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Inflation and the Development of the Brazilian Financial System

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Introduction

The development of the Brazilian financial system in the past twenty years has paralleled the evolution of the inflationary process in the Brazilian economy. Institutional reforms, interest rates shocks, and major changes in regulations in in the period have been determined by and large by the pattern of policy response to what seemed to policymakers the major forces driving inflation. The rise and fall of institutions, financial instruments as well as the patterns of industrial organization from the sheer size of banks, number of institutions and their degree of concentration have, on the other hand, been found to respond not only to the inflationary environment but also to the corrective policies in different opportunities.

Although it must be acknowledged that the financial system that emerged from the experience of the past years cannot be fully analyzed without reference to other aspects of the economic structure, this paper concentrates in those aspects of the system's evolution that relate to the behaviour of inflation or the anti-inflationary policies with special reference to the experience of the past ten to fifteen years.

Following this introduction the paper is divided into four sections. Section 1 analyzes the major changes in the environment from the financial reforms of 1964/65 to the unstable financial situation of the second half of the seventies. Section 2 presents main data on the evolution of the financial system during the seventies and the limitations this instability posed for monetary policy. On section 3 concentration and growth of the financial institutions under condition of high inflation are analyzed with special reference to the resulting situation at the first half of the present decade. Finally, on section 4 the problems posed by the 1986 monetary reform for the prospects of evolution of the Brazilian financial system are taken up.

1. From financial reform to the return of instability

The diagnosis of the Brazilian economic problems at the beginning of the military regime in 1964 contained in the PAEG

[the plan which defined the economic strategy of the new government] was centered around the following main elements: [i] the chronic public deficit due to the increasing role of the government and to its inability to raise revenue; [ii] the difficulties found in raising 'non-inflationary finance' to match public sector borrowing requirements and [iii] the inconsistencies posed by the limitation that the so called usury law placed on nominal interest and the existence of inflation. The financial reform was then part of the strategy to untie the knots of the vicious circle of inflation-public deficit-money creation-more inflation.

The aims of the reform were thus to redress public sector capability of raising non inflationary finance; neutralize the effects of inflation on financial intermediation and on incentives to postpone the payment of taxes; and to define a specialized financial system directed to efficient intermediation of domestic savings and capable to generate the basis for the the development of a capital market directed towards the provision of long run funds for investment.

The details as well as the outcome of the reform has been the object of several academic works. The interested reader is encouraged to check Simonsen [1969], Sochaczewsky [1980], and Montoro [1982] among others, for thorough analyzes of the experience. Since inflation was substantially reduced, with the

important help of wage controls, from 92% to 25% between 1964 and 1967, the evaluation of the successes and failures of the reform have been concentrated on the advantages and shortcomings of monetary correction as the basis for the working of the new financial system.

The main motivation for the introduction of financial indexation on certain kinds of debts was to attract financial savings back to financial markets which had been upset by the previous inflationary experience. On the other hand, the introduction of indexed government bonds [ORTN's] restored government borrowing as an alternative to money printing as a way to finance public deficits. Finally, monetary correction of passbook savings and mortgages lay the foundations for the financing of housing construction activity.

The system that emerged from the financial reforms of 1964/65 was based on specialized institutions. With the creation of the Central Bank that absorbed most monetary authorities functions of the Banco do Brasil and SUMOC (the former Superintendency on Money and Credit), the regulatory role of the SUMOC council was to be performed by the National Monetary Council and the idea was that Banco do Brasil would gradually be converted into a commercial bank and progressively retreating from its role of financing government spending. Commercial banks would be confined to short term credit operations funded by demand

deposits. Financial companies (the financeiras) would be responsible for consumer credit. Investment banks would be the basic institution in charge of creating a long term capital market issuing time deposits, administering financial packages to fund long term projects and performing underwriting operations. Savings and loans associations and similar institutions operating under the supervision of the National Housing Bank (BNH) should provide mortgage credit and issue indexed passbook savings, the BNH acting as a second line provider of finance for the system by making use of a compulsory savings fund formed by a tax of 8% on the monthly wage bill of every employer designed to finance the worker's temporary unemployment or as retirement complement.

From 1968 to 1972 the Brazilian economy experienced a period of relative tranquility of the so called 'miracle years'. Following the recessive years of the early sixties, and on the track of a strong world recovery amidst the abundant external liquidity, aggregate output grew at a rate above 10% per year whereas the annual rate of inflation was reduced from 25% to 15%. Interest rates were kept low by passive monetary policy whereas financial innovations which followed desrepression guaranteed an increase in real loans to the private sector well above monetary expansion. Financial savings were captured by the financial system thanks to a variety of financial assets to match asset holders' needs. Non monetary financial assets issued by the financial system (in our definition M4-M1) as a percentage of total

financial assets (M4) went from 43% in 1965 to 83% in 1973. This ratio increased by 43.5% between 1970 and 1973 alone. Furthermore, non monetary assets grew at a faster rate than the money supply during the whole period. That meant that development of nonbanking institutions had managed to attract private savings to the formal system without putting pressure on monetization. That defines a totally different picture from the beginning of the period.

By the end of the miracle years the Brazilian experience with financial reform helped to establish the view that monetary correction had provided the basis for the stability of financial intermediation in an inflationary environment.¹ The major shortcoming of the reform seemed by then to be the failure to provide the basis for a market for long term capital since a short-lived boom of the stock market in 1971 exhibited the fragility of the institutions which regulated the issuing of shares and the stock market development was impaired by the memories of widespread speculation.²

The basis for financial indexation was the nominal value of the ORTN which was determined every month by the Minister of Finance. Up to the first half of the seventies, there was no fixed

¹ Cf. on this point, Simonsen [1974].

² Investment banks also failed to provide long term credits. According to Behrens [1978], long term loans represented less than 5% of the total assets of the investment banks in the period 1966-76.

rule connecting the monthly rate of monetary correction to inflation indices, although it followed basically the wholesale price index calculated by the Getulio Vargas Foundation. The behaviour of the rate of inflation up to 1973 helped the building up of confidence in contracting loans and savings based on official indexation, since the monthly rate was increasingly stable and the prospects for twelve months were by and large favourable during most of the period. A system of price controls based on mark-up monitoring for most of the industrial sector and strict control of prices of the basic staple items that determined urban cost of living and wage adjustments, contributed to increase the predictability of inflation thereby reducing uncertainty as to nominal values.

On the demand side, improvements on tax-collecting activities and expansion of the tax base due to economic growth led to a relief of the public deficit as the central government borrowing requirements had been reduced from an estimated 4.3% in 1964 to 1.1% of GDP by 1966, and the space for public sector borrowing had been increased substantially above its needs by the growing demand for indexed government debt by the expanding financial system.

Stability of the rate of inflation seemed to be the key element to the overall equilibrium of the system. In spite of unequivocal signs that productive capacity was under strain in

most industrial sectors, the government tried to keep inflation down to a target of 15% in 1972, while loans to the private sector had grown by 57.5% in the previous year. As external sources of credit found its way into the system, total credit to the private sector increased by 43.2% in 1972 and the money supply pushed by the accumulation of foreign reserves was growing at 30% per year. Price controls were increasingly repressive in the following year a failure to control demand pressures led the target of 12% for the annual rate of inflation to be felt as an artificial political gimmick of a departing government. In March 1974, when the new government took over with a brand new economic team, it decided to put an end to price repression. In the first four months of 1974 wholesale prices increased by almost 4% compared with a monthly average of less than 1.5% in the previous six years.

The Brazilian financial system at the time of the first oil shock was under the effect of several events that would change dramatically the smooth path of the previous years. First, the new government tried to define a policy of hands off before the bankruptcy of the fourth largest commercial bank in the country signalling its commitment with an austere monetary policy. Secondly, as the diagnosis of lax monetary policy as the cause of the upsurge of inflationary pressures was adopted, the financial system would face a period of illiquidity. The discount window was virtually closed and the piling up of foreign reserves of the previous period was reversed due to the rapid increase in the

current account deficit following the sudden growth in expenditures with oil and other intermediate imports. Finally, the new uncertainties concerning the future behaviour of the rate of inflation added steam to the fogged horizons as to the future of the country after the oil shock. The limits to government action towards the combination of risk aversion and higher uncertainties were increasingly narrow: Try a quick reversal of inflation? Show a positive response to the adverse external shock?

The conflicts were clear between short run stabilization efforts which pointed to demand restraint and policies directed towards long run adjustment through higher investment. The conversion of supply in the direction of the production of more tradeable goods both to substitute imports and to increase exports required the willingness of private investors as well as government support.³

With the exception of few incurable pessimists like Albert Fishlow [1974] financial indexation had been hailed as the magic that purged distortions from the financial system in inflationary environments. Its major weakness, as Fishlow properly anticipated, was that overall indexation contributed for the propagation of adverse supply shocks. As the Brazilian experience of the following years would illustrate, financial indexation ended up

³ See Carneiro [1986] for a description of the main consequences of such conflicts during the period 1974/85.

providing the link between by and large self-feeding inflationary dynamics on the supply side and ultimately accomodating demand policies.

The first sign of accomodation was provided by the reversal of the restrictive demand policies at the beginning of 1975. By the end of 1974, the government blamed the loss of the elections for Congress on the restrictive monetary policy which had clearly managed to cool the level of activity in the industrial sector. Besides, the impact of demand restrictions on inflation appeared to be very small as the quarterly rate of price increases had been reduced from 11.8% in the second quarter to 10.4% in the fourth quarter. With the help of the loss in reserves and determination to control the federal expenditures, the annual growth of the real money supply had been decreased from over 30% in the last quarter of 1973 to 1.6% in July 1974 and showed no sign of rebounding by the first quarter of 1975 when it showed a decrease for the first time since 1966. Under pressure to reflate for fear that the signs of international recession might be reflected in the domestic level of investment, the monetary authorities reacted to the decrease by 7.5% in the money supply observed in January 1975 by adopting several measures to increase the liquidity of the financial system and revert the supply of credit: reduction in the required reserves of commercial banks, increase in the ceilings for the Banco do Brasil credit, speeding up of the process of extending credit for government expenditures,

expansionist open market operations and finally by creating a device called 'refinanciamento compensatório' by which free reserves of commercial banks were increased at a 6% nominal interest so as to induce them to supply more credit to the private sector. As inflationary pressures seemed to have been controlled witness the 5.7% accumulated rate of the first quarter of 1975, the path seemed to be open for the redressing of investment policies required by the new development plan then being designed at the ministry of planning.

The behaviour of the economy following the increase in the liquidity of the financial system showed how difficult it may be to turn on and off the taps of monetary policy. Furthermore, it illustrated how hard is the identification of supply and demand phenomena in credit markets based only on actual transactions. As firms' cash balances became idle due to either the postponement of investment decisions or to the availability of cheap credit they were directed towards short term assets. Excess demand for short term assets gave rise to a speculative wave in the financial markets. Monthly inflation rates had increased from a minimum of 1.1% in March to 2.8% in July and this high volatility was transmitted to the rate of monetary correction due to the use of lagged changes in the wholesale price index as the basis for indexing government bonds. Capital gains could be then made by leveraged financial intermediaries holding indexed bonds and offering them to eager private investors with advanced repurchase

agreements based on the markets volatile estimates of the current rate of monetary correction. As monthly inflation rates accelerated and expectations lagged behind enormous profits could be made that encouraged further leveraging. Small broker firms (the so-called 'corretoras' and 'distribuidoras') could then hold indexed bonds up to eighty to a hundred times its capital and make fortunes practically out of nothing. As the speculative wave proceeded and could only succeed with increasing inflation, the government began to realize that, by pumping more liquidity, it was not reactivating the economy but only fueling speculation. When it decided that supply shocks or 'accidents' should not be transferred into monetary correction indices and reverted the sign of monetary expansion in order to curb the acceleration of inflation, the system started to disrupt as a castle of cards. At first the government underestimated the strength of linkages between the small daredevils of the market and the remainder of the system and decided not to help the bankrupt firms, but soon it became clear that the pattern of interfirm credits would provoke a major financial crisis and decided to rescue the system. By the end of 1975 the costs of the experiment were clear as the money base increased by 9.1% in November and by 13.7% in December, a compound rate of more than twice the one observed in the same period in the previous two years.

A few lessons could be drawn from this experiment which are relevant to understand the developments of the financial

system for the remainder of the decade and beyond. The first one, of course relates to the difficulties posed by the indexation mechanisms in the financial system when the rate of inflation is subject to shocks. The space that exists for 'managing' the rate of monetary correction in order to prevent the instability of the rate of inflation to be transmitted into the system of financial indexation without jeopardizing the savers' confidence in the system is very narrow. The second one is that the system that emerged from the financial reforms of the mid-sixties was much less segmented into separate markets than the formal institutions might lead one to believe. The importance of the financial groups headed by a commercial bank had to be recognized as larger banks were called to absorb insolvent smaller financial firms and in the process be granted special credit facilities so as to prevent confidence crises to develop from seemingly 'localized bankruptcies'. The third one is that simple management of monetary aggregates would have to be carefully monitored in the future if the financial system were to be preserved in its role of capturing private savings for the financing of the government investment programme. No hope for the development of a long term capital market existed in the foreseeable future, with higher and less predictable rates of inflation vis-a-vis the adjustments that would have to be made in the economy in order to make foreign indebtedness a viable strategy for future growth.

Finally, the outcome of the speculative wave of 1975 indicated that the uncertainty of the following years would give rise to a pattern of demand for financial assets that would pose new problems to monetary and credit policies in the Brazilian economy. These new problems were caused by a high demand for liquid assets which underlined the times of great uncertainty due to the growth-cum-external debt strategy. That this demand for liquidity could not be satisfied by money alone was clear because of the level of inflation. Therefore, near monies like indexed public debt were to be provided by the system in order to satisfy asset holders preferences if a run into foreign assets was to be avoided.

The pattern of intermediation that emerged from the crisis derived from a combination of asset holders' preference for short run liquid assets and the needs to provide funds for the priority projects associated with the strategy of long run adjustment of the II National Development Plan (II PND).⁴ Since, as argued above, there were no private domestic sources for long term financing of the new batch of investment projects, and foreign finance was to be provided basically from private international bankers, the financial system would have to be mobilized to internalize such funds in the form of money loans. This explains

⁴ For a description of the long run strategy for adjustment adopted by the Brazilian government after the first oil shock see Carneiro [1986].

the growing importance of foreign sources as a proportion of total liabilities of the Brazilian financial system in the seventies. On the other hand, although the introduction of indexed government bonds had appeared as a major achievement of the financial reforms, signalling that public debt could be used as long term assets, the uncertainty as to the rate of monetary correction due to the instability of both inflation and to the rules applied to monetary correction led to proliferation of the daily repurchase agreements as the major way by which asset holders held such assets in their portfolios. In other words, two to five year bonds were in fact held not by the public but by the financial intermediaries who had to refinance them as demand deposits yielding the so-called overnight rate, the basic cost of banks reserves.

The overnight interest rate became thus the instrument 'par excellence' of monetary policy, and the base for the determination of lending rates throughout the economy. The inherent fragility of the financial system which had been underlined by the 1975 crisis did not encourage attempts at drastic increases in the rate of interest and therefore for most of the remainder of the period attention was directed towards the expansion of credit aggregates.⁵

⁵ Control of credit aggregates took various forms in the period, ranging from restrictions on the growth of Banco do Brasil lending to the private sector to episodic changes in the regulation of consumer's credit. Real growth of Banco do Brasil loans declined from 28% in 1975 to 10% in 1976, to 7.2% in 1977 and became negative from then onwards. Coates [1985] studies the instruments and effects of consumer credit policy in the period and Carneiro and Fraga [1984] analyze the instruments of monetary policy in Brazil in the seventies and provide further references.

Commercial lending rates were liberalized in the last quarter of 1976 interrupting a long tradition of ceilings in interest rates charged by banks which have characterized the banking policy in Brazil even after the financial reforms. The real growth of total loans to the private sector proceeded, however, above the expansion of conventional monetary aggregates, indicating that the financial system still found ways to generate liquidity through a complex net of interfirm deposits and credits that somehow escaped the control of the monetary authority when it tried to apply the conventional instruments of regulating compulsory reserves. Attempts at controlling the monetary base by means other than ceilings on the expansion of Banco do Brasil assets usually led to disturbances on the financial system that ended up in rescue operations more or less disguised in 'administered mergers' backed by Central Bank special credit lines. 6

The rate of inflation remained in the 40% annual plateau from the time of the first oil shock in 1974 to the beginning of 1979. The record of the financial system in the period suggests that it could not perform its role in late seventies as it had in the pre-1974 era. The new problems of intermediation centered around two basic issues: uncertain inflation and narrow limits for

6 More on this point in section 2 below.

steady growth as it was dependent on doubtful extension of external funds by the the private international bankers. The limits for external indebtedness were unclear as they seemed to depend ultimately on the possibilities of recycling of petrodollars and the Brazilian government chose to follow a route of long run structural adjustment which turned out to depend on a long debt cycle.

New problems for financial intermediation were caused by the increase in both lenders' and borrowers' risk. High and uncertain inflation rates played a part in both risks. High lenders' risk meant that financial assets ended up being near monies, the liquidity of which had to be backed by the State. As a consequence, the State became the ultimate debtor both by issuing public debt and by guaranteeing a large portion of the private indexed assets, like passbook savings. High borrowers' risk under high inflation relates to the dangers of financial fragility associated with borrowing long term at uncertain nominal rates.⁷ Borrowers in such situations tend to require a type of insurance against the risk of bankruptcy that only the government can provide in the form of ceilings on the rate of monetary correction. In order to attract investors to borrow long term from

⁷ On the effects of inflation on financial fragility in Minsky's sense, see Dreizzen [1985]. The author shows how uncertain debt service may convert a hedged scheme into a speculative one based on departures of nominal revenues from 'average' price level behaviour that is the basis for financial indexation.

the National Development Bank so that priority projects would be actually carried on, the Brazilian government set a ceiling of 21% on the rate of monetary correction applied to such loans. That meant of course granting subsidies every time the rate of inflation went above the ceiling. The net result was again that the role of the state in financial intermediation was enhanced, and that public debt was a way through which savings were channelled to priority investment.

2. The financial system in the seventies

The first feature that resulted from the financial reform of the mid-sixties was the rise of an important set of non-monetary credit institutions, that is institutions whose liabilities are not means of payment. The total assets of such institutions grew by 170% in real terms between 1973 and 1978 alone, that is, 22% per year.

The growth of non-monetary intermediaries may be seen as the other side of the coin of the substitution of non-monetary for monetary assets in the private sector portfolio as illustrated by figures 1 and 2. Figure 1 shows the behaviour of average stocks of currency held by the public, means of payments (M1) and three

other monetary aggregates (labelled M2 to M4) from 1970 to 1985 as a fraction of nominal GDP.⁸ From the beginning of the seventies up to the first oil shock the ratio M1/GDP remained stable around 15%, whereas the other aggregates increased relatively to income following the path defined by financial innovations after the reform. After 1974/75, with the increase in the inflation plateau to the 40% range, both M1 and M2 ratios decrease steadily for the remainder of the decade. In 1980 M1/GDP had declined to less than 8% and M2/GDP decreased from around 20% to 12%. M3/GDP, after having increased from 18.1 to 22.6% up to 1973, remained practically stable until 1979. Contraction in 1980 reflects the pre-fixing of monetary correction that year and a slight recovery is observed in the first half of the eighties. Figure 2 shows the behaviour of the same aggregates as a proportion of M4, illustrating the composition of financial portfolios of the private sector after 1977.

The increasing share of nonmonetary institutions in the total credit supply in the seventies illustrate that the financial reforms managed to convert a system based essentially on commercial banks into a variety of specialized institutions.

⁸ M2 is defined as M1 plus time deposits, M3 as M2 plus passbook savings deposits and M4 as M3 plus federal bonds outstanding.

One important question to ask is to what extent this change in the provision of credit from the part of the financial system has resulted in increase of net borrowing from the part of non financial institutions. Unless we are able to say something on this we might be led to conclude that this increase in financial intermediation meant simply more efficiency in the use of savings by the net debtors in the economy thanks to the disrepressing of the system. In view of the events reported in section 1 above, we are entitled to question this view.

In order to answer this question we must have some idea of the interdependence of the several types of financial institutions. Aggregate balance sheet data were selected for each type of institution namely: Monetary Authorities (Central Bank and Banco do Brasil), Commercial Banks, Investment Banks and Financial Companies, the Housing Financial System and The Development Banks Systems (including the National Development Bank and its subsidiaries and the state-owned development banks). From balance sheet data we singled out deposits and other forms of debt which might evidence the nature of interdependence among the different types of institutions, since the consolidation of balance sheets for each group cleared the debt within the group.

Using the annual aggregate balance sheets for each group of institutions we may thus have estimates of the internal provision of credit for use of the financial system itself, that

is, the portion of total assets accumulation by the financial institutions that do not correspond to increase in debt by the non-financial part of the economy. We found that in the two years before 1974, around 16.7% of total asset expansion by the financial system as a whole corresponded to internal lending and that this fraction increased to an average of 25% from 1974 to 1977. The corresponding figures for the non-monetary system are 23.5% and 30.6% respectively. These figures illustrate the internal needs of finance that characterized the unstable environment of the second half of the seventies and finally brought the credit expansion above the growth of monetary liabilities to a halt.

For the system as a whole, the trends observed on the internal financial needs illustrate the difficulties for the definition of the appropriate tools of monetary policy during the period. The existence of a large segment of non-banking institutions by and large outside the control of the Central Bank usually tend to make the growth of financial assets harder to control by instruments of banking policy alone, but the peculiarities of the Brazilian situation aggravated the problem. As an example, it may be remembered that since the Banco do Brasil loans to the private sector were an important tool for control of the monetary base, they were subjected to increasing restrictions after 1975, but these are not reflected in the aggregate of asset expansion of the monetary authorities as a whole, due to the

growth of 'financial assistance' from the Central Bank to financial institutions in the period. In 1974, around 52% of the total accumulation of assets of the monetary authorities corresponded to debts of the financial system as compared to around 10% to 15% in the previous years. From 1974 to 1977 these figures were at unusually high levels of 41% in 1975, 26% in 1976 and 39% in 1977, declining to 2 to 8% at the end of the decade.

The growth of total real loans to the private sector proceeded for the decade at an annual rate of 19%, which means that total private debt with the financial system grew by almost six times in the period. After 1976, however, concern of monetary policy with credit aggregates, liberalization of lending rates and a possible exhaustion of the possibilities of expansion of nonmonetary institutions without further growth of monetary liabilities, led to a deceleration of growth in the total provision of credit. Between 1970 and 1977, the average rate of growth of real loans was 22.7%, while from 1977 to the remainder of the decade the same aggregate grew by 5.7% per year. As a result of this process, total private debt with the financial system remained practically constant as a proportion of GDP from 1976 to the end of the decade, and began to decline in the beginning of the eighties.

Graphs 3a to 4c show the quarterly behaviour of selected interest rates, in nominal and real terms respectively, after

1977. Up to the end of the decade, nominal rates were kept constant around 10% for federal bonds except during a short-lived attempt at monetary control in the beginning of the Figueiredo government in 1979. Rates charged by commercial and investment banks reflected this stability of the basic rates in sharp contrast with the experience after the attempts at active monetary policy after 1980 as will be briefly analyzed in the following section.

3. The evolution of the financial sector in the eighties

The end of the seventies and beginning of the eighties brought about important changes to the Brazilian economy. On the external front the economy was hit by the second oil shock, which led, contrary to what happened after the first one, to a substantial deterioration in the terms of trade. Besides, the Federal Reserve Board in the U.S. at the same time abandoned its policy of interest rate pegging in favor of having targets for the rate of expansion of the money supply. This change in the course of the monetary policy had an immediate upward impact on interest rates and hence was like another supply shock to the economy, as Brazil had been borrowing abroad extensively during the seventies.

On the internal front, Brazil under President Figueiredo was initiating its transition process towards democracy. With a less repressive regime, strikes for better wages started to sprout everywhere in the industrial sector, and the movement was seen by the government as a threat to the stability of the process of return to democracy. A change in the law that presided over wage indexation reducing the interval between adjustments was then seen as a way to appease labour union activity.

By the end of the first six months of the Figueiredo administration the Minister of Planning Mario Simonsen, after suffering harsh criticism from government supporters in Congress, resigned and was replaced by the Minister of Agriculture; Delfim Netto. Delfim, who was considered by many entrepreneurs as the father of the "Brazilian economic miracle", promised in his inaugural address to rule out recession as a solution to the problems facing the economy and to fight inflation by stimulating economic growth. He immediately cut nominal interest rates in 10 percentage points and reinforced his previous policies to promote a favourable supply shock from the agricultural sector.

The rise in interest rates in the Eurodollar market and the doubling in the price of oil were two strong forces pushing towards a deficit in the Balance of Payments. In an attempt to avoid the deterioration of the external conditions, the crawling peg regime was abandoned for the first time since its adoption in

1968 and the exchange rate was devalued by 22% in December of 1979. One month before, the law governing all wage readjustments had been changed. Automatic and full wage indexation according to past inflation was given and the time interval between two wage adjustments was reduced from 12 to 6 months.

Following the devaluation Delfim Netto tried to neutralize inflationary expectations announcing that monetary correction and exchange rate devaluation would be restricted to 40% and 45% respectively along 1980. Needless to say these measures failed to have any significant impact on prices. The annualized rate of 100% observed in the second half of 1979 became the new plateau for the following years. By the end of 1980 the effects of devaluation had disappeared. The real exchange rate ended up appreciating in that year.

Along 1980, international reserves held by the Central Bank suffered a loss of more than US\$ 3 billion. Trying to put a hold on that, the government reversed its previous policy of controlling interest rates. All existent controls on interest were abolished for the first time since the thirties and the Central Bank started pursuing a very restrictive monetary policy with the explicit purpose of raising the domestic cost of borrowing. The effects can be easily seen in Graph 3.a. The objective behind this move was to induce firms to borrow abroad in an attempt to improve the Balance of Payments.

The result of this policy on the financial sector again was to induce a process of concentration through the merger of a number of institutions. Between 1979 and 1982 the number of broker firms (corretoras and distribudoras) was reduced from 733 to 689. These figures certainly underestimate the impact of the restrictive policies on the financial sector.

The jump of the inflation rate to a new plateau after the second oil shock and the change in the wage readjustment law had an important impact on financial activities in Brazil. To have a picture of the evolution of the size of the financial sector in Brazil in the period we present in Table 2 data on the number of financial intermediaries (including both headquarters and branch offices), on the rate of inflation, and on real per capita income for selected years during the seventies and beginning of the eighties. We also provide separate information on the number of commercial banks.

The data in Table 2 in the Appendix evidence the existence of a positive correlation between inflation and the size of the financial sector. In the first half of the seventies the number of financial intermediaries increased in parallel to real per capita income. At the beginning of the eighties, with the jump of the inflation rate to a new plateau above three digits, the number of financial intermediaries started increasing very rapidly. From

1979 to 1983 it went up by almost 35%, while real per capita income declined by almost 7%.⁹

The increase in the number of persons employed in the financial sector is even more impressive than the data on the number of branches or the rates of growth for the financial sector. It gives us a better picture of the impact of the inflation acceleration on the size of the financial sector. In Table 3 we show the number of employees at commercial banks in the period 1979-1984. From this table we can see that employment at both private domestic and public banks increased at an astonishing rate in that period. Indeed, in a five years period employment at commercial banks went up by almost 60% while real per capita income was falling.

It is important to mention that the dramatic increase in banking activities was not caused by the entrance of new institutions into the market but by the expansion of the established ones. While the number of bank's headquarters remained practically unchanged during the 1979-85 period, the number of employees at the largest private domestic bank (Bradesco) between 1981 and 1984 increased by more than 50%.

⁹ It is important to point out that this expansion of the financial sector was not followed by a significant increase in the amount outstanding loans to the public.

Another important point that we can observe from Table 2 is that employment at foreign-owned banks, contrary to what happened to the private domestic and public ones, remained nearly constant from 1979 to 1984. This reflects the existence of a legal limitation on the number of branches a foreign-owned bank could have in the country.

Finally, it is interesting to note that the recent experience of Argentina also shows in a clear way the existence of a positive correlation between inflation and the size of the financial sector. Table 4 presents data on the number of commercial banks (headquarters plus branch offices) in Argentina in the period 1979/85.

With respect to the expansion of banking activities in Argentina in the last years, the data presented in Table 3 suggests that the period 1979-85 should be divided in two. In the first period, i.e. between 1979 and 1981, the number of commercial banks remained practically unchanged. In the second one, although the economy had plunged into a deep recession, banking activities boomed; the number of banking institutions increased by almost 25% between 1981 and 1985. It is certainly not a coincidence the fact that from 1979 to 1981 inflation was declining under the "tablita", and that afterwards, with the complete failure of the Martinez de Hoz experiment, the economy was moving towards hyperinflation.

The existence of the mentioned positive correlation between inflation and the size of the financial sector has been observed by a number of authors. Keynes in his "A Tract on Monetary Reform" compared exchange-houses in Vienna during the Austrian hyperinflation of the twenties to mushrooms appearing everywhere. Bresciani-Turroni [1937] in his classic study on the German hyperinflation mentions the "hypertrophy of the banking system" brought about by the accelerating inflation. According to him "the increase in banking business was not the consequence of a more intense economic activity. The work was increased because the banks were overloaded with orders for buying and selling shares and foreign exchange, proceeding from the public which, in increasing numbers, took part in speculation on the Bourse."¹⁰ With the increasing "flight" from domestic currency, financial institutions were able to charge a higher bid-ask spread.¹¹ Thus, the lure of higher profits in an industry with few restrictions to entry and/or expansion lead to the swelling of the financial sector.

The case of an hyperinflation is an extreme one. However, under more moderate inflationary situations several authors have also pointed out to the existence of the mentioned positive

¹⁰ Bresciani-Turroni [1937], p. 216.

¹¹ See Dornbusch and Pechman [1985] for an explanation of this point.

correlation between inflation and the size of the financial sector. Daly [1967], for instance, analysing the evolution of the financial sector in Uruguay in the post World War II period showed that the rise of the inflation to a higher plateau at the beginning of the fifties led to a dramatic expansion of banking activities.¹² He mentions that the expansion of the financial sector was due to the existence of a number of regulations on interest rates payments on deposits. The increase in the number of banks, Daly noted, "represent[ed] a process of non-price competition (providing convenience through many locations) for the available savings."¹³

The explanation advanced by Daly to the increase of the Uruguayan financial sector as a process of non-price competition seems very appropriate to explain the recent and earlier reported swelling of financial intermediation in Brazil. The fight for collecting inflation tax, in an environment marked by the existence of a great number of regulations on interest rates, may also have led to competition through non-price mechanisms. Having this in mind, Bodin de Moraes [1986] developed a version of Salop's monopolistic competition model to analyze the mechanisms

¹² The average annual inflation (CPI) in Uruguay went up from 7% in the period 1940-54 to 24 percent in the period 1955-64. The impact of this on the financial sector was almost immediately felt. Between 1958 to 1964, while per capita income was declining slowly, the number of banks (including branches) rose from 433 to 704.

¹³ See Daly [1967], p. 93.

leading to the expansion of the financial sector in response to a rise in inflation.¹⁴ The most interesting feature of this model is that it allows us to stress the fact that the main difference for a consumer between two (or more) financial institutions is the relative distance. Hence, the existence of "shoe-leather" costs and the prohibition to pay competitive interest rates on deposits will make financial institutions to compete basically through location.

4. The financial sector after the Cruzado Plan.

The importance of inflation for the evolution of the Brazilian financial system in the past fifteen years is hard to overemphasize in view of the previous sections. A long story of reforms, regulations and adaptation of the financial institutions to high inflation made the financial system a part of the mechanism of transmission of inflationary pressures.

A sketch of this mechanism would be as follows:
generalized indexation made the inertial component the most important element for the determination of inflation, that is the

¹⁴ See Salop [1979].

minimum value of the present rate was determined by the past rate to which supply or demand shocks would be added. Whenever a new shock such as a devaluation or a crop failure signalled an acceleration of price increases real liquidity decreased and rates of interest tended to rise as banks fought for scarce reserves. If the Central Bank refused to accommodate, illiquidity of the marginal firms appeared in the form of higher bids for reserves and thus more pressure for 'financial assistance' was put on the Central Bank. Rescue operations ended up increasing liquidity of the system and thus sanctioned the higher rate.

With a long tradition of inflation, financial savings tended to be channelled to short run assets with a continuous process of recontracting of rates. Therefore, a large portion of human and technical resources in the economy, both within the financial system and in the productive sectors alike were devoted to forecasting inflation and monitoring yields in the financial markets. When on February 1986 the government decided to promote a monetary reform devised to bring inflation to a sudden stop, based on the end of short run indexation, one immediate concern was with what would happen with the financial system. In other words, how hard would be the adjustment of the existing system to low inflation rates.

Immediately after the announcement of the Cruzado plan the government set a zero target for inflation in an effort to

effectively erase inflationary expectations from the memory of economic agents. In addition to the possible loss of inflation tax revenue by the banking system, two phenomena were crucial for the future development of the financial sector at that junction: high uncertainty as to the rules since the programme meant a discontinuity of policy and was accompanied by news that a major financial reform was being considered by the government; strong shifts on the portfolios with higher demand for money to replace interest bearing near monies. For the financial system as a whole, this meant that the market for banking activities would be shrinking.

This state of affairs was expected to generate: [a] bankruptcies of the marginal firms in the financial sector; [b] redressing of bank operations including the introduction of fees for banking services that were implicitly charged on the holding of idle deposits; [c] major adjustments of surviving firms including decrease in employment and number of branches.

The speed and the costs of the adjustments would depend of course on the kind of monetary policy that would be followed by the Central Bank after March. With lower inflation, a higher stock of money was desired by economic agents but it is hard to say how much higher. In such situations if the Central Bank follows restrictive policy or underestimates the rise in the demand for money, interests rates will rise and banks will loose more both by

smaller deposits and by higher costs of bank reserves. Otherwise, if the Central Bank accomodates too much or overestimates the demand for money, there is a risk of pumping excess demand into the system.

A crucial aspect of the cruzado plan to bear in mind was its announcement as a nonrecessive alternative to end inflation. Although the government could count on full support of the population immediately after the progamme was launched most of the opposition concentrated on the possible recessive effects of the price freeze. Thus, the government chose to immediately reduce the nominal interest rate with three things in mind: [i] to underline the possibilities of downward corrections of nominal prices in view of declining financial costs; [ii] to reinforce expectations of zero inflation, so that agents could take nominal rates as the probable real rates of interest; [iii] to stimulate economic activity for fear that high uncertainty brought about by the drastic change of rules might exert a contractionary effect on investment. Therefore, it is easy to understand that the bias of post-cruzado monetary policy would be towards excessive monetization.

By now there is ample agreement on the fact that the monetary policy pursued by the Central Bank in the first months of the Cruzado Plan was too expansionist. This can be easily observed from Tables 5 and 6. In the first table we provide data on the

evolution of selected monetary aggregates in the first six months of the current year. From it we can see that nominal money stock (M1) increased by almost 200% between the adoption of the plan at the end of February and the end of July. This is not enough for us to say that monetary policy was too expansionist as it may simply be the reflex of the sharp rise in the demand for money induced by the reduction in the opportunity cost of holding cash and demand deposits. However, what may lead us to pin down the occurrence of an excessive monetization of the economy is the evolution of a broader monetary aggregate, such as M4. Price stability should only lead to a reshuffling in the portfolio of agents in the economy, with indexed assets being substituted for nominal ones. The data in Table 5 shows that M4 did not remain constant, increasing by 22.5% between February and July.¹⁵

Another sign of excessive monetization of the economy is given by the ex-post real interest rates and the spread between the value of the U.S. dollar in the parallel and in the official markets after February. In Table 6 we show the evolution of the ex-post real rate of return for selected assets. We can see that both the ex-post net real return on very short-term applications (overnight) and on Certificates of Deposits (C.Ds) remained either

¹⁵ It should be noted that between the end of February and the end of March alone, M4 increased by 17.8%. Part of this increase, however, had nothing to do with excessive monetization but was due to the fact that a fraction of the stock of indexed deposits had readjustment dates between the last day of February and the last day of March.

at a very low level or negative. Besides, while the exchange rate with respect to the dollar was kept constant, the rate of devaluation in the parallel market remained highly positive. At the end of August this spread, which was around 25% when the Cruzado plan was initiated, had climbed to 70%.

The Cruzado plan with its target of bringing the economy to zero inflation led to a substantial reduction in the expected profitability of financial institutions. The stock market value of the major banks plunged soon after the stabilization plan was announced. Although there is no detailed information on employment in the financial sector as yet, there are several indications that banks as well as other financial institutions started the process of adjustment to the new environment. Employment in the sector was reduced, mainly through not hiring new persons to occupy vacant positions. Unofficial estimates point to a fall of around 40,000 jobs in the sector as of September 1986. On the revenue side, the Central Bank allowed and the banks immediately began charging for a number of services that were provided earlier at no explicit cost to customers. It should be noted that six months after the reform no major crisis has occurred and expected profitability for banks in the current year led to a strong recovery in the price of shares of major banks in the stock market. This would mean that either banks adjusted surprisingly fast to the new situation or that the Central Bank acted in a less restrictive way than originally expected.

It is too soon to evaluate the full consequences of the 1986 monetary reform for the financial system, because the results of the programme are themselves still uncertain and at least banks have been less affected thus far than it was expected at the launching of the Plan. It may well be that excessive worry not to hurt the financial sector in the first months of the Brazilian experiment is at the root of the present difficulties to define the appropriate monetary policy consistent with the objective of achieving a new low inflation equilibrium.

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TABLE 1

BRAZIL: SOME MACROECONOMIC DATA

YEARS	GDP (1)	INDUSTRIAL OUTPUT (1)	INFLATION (2)	REAL WAGES (3)	MONETARY BASE	EXPORTS (4)	IMPORTS (4)	TERMS OF TRADE TOTAL N-OIL (77=100)		PSBR/GDP (5)
1971	12.0	-	19.8	63.6	5.6	2.9	3.2	82	65	1.5
1972	11.1	14.0	15.5	68.1	10.3	3.9	4.2	87	72	5.7
1973	13.6	16.6	15.7	73.3	16.7	6.2	6.2	95	82	3.0
1974	9.7	7.8	34.5	74.3	9.4	7.9	12.6	78	78	0.8
1975	5.4	2.1	29.2	82.1	-3.9	8.7	12.2	76	76	1.6
1976	9.7	11.9	46.4	84.7	2.6	10.1	12.4	85	85	2.0
1977	5.7	2.2	38.7	89.3	13.0	12.1	12.0	100	100	4.0
1978	5.0	6.1	40.9	96.7	5.2	12.7	13.7	86	84	2.9
1979	6.4	6.9	77.2	100.0	2.9	15.2	18.1	79	81	2.9
1980	7.2	9.2	110.2	96.0	-15.0	20.1	22.9	65	78	1.8
1981	-1.6	-10.2	95.2	100.1	-22.9	23.3	22.1	55	71	3.1
1982	0.9	-0.2	99.7	109.9	-5.4	20.4	19.6	54	69	2.9
1983	-3.2	-5.5	211.0	94.5	-23.0	21.9	15.4	53	64	0.1
1984	4.5	7.0	223.8	87.3	-20.4	27.0	13.9	58	71	2.2
1985	8.3 (6)	7.0	235.1	85.3	2.1	25.6	13.2	55	69	-

(1) REAL RATES OF GROWTH

(2) DECEMBER TO DECEMBER

(3) INDUSTRY ONLY, DEFLATED BY THE GENERAL PRICES INDEX (IGP) 1979=100

(4) US\$ BILLIONS

(5) ADJUSTED FOR INFLATION. AUTHOR'S ESTIMATES. FOR DETAILS SEE CARNEIRO (1986 B)

(6) PRELIMINARY

SOURCES OF RAW DATA: BOLETIM DO BANCO CENTRAL (SEVERAL ISSUES)

NATIONAL ACCOUNT TABLES (FGV)

INTERNATIONAL FINANCIAL STATISTICS (SEVERAL ISSUES)

CONJUNTURA ECONOMICA (SEVERAL ISSUES)

FIBGE-INDICADORES DA INDUSTRIA

Table 2

Number of Financial Intermediaries, Inflation and Real
Per Capita Income

Year	Financial Institutions		Inflation	Per Capita Income (1975=100)
	Total	Commercial Banks		
1971	13,378	8,012	19.8	82.1
1975	14,330	8,650	29.2	100.0
1979	17,151	10,789	77.2	117.6
1983	23,097	14,549	211.0	109.9
1985	24,425	15,529	235.1	118.5

Obs: Inflation is the December 12 month rate of change of the
General Price Index

source: Relatorio do Banco Central do Brasil, various issues

Table 3

Number of Employees at Commercial Banks: 1979/84

Year	Private Domestic		Private Foreign	State & Federal	
	Total	Bradesco		Total	B. Brasil
1979	269,618		11,872	174,479	
1980	282,668		11,880	186,278	
1981	306,970	83,719	11,806	203,798	83,719
1982	339,987		12,173	232,729	
1983	384,956		12,197	232,245	
1984	426,620	125,984	12,177	n.a.	115,618

Source: Conjuntura Economica, Feb. 1986, and The Banker, Jun.
1982, and Jun. 1985.

Table 4
 Argentina 1979/85
 Number of Commercial Banks and Inflation

Year	Commercial Banks		Inflation
	Total	Private	
1979	3,921	1,975	159.5
1980	3,921	1,935	100.8
1981	3,986	1,842	104.5
1982	4,154	2,002	164.8
1983 (Mar.)	4,539	2,280	343.8
1984 (Oct.)	4,596	2,423	626.7
1985	4,956	2,938	779.9

Obs: Number of headquarters and branch offices as in December of each year, except when indicated. Inflation is the annual average rate of growth of the Cost of Living Index.

Source: Banco Central de la Republica Argentina and Indicadores de Conjuntura.

Table 5
 Selected Monetary Aggregates
 (CrZ billion)

Month	Base Money	M1	M4
Jan.	45.9	94.1	893.7
Feb.	51.5	107.4	927.9
Mar.	70.0	199.8	1093.8
Apr.	94.8	237.8	1103.0
May	109.0	273.6	1108.7
Jun.	120.6	319.9	1133.9
Jul.	137.6	318.8	1137.1

Source: Conjuntura, vol. 40, n. 9 p. 28.

Table 6

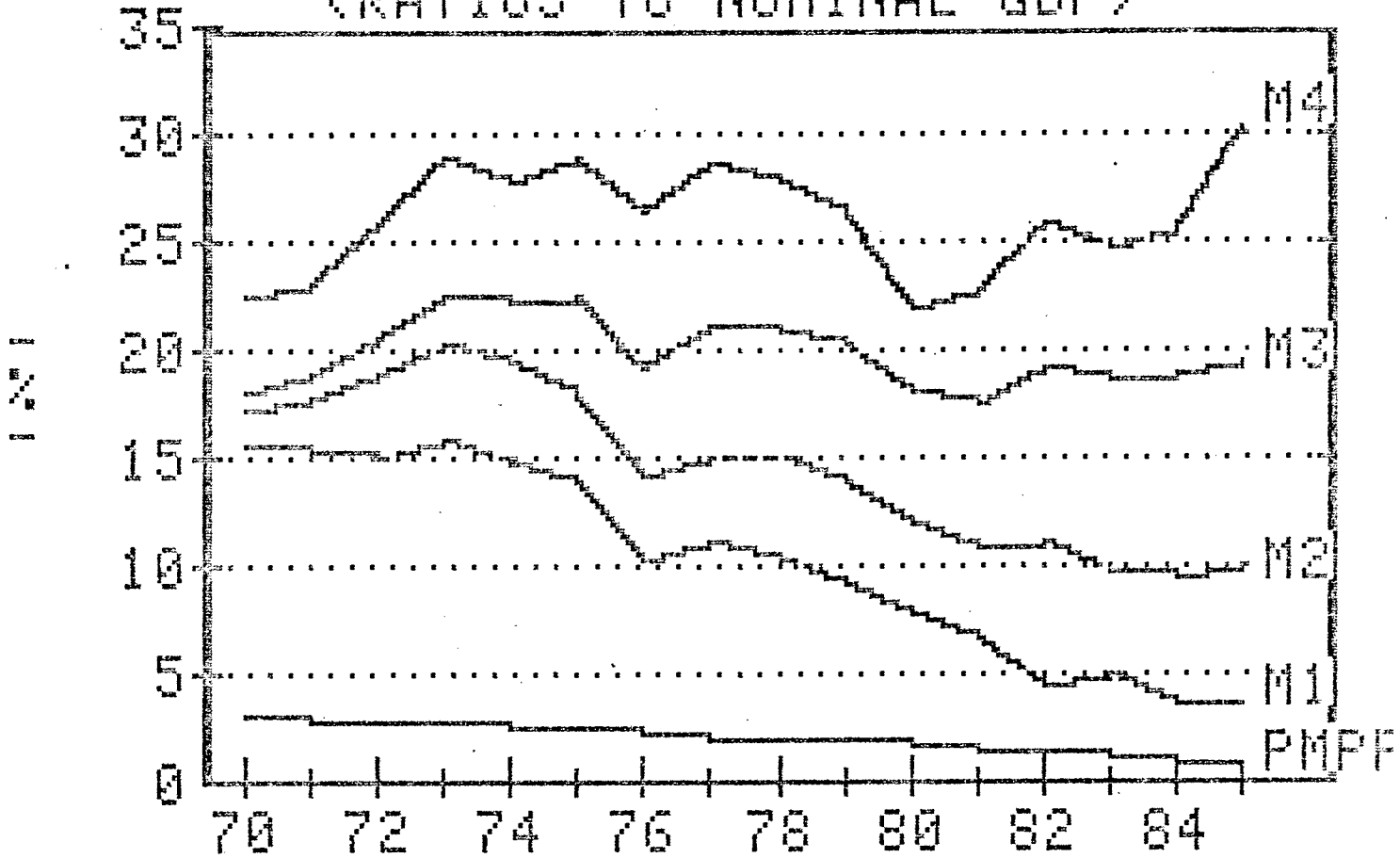
Ex-Post Monthly Real Rates of Return for Selected Assets
Jan./Aug. 1986, Percentage Points

Month	Overnight (Net Rate)	C. D.	U.S dollar (parallel mkt.)
Jan.	-1.30	0.92	-10.80
Feb.	-1.63	0.95	5.92
Mar.	0.75	1.13	-8.40
Apr.	-0.03	1.07	14.54
May	-0.72	-0.19	1.57
Jun.	-0.48	-0.04	-0.30
Jul.	-0.10	0.29	13.48
Aug.	-0.14	0.68	-5.74

Obs. Nominal Rates were deflated by the Consumer Price Index (IPC), calculated by the I.B.G.E.

Source: Boletim Macrometrica.

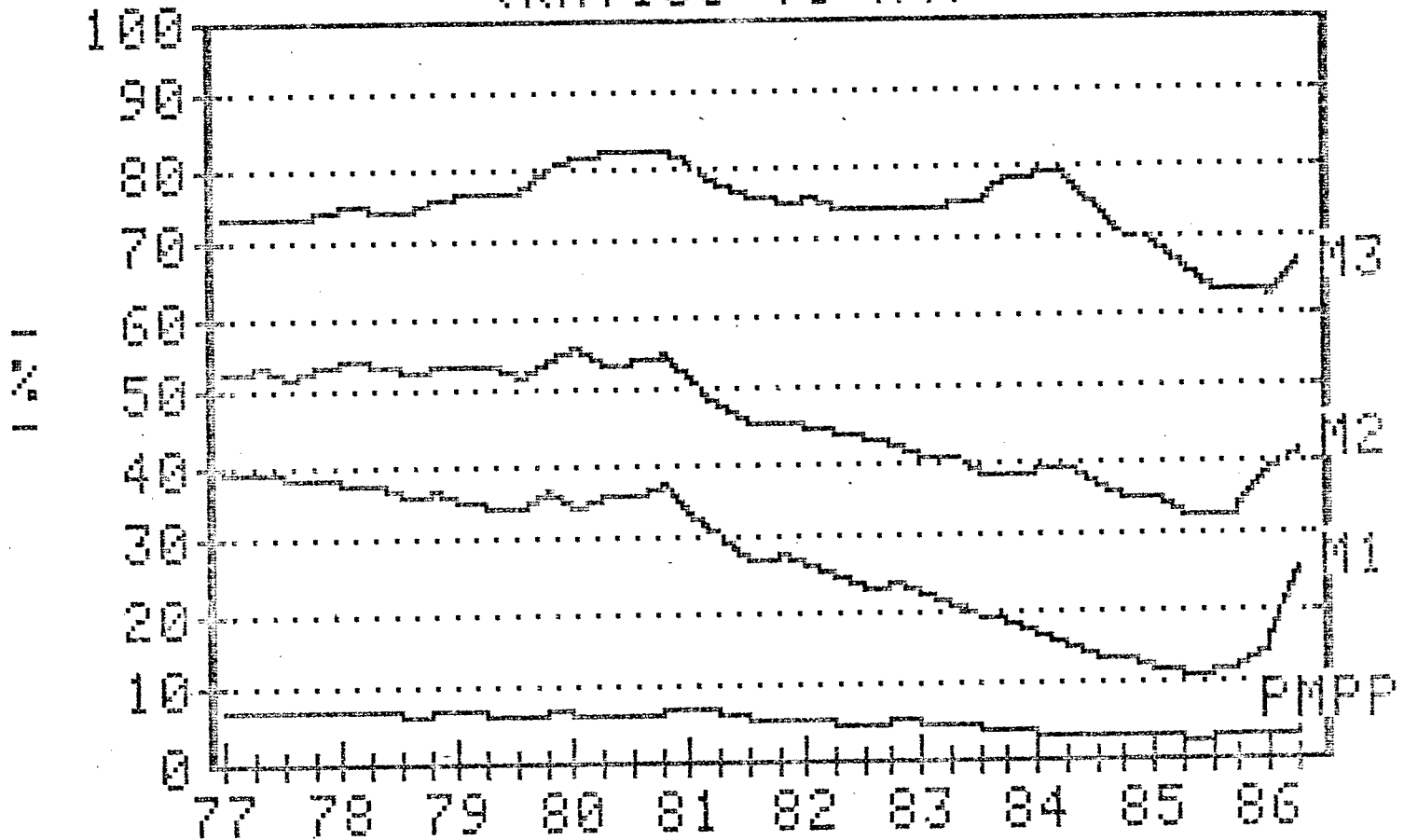
MONETARY AGGREGATES (RATIOS TO NOMINAL GDP)



SOURCE OF RAW DATA: CENT. BANK-BOLETIM

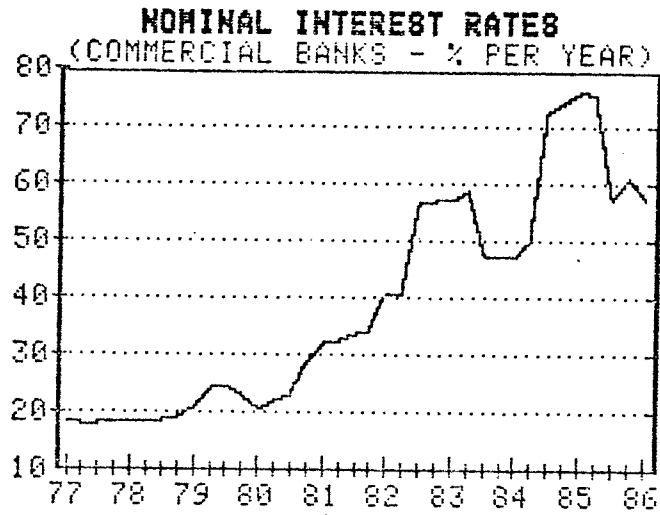
GRAPH 1

MONETARY AGGREGATES (RATIOS TO M4)



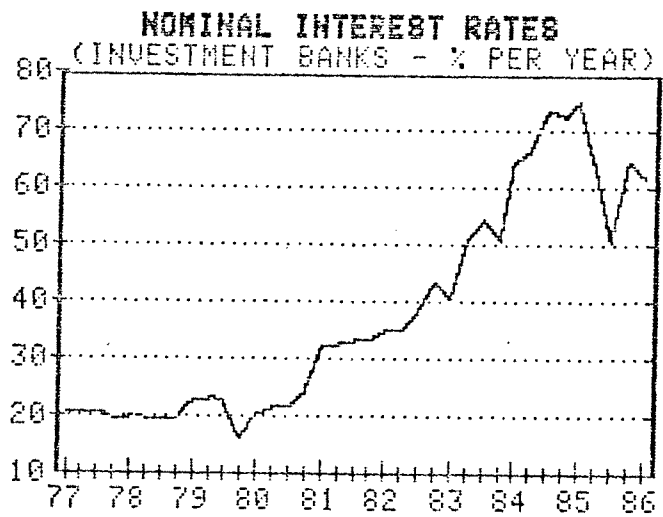
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GRAPH 2



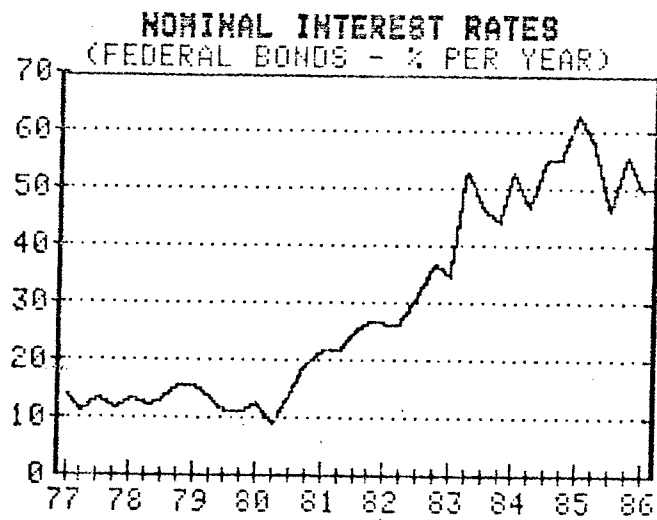
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GRAPH 3a



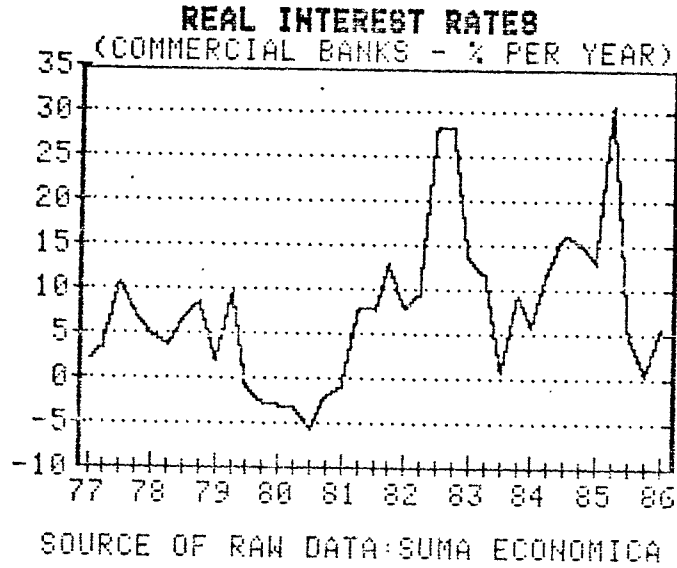
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GRAPH 3b

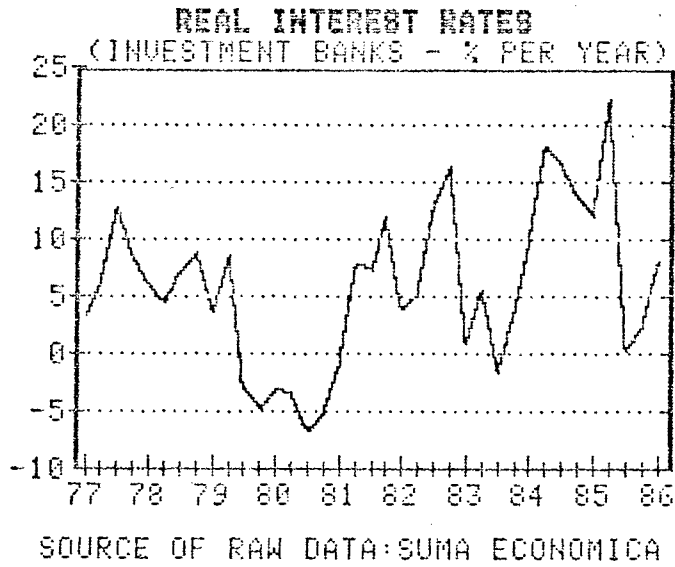


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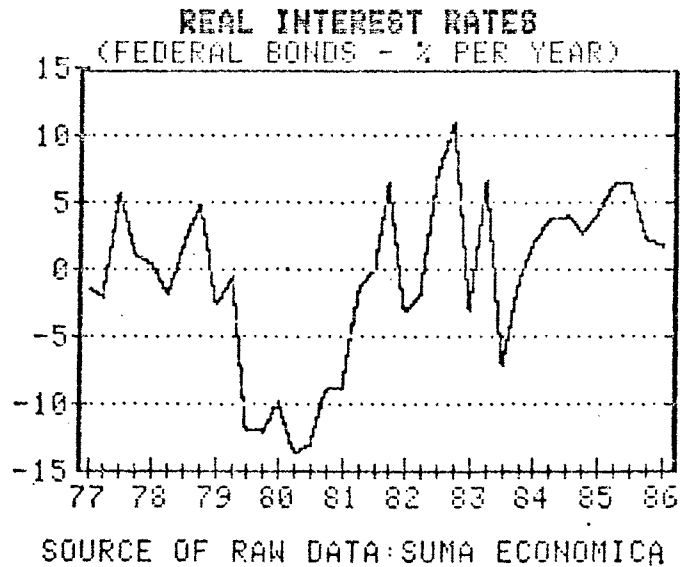
GRAPH 3c



GRAPH 4a



GRAPH 4b



GRAPH 4c