Graph 1) which dipped sharply after February 1999.

The decline of Brazil's growth in 2001 had little to do with any shortcomings in the country's adjustment programme. Rather, the downturn was mainly connected with the global economic slowdown and, in particular investors' worries over the course of events in Argentina. With these issues preoccupying investors, capital inflows slowed resulting in renewed downward pressure on the *Real*. This development in turn forced the authorities to tighten monetary policy over the first half of 2001, contributing to a slowdown in GDP growth. However, with investors once again taking the view that the *Real* had significantly undershot its equilibrium value, pressure against the currency abated during the final quarter of 2001. Against this background the first quarter of 2002 saw the authorities engineering reductions in base interest rates, a development which was likely to have favourable implications for growth. In analysing the slowdown of growth in 2001, it is also important to take into account the effects of the energy crisis. This was due in part to the extended

[16] Production and sales of automobiles declined from 1.2m in 1998 to 1.1m in 1999, rising to 1.4m in 2000 and 1.5m in 2001; rolled steel output stood at 16.4m in 1998, rising to 16.8m in 1999 and 18.2m in 2000; sales of television sets declined from 5.8m in 1998 to 4.0m in 1999, rising to 5.3m in 2000 going back to 4.7m in 2001.

drought in many parts of the country which dramatically decreased the water level of the principal hydro-electric dams (Brazil is 90% reliant on such energy sources)[17].

Conclusions

Although the exchange rate anchor did not figure as a major instrument in the original conception of the *Real* Plan it became an increasingly central component of the stabilisation policy mix from late 1994 onwards. We found that whatever its initial virtues in containing inflation, the authorities overlong adherence to the anchor created more problems than it solved and thus undermined the achievements of the Plan. It was shown that the insistence on an overvalued exchange rate anchor worsened the country's current account balance, forcing the government to raise interest rates to draw in foreign capital to finance the resulting deficit. In raising interest rates further problems were created, most importantly in the public accounts where the rising cost of borrowing pushed up public indebtedness to long-term unsustainable levels. We thus come to the conclusion that an exchange rate anchor should be viewed as a very short term instrument in stabilising an economy which, if maintained too long, can threaten the very process of stabilisation itself.

Next, we demonstrated that following devaluation all the difficulties that were feared to stem from it did not come to pass. In fact, inflationary pressure proved restrained, an Asian type financial meltdown did not transpire, foreign investment picked up while growth, after a lag, became positive again. The obvious conclusion from this episode is that at least in the case of Brazil, the exchange rate anchor did not turn out to be the *sine qua non* of long-term stability. Rather, the genuine long term "anchor of stabilisation" turned out to be a combination of deep-rooted structural and

[17] Some of the blame for the energy crisis was also laid on the substantial lag by the government in investing in new generation and transmission capacity (Baer to fill in details).

institutional reforms[18]. These include fiscal adjustment, the de-indexation of the economy, structural reform of the financial sector and the adoption of a credible inflation-targeting regime. The Brazilian experience would seem to suggest that exchange rate anchors *do* have short-term utility. However, policy makers need to recognise when the costs of maintaining that anchor in place outweigh the benefits. In other words, knowing when to raise the anchor is essential.

Table 9: Indicators of Income Distribution and Poverty: 1977-1999

Year	Gini Coefficient	Theil Index	Gap between the 20% richest and the 20% poorest	Gap between the 40% richest and the 40% poorest	Poor as a percentage of the population*
1977	0.62	0.91	27.5	26.8	39.6 (40.7)
1978	0.60	0.74	31.3	25.0	42.6 (45.2)
1979	0.60	0.74	32.9	25.2	38.8 (42.0)
1980	n.a	n.a.	n.a	n.a.	n.a.
1981	0.59	0.69	24.0	21.8	43.2 (50.7)
1982	0.59	0.71	25.6	23.0	43.2 (52.0)
1983	0.60	0.73	25.7	23.5	51.1 (62.8)
1984	0.59	0.71	23.6	22.4	50.5 (63.6)
1985	0.60	0.76	25.5	23.6	43.6 (56.9)
1986	0.59	0.72	24.0	22.1	28.2 (37.6)
1987	0.60	0.75	27.6	24.4	40.9 (55.4)
1988	0.62	0.78	30.9	27.2	45.3 (62.6)
1989	0.64	0.89	34.3	30.4	42.9 (60.7)
1990	0.62	0.78	31.2	26.9	43.8 (63.2)
1991	n.a	n.a.	n.a.	n.a	n.a.
1992	0.58	0.70	26.7	21.8	40.8 (57.3)
1993	0.60	0.77	28.8	24.5	41.7 (59.4)
1994	n.a.	n.a	n.a.	n.a.	n.a.
1995	0.60	0.73	28.0	24.1	33.9 (50.2)
1996	0.60	0.73	29.8	24.6	33.5 (50.1)
1997	0.60	0.74	29.2	24.5	33.9 (51.5)
1998	0.60	0.74	28.6	24.2	32.8 (50.3)
1999	0.60	0.72	27.2	23.3	34.1 (53.1)

* Figures in parentheses are absolute numbers of poor in millions
Source: Paes de Barros, Enriques, Mendonça (2000) p.24 & p.39

[18] A seemingly unrelated institutional variable is the country's concentrated distribution of income, which has hardly changed over generations (Baer & Coes, 2001). This situation finds and echo in the two years encompassing the devaluation: between 1998 and 1999 the Gini coefficient of income inequality remained completely unchanged (see Table 9).

Bibliography

Amann, Edmund & Baer, Werner (2000) 'The illusion of stability: the Brazilian economy under Cardoso', *World Development*, Vol. 28 No.10 pp.1805-1819

Baer, Werner (2001) *The Brazilian Economy: Growth and Development,* 5th Edition, Wesport CT.: Praeger

Baer, Werner & Coes, Donald V. (2001) 'Privatisation, regulation and income distribution in Brazil', *The Quarterly Review of Economics and Finance*, special issue, Vol. 41, No.5 pages 609-620

Diaz Alejandro, Carlos (1981) comment on Urrutia, M 'The experience with the crawling peg in Colombia' in John Williamson (ed.) *Exchange Rate Rules*, London and Basingstoke: Macmillan pages 221-223

Dornbusch, Rudiger, Goldfajn, Ilan & Valdés, Rodrigo (1995) 'Currency crises and collapses', *Brookings Papers on Economic Activity* 2:1995

EIU (1999) *Brazil Country Report: December*, London: Economist Intelligence Unit

Fischer, Stanley (1985) 'Israel' in John Williamson (ed.) *Inflation and Indexation: Argentina, Brazil and Israel*, Washington D.C.: Institute for International Economics

Franco, Gustavo H. B. (1995) *O Plano Real e Outros Ensaios*, Rio de Janeiro: Francisco Alves

Franco, Gustavo H. B. (1999) *O Desafio Brasileiro*, São Paulo: Editora 34

Frenkel, Jacob A. (1982) 'United States inflation and the Dollar' in *Inflation: Causes and Effects* edited by Robert E. Hall, University of Chicago Press pages 189-209

Giambiagi, F & Averburg, B. (2000) 'The Brazilian Crisis of 1998/1999: Origins and Consequences', paper presented at a workshop on Brazil and South Korea held on the 7/8th December 2000 at the Institute for Latin American Studies, University of London

Velasco, Andrés (2000) 'Exchange rate policies for developing countries: what have we learned? What do we still not know?', *G-24 Discussion Paper Series*, Geneva: UNCTAD