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Quasi-Fiscal Deficits: Latin American Lessons for South Asia

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Abstract

In most South Asian countries, the central banks are assuming an active or increasing role in mobilizing domestic and foreign resources or in financing public enterprises operations. These transactions are becoming an important source of losses for the Central Banks and are leading to an imbalance known as the quasi-fiscal deficit (QFD). QFDs, just as ordinary fiscal deficits, are financed either through money creation or debt issue. The macroeconomic effects of these QFDs are becoming or should become a matter concern to policymakers in the Region. Since the specific effects depend on the type of operations that causes the deficit and on the specific approach adopted to finance them, a careful analysis of the QFD issue in South Asia is warranted.

The paper provides an overview of the main lessons for South Asia that can be drawn from the Latin American experience in dealing with quasi-fiscal deficits. For a sample of Latin American countries, it discusses the major institutional channels through which these QFD came about, the macroeconomic repercussions of their financing, including changes in resources allocation, and the solutions adopted to bring them under control.

The Latin American experience suggests that the most common operations leading to quasi-fiscal deficits include: (i) quasi-fiscal expenses such as deposit guarantees, loan collateralization, coverage of losses of nationalized Banks, often due to interest rate controls and credit rationing systems, (ii) service of the Central Bank's debt, (iii) foreign exchange losses, and (iv) commercial bank financing of fiscal deficits.

In the South Asian context, losses of state and commercial banks and the cost of subsidized credits and foreign exchange guarantees seem to be the main sources of QFD. Rodriguez's overview of the few documents available to estimate the size of the problem in South Asia provides the following "back-of-the-envelope" aggregate estimates for the largest countries in the Region. By mid-1992, in India, credit operations and foreign exchange guarantees had translated into a QFD of 1.5% of GDP. In Pakistan, the directed credits, losses on foreign exchange and interest on non-performing loans under directed credit lead to a QFD of at least 1.3% of GDP. In Bangladesh, the availability of external financing and the low level of development of the domestic financial market have so far avoided any significant quasi-fiscal problems. Details on the sources of these estimates and country specific suggestions for additional analysis and directions for reforms provide the core of the paper's analysis of the South Asian situation.

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I. CONCEPTUAL ISSUES

A. Basic Definition

The conventional role of a Central Bank is to provide its economy with high powered, or base, money by purchasing either reserve assets or government paper with newly printed bills. Under this simple concept, the sources of monetary expansion are exogenous to the Central Bank and result either from balance of payments or the fiscal deficit of the rest of the government sector. In practice, however, Central Banks often engage in other operations which significantly increase the rate of money creation. These operations, not related to reserve purchases or direct monetary financing of the fiscal deficit, all give rise to what is known as the *quasi-fiscal deficit.*

The extensive array of such operations prevents a simple accounting framework for disclosing their effects. In practice, Central Banks issue liabilities in order to finance three basic types of expenditures:

(a) Reserve purchases
(b) Fiscal Deficits
(c) All other expenditures grouped under the heading of "quasifiscal expenditures".

The liabilities issued by the Central Bank may be non-interest earning (monetary base) or interest earning (debt). In the later case, the interest due on the debt forms part of the quasifiscal expenditures. While money financing is apparently cheaper for the Central Bank, it gives rise to inflation or reserve losses and therefore the need to resort to the more expensive debt financing.

The service of a Central Bank's interest earning debt is only one of the components of the quasifiscal deficit. The most significant additional sources of quasifiscal deficit are:

(a) granting of rediscounts to the private sector.
(b) losses from deposit insurance mechanisms.
(c) fallen loan guarantees to private or public sector agents.
(d) foreign exchange losses from forward operations or multiple exchange rates.

(e) covering the losses of nationalized state banks. These losses are often due to the use of interest controls and credit rationing systems.

All of these quasi-fiscal expenditures may be financed directly with money creation, in which case they immediately show as a quasi-fiscal expenditure, or temporarily by Central Bank interest earning debt.

Item (e) is by far the most significant in the context of South Asian countries. In all South Asian countries the bulk of the commercial and development banks belong to the state. It is proper therefore to consolidate them with the financial public sector balance and therefore to incorporate their losses into the computation of the quasifiscal deficits. There have been and still are significant losses due to the rationing of credit at subsidized interest rates in the national banks. Those losses may not have a direct impact on Central Bank liabilities because they are temporarily financed through the net worth of the national banks. However, as the wealth position of the national banks deteriorates, it becomes more evident that they will have to be capitalized if they are to remain in operation. At this point the quasifiscal losses accumulated in the past would become due and have to be assumed, probably at the expense of the Central Bank if not the Treasury.

In summary, quasi-fiscal deficits result from the monetary financing of quasi-fiscal expenditures, or from the debt service of financing fiscal or quasi-fiscal expenditures. Once a debt is issued, the quasi-fiscal impact of its service may take on a life of its own: if market interest rates rise, the Central Bank may be forced to roll-over its existing stock of debt at a higher rate, therefore contributing to a higher potential quasi- fiscal deficit.

B. Macroeconomic Effects of Quasi-fiscal Deficits

Quasi-fiscal deficits, as well as ordinary fiscal deficits are financed either through money creation or debt issues. From this perspective, the macroeconomic effects of financing quasifiscal deficits is no different from the usual effects found for fiscal deficits. However, the macroeconomic effects of quasifiscal deficits may differ depending on the expenditure that gives rise to them. Interest rate and exchange rate controls may cause Central Bank losses which in addition to requiring deficit financing, may seriously affect resource allocation.

The accrued interest on Central Bank debt, or on the debt of nationalized banks (including deposits) that cannot be served with the return on assets, is normally rolled over in the form of more issues of a similar instrument. This process crowds out the capital market and generates pressure for a rising real interest rate on government paper. If the real interest rate paid on such debt becomes positive, the system may enter into an explosive path, as every period the Central Bank will be forced to issue a larger real quantity of debt. As the market perceives the need for a growing real debt path, the required interest rate rises even more and eventually a run against the liabilities of the institution occurs. Such runs have been common in

Latin America and have ended up in virtual debt repudiations, macrodevaluations and hyperinflations.

In some cases, quasifiscal expenditures are financed through *quasifiscal revenues* and have no direct impact on the overall fiscal deficit but may affect resource allocation and macroeconomic balance. Such is the case of subsidized credit to targeted sectors financed through low interest rates on deposits. While such operation is self financing, it is bound to have macroeconomic effects through two channels:

(a) The allocation of investment is distorted as the marginal rates of efficiency of capital will not be equalized across sectors. For the same Investment/GDP ratio, the growth rate of the economy is likely to be smaller.

(b) The volume of savings will shrink in response to the lower deposit interest rates. The lower savings rate will result in less investment and growth.

Schemes of deposit insurance for commercial banks not only are a source of quasifiscal losses, but also have macroeconomic repercussions as they favor the adoption of excessive risk taking and allow for the possibility of recurrent bank crisis. Deposit insurance forces the Central Bank to guarantee all of the deposits in the commercial banking system that are insured. In the absence of adequate supervision, this system allows banks to make significant losses without depositors withdrawing their money because the losses will eventually be paid back by the Central Bank. Therefore, the market signal through which bad banks cannot capture deposits for lending is lost. It is common in Latin America to observe the bulk of bank deposits going to the banks in most financial trouble which are the ones offering the highest interest rates. In the end the Central Bank has to pay for the bad investments in order to enforce the deposit guarantee.

In South Asia, through the workings of the national banking system, there is an implicit guarantee on all deposits. In spite of the substantial losses accumulated by the national banks, the public does not withdraw the deposits because it has full confidence that the banks will be rescued by Central Bank intervention. In consequence, the managers of the national banks do not have the proper incentives to allocate the loans to the most profitable activities. Excessive risk taking and recurrent bank crises tend to be the general pattern observed as a consequence of the deposit guarantee system in Latin America, given the absence of adequate supervision.

There is the belief that Central Bank losses from foreign exchange operations have no macro effects insofar as they can be financed with a stable growth rate of foreign currency or domestic deposits. Such a view assumes that banks need not invest the money they receive for deposit but just spend it, provided the public continue reinvesting the deposits plus the accrued interest. In the financial world this operation is called a "Ponzi Game" and is known to be inconsistent with the working of an efficient financial market. The basic problem with the Ponzi game is that the public will not want to reinvest in a financial institution that has no worthy assets. Sooner or latter, somebody will ask for his deposit and the insolvency of the bank will become evident. Under no circumstance we can recommend to consider the increase in deposits in the financial system as a genuine source of financing for public sector expenditures.

In general, the previous analysis leads to the more general idea that any accrued loss from the Central Bank need not generate macroeconomic problems until it has to be effectively paid. Such a myopic view would imply that only current macroeconomic problems are of relevance. An insolvent financial system may be kept running for some time thanks to some shortsightedness on the part of depositors and high interest rates. But refinancing an insolvent institution through high interest rates only compounds the problem for the future. At some point, the market will turn against the insolvent bank and the crisis will ensue. One of the objectives of sensible macroeconomic policy is precisely to avoid the likelihood of such a financial crisis. That is one reason why the Central Bank should not follow policies leading to its financial insolvency such as covering its accrued losses with deposits growth.

C. Central Bank "Profitability"

Central Banks can purchase assets by issuing interest earning liabilities or non-interest bearing high power money. In determining the profitability of such operations, the rate of return on the assets purchased by the Central Bank is commonly compared to the accrued interest on the liabilities issued. More than often, an evaluation of these operations suggests a profit for the Central Bank.

According to standard accounting procedures, the reason for Central Banks' high profitability is easily understood. Most of their expenditures are loans to the financial sector, the public sector, or public enterprises. Those loans are usually stipulated at competitive interest rates and therefore show a healthy income stream on an accrual basis. However, those loans are rarely repaid and therefore the income stream on a cash flow basis may be quite negligible.

Since the loans granted are most likely to be financed by printing non-interest bearing money, it is common to hear that the operations actually generate surpluses and therefore are deflationary! This results from comparing the accrued interest stream of the credit granted to the zero interest cost of the money issued to finance the loan. The truth is that the money printed soon has to be sterilized with interest bearing Central Bank debt, since otherwise prices would rise, or reserves fall. At this point the Central Bank income flow is likely to be equilibrated on an accrual basis. However, the income flow on a cash basis will likely be negative, as the Central Bank has acquired a non-performing asset financing it with interest bearing debt which would be difficult not to service regularly.

From a purely accounting perspective, the operation described does not produce any deficit because interest is recorded on an accrual basis and most loans are carried at par value. However, from an economic viewpoint, interest on the loans granted is likely to be served by more of the same assets (e.g. the bad loans will be rolled over) while the market may not accept the full roll-over of the Central bank liabilities. Since the Central Bank generates no primary revenues, it can only service its debt by either issuing more debt or printing money.

If the debt is financed with more debt, interest rates will increase, compounding the problem for the next period. Servicing interest on debt by issuing more debt is feasible in the long run only if the growth rate of the economy (and therefore the growth rate in the demand

for the debt) exceeds the real interest rate, an unlikely scenario given today's developed capital markets.

A crucial difference between the debt of the Treasury and of the Central Bank is that the Treasury debt usually can be traded below par as the quality of its service decreases. As has happened in many Latin American countries, the Treasury is eventually cut off from debt financing in the international and even domestic markets. However, as long as domestic currency exists, the Central Bank is expected to continue servicing its internal debt. Either it pays back interest by issuing more debt or issues cash to pay the interest and even to rescue the part of the stock coming due which the public does not want to roll over at the ongoing rate.

Issuing debt backed by the monetary authority without the counterpart of a performing asset is dangerous because it may erode confidence in the domestic currency and lead to hyperinflation and a collapse of the monetary system. Governments normally resort to Central Bank debt financing only after having exhausted more conventional financing sources: Treasury debt financing and monetary financing at acceptable inflation rates. In some cases, however, exaggerated optimism about the quality of Central Bank assets leads to the generation of high debt stocks which eventually are served by printing money.

We therefore find a basic asymmetry between the Central Bank's assets and liabilities: while all of its liabilities eventually must be rescued at par by issuing domestic currency, most of its assets (other than international reserves) are valued well below par because they are not regularly served. The delicate equilibrium between Central Bank revenues and expenses is dependent on its ability to roll over its debt without disturbing the monetary system. Once the market interest rate required to roll over the Central Bank debt is positive, the system will become unstable, unless the fiscal surplus is large enough to pay the real interest on the Central Bank debt. This is highly doubtful as treasuries have sufficient problems balancing their own budgets without access to Central Bank financing.

D. Most Common Operations Leading to Quasi-fiscal Deficits

This section focuses on the most common operations leading to quasifiscal deficits:

(a) Deposit guarantees and loan collateralization
(b) Service of the Central Bank debt
(c) Foreign exchange losses
(d) Commercial Bank financing of Fiscal Deficits.

(i) Hidden Quasi-fiscal Expenses: Deposit Guarantees and Loan Collateralization

Financial operations which cause forced monetary creation, even though originally disconnected from the Central Bank, should be included as a potential source of quasi- fiscal expenditures. This is particularly so when the Central Bank grants deposit guarantees for

commercial banks or any type of collateral for third party loans to agents such as public enterprises, agricultural cooperatives, public contractors, etc.

In such a system, possible losses from exercising Central Bank guarantees are a potential source of quasi-fiscal expenditures. Here, the difference between perceived and accrued interest on commercial bank assets could contribute to a potential quasi-fiscal deficit, since the Central Bank may ultimately be called upon to put up cash for the commercial banks' accumulated losses. From this perspective, a bad loan granted by the Central Bank and financed by its bond is the same as a bad loan granted by a commercial bank and funded with a Central Bank guaranteed private time deposit.

Many Governments own development banks, commercial banks and other financial institutions which commonly redirect credit to targeted sectors. Provincial or state banks, often the primary financing source of local public sector deficits, usually have the explicit or implicit guarantee of the Central Bank. They can therefore place their own liabilities (deposits) with little regard to the value of the assets purchased.

As the loan portfolios of public banks deteriorate, they are faced with three alternatives: (i) bankruptcy, which is seldom used; (ii) requesting capitalization from the Central Bank or the Treasury, meaning more debt instruments and perhaps some fresh money: or (iii) rolling over the loans for which the public must also roll over its deposits. Alternatives (ii) and (iii) only postpone the problem by refinancing the quasi-fiscal losses of the non-performing assets. Whether the Treasury or the Central Bank does the refinancing, it will have to produce genuine funds to pay the interest on the public bank's deposits, meaning a fiscal surplus to compensate for the quasi-fiscal deficit. In the absence of real fiscal adjustment, the refinancing of any deficit at an interest rate larger than the growth rate of demand for the debt can only produce an explosive situation.

(ii) Service of the Central Bank Debt

For most countries, servicing interest on Central Bank debt is one the most significant factors determining the magnitude of the quasi-fiscal deficit. Many Central Banks in Latin America make their debt more attractive by shorting maturity to increase liquidity and by allowing it to be held by commercial banks. In some cases, when banks did not voluntarily hold the Central Bank's paper, it imposed mandatory remunerated reserve requirements or, alternatively, regulated that a fraction of the bank's assets be invested in its paper. Paying interest on the monetary base or making Central Bank debt accessible to commercial banks may seem to be a good idea to increase the absorption of liquidity in the short run. The short run impact of printing money can be sterilized by imposing a higher remunerated reserve requirement or inducing banks to acquire other types of Central Bank debt. However, as this operation is repeated, the base for the inflation tax is eroded and any additional deficit financing requires ever increasing rates of sterilization.

These operations generate a system where, cash holdings aside, the counterpart of deposits at commercial banks is Central bank debt, a fraction of which is remunerated. In such

a monetary system the money supply has two components: remunerated and non-remunerated. The remunerated money is a liability of the Central Bank and, in the absence of a fiscal surplus, the interest must be paid by rolling over such debt (equivalent to issuing more money). Formally, the rate of change in the nominal quantity of money equals:

$$(1)\quad dM.dt = Im.M.\sigma + DEF,$$

where σ stands for the fraction of the total money supply accruing interest at the rate Im, and DEF stands for all other sources (non-interest) of money creation. Assume that the nominal interest rate on money has a positive real component: $Im = \pi + Rm$, where π is the inflation rate and Re is the real rate of interest. Also define velocity of circulation as $V = Y/M$, where Y=GDP. Equation (1) can be transformed into:

$$(2)\quad (1/M).dM/dt = \sigma.(Rm + \pi) + d.V,$$

where $d = DEF/Y$ represents the ratio of non-interest deficit to GDP. In a steady state the rate of monetary growth equals the difference between the inflation rate and the growth rate of money demand, that we assume equal to that of the economy, g:

$$(3)\quad (1/M)dM/dt = \pi - g.$$

Substituting (3) into (2) and solving for the inflation rate we obtain:

$$(4)\quad \pi = (\sigma.Rm + d.V)/ (1-\sigma)$$

Equation (4) represents the equilibrium inflation rate when a fraction σ of the money supply is paid interest (through the operation of the quasi-fiscal deficit) by printing more money. Basically this is an economy where the inflation tax is returned to money holders in the form of interest on money. Under such circumstances, the inflationary financing of any genuine deficit (d) is bound to generate much higher inflation as the first round inflation is compounded by the need to issue additional money to pay the higher interest on the money stock.

As seen in (4), as σ tends to unity the inflation rate converges to infinity. In this circumstance, the Central Bank has to pay back all of the inflation tax as interest on money and is left with no net revenue; therefore it is impossible to finance any amount of deficit through money creation at any inflation rate.

(iii) Foreign Exchange Losses

In economies subject to exchange controls, it is common to observe quasi-fiscal deficits arising on account of foreign exchange operations by the Central Bank. Those operations have been analyzed in detail in the paper of Rocha and Saldanha so we shall only briefly comment on some of the most relevant aspects based on the experience of Latin American countries.

Multiple Exchange Rates In general, when there are exchange controls, the Central Bank tends to buy cheap foreign exchange from exporters who are forced to surrender their earnings in exchange for the local currency at the official buying rate and to sell even cheaper to privileged importers. In consequence, even though both the buying and the selling rates are below the equilibrium rate, the Central Bank looses money under the fixed exchange rate system.

Monetization of Inflationary Capital Gains on Reserves An additional complication results from the common accounting practice in the region to record the sale of foreign exchange at the average price of the stock of acquired reserves and to record the purchase of foreign exchange at the actual buying price. In an inflationary economy, this procedure tends to generate a buying price much higher than the selling accounting price. Under these circumstances, the simultaneous purchase and sale of one dollar is bound to increase the local currency valuation of the stock of reserves without generating any compensating change in the bank's liabilities (actually the dollar may have been bought and sold at the same market price so that there was no money issued). To compensate such an increase in assets, an identical amount is credited to a liability account labeled "profits from foreign exchange operations". In the steady state the balance of this account is related to the inflationary adjustment on the local currency value of the stock of foreign exchange reserves. As such, it cannot be treated as a capital gain and spent since that would mean reducing the real capital of the institution. However, that is exactly what often has been done with the balance of the account: at the end of the fiscal year those balances (usually positive) are transferred to the Treasury account at the Central Bank and considered genuine capital gains which can be spent. Through this procedure, the Bank's inflation adjusted capital is reduced since the inflationary capital gains should have been capitalized and not spend. Of course, this procedure of printing money in proportion to the increase in the local currency value of the stock of reserves may result in a totally endogenous money supply that would validate any inflation rate the market determines.

Losses from Foreign Exchange Swaps Another source of quasi-fiscal deficits in Latin America comes from foreign exchange operations from the Central Bank's granting exchange rate insurance to some activities at premiums far shorter than the actual rates of devaluation. This was the case in Argentina in 1982 when, after the debt crisis, the government granted currency swaps to those who had external debt payments coming due and were willing to renegotiate them. Through the swaps, the Central Bank guaranteed debtors a foreign exchange price on the contract's due date which ended being in the order of 1/20 of the market value (a 95% subsidy). The losses from those swaps in Argentina were estimated to be 16% of GDP in 1982 alone (FIEL, 1986). Both India and Pakistan have implemented exchange rate insurance schemes that in the presence of devaluations will result in quasifiscal losses of a similar nature as those described above. In both cases the schemes try to make it more attractive for banks to bring foreign exchange and deposit it in the Central Bank in exchange for local currency. While the depositor can enjoy the high rates on local currency, they are given the guarantee that they can repurchase the foreign currency at the exchange rate the transaction was originally made. If devaluation takes place, the Central Bank has to sell foreign exchange below the current price and take the loss.

(iv) Commercial Bank Financing of Fiscal Deficits

Monetary authorities constantly seek non-inflationary ways of financing fiscal deficits. Favorite among these is raising the level of reserve requirements on bank deposits. This increases the demand for base money and therefore provides for temporary non-inflationary financing. However, the intermediation costs of banks become higher and in consequence they are forced to raise the spread between the borrowing and lending rates.

As a result, the fiscal deficit is initially financed with the equivalent of a tax on financial intermediation. However, higher intermediation costs generate pressures which lead to the Central Bank remunerating all or part of the reserve requirements. At this stage, a remunerated reserve requirement can not be distinguished from any other remunerated public debt. There are however two distinguishing features: (i) contrary to public debt, reserve requirements are compulsory investments; and (ii) in the event of a fall in demand for bank deposits (a currency run), the Central Bank is forced to print notes to recover forced investments at par value and therefore to feed the run.

In some instances, Central Banks issue voluntary interest earning debt that is placed mostly with the commercial banks. At other times, forced investments, not linked to deposit levels, are imposed on commercial banks. Either voluntary or mandatory, proportional or independent from deposit levels, these investments should be considered Central Bank debt and not as standard monetary base when computing the revenue from money creation. They can be viewed as potential sources of money creation if the Central Bank is forced to print money (base) to pay for them. The fact is, however, that the interest on the interest earning liabilities of Central Banks are usually paid by rolling over those liabilities.

At times, in both Argentina and Uruguay, the local currency deposits of the public at commercial banks mostly had as a counterpart Central Bank debt which was served by issuing more debt. To the extent that these deposits had no real asset counterpart, the system was technically bankrupt but able to be kept alive as long as depositors were willing to roll-over their principal and interest. Such a system is highly unstable because it is bound to collapse in the event of even minor deposits withdrawals. When that happens the Central Bank is forced to rescue its debt with newly printed money and the previously repressed inflation is released. Measures taken in 1990 in Argentina and Brazil regarding the forced refinancing of bank deposits aimed at breaking this mechanism. However, the loss of confidence which these forced meltdowns or debt exchanges produce will restrict the restoration of normally functioning capital markets.

Primary deficits of the Treasury are at the root of the quasi-fiscal deficit problem. Financing those deficits forces the Central Bank into debt and then servicing the interest adds to gross financing needs. However, the "quasi-fiscal" deficit is not the cause, but the consequence of inflation. If the quasi- fiscal deficit is eliminated by a debt meltdown, the continuing primary deficits will soon begin creating another. The structural solution requires two steps: (i) producing a sustainable primary surplus through serious structural adjustment in the public sector and (ii) with the proceeds from fiscal adjustment, refinancing the outstanding

public debt. Also, Central Banks should not be allowed to assume debt on behalf of the Treasury since doing so reduces confidence in the currency and in the financial system.

II. LATIN AMERICAN EXPERIENCES

This section relates some experiences with quasi-fiscal deficits of Latin American countries during the 1980s. The experiences are quite varied, both in their intensity and in the kinds of operations involved. Chile, for example, solved its problems through fiscal adjustment. In Argentina, the ongoing quasi-fiscal deficit ended in hyperinflation which melted down Central Bank debts, therefore providing an apparent solution as the quasi-fiscal deficit was thus eliminated. Uruguay has found a way to live with the quasi-fiscal deficit through sound financial policies which allow for relatively reasonable real interest rates at which the debt can be rolled over. Nevertheless, the endogeneity of the money supply allowed by the quasi-fiscal operations has helped sustain an annual inflation rate which has oscillated between 50% and 100% for the last 20 years. Brazil, on the verge of hyperinflation awaits an unavoidable financial crisis. As it stands, most of the counterpart of the money supply is government paper financed in the overnight market at whatever interest rate the market demands to roll it over because the treasury has no primary surplus to pay for any of the interest due.

A. CHILE: Quasi-fiscal Deficit Caused by the Private Sector Solved through Fiscal Adjustment

The most relevant operation in solving Chile's quasi- fiscal problem was that of its Central Bank salvaging commercial banks after the 1982 crisis. The crisis had origins in the large capital inflows from 1977 to 1981 which averaged 13.2% of GDP per year. In 1982, amidst the regional debt crisis shock, the rate of capital inflow drastically fell to only 3.3% of GDP. The unprecedented rate of foreign investment made possible a private sector credit boom coupled with a substantial real overvaluation of the currency. Interestingly enough, the public sector did not take advantage of the easy availability of foreign financing as did most of its neighboring countries. In fact, the public sector ran a primary surplus during the period. Therefore, all of the excess spending financed from abroad was due to the private sector. As the capital inflow reversed drastically in late 1981, a serious crisis began to develop. During 1982, after three years of stability, the currency was devalued by about 88%. A major recession ensued and commercial banks experienced drastic financial problems as their loans performed poorly.

The crisis left a deep scar in Chile's Central Bank. During 1983-1985 it rescued the troubled financial institutions and major debtors. The financial system was recapitalized primarily with credit subsidies from the Central Bank which were financed by different interest earning liabilities (IOUs). In consequence, the stock of outstanding Central Bank IOUs grew from 10.1% of GDP in 1984 to 26.6% in 1988 as seen in Table 1. As of 1988, the counterpart of the stock of $7,038 million of Central Bank IOUs was a liability from the Treasury to the Bank of $7,280 million.

It is clear that the increased financial debt of the Central Bank resulted from the salvage operation conducted on behalf of the Treasury. The Treasury's debt at the Central Bank increased by roughly $3 billion in 1984-88, an amount similar to the increase in the outstanding stock of Central Bank IOUs. The Central Bank had no significant problems issuing the extra financial debt because most of it was placed at financial institutions at a time when the public's demand for financial assets was steadily growing. The comprehensive measure of the public's demand for financial assets, M3, grew during the period by $3 billion. We therefore observe that the banks borrowed an extra $3 billion from the private sector that was used to purchase debt from the Central Bank. This debt was then spent, on behalf of the Treasury, in financing losses of the most troubled debtors. This operation was facilitated by the important monetization of the period which allowed M3 to grow from 21.5% to 32.7% of GDP.

TABLE 1
CHILE

CENTRAL BANK MONETARY AND DEBT POLICY

	1984	1985	1986	1987	1988
Central Bank IOU's	3991	6012	6953	6982	7038
Monetary Base	690	603	723	732	985
M3	4125	3912	4635	5782	7213
Treasury Debt at the CBCH(*)	2887	5346	6020	6197	5829
Memorandum					
Pesos per Dollar	127.8	183.7	201.5	234	249.7
GDP in dollars	19222	16014	16028	18960	22068

Millions of US$ dollars
(*) Net of Capital and Reserves of the CBCH
Source: Banco Central de Chile

During 1983 and 1984 the Central Bank also purchased asset portfolios of the troubled institutions in exchange for its IOUs which were part of the 1984 stock shown in Table 1. As of 1984, the Central Bank had already purchased about $1 billion of non- performing assets and had granted subsidized credit lines for another $3 billion. It continued the purchases in 1985 and thereafter the stock settled at around $3.3 billion. These non- performing assets were an important burden for the Central Bank.

In conclusion, as of December 1988, the Central Bank total stock of liabilities of $16.7 billion consisted of $7.8 billion of domestic interest earning liabilities, $4.5 billion of net external debt, slightly less than $1 billion of non-interest bearing monetary base and about $3.4 billion in capital and provisions. These liabilities were matched by roughly $7.3 billion of government paper, $2.6 billion of international reserves, and $6.8 billion of private assets of which about $3 billion was of doubtful performance.

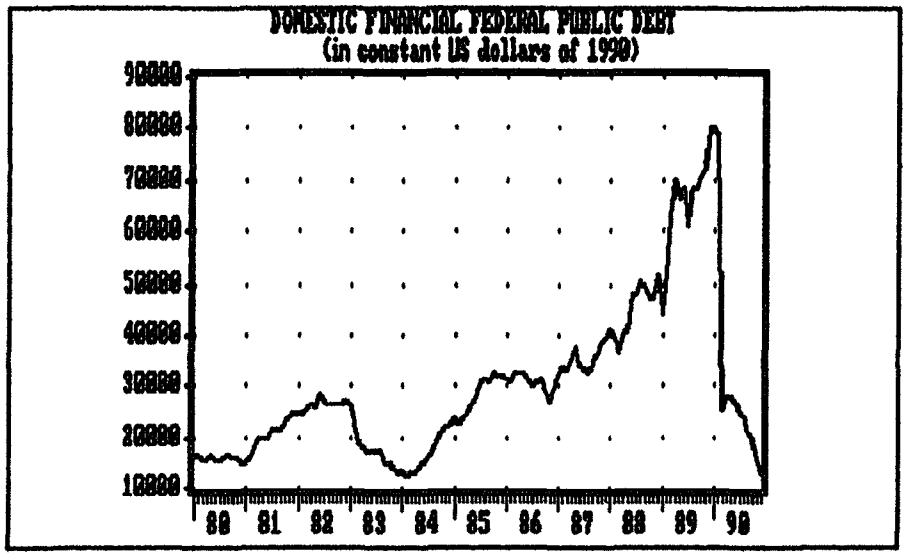
The magnitude of the Treasury debt and of the non- performing asset portfolio implied that the Central Bank was bound for deep financial trouble unless it drastically increased the rate of return on its asset portfolio. This required that the Treasury begin servicing its debt with the Central Bank, which only happened in 1989. As it stood, the agreement reached with the Treasury in granting the Central Bank autonomy established that the Treasury bond would yield LIBOR plus 1/2%. Actual cash payments were 2% of the face value of the bond, and the rest was capitalized.

Since then, and due to a substantial boom in copper prices which generated unusually high foreign exchange fiscal revenues, the Treasury has been able to rescue most of its outstanding debt at the Central Bank. Therefore, Chile's potential quasi-fiscal deficit crisis was averted through mixed doses of fiscal adjustment and a favorable terms of trade shock.

B. BRAZIL: Freezing Debts to Solve the Quasi-fiscal Problem, the Collor Plan

Figure 1 shows the time path of the real stock of internal public debt of the federal government of Brazil measured in constant 1990 dollars. Between January of 1984 and 1990, the debt grew at an astonishing annual compound rate of 34.3% in real dollars. The higher interest rate required to refinance the debt implied that it was due to grow even faster when the new interest service came due. As this happened, the roll-over of the outstanding debt became increasingly more difficult and the alternative to increasing the interest rate was an increase in the liquidity of new issues by shortening maturity or indexing the principal to the short run market interest rate or inflation. During 1989, the value of the outstanding stock of public debt rose from $40 billion to $76 billion. For that same year, the compound real interest rate on bank certificates of deposit was 40%.

Gradually, the issuance terms shifted from stipulating a fixed nominal interest rate to being indexed to a price level and then to the market's overnight interest rate (the LFT:Letras do Financiamento do Tesoro). The later had become the most widely held public debt title by the implementation of the Collor plan in March 1990. It had an average maturity of about 24 months and paid the market's overnight interest rate. This implied that the total value of the LFT stock was indexed to the daily interest rate in the money market, a highly de-stabilizing situation for a country already on the verge of hyperinflation. As the market would get nervous, the interest rate would rise and immediately the stock of outstanding public debt would raise in the same proportion, putting additional pressure in the financial markets.



High inflation and the resulting fall in money balances stimulated the market's search for alternative forms of remunerated liquidity. The LFTs provided a good hedge against interest rate changes but were not liquid enough to make them attractive to small investors. Banks started capturing overnight deposits from the public in money market funds and used those funds to purchase LFT of a much longer maturity. Short run money market funds also received deposits with a maturity of 21 days and used the proceeds also to buy LFTs or bank's certificates of deposit.

Overnight deposits and short run money market funds clearly compete in liquidity with the traditional liquid monetary assets (currency and demand deposits) and they pay interest. This additional supply of liquid assets further fueled inflation, generating a financial system were the market produced its own supply of liquid assets. (The demand for monetary base was practically kept at a minimum due to the creation of liquid assets through overnight swap operations not subject to legal reserve requirements).

The financial system became like an inverted pyramid with two vertex: (i) the monetary base, providing for the secondary expansion of demand deposits and to a lesser degree of savings accounts deposits (in this case the reserve requirements are very low and often not complied with) and (ii) the federal public debt that, after intermediation, becomes the counterpart for the overnight and money market funds.

In the government's view, the country had entered into a vicious circle of high debt with high real interest rates which was impossible to break because it lacked the fiscal surplus with which to repurchase the debt. The solution lay in selling government assets in exchange for the outstanding debt. This would help reduce interest rates and restore normality to financial markets and inflation, but privatization would take more time than the ongoing hyperinflation would allow. Therefore, in March 1990, authorities resorted to a mandatory freeze on all financial assets for a period of 18 months. It was expected that after those months there would be enough public firms in condition to be exchanged for a substantial part of the excessive stock of outstanding public debt. During the transition, the real interest rate on the frozen financial

assets was set at 6% annual and the principal was also indexed to the CPI inflation (except for the initial month when there was a loss of about 15%).

Most of the financial public debt outstanding as of 1990 was not held directly by the public but was intermediated by financial institutions through the overnight money market and short run funds. Therefore, much of the debt was "compromised" as collateral for the extremely liquid liabilities of the financial institutions. It was impossible to freeze the assets of the financial institutions without also freezing their liabilities. The step taken was to freeze all the liabilities of the financial institutions rather than only those that had public debt as a counterpart. This may have been due to difficulties in instrumentation, but more likely was due to the desire to sharply reduce outstanding liquidity to quickly improve the inflation front.

The freeze on financial assets was implemented together with a change in the denomination of the currency. The Cruzado Novo (Cr.N.) was replaced by the Cruceiro at a one to one rate (just a change of name). The frozen assets were to remain denominated in Cr.N. until September 1991 when they would begin being converted into Cruzeiros at a one to one rate in 12 monthly quotas including principal plus accrued interest (at the rate of inflation plus 6%).

It was estimated that if the repayment plan were to be financed by printing new money, the monetary base should grow at about 24% monthly during the first twelve months (the stock to be rescued was about $28 billion and the monetary base $9.5 billion; repayment in 12 months required an inflation tax of $2.33 billion per month, or 24.5% of the monetary base). Parallel to the freeze of financial assets, other ambitious measures of fiscal adjustment and privatization were announced. In September 1991, authorities started the repayment of the frozen cruzados at a time when neither the promised fiscal adjustment nor the privatizations had taken place. Since then inflation has been above 20% per month and the country has been undergoing a deep political crisis.

C. ARGENTINA: Hyperinflation and Debt Meltdown Prior to Fiscal Adjustment.

If one were to quickly characterize government action in Argentina it would be that of a systematic tendency to increase spending and to run deficits. It is well known that governments do not need to run fiscal surpluses all of the time, and much less in the context of a growing economy. The fact of the matter is, however, that the Argentine economy has been stagnant for the last two decades and the government ran fiscal deficits for every year between 1960-90. In fact, it ran a primary deficit (not including any interest payments) for every year between 1960-90. This means that for every one of those 30 years, after paying for the current and capital spending, the government has not had any genuine resource left to service interest on its debt, internal or external. As a consequence of the pressure of incremental government borrowing, the economy had high inflation and high real interest rates.

For an economy that does not grow and has a positive real interest rate, running a positive primary deficit implies an ever growing stock of public debt in relation to GDP. Of course, ex-post, real government debt did not grow continuously because every once in a while

the existing stock of debt was melted down by outbursts of inflation in excess of nominal interest rates fueled by large devaluations from foreign exchange crises.

The tendency to melt down the existing stock of debt by implementing unexpected devaluations was eventually discounted by the market and in later years the market demanded, and obtained, an increasing degree of indexation of the public debt by either the price level or the price of foreign exchange. As this happened, the government could no longer melt down any of the stock of real debt and had to face the critical problem of growing real debt in the face of primary deficits.

The primary deficit started falling in 1983 as a result of reduced spending and higher revenues. This late effort, however, was not enough to reverse the increasing reluctance of the public to hold the internal government debt or the domestic currency. The government resorted increasingly to the use of forced investments of the banking system (depositos indisponibles). The fall in demand for domestic-currency denominated assets induced real interest rates that were inconsistent with the real equilibrium of the economy. The shift out of the domestic currency resulted in an increasing degree of dollarization of the economy and a tendency for recurrent currency runs that required frequent macro devaluations. At this point the government was forced to continuously raise interest rates to induce the public to keep holding the domestic currency and to roll-over the public debt.

The higher interest rates were paid by issuing more debt and money, and the service of the debt became the major source of money creation. The system finally exploded when the country entered into hyperinflation in May 1989. The hyperinflation however, was not able to melt down the stock of interest-earning debt of the government, as much of it was placed with a maturity of between 1 and 7 days and interest rates actually had a tendency to anticipate devaluations. The final blow came on January 1, 1990 when the government mandatorily canceled all interest earning obligations in the financial system (all government debt plus all interest- earning deposits) with an issue of dollar-denominated government paper paying LIBOR and with a 10 year maturity.

In addition to regularly financing fiscal deficits, the Central Bank also suffered substantial losses from bad loans to the private financial sector and to public enterprises and from bailing out financial institutions under the scheme of official guarantee of bank's deposits.

High reserve requirements and simultaneous high inflation generated an excessive tax on financial intermediation that caused very high bank spreads and induced the Central Bank in 1977 to start a new regulation system. It collected interest on the fraction of reserve requirements that corresponded to non-remunerated bank deposits (demand deposits) and paid interest on the reserve requirements made on interest-earning time deposits. The balance of these operations, denominated the Monetary Regulation Account, was a significant source of quasi-fiscal deficit as the interest paid exceeded the interest collected. In 1985, the Monetary Regulation Account was modified by a system that incorporated remunerated and non-remunerated reserve requirements; in addition, the Central Bank started to sterilize liquid funds by issuing a variety of short term liabilities that included short term CD's and lump-sum mandatory deposits that absorbed part of the commercial banks' liquidity. The Central Bank also

had losses from swaps and different "exchange insurance" mechanisms, which were frequently used to attract short term foreign financing.

It is difficult to determine, ex-ante, when the quasi-fiscal deficit will result in additional money creation as much of the interest on the Central Bank's liabilities is paid with the creation of more of those liabilities. This mechanism gave raise to a situation in which the Central Bank gradually started to absorb a growing fraction of the lending capability of Commercial Banks. As of 1989, it was reported that more than 80% of the commercial banks' assets were placed in liabilities of the Central Bank. Instead of being the "Lender of Last Resort", this mechanism of liabilities management generated a situation in which the Central Bank become the "Borrower of First Resort".

Another important source of quasi-fiscal deficit was the loss from Swaps and other exchange rate insurance mechanisms. These operations were concentrated in 1982-85 and resulted in the Central Bank absorbing most of the outstanding external debt of the private sector.

The melt down of public debt cleared the quasi-fiscal deficit and allowed for the implementation of the "convertibility plan" in March 1991. This plan created a new currency of a value equal to one dollar and stipulated that the Central Bank could issue currency only to purchase foreign exchange reserves. No new internal debt has been issued since then by the Central Bank, neither has it granted any financing to the public sector. In practice, the Central Bank has been converted into a Currency Board. The confidence in the new currency allowed for a significant reduction in inflation that also created favorable conditions for fiscal adjustment. Since 1991 the government resumed payments on the foreign debt, and has run primary surpluses.

D. URUGUAY: Coexistence of Quasi-fiscal Deficits and Dollarization.

Like several other countries in Latin American, Uruguay is not immune to using the Central Bank as a borrowing agent for the Treasury. In addition, it experiences a sustained dollarization process which significantly reduces the demand for non-interest earning local money and therefore multiplies the inflationary consequences of deficit financing.

There are several channels through which the Central Bank borrows from the financial system, the main one being the other public bank, the Banco de la Republica (BROU). Legally speaking, the BROU and the Central Bank are not part of government but are autonomous institutions which cannot regulate each other. In practice, this means that the BROU does not have to comply with mandatory reserve requirements. However, BROU keeps significant deposits at the Central Bank both in pesos and in dollars, all of which carry a competitive interest rate (85% annual as of the first quarter of 1990 for the peso deposits).

For a clearer view of transaction between the Central Bank and BROU, Table 2 presents BROU's October 1989 balance sheet. BROU is not exempt from the general dollarization of the Uruguayan economy. Of a total stock of monetary liabilities of N$1.1 billion ($1.5 billion),

80% are funded in dollars and only 20% in pesos. Furthermore, practically all of the peso deposits are relent to the Central Bank: of the N$213 billion, N$212 billion were deposited at the Central Bank in October 1989.

Public institutions also grant credit in dollars. Only 37% of BROU's credit to the private sector is denominated in pesos. The ratio for private commercial banks is even lower, at 16.5%. Banco Hipotecario is the exception, as all of its credit to the private sector is in pesos. In September 1989, 44% of total credit to the public sector was granted in pesos, and the rest in dollars.

In practice, the Central Bank uses BROU to conduct the equivalent of open market operations on its behalf: to restrict liquidity, BROU raises deposits from the public and sterilizes them by depositing them at the Central Bank. The same result would be obtained if BROU relent the money and the Central Bank floated a new bond for the same amount. The coordination between the banks makes it difficult to predict the value of the money multiplier since the ratio of reserves to deposits for one of the largest participants, BROU, is a policy variable and not a predetermined constant as with the rest of the private banks.

Strengthening the peso would require, among other things, a clear and predictable monetary rule. This could hardly be achieved when the Central Bank is involved in liabilities management policy which requires the roll over of a large fraction of interest earning liabilities, including those held by its sister institution, BROU. Predictability of monetary policy would be greatly enhanced if the Central Bank were to be capitalized so that all its interest earning liabilities were assumed by the Treasury (as was recently done in Chile) and to be precluded from assuming further debt, implying that all open market operations should be conducted with assets and not through the issuance of liabilities (as is the case with the US Federal Reserve). In addition, BROU should be restricted from operating as a standard commercial bank, subject to the regulation of the monetary authority, in particular with respect to the fulfillment of regulations concerning reserve requirements.

TABLE 2

URUGUAY

ASSETS AND LIABILITIES OF BROU
(October 1989)

ASSETS		
INTERNATIONAL RESERVES	228357	(15.24%)
CREDIT TO PUBLIC SECTOR NON-FINANCIAL	37487	(2.50%)
CASH IN VAULT:	32051	(2.14%)
DEPOSITS IN N$ AT CB:	212027	(14.15%)
DEPOSITS IN DOLLARS AT CB:	183457	(12.23%)
OTHER INTERBANK OPERATIONS:	19979	(1.33%)
CREDIT TO PRIVATE SECTOR:	785272	(52.40%)
IN N$:	290630	(37%)
IN DOLLARS:	494642	(63%)
TOTAL ASSETS= LIABILITIES:	1498630	(100.00%)
LIABILITIES		
DOLLAR DEPOSITS:	862532	(57.55%)
PESO DEPOSITS:	213751	(14.26%)
NET WORTH AND OTHER:	422346	(28.19%)

BROU's interest earning peso deposits at the Central Bank are not the only instrument used to sterilize issues of high powered money. In addition, the Central Bank resorts to issuing Letras de Regulacion Monetaria (Monetary Regulation Bills) as a direct mechanism for regulating the stock of liquidity.

Table 3 shows the composition of the Central Bank's monetary liabilities as of November 1989. Of total peso liabilities, only 42% are non-remunerated and could be considered as high powered money for computing the revenue from money creation. The other 58% is Central Bank interest earning debt. This debt is mostly held by BROU and represents potential money creation in the case of a run against the bank's deposits. The service of interest on this debt should be considered as part of the operational losses of the Central Bank and incorporated into the deficit of the consolidated public sector.

TABLE 3

CENTRAL BANK OF URUGUAY

COMPOSITION OF MONETARY LIABILITIES DENOMINATED IN PESOS

	Monetary Base		Interest Earning		Total	Share of
	Currency	Deposits	Bills	Deposits	BROU	Base in Total
1984	16.90	1.24	2.03	7.86	28.0	64.7
1985	29.60	3.75	4.26	20.87	58.5	57.0
1986	61.10	2.24	19.16	28.11	110.6	57.3
1987	104.90	5.24	29.26	61.90	201.3	54.7
1988	158.60	11.17	62.04	122.70	354.5	47.9
1989*	218.90	17.32	91.40	233.90	561.5	42.1

Billions of N$, end of year data.
* As of the end of November 1989.
Source: BCU Bulletin.

The data of Table 3 also show that the interest earning liability of the Central Bank is growing as a fraction of its total peso liabilities. As time passes, less of the peso system is based on non-interest earning high powered money and more on remunerated Central Bank debt. As the ratio of the Central Bank's interest earning liabilities grows, its ability to collect inflation tax is reduced. Once all of the Central Bank's peso liabilities pay interest, the economy would converge to a system where there could be inflation but would be no room for the inflation tax. In such a system, interest would be paid on money by issuing more money and the rate of money creation and inflation would be undetermined. Table 3 shows that Uruguay is rapidly converging to such a system with the additional complication that the demand for pesos is also falling as dollarization proceeds. Table 4 shows that the velocity of circulation of the non-interest earning monetary base has systematically increased during the last 15 years, and as of 1989 it had a value of 26 meaning that the monetary base was barely 3.8% of GDP.

TABLE 4

URUGUAY: INCOME VELOCITY OF THE MONETARY BASE

1975	15.79	1980	18.84	1985	20.95
1976	13.63	1981	17.70	1986	21.68
1977	14.97	1982	17.67	1987	23.24
1978	14.55	1983	17.34	1988	23.49
1979	19.38	1984	21.67	1989	26.09

An additional complication is the fact that the Central Bank's monetary liabilities have been growing much faster than the demand for domestic money (M2 = Currency plus demand and time deposits and savings accounts of the private sector). As of November 1989, the Central Bank's peso liabilities represented 81% of M2. That same ratio was only 46% in 1977. This trend indicates that the backing of the peso money supply is gradually shifting away from real assets and into Central Bank debt. Of course, the debt may have a real asset as collateral, such as the stock of international reserves. The possibility of using international reserves to rescue internal debt denominated in pesos is an issue that has not yet been debated. There are discussions about using reserves to repurchase external debt, but such an operation would leave the remaining peso system (M2) without any real backing to sustain it in the event of a sudden portfolio shift that would possibly include a fall in the demand for the Central Bank remunerated peso debt.

Stopping the dollarization process will likely require an inflation rate similar to or smaller than that of the dollar and conditions guaranteeing that the rate be sustained over time, e.g. guaranteeing that there will be no surprise devaluations. Among such conditions is the backing of the remaining peso money supply. Credibility would be much higher if the stock of M2 were backed by private sector assets or reserves than if it is backed by government paper whose interest will be served with future fiscal surpluses. In that context, fiscal surpluses are essential for the sustainability of the system, but the existence of actual real assets backing the stock of money is the crucial factor determining the confidence in the peso.

E. CONCLUSIONS: Quasi-fiscal Deficits in Latin America

Latin American countries have undergone processes of financial liberalization since the 1970s. In the four countries surveyed, there are no significant interest rate controls or mandatory credit allocations. In each of them, commercial banks had high levels of non-performing assets as a result of significant macroeconomic disequilibria. In addition, three of the four countries showed important fiscal disequilibrium, which continuously added to the levels of domestic debt and contributed to enlarging the macroeconomic imbalance.

In Chile, the sharp devaluation of the early 1980s as a result of a reversal in the direction of capital flows resulted in a difficult financial situation for commercial banks as a large fraction

of their loans became non-performing. Capitalization of banks by the Central Bank gave rise to the quasi-fiscal deficit. The deficit was later assumed by the Treasury and eventually repaid through fiscal adjustment and very favorable terms of trade on copper exports.

The quasi-fiscal deficit in Argentina was completely associated with continued macroeconomic imbalance that generated high levels of domestic indebtedness and sharp devaluations. The Central Bank was used as a channel to place public debt, first by direct treasury borrowing from the bank and then via compulsory reserve requirements on commercial banks that ended up being remunerated. The remunerated reserve requirements plus several other liquid liabilities issued by the Central Bank become the greatest source of monetary emission, and in 1989 ended hyperinflation. In addition, the Central Bank was used as the main channel through which the existing stock of private external debt was transferred to the public sector: the Central Bank granted exchange rate guarantees to private external debtors who wanted to renew their debt obligations and transfer them to the Central Bank. Subsequently, the Central Bank was forced to devalue significantly so that, in the end, its debt holders were able to cancel their local currency debts with just a few cents on the dollar. The Central Bank therefore became responsible for several billion dollars of foreign debt that it had to service with fresh purchases of foreign exchange, thus adding to the quasi-fiscal deficit.

Brazil is the country were the quasi-fiscal deficit currently is most noticeable, mainly because of its magnitude and the fact that there has been no serious attempt to solve it. Its quasi- fiscal deficit is due to servicing public debt which is directly and voluntarily placed at commercial banks. The Central Bank allows for very low reserve requirements to accommodate for placing the debt which is extremely liquid and is funded by the banks with overnight deposits. As it is, public debt in Brazil is considered interest earning money. The debt pays a daily interest rate equal to the daily deposit rate in the financial system. Since most of the deposits in the financial system are used by the banks to purchase public debt, it is clear that the interest rate on the public debt is closely indexed to itself. In addition, since the Treasury runs a primary deficit, the accrued interest on the debt is paid by issuing more debt. In conclusion, the interest rate is undetermined, as well as the rates of monetary expansion and inflation.

Uruguay's quasi-fiscal deficit is related to the commercial operations of the Banco de la Republica, a state owned commercial bank that used to be the Central Bank. This bank, basically funded by Central Bank rediscounts, grants subsidized credit and finances deficits of public enterprises. Therefore, its accounts should be consolidated with those of the Central Bank when computing the quasi-fiscal losses. As a result of loose fiscal and credit policies, Uruguay has had sustained annual inflation in excess of 50% for decades. As a result the economy has sustained the process of dollarization which, by reducing the basis for the inflation tax, has contributed to the volatility of the system and magnified the need for immediate fiscal adjustment.

III. QUASI-FISCAL DEFICITS IN SOUTH ASIA: SOME TENTATIVE ANALYSES

This section provides an overview of the three quasifiscal situation of the three largest countries in South Asia: India, Pakistan and Bangladesh. The information is based on Bank documents and on comments on an earlier version of the paper provided by the various country teams during of the 1992 Fall.

A. INDIA: Unsustainable Fiscal Deficits Financed by Growing Internal Debt

There was no detailed information available at the time this report was being prepared on either the sources or the amounts of quasi-fiscal deficits in India. Some evidence was available on the financial flows on NRI. Hence, the results presented here are highly tentative.

An important feature of India's financial system is that most of its institutions belong to the public sector (Central or State governments): 90% of all deposits in the financial system are made in public institutions. It follows that under this system the public sector is not only responsible for the losses of the Central Bank but also for those of its commercial banks. Therefore, quasi-fiscal losses are better computed from the consolidated balance sheet of all public banks than from just the Central Bank's.

Commercial Banks are required to invest a certain percentage of their deposits in a specified set of government securities. This investment ratio is called the Statutory Liquidity Ratio (SLR) and reached a value of 38.5% in March 1992. The authorities have announced their intention to reduce the average SLR to 25% by 1996-97. Although the SLR has been reduced progressively since then, the average effective SLR is still 37%, as of June of 1993. These forced public sector savings are remunerated at rates below market and the spread has tended to be around 2% in 1992.

In addition to the SLR investments, banks are required to keep a cash reserve requirement at the Central Bank remunerated at even lower rates. This reserve requirement was 25% of deposits until April 1992 when the 10% incremental rate was eliminated under the IMF stand-by agreement. In addition, banks are required to direct about 40% of their credit to selected priority sectors. Of these loans, about one half is estimated to be made at subsidized interest rates.

The total amount of central and state government debt to the banking system was of $78.7 billion in March 1991. Of the remaining $96.5 billion of credit, 12% (or $11.6 billion) is estimated to have gone to subsidized private sector credit lines. In all we find that $90.3 billion are mandatorily invested by the banking system at less than competitive market interest rates, equivalent to 61% of M3, the total supply of financial resources in the system.

Estimating the quasi-fiscal losses from directed credit operations is impossible given the lack of information about the financial position of public banks (balance sheets) and much less of their annual earnings. A very rough simulation could assume an annual loss of 2 percentage points from the average interest rate subsidy applying to the total amount of 90.3 billion of subsidized credit. This would imply an annual loss of $1.8 billion, or about 0.6% of GDP.

There could be other reasons for concern. The demand for M3 has been growing at a very fast rate, faster than that of real interest on deposits. The result is that banks have been able to roll-over all of their existing loans and lend fresh money in addition. With real money demand growing faster than the real interest rate paid on deposits, banks will have no financial

problems even if their total asset portfolio is non-performing. All of the interest on existing deposits can be financed just by issuing the new deposits demanded.

A foreign exchange crisis in 1991 and the massive withdrawals of foreign currency deposits suggest that there may be limits to the fast monetization rate, at which point the solvency of the banking system will become an issue. In addition, the sharp devaluations experienced since 1991 resulted in significant losses due to the prevailing scheme by which the RBI grants exchange rate guarantee on foreign currency deposits made by commercial banks at the Central Bank. As devaluation occurs, the Central Bank is forced to resell the foreign exchange deposited at the previous lower price. Two recent reports estimate the NRI-related exchange losses at $1.0 billion for 1990/91 (about 0.4% of GDP) and $2.0 billion in 1991/92 (roughly 0.7% of GDP). [1]

While the scheme helps in bringing in capital inflows, this happens at the expense of the subsidy implicit in the combination of exchange rate insurance plus devaluation. It is possible that the opportunity cost of obtaining foreign exchange through this method may end up being more expensive than paying the prevailing risk premium that India carries in the capital markets for direct borrowing.

To sum up, as of mid-1992, the current a quasi-fiscal loss was about 1.5% of GDP (including 0.6% from direct credit operation and 0.7% from NRI related losses). This is no reason for serious concern in the short run. For the future, however, there are three potential sources of concern in evaluating the sustainability of the financial position of the banking system: (i) the large burden of government debt in the portfolio of the commercial banks; (ii) the poor quality of the private portfolio of the commercial banks, particularly the part associated with directed lending, and (iii) the large foreign exchange losses of the RBI. The solution to these problems has to start with a reduction in these sources of deficit. The consolidated government has run primary deficits at least since 1970. Those deficits have doubled from about 4% of GDP in the 1970s to nearly 8-9% in 1990. As long as the government has any primary deficit, it will need to roll over the total of the accrued nominal interest and amortization on the outstanding debt. Since 1991, the government has managed to significantly improve its control of the fiscal situation but more is still needed.

Other steps in the solution to this potential quasi-fiscal disequilibrium include: (i) The debt should be structured in as long a term as possible and at fixed interest rates. Any form of indexation of the debt, by prices, or by the market interest rate should, if possible, be avoided. Indexation may make the debt easier to renegotiate but would imply a greater cost in terms of the endogeneity of the money supply process, as experienced in Brazil. (ii) The costs of obtaining foreign exchange trough granting of exchange rate insurance in the face of devaluations should be evaluated and compared with other conventional costs of foreign borrowing in order to determine the least cost strategy. (iii) As far as possible, the outstanding debt should be repaid by sales of real assets. Recent Latin American experiences (mainly Mexico and

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[1] World Bank report on Non Resident Indians (1991) and 1992 Reserve Bank of India Annual Report.

Argentina) suggest that substantial reductions in public debt can be obtained with the proceeds from privatization of public enterprises, including public utilities.

B. PAKISTAN: Financial Reform Reveals Quasi-fiscal Imbalances

Pakistan historically has had a highly distorted financial system, resulting from financial controls and excessive government financing. In 1990, authorities began an ambitious program of structural adjustment for both the public and financial sectors.

The main sources of quasi-fiscal losses are related to (i) the prevailing system of directed credit under interest rate controls which implies lending by the State Bank of Pakistan to the private sector at rates of interest below the T-bill rate--Rs. 6.1 billion--; (ii) losses on foreign exchange cover of bank deposits --Rs 5.0 billion--; and (iii) interest not-collected on non-performing loans under directed credit, not counting "ordinary" bad loans of state owned banks and DFIs--Rs. 2.3 billion. The total represents about 5.8% of fiscal revenue or 1.3% of GDP. The mechanisms and policy implications of the underlying these sources are discussed next.

The Central Bank runs a system of rediscounts (advances) for commercial banks so that these bank's loans may not be directly related to the size of the deposits they capture. Annual rediscounts granted to commercial banks by the State Bank of Pakistan (SBP) have been in the order of 15% of their stock of deposits. To the extent that those rediscounts were financed by printing non-interest bearing high powered money, it is clear that the SBP is a partner in a fraction of the asset portfolio of commercial banks. This implies that if there is need to capitalize the commercial banks because of a bad asset portfolio, only the fraction of the portfolio not covered by rediscounts from the SBP will need genuine financing.

Some of the quasi-fiscal costs resulting from the system of directed credit at regulated interest rates stems from the fact that the national commercial banks have a significant fraction of non-performing loans. Their costs have been absorbed so far by the eroding net wealth of the nationalized banks and are currently hidden by the ongoing roll over of deposits. However, there are signs of financial disintermediation in recent years and this tendency, if continued, may create financial difficulties for the national commercial banks, requiring Central Bank intervention.

In recent years the government has resorted to financing its fiscal deficits through internal debt issues. Contrary to the case of India, where larger deficits were internally financed without significant pressures on credit markets, the Pakistani government was forced to continually develop more attractive debt instruments to maintain its borrowing. In particular, the treasury was forced to issue very liquid instruments which competed with bank deposits and induced commercial bank disintermediation. Current efforts to consolidate and restructure the public debt are centered on the issuance of Treasury bills at market determined interest rates and more attractive maturities for the Treasury. The competitive auction of Treasury bills has resulted in positive real interest rates, a fact that may force the government to assume the costs of its deficit policy.

Pakistan's quasi-fiscal deficits have been hidden through direct borrowing from the national banking system and across the board interest rate controls. Liberalizing interest rates and allowing competition in financial markets will make the quasi-fiscal deficit more transparent. As interest rates are liberalized, the cost of financing the public debt likely will raise, increasing pressures for domestic banks to finance the deficit.

As it stands, the government is competing with its own banks by issuing competitive treasury debt instruments. This policy will help the Treasury finance its direct debt but will shift the burden to the state banks. There is need for a comprehensive debt policy for the overall public sector, one requiring the capitalization of the state banks either to make them competitive with private banks under market determined interest rates or to prepare them for privatization. The Central Bank should be left out of this scheme, which should use Treasury paper as the main capitalization instrument.

An arrangement similar to that made in Chile would be feasible if the Treasury could generate enough funds to service at least part of the nominal burden on its new debt. This would require a sustainable primary surplus, something that seems far from reach given the overall 1990-91 deficit of 8.8% of GDP.

A potential source of quasifiscal problem is the policy followed by the Central Bank regarding the granting of exchange rate guarantee to foreign currency deposits made by banks at the Central Bank (these are the counterpart of the foreign currency deposits they capture from the private sector). Foreign currency deposits in the banking system have grown rapidly , reaching a level of $3.5 billion by May 1992. The proceedings of the deposits are to be deposited at the Central Bank, which guarantees the convertibility of the foreign currency at the original exchange rate at which the deposit was made. Since the PR has experienced depreciation during this period, the Central Bank will find itself having to sell foreign exchange at a price well below the market price. There is no way, other than expropriation, of avoiding the losses already accrued from this operation. However, further losses may be stopped by eliminating the exchange rate insurance for all new deposits or the renewals of the ones already existing.

In summary, Pakistan resorted to financing its deficits at controlled interest rates and used the commercial banking system to grant subsidized credits to selected sectors. The fiscal deficits were financed primarily by issuing a wide variety of Treasury debt instruments placed at the Central Bank, the National banks and with the public. The credit subsidies were partly financed with Central Bank rediscounts and mainly at the expense of the net worth of the national banks. Financial liberalization made both the problem of servicing the outstanding Treasury debt as well as the non-performing portfolio of national banks evident. The solution to the problem requires that the Treasury generate a primary surplus to pay the real interest on its debts and the interest on a new Treasury instrument that should be issued to capitalize the national banks.

An alternative to capitalizing the state banks would be to privatize them. In this case the market would simply pay exactly what the banks are worth, discounting any possible quasifiscal losses. It may, however, be possible for the liabilities to exceed the value of assets by so much that net worth is negative. In such a case the Treasury will have to pay the difference if bankruptcy is not desired or feasible. The alternative to selling the national banks is consistent

with greater market competition and has the advantage of not creating any strain on the Treasury cash flow, at least in the case in which the banks have a positive market price.

C. BANGLADESH: Financial Reform Improves Quasi-fiscal Balance

Bangladesh is the poorest country in the region and also the only one to have undergone significant financial sector reform. Prior to 1989, some of the quasi-fiscal problems of the country were similar to those of its neighbors: directed credit at low interest rates that created serious solvency problems for commercial banks, most of which belonged to the state. While deposit rates were traditionally slightly positive in real terms, regulated lending rates were much lower and created serious financial problems for banks which the Central Bank temporarily solved thorough the "refinancing facility" at subsidized rates.

A significant difference between Bangladesh and her neighbors has to do with the little use made of the domestic financial market for financing fiscal deficits. While fiscal deficits are in the order of 6-8% of GDP, less than one percent has been domestically financed in any year since 1985. The availability of external financing and the low level of development of the domestic financial market must have been determining factors for the low level of domestic public debt. In consequence, we do not find any significant quasi-fiscal problem from the level of public domestic debt as in India and Pakistan.

External financing of the deficits has helped keep the inflation rate at a very stable annual level of 8-11%. In addition, again different from India and Pakistan, the Central Government has run smaller primary deficits within a general pattern of fiscal adjustment: since 1986/87, the primary deficits have decreased almost linearly from a level of 5.6% of GDP to only 1% in 1991. (See Table 6)

TABLE 6

BANGLADESH: FISCAL ACCOUNTS OF CENTRAL GOVERNMENT
(% of GDP)

Year ending June	Total Deficit	External Financing	Primary Deficit
1986	7.6	6.8	5.8
1987	8.4	7.5	5.9
1988	7.2	7.3	4.6
1989	7.3	7.1	3.0
1990	7.6	6.5	3.3
1991	6.8	6.2	1.0

The quasi-fiscal problem existing prior to the 1989 reform was attacked through a consistent set of measures including: (1) the partial liberalization of interest rates that made them positive in real terms for borrowers: (2) the replacement of the refining facility by an onerous

rediscount window; (3) the implementation of an explicit Treasury subsidy for those credit operations still remaining at below market interest rates; (4) the capitalization of banks for part of their bad assets with a 15-year Treasury bond in an amount close to 2% of GDP; and (5) the establishment of special law courts for dealing with debt recovery cases.

All of the reforms immediately helped improve the quasifiscal losses of the national banks and were coupled with an improved primary balance of the Central Government which reached 1% of GDP in 1990/91. Budget provisions have been made to incorporate the financing for the interest rate subsidy and the service of the Treasury bond used in the capitalization scheme.

The adjustments made in Bangladesh have attacked the quasi-fiscal problem at its roots: the primary deficit and the losses from directed credit at subsidized interest rates.[2] Existing losses have been made transparent though the capitalization of banks at the expense of the Treasury, and the recovery of the bad credits enhanced by the creation of special courts. The partial liberalization of interest rates, making lending rates positive in real terms and the fiscal adjustment provide a sound basis for restraining the quasi-fiscal deficit.

IV. CONCLUSIONS AND POLICY RECOMMENDATIONS

Quasi-fiscal deficits are a common occurrence in both Latin American and South Asian countries. There are, however, sharp differences insofar as their magnitude and in the factors generating them.

In South Asian countries the Central Bank has not been the primary source of public sector financing. Rather, the state has used the commercial banking system to finance the deficit and subsidized directed credit operations. This has resulted in high levels of non-performing assets for the commercial banks. Also, in India, the public sector has placed significant amounts of debt in the market voluntarily.

The levels of internal debt and public sector primary deficits in India are much greater than those normally financed in Latin America. Given the negative passive deposit rates, they can only be explained by the abnormal rates of monetization and financial deepening.

The market in Pakistan has been much more sensitive to the crowding out by the public debt. It forced the Treasury to gradually increase the attractiveness of its debt to the point that

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[2] Note that the financial sector reform has, on the other hand, added to the direct deficit of the Government of Bangladesh. Interest on servicing the bonds issued for capitalization of the Banks added TK 1 billion each year to the government's deficit. Notwithstanding this increased interest burden, public sector deficits have declined from 7.6% of GDP in 1990, to 6.8% in 1993 and to 5.3% in 1992 as a result of energic efforts to increase revenue, cut back in other recurrent expenditures and due to shortfalls in the realization of the targeted capital expenditure program.

it seriously competes with deposits at the national commercial banks that need to be rolled over to refinance non-performing assets. In the absence of sustained monetization, the quasi-fiscal deficit in Pakistan results from either public debt or the national commercial banks. Increasing the relative attractiveness of one worsens the situation of the other. In consequence, Pakistan is in a situation where it is mandatory to adjust or, alternatively, face a severe financial crisis. Adjustment should include improving the financial situation of the Treasury and of the state owned commercial banks, including rescheduling the public debt at credible terms. For this to happen, the currently unfulfilled fiscal adjustment is fundamental.

In the cases of India and Pakistan, an evaluation should be made about the full costs of obtaining foreign exchange through the granting of exchange rate insurance for foreign currency deposits at the Central Bank. Such insurance allows depositors to repurchase their foreign exchange at the exchange rate the deposit was made and this generates substantial losses when devaluations take place as it has been the case.

Bangladesh is the country which has consistently and efficiently faced the quasi-fiscal problem. Paradoxically, it is also the poorest country in the region, suggesting that the willingness to adjust grows directly with poverty. In this case the reforms were globally consistent: fiscal adjustment was coupled with financial liberalization and capitalization of banks at the Treasury's expense.

Quasi-fiscal deficits in South Asian countries result mainly from servicing domestic public debt which financed primary deficits and from losses from interest rate controls and directed credit operations. For the most part, those losses occurred in the state owned commercial banks rather than directly at the Central Banks. The losses, which show as a non-performing asset that has been financed with deposits from the public, should be considered as public debt.

If national banks have accumulated quasifiscal losses, privatization will ensure that those losses are discounted by purchasers in the price paid. If the losses are large enough so that net worth is negative, bankruptcy should be called for. However, political or legal reasons may prevent the bankruptcy of national banks in which case the Treasury will have to pay the difference between liabilities and the market value of assets so that net worth is at least zero. If the national banks are to continue functioning normally without privatization, the government should capitalize them for the losses incurred on its behalf and implement rules so that they are responsible for their losses afterwards.

Any capitalization of banks by the Treasury would require the explicit creation of new public debt which should be consolidated with the rest of the outstanding domestic public debt. The new debt would need to be restructured with maturity terms consistent with the unavoidable fiscal adjustment. It is not safe to assume that the public debt can continue to be rolled over at rates such as those being experienced, for example, in India.

In setting priorities towards solving the quasifiscal problems in South Asia, the first measures should aim to stop the accumulation of actual and potential quasifiscal liabilities. Included in this set of measures are: (i) setting limits on the granting of subsidized credit by the commercial banks and on the level of the implicit interest rate subsidies granted, (ii) increasing collection rates on state or nationalized banks, (iii) restructuring of domestic and external debt

at larger maturities without penalty rates, (iv) evaluating the total costs of obtaining foreign exchange through exchange rate insurance schemes and, if necessary, substitute those funds for other less expensive alternatives.

A second step in the agenda for adjustment would be the reduction in the existing level of claims generating the ongoing quasifiscal deficits, among which are: (i) stock of Central Bank debt, (ii) exchange rate insurance schemes and deposit insurance, (iii) accumulated losses of nationalized banks. Such measures are bound to have a fiscal cost that may have to be faced initially through the issue of Treasury debt. However, the permanent solution to the problem requires that existing quasifiscal debt be paid with genuine fiscal resources. Such resources can only come through a fiscal surplus or the proceeds of privatization. Fiscal adjustment and privatization are the only effective instruments for dealing with the inherited level of quasifiscal debts in a sustainable manner.

APPENDIX : Algebraic Analysis of Quasi-fiscal Deficits

The same distinctions made between primary, operational and total deficits of the non-financial public sector can also be made when evaluating the Central Bank's financial performance. However, in evaluating Central Bank operations, the primary concern is with detecting the sources for actual or potential monetary creation, and not so much the institution's net wealth changes. In fact, without additional assumptions, none of the three conventional fiscal measures of deficit can explain the changes in the supply of base money. This point is briefly elaborated below. For a more extensive treatment of different accounting measures of deficits, the reader is referred to Rocha and Saldanha (1991).

Consider a simplified version of a Central Bank that has one asset of nominal value A, and two liabilities: interest earning debt, D, and non-interest earning high power money, H. The nominal rates of return on the three instruments are respectively Ia, Id and 0. Denoting W to the net wealth of the Central Bank, the balance sheet identity requires:

$$(1)\quad A = D + H + W$$

Changes in the nominal net worth are equal to the difference between the interest accrued on assets and liabilities minus any other non-interest (net) quasi-fiscal expenditures accrued during the period:

$$(2)\quad dW/dt = Ia.A - Id.D - OQF$$

There are three conventional measures of deficits: Total, Primary and Operational. Total deficit measures the nominal fall in the value of the net worth;

$$(3)\quad TD = -dW/dt = OQF + Id.D - Ia.A$$

The Primary deficit equals the result of non-interest related operations:

$$(4)\quad PD = OQF$$

The Operational deficit only considers the real interest rate on all assets and liabilities. The real interest rate is computed as the difference between nominal interest rates and the inflation rate during the period(π): Ra=Ia-π and Rd=Id-π.

$$(5)\quad OD = (Id-\pi).D - (Ia-\pi).A - OQF$$

On the other hand, the rate of increase in high power money (dH/dt) can be obtained by differentiating (1):

$$(6)\quad dH/dt = dA/dt - dD/dt - dW/dt$$

Substituting (2) into (6) we obtain:

$$(7)\ dH/dt = (dA/dt - Ia.A) - (dD/dt - Id.D) + OQF$$

High power money tends to increase with asset purchases, interest payments on debt and with other quasi-fiscal spending; it tends to fall with increases in interest earning debt or with interest collected. The increase in high powered money is not equal to any of the three alternative measures of the deficit presented in (3), (4) or (5).

It follows from the previous analysis that there are different deficit definitions depending on what is to be measured. In particular, estimating the rate of change in money requires a non-conventional definition of deficit that incorporates the actual rates of change in stocks of assets and interest earning debt. Such changes in stocks may or may not be the result of policy decisions: there may be limits to the ability of the Central Bank to change the level of its nominal liabilities (when it is not feasible to increase the stock of debt in real terms, so that $dD/dt=\pi.D$), and there may be minimum levels for the feasible rate of increase in assets (when the accrued interest cannot be paid so that it must be rolled over such that $dA/dt = Ia.A$).

So far we have used the overall definitions of Central Bank deficit, including the regular financing of the fiscal deficit and the quasi-fiscal deficit. To the extent that all Treasury financing is formally documented, financing the fiscal deficit can be considered as the acquisition of an Asset and therefore it is a part of dA/dt. The rest of dA/dT includes the counterpart of all other quasi-fiscal expenditures that are documented as debt operations: rediscounts to financial institutions, sectoral loans, trade credits, etc. Direct subsidies, foreign exchange losses and expenses due to guarantees and collateral should be computed as OQF since they do not give rise to the acquisition of any asset.

The combined service of the quasi-fiscal deficit and the fiscal deficit determine the need of the Central Bank to issue liabilities. Those liabilities may be interest earning debt or high power money. An open market operation or a shift from debt financing to monetary financing will leave the wealth of the Central Bank unchanged but will have quite a different effect on inflation. Other things equal, satisfying the financing needs with high powered money will immediately lead to more inflation (or reserve losses if there is a fixed exchange rate with full currency convertibility, currently non-relevant for South Asia). If the financing need is met by issuing more interest earning debt, the short run inflationary impact may be avoided at the expense of a higher interest bill in the future. Eventually, the real debt level of the Central Bank is bound to reach a level in which the real component of the nominal interest will have to be serviced, which means issuing money. Depending on the real interest rate, debt financing may be an expensive way to buy time on inflation.