Fiscal Adjustment and Deficit Financing during the Debt Crisis

William R. Easterly

Highly indebted countries are probably better off raising conventional taxes and cutting current spending — rather than raising taxes on financial intermediation and cutting public investment. But shifting policies may require the breathing space only new external financing or debt relief would provide.

To study the adjustment to the debt crisis, the author compared the experience of seven "crisis" debtor countries (Argentina, Brazil, Chile, Mexico, Morocco, Yugoslavia, and the Philippines) with those of five "noncrisis" debtor countries (Colombia, Indonesia, Korea, Turkey, and Thailand).

In response to a sharp reduction in external capital flows, the crisis countries rescheduled their debt during 1982-87. The noncrisis group avoided debt rescheduling during that period and maintained access to external capital.

Most of the noncrisis countries followed an approach of modest domestic financing at market interest rates. This was less costly for private investment because financial savings grew rapidly.

In the crisis countries, public investment was the locus of fiscal adjustment. Most of the crisis countries took the approach of increased domestic financing through taxes on financial intermediation — through reserve requirements, high inflation, and interest rate controls. In the short run, this tax precipitated capital flight and financial disintermediation.

The crisis countries would probably have been better off raising conventional taxes and cutting current spending rather than raising taxes on financial intermediation and cutting public investment.

Small increases in rates or coverage of broad-based taxes (such as income or consumption) are probably less distortionary for the same amount of additional revenue than taxes on financial intermediation. Conventional broad-based taxes penalize mainly consumption. The tax on financial intermediation falls more on investment and may cause more severe damage in the long run.

In a situation that called for quick action, the behavior of the crisis countries was understandable. It takes more time to raise conventional taxes than to tax financial balances, and it takes more time (because it is harder) to cut current spending than to cut public investment.

Shifting to sounder policies in the crisis countries may require the breathing space only new external financing or relief from debt service would provide.

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I. <u>Introduction and Summary</u>

The sharp reduction in external financing to most high-debt countries in the 1980s forced major adjustments in macro policy, especially in the management of fiscal deficits. The debt crisis itself initially worsened public finances, since the governments of debtor countries often felt compelled to assume external liabilities of the private sector and financial system. At the same time, the near-termination of external capital flows required an increase in internal finance of public deficits. The result in most high-debt countries was increased inflation, output stagnation, and falling private investment. By contrast, some high-debt countries avoided a drastic decline in their capital inflows and did not have to reduce public deficits as sharply or increase reliance on internal financing. The outcome was much more favorable in these countries, with steady growth, low and stable inflation, and healthy private investment.

In order to study the nature of adjustment to the debt crisis, this paper focuses on a group of seven debtor countries that experienced a sharp reduction in external capital flows and rescheduled their debt in the period 1982-87: Argentina, Brazil, Chile, Mexico, Morocco, the Philippines, and Yugoslavia. The study contrasts a group of five countries that avoided rescheduling over 1982-87 and maintained access to external capital: Colombia, Indonesia, Korea, Turkey, and Thailand. The former group of countries will be referred to as "crisis countries" and the latter as "non-crisis countries".

The purpose of discriminating between the two groups is to show the adverse consequences of the cutoff in external financing to the "crisis" group and the resulting policy response. The combination of a more favorable external environment and wiser policy choices made for better performance in the "non-crisis" group. The study will not examine the origins of the debt crisis itself or how the countries came to be in one group or the other. The debt crisis was

clearly an endogenous phenomenon -- and one that had a lot to do with fiscal policy. However, the origins of the debt crisis have already been analyzed in many other places (see for example, Barandiaran (1988), Sachs (1985), Berg and Sachs (1988), Cuddington (1988)), and so will be treated as an exogenous event in this paper.

The use of rescheduling as a discriminator is far from ideal, since it refers only to a short period and thus does not capture problems which may not have become evident during this period. The distinction between rescheduling and "voluntary" refinancing may also be more of form than of substance in some cases. Turkey and Colombia are borderline cases in this regard, both because they may yet reschedule and because their refinancing operations may have contained an element of official intervention. However, the rescheduling criterion at least has the advantage of being objective, in contrast to the judgmental assignment of countries to "success" and "failure" groups by the researcher.

The specification of two contrasting groups of countries also must allow for substantial differences among countries within each group. This is particularly evident in the varying policy responses in the "crisis" group -- ranging from failed adjustment efforts in Argentina to impressive adjustment in Chile -- and in the incomplete adjustment of Turkey in the "non-crisis" group. However, the similarity of external conditions faced within each group justify also considering the group as a whole.

The central role of fiscal deficits and their financing has recently received increased attention in the voluminous literature on the adjustment to the debt crisis. The framework linking public deficits, the decline in external financing, and inflation has been set out in Van Wijnbergen et. al. (1988) and Buiter (1988). The risk of an internal public debt trap and need for eventual monetization has been analyzed in Morley and Fishlow (1987), with the classic

result on monetization of internal debt coming from Sargent and Wallace (1984).
Reisen and Van Trotsenburg (1988) contains a comparative analysis of internal
public financing in debtor countries and its macroeconomic implications.
Cardoso and Dornbusch (1987) and Dornbusch (1988) have analyses of the internal
and external debt dynamics in Brazil and Mexico, respectively. Kiguel (1988)
has a trenchant analysis of the role of excessive public financing requirements
in the failure of the Austral Plan in Argentina.

Many of the general surveys of adjustment to the debt crisis also give
a central place to fiscal policy. Selowsky and Larraín (1988) show the
importance of public sector behavior in the debt crisis and subsequent
adjustment in Latin America. Barandiaran (1988), Cline (1987), and Edwards and
Larraín (1988) also feature inadequate fiscal adjustment as one of the main
culprits in the disappointing macroeconomic outcomes in Latin America.

This paper will seek to contribute to this literature through
refinement of the theoretical framework and through detailed empirical results.
The paper will examine first the nature of changes in external debt flows, which
will show how the external debt crisis contributed to a parallel fiscal crisis
in the crisis countries but not in the non-crisis countries. The specific kind
of fiscal adjustment undertaken is discussed in the following section. The
adjustment efforts were concentrated on public investment in the crisis
countries, while the non-crisis countries maintained stable levels of most
fiscal aggregates. A resource surplus was generated in tne crisis countries
through the investment-led contraction of absorption, even though overall
production was stagnant. By contrast the non-crisis countries had obtained a
resource surplus by the end of the period through healthy growth of both
production and absorption. The cverall amount of fiscal adjustment was less
than the decline in external financing in the crisis countries, so that they had
to recur increasingly to domestic financing.

The next section discusses the macroeconomic implications of the increased reliance on domestic financing of public deficits, including the significance of domestic versus external finance and the different types of domestic finance. A simple theoretical model relates the means of domestic financing to the behavior of interest rates and inflation. The final section of the paper presents empirical data on the means of domestic financing utilized in the sample countries and on levels of interest rates and inflation. It shows that the crisis countries relied heavily on implicit taxes on financial intermediation to domestically finance their deficits, which explains the poor performance of private investment and inflation. The non-crisis countries largely eschewed taxes on financial intermediation for domestic borrowing at market rates, with successful results. The policy conclusions are that larger deficit reductions -- preferably implemented through tax reform and reduction of current expenditures -- and less distortionary means of financing would lead to improved outcomes in the crisis countries.

II. <u>Changes in external debt flows</u>

The hallmark of the external debt crisis was a sharp reduction in external debt flows to the crisis countries. As Table 1 shows, the net flow of public external debt to the crisis countries reached a peak of 3.8 percent of GNP in 1982 and then declined to 0.8 percent of GNP in 1986. The reduction in private long-term debt flows began after 1981, when it reached a peak of 2.3 percent of GNP. By 1986, there was a small negative flow of external long-term debt to the private sector in the crisis countries. (See Appendix I for data on individual countries.)

The data in Table 1 also indicate that the public sector assumed part of the private external debt. The increase in public external debt is considerably greater than the net flow of new lending (both measured in dollars as a percentage of GNP in dollars). Revaluation of debt in non-dollar

Table 1

EXTERNAL DEBT FLOWS
(Percent of GNP)

	1980	1981	1982	1983	1984	1985	1986
PUBLIC LONG-TERM DEBT:							
CRISIS COUNTRIES							
Change	2.1	2.4	3.8	8.1	4.1	4.4	4.4
Net flows	2.6	2.8	3.8	2.9	2.4	1.3	0.8
Revaluation	-0.1	-0.4	-0.3	-0.4	-0.6	1.2	1.3
Residual	0.1	-0.1	0.3	5.6	2.2	2.0	2.4
NON-CRISIS COUNTRIES							
Change	3.9	2.0	2.6	2.5	2.1	4.9	4.3
Net flows	2.8	2.9	2.9	2.9	2.9	2.5	1.3
Revaluation	0.0	-0.8	-0.6	-0.5	-0.8	2.0	2.7
Residual	1.1	0.0	0.2	0.0	0.1	0.4	0.2
PRIVATE LONG-TERM DEBT:							
CRISIS COUNTRIES							
Change	NA	2.3	0.1	0.5	-0.7	-2.2	-1.3
Net flows	1.1	2.2	0.6	-0.3	-0.2	-0.3	-0.2
Revaluation	0.2	-0.1	-0.2	0.4	0.3	0.3	0.2
Residual	NA	0.2	-0.3	0.4	-0.8	-2.2	-1.3
NON-CRISIS COUNTRIES							
Change	NA	0.7	0.1	0.7	0.6	0.4	-0.4
Net flows	0.5	0.7	0.1	0.7	0.7	0.4	-0.4
Revaluation	0.1	-0.1	-0.1	0.2	0.3	0.5	0.6
Residual	NA	0.0	0.1	-0.2	-0.4	-0.5	-0.6
SHORT-TERM DEBT:							
CRISIS COUNTRIES							
Change	NA	2.3	1.4	-6.2	-1.2	-0.9	-1.0
Revaluation	0.2	-0.1	-0.2	0.3	0.2	0.2	0.1
Effective Change	NA	2.5	1.6	-6.5	-1.4	-1.1	-1.2
NON-CRISIS COUNTRIES							
Change	NA	0.3	1.3	0.2	0.3	0.2	-0.1
Revaluation	0.3	-0.1	-0.2	0.4	0.4	0.7	1.0
Effective Change	NA	0.4	1.5	-0.3	-0.1	-0.5	-1.0

Source: World Debt Tables, 1987-88 edition. Estimates of revaluation by IEC Debt Division. Private and short-term estimates assume an identical currency composition to the public debt. For country breakdown, see Appendix I.

currencies explains part of this difference in 1985-86, but this was not a factor in 1983-84. The residual -- the difference between the net flow (plus revaluation) and the increase in debt -- reaches 5.6 percent of GNP in 1983 and is over 2 percent of GNP in 1984-86. The private sector data display a complementary negative residual beginning in 1984 -- the reduction in the private external debt is not fully explained by the negative flow of new lending minus amortization, plus revaluation (a positive factor in 1984-86). The data on short-term debt complete the picture. In 1983, the effective reduction in short-term debt (excluding revaluation) amounted to over 6 percent of GNP, continuing at over one percent of GNP in 1984-86. The data thus imply that there was a conversion of short-term debt (both public and private) into public long-term debt in 1983 -- and to a lesser extent, into private long-term debt. Beginning in 1984, there was a conversion of private long-term debt into public debt. In most countries, this was done through a program which exchanged the private external liability for a domestic currency liability to the public sector. This domestic debt in many cases was not serviced, or carried negative real interest rates. The public sector thus had to absorb a double shock -- the reduction of net flows of new finance and the need to finance the servicing of newly acquired short-term debt and private long-term debt.

In contrast, the flow of net external finance to the public sector in the non-crisis countries was steady until 1986. The flow to the private sector is modest but stable. Short-term debt also does not show any marked fluctuations. There is no evidence of assumption by the public sector of private sector debt. Thus the public sector in these countries was able to avoid the double shock that bedeviled governments in crisis countries.

III. Fiscal adjustment during the 1980s

This section analyzes the fiscal adjustment undertaken in high-debt countries after the outbreak of the debt crisis. This paper takes the approach of using only consolidated public sector data, refraining from any conclusions where such data is not available. This will leave gaps in the analysis, but this is preferable to the use of misleading central or general government data. Although central government data is more widely available for most countries, it is inadequate to address fiscal adjustment, in which public enterprises usually figure prominently.1/

A. Changes in fiscal aggregates

The reduction of net capital flows and the assumption of private external debt forced the crisis countries to make adjustments in their public expenditures, revenues, and overall deficits. Table 2 shows the behavior of consolidated public sector deficits in the sample countries. In several countries -- Argentina, Brazil, Chile, and Yugoslavia -- the debt crisis initially caused an increase in the public deficit. After 1982 most of the crisis countries achieved reductions in their deficits, especially when they are measured in operational terms. Argentina, Brazil, Mexico, and the Philippines had particularly sizable cuts in the early stage of the adjustment. However, all of these countries except the Philippines later experienced retrogression. Chile had a lesser fiscal deficit and achieved more permanent adjustment in the conventional fiscal accounts but experienced high central bank losses. Yugoslavia also had a major fiscal problem because of central bank losses. Morocco postponed most of its adjustment till 1986-87. As reflected in the total public deficit, the degree of fiscal adjustment in the crisis countries is modest.

1/ Indonesia is excluded from this part of the analysis on this criterion, since data on public enterprises are not available.

Table 2

PUBLIC SECTOR DEFICITS:
PUBLIC SECTOR BORROWING REQUIREMENT, OPERATIONAL, AND PRIMARY DEFICITS

PUBLIC SECTOR BORROWING REQUIREMENT (Percent of GDP)	1979	1980	1981	1982	1983	1984	1985	1986	1987
	(positive indicates deficit)								
CRISIS COUNTRIES									
Argentina-PSBR	6.5	7.5	13.3	15.1	16.1	12.6	6.1	4.3	7.5
-incl. central bank losses	NA	NA	NA	NA	NA	15.1	8.3	5.9	11.8
Brazil-PSBR	NA	NA	12.5	15.8	18.6	23.3	27.5	10.8	NA
-operational	NA	NA	5.2	7.0	3.5	2.7	4.3	3.7	5.5
Chile-PSBR	-5.0	-5.6	-0.8	3.4	3.0	4.4	2.6	1.9	0.4
-incl. central bank losses	NA	-6.6	-2.3	2.9	9.4	10.6	15.2	11.4	NA
Mexico-PSBR	7.4	7.6	14.1	16.9	8.5	7.1	9.6	15.6	15.2
-operational	NA	5.2	11.3	7.2	-1.2	-1.0	3.5	5.8	-5.4
Morocco	NA	NA	13.5	9.0	10.6	9.8	8.2	4.4	3.8
Philippines	NA	NA	7.5	6.5	6.2	3.3	2.1	1.6	1.9
-incl. financial losses	NA	NA	NA	NA	8.9	8.4	6.4	6.4	3.2
Yugoslavia-PSBR	-0.1	0.6	-0.5	-0.5	-0.3	-0.3	-0.3	0.0	NA
-incl. national bank losses	2.2	6.1	2.1	6.8	13.4	13.2	13.6	11.5	NA
NON-CRISIS COUNTRIES									
Colombia	0.2	2.8	5.2	6.0	7.6	6.7	3.6	-0.2	1.6
Korea	NA	NA	NA	7.3	3.6	3.9	3.9	0.3	NA
Thailand	5.6	7.8	6.6	7.8	5.6	4.3	7.0	4.7	2.6
Turkey	NA	NA	6.2	4.0	5.7	6.6	4.7	4.5	8.3

PRIMARY DEFICIT (Percent of GDP)	1979	1980	1981	1982	1983	1984	1985	1986	1987
	(positive indicates deficit)								
CRISIS COUNTRIES									
Argentina	3.4	4.1	5.9	4.8	10.1	7.7	0.6	0.5	3.5
Brazil	NA	NA	1.6	2.1	-2.8	-3.8	-2.4	-0.5	NA
Chile	-6.2	-6.4	-1.2	2.9	1.2	2.0	-0.6	-0.5	-2.5
Mexico	4.0	4.1	9.1	8.7	-3.9	-4.8	-2.4	-0.9	-4.3
Morocco	NA	NA	NA	NA	NA	NA	NA	NA	NA
Philippines	NA	NA	6.7	5.5	4.9	1.4	-0.3	-2.8	-7.2
Yugoslavia	NA	NA	NA	NA	NA	NA	NA	NA	NA
NON-CRISIS COUNTRIES									
Colombia	-1.1	1.1	3.8	4.2	5.5	3.9	0.7	-3.2	-2.2
Korea	NA	NA	NA	5.9	2.3	2.5	2.4	-1.0	NA
Thailand	4.2	6.4	4.7	5.8	3.2	1.8	4.0	NA	NA
Turkey	NA	NA	-1.0	2.9	-0.7	4.0	-1.3	-1.0	NA

Sources are given in Appendix IV.

The non-crisis countries also show some decline in public deficits after 1982, although it is more gradual and begins from a slightly lower level. Korea eliminated its deficit by 1986, while Colombia and Thailand continue to show moderate deficits. The only exception to the fiscal improvement is Turkey whose deficit failed to improve over 1983-86, then increased in 1987.

The improvement in the primary deficit (the total deficit excluding interest payments) is more pronounced than the overall fiscal adjustment in the crisis countries. Brazil, Chile, Mexico, and the Philippines achieved primary surpluses after 1982. In Mexico and the Philippines, the degree of adjustment in the primary balance was particularly noteworthy -- a change of 13 percentage points of GDP from 1982 to 1987. In the non-crisis countries, the improvement in the primary deficit was more modest, although again the level was lower to begin with. Korea, Colombia and Turkey achieved primary surpluses by 1986.

Losses of the central bank -- often not included in conventional deficit definitions -- were a major factor in the behavior of the deficits after 1982 in several countries. These were associated with the assumption of external liabilities and financial losses of private corporations and banks. In some cases, the losses stemmed from the granting of exchange rate guarantees or differentially low exchange rates to private debtors in foreign currency. Data on such losses were only found for four countries -- Argentina, Chile, the Philippines, and Yugoslavia -- but they were probably important in other cases. In these four cases, the central bank losses were very important -- in Chile and Yugoslavia they explain virtually the entire public sector deficit. The losses prevented the total deficit from falling more rapidly (or not at all) in these countries.

Table 3 shows that the additional revenue effort to achieve the fiscal adjustment in the crisis countries was small. Revenue stayed stagnant or declined in Argentina, Chile, the Philippines, and Yugoslavia. A breakdown of

Table 3

CONSOLIDATED PUBLIC SECTOR REVENUE*
(Percent of GDP)

Total Revenue	1979	1980	1981	1982	1983	1984	1985	1986	1987
Crisis Countries									
Argentina	33.9	36.4	35.7	33.1	34.7	33.4	41.5	38.2	36.8
Brazil	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chile	43.3	43.2	38.2	40.2	41.1	41.0	43.5	40.5	41.0
Mexico	24.0	25.2	23.9	26.3	30.5	29.2	28.2	30.4	30.0
Morocco	NA	NA	NA	NA	NA	NA	NA	NA	NA
Philippines	NA	NA	15.3	15.2	15.1	13.7	14.9	13.9	16.6
Yugoslavia	NA	32.6	31.8	30.5	29.9	28.4	27.1	NA	NA
Non-Crisis Countries									
Colombia	26.7	27.3	24.8	24.6	23.9	18.8	20.5	22.0	18.6
Korea	NA	NA	NA	26.9	28.0	27.0	27.1	26.9	NA
Thailand	14.8	15.1	14.9	15.5	16.9	18.3	17.5	19.9	20.1
Turkey	NA	NA	NA	NA	NA	NA	NA	NA	NA

Tax Revenue	1979	1980	1981	1982	1983	1984	1985	1986	1987
Crisis Countries									
Argentina	20.6	23.3	20.3	18.7	18.6	18.2	22.0	21.9	21.7
Brazil	NA	23.2	23.6	25.1	24.4	21.8	NA	NA	NA
Chile	25.7	26.3	25.2	22.7	22.4	23.7	23.2	23.4	23.8
Mexico	11.3	10.9	10.6	9.9	10.2	10.2	10.0	11.2	10.5
Morocco	NA	NA	NA	NA	NA	NA	NA	NA	NA
Philippines	NA	NA	10.9	10.5	9.3	9.7	10.5	NA	NA
Yugoslavia	NA	30.1	29.1	27.7	26.6	13.3	24.2	NA	NA
Non-Crisis Countries									
Colombia	15.2	14.5	12.9	13.0	13.3	12.4	13.7	14.5	13.6
Korea	NA	NA	NA	18.2	19.0	18.3	18.3	18.2	NA
Thailand	13.1	13.4	13.5	13.1	14.1	14.1	14.5	NA	NA
Turkey	NA	NA	NA	NA	NA	14.4	16.8	19.9	20.4

Non-tax Revenue	1979	1980	1981	1982	1983	1984	1985	1986	1987
Crisis Countries									
Argentina	13.3	13.2	15.4	14.4	16.1	15.2	19.5	16.2	15.1
Brazil	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chile	17.6	16.9	13.0	17.5	18.7	17.3	20.3	17.1	17.2
Mexico	0.7	0.8	0.9	1.1	1.0	0.8	0.9	1.0	1.0
Morocco	NA	NA	NA	NA	NA	NA	NA	NA	NA
Philippines	NA	NA	4.4	4.7	5.8	4.0	4.5	NA	NA
Yugoslavia	NA	2.6	2.7	2.8	3.3	15.1	2.9	NA	NA
Non-Crisis Countries									
Colombia	11.5	12.8	11.9	11.6	10.6	6.4	6.8	7.5	5.0
Korea	NA	NA	NA	8.7	9.0	8.8	8.8	8.7	NA
Thailand	1.7	1.7	1.4	2.4	2.8	3.8	3.0	NA	NA
Turkey	NA	NA	NA	NA	NA	NA	NA	NA	NA

* Consolidated public sector includes central, state and local, decentralized agencies, and SOEs.

Sources are given in Appendix IV.

revenue into tax and nontax revenue shows that taxes did not play much of a role in the adjustment. The ratio of tax revenue to GDP falls or is virtually unchanged over 1982-85 for the six crisis countries for which consolidated data are available. An increase in nontax revenues -- mainly reflecting improved financial performance of public enterprises as a result of output price increases -- is noticeable in the first year after the debt crisis broke out but is later eroded. In the non-crisis countries, Colombia, Korea, and Thailand do not show major changes in their tax revenue ratio. Turkey did have a rapid rise in taxes, although this was not enough to keep its deficit from rising. Nontax revenues are more variable -- falling sharply in Colombia, rising in Korea, and unchanged in Thailand.

The burden of the adjustment in the crisis countries was on the public expenditure side, as shown in Table 4. The most severely cut was capital spending, which fell sharply in Argentina, Brazil, Mexico, and the Philippines, increasing only in Chile. By contrast, Colombia, Korea and Thailand showed fairly stable public investment ratios over the period, while Turkey increased its ratio.

The other expenditure category that shows significant reductions is net transfers. This is a catch-all category which includes, among other things, social security contributions and payments, medical benefits of public employees, and consumer subsidies. After an initial increase in 1982-83, net transfers fell in Argentina, Brazil, Chile, the Philippines and Mexico. They were also reduced in Colombia, but not in the other non-crisis countries.

Not surprisingly, public interest expenditures increase dramatically in all crisis countries. Even when interest is corrected for the effect of high inflation -- such as in Mexico and Brazil -- the increase is still significant. By contrast, public interest expenditure in the non-crisis countries stays stable at around 2 percent of GDP.

Table 4

CONSOLIDATED PUBLIC SECTOR EXPENDITURES*
(Percent of GDP)

Non-interest Current Expenditure	1979	1980	1981	1982	1983	1984	1985	1986	1987*
Crisis Countries									
Argentina	19.0	21.7	21.2	20.7	24.7	23.4	25.5	22.3	23.1
Brazil	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chile	12.6	12.4	11.1	11.5	10.2	10.0	9.3	7.5	8.3
Mexico	17.9	20.4	20.3	25.3	18.9	17.7	19.7	23.5	20.2
Morocco	NA	NA	NA	NA	NA	NA	NA	NA	NA
Philippines	NA	NA	9.2	8.9	8.8	7.1	7.6	NA	NA
Yugoslavia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Non-Crisis Countries									
Colombia	7.6	8.3	9.3	8.9	9.6	9.1	8.6	8.2	7.6
Korea	NA	NA	NA	15.6	14.9	14.1	14.5	12.5	NA
Thailand	12.7	12.8	12.6	13.3	13.1	13.7	14.0	NA	NA
Turkey	NA	NA	NA	NA	NA	NA	NA	NA	NA

Interest	1979	1980	1981	1982	1983	1984	1985	1986	1987*
Crisis Countries									
Argentina	3.1	3.4	7.4	10.4	6.0	5.0	5.5	3.8	.9
Brazil	NA	NA	10.9	13.7	21.4	27.1	29.9	11.3	4
- operational	NA	NA	3.6	4.9	6.3	6.5	6.7	4.2	.A
Chile	1.2	0.8	0.4	0.5	1.8	2.4	3.2	2.4	2.9
Mexico	3.4	3.5	5.0	8.2	12.4	11.9	12.0	16.5	19.5
- operational	2.1	1.5	2.6	-0.4	5.2	5.4	5.8	6.6	4.0
Morocco	NA	NA	NA	NA	4.7	6.2	6.2	6.2	NA
Philippines	NA	NA	0.8	1.0	1.3	1.9	2.4	NA	NA
Yugoslavia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Non-Crisis Countries									
Colombia	1.3	1.7	1.4	1.7	2.1	2.4	2.9	3.0	3.8
Korea	NA	NA	NA	1.4	1.3	1.4	1.4	1.3	NA
Thailand	1.4	1.4	1.8	2.0	2.4	2.5	2.9	NA	NA
Turkey	NA	NA	NA	NA	NA	NA	NA	NA	NA

Capital Expenditures	1979	1980	1981	1982	1983	1984	1985	1986	1987*
Crisis Countries									
Argentina	10.5	9.5	9.7	8.6	9.7	7.8	7.1	7.1	7.7
Brazil	NA	NA	7.6	7.5	6.5	5.2	5.4	NA	NA
Chile	5.2	5.4	5.2	4.7	4.9	6.4	7.0	7.5	6.9
Mexico	10.0	8.9	12.7	9.7	7.7	6.7	6.0	6.0	5.5
Morocco	NA	NA	NA	NA	NA	NA	NA	NA	NA
Philippines	NA	NA	8.7	6.6	7.6	4.5	3.2	3.6	5.0
Yugoslavia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Non-Crisis Countries									
Colombia	6.2	6.5	7.4	7.3	8.2	9.5	8.9	7.5	6.3
Korea	NA	NA	NA	10.9	10.3	10.1	9.9	9.0	NA
Thailand	6.7	8.5	7.9	8.0	7.3	6.9	7.8	7.2	6.6
Turkey	NA	NA	NA	NA	10.2	9.7	11.4	13.6	13.5

Net Transfers	1979	1980	1981	1982	1983	1984	1985	1986	1987*
Crisis Countries									
Argentina	7.7	9.3	10.7	8.6	10.4	9.8	9.6	9.3	9.5
Brazil	NA	NA	10.8	11.6	10.9	9.3	10.0	NA	NA
Chile	19.3	19.0	20.7	26.9	27.2	26.6	26.6	23 8	23.2
Mexico	5.3	6.4	7.6	10.8	7.2	5.8	5.1	NA	NA
Morocco	NA	NA	NA	NA	NA	NA	NA	NA	NA
Philippines	NA	NA	0.8	1.4	1.1	0.7	0.8	-1.9	-1.0
Yugoslavia	NA	NA	NA	NA	NA	NA	NA	NA	NA
Non-Crisis Countries									
Colombia	11.8	13.6	11.8	12.7	11.6	4.1	3.6	2.8	2.3
Korea	NA	NA	NA	3.1	2.1	2.5	2.9	2.9	NA
Thailand	-0.4	-0.5	-0.7	-0.4	-0.4	-0.5	-0.7	NA	NA
Turkey	NA	NA	NA	NA	NA	NA	NA	NA	NA

* Consolidated public sector includes central, state and local, decentralized agencies and SOEs.
Operational interest refers to interest less the inflation correction on domestic debt.
Sources are given in Appendix IV.

One expenditure category that showed considerable variability between crisis countries was current expenditure (excluding interest). It increased in Argentina but was cut in Chile and the Philippines. In Mexico, current expenditures rose and fell erratically in response to crises and successive stabilization efforts. By contrast, Colombia, Korea, and Thailand show little change in their current expenditures over the period.

B. Income and Absorption

The overall adjustment pattern in the crisis and non-crisis countries is very different. In the crisis countries, saving remained constant but investment was cut. In the non-crisis countries, investment increased while saving was raised even more, so that a resource surplus was eventually achieved. Income was rising steadily in the non-crisis countries while stagnant in the crisis cases. Absorption was reduced sharply in the crisis countries but kept growing in the noncrisis countries (Figure 1). Thus consumption was also increasing at a healthy rate in absolute terms in the non-crisis countries, while flat in the crisis countries. As the data in Appendix I show, this pattern also shows up in the behavior of imports and exports. Imports contracted sharply in the crisis countries, while exports stagnated. Both imports and exports grew in the non-crisis countries. These differing outcomes were a result of the public finance choices made, especially the means of financing fiscal deficits, as described in the next section.

Although public expenditure adjustments contributed to the improvement in the resource balance of the crisis countries, the overall fiscal improvement was less than the degree of the turnaround of the external balance. This can be seen in Figure 2, which compares the current account deficit and fiscal deficits in 6 crisis and 3 non-crisis countries. The greater reduction in the current account deficit in comparison with the public deficit implies that more net

Figure 1:

GDP, ABSORPTION, AND CONSUMPTION
CRISIS COUNTRIES

GDP, ABSORPTION, AND CONSUMPTION
NONCRISIS COUNTRIES
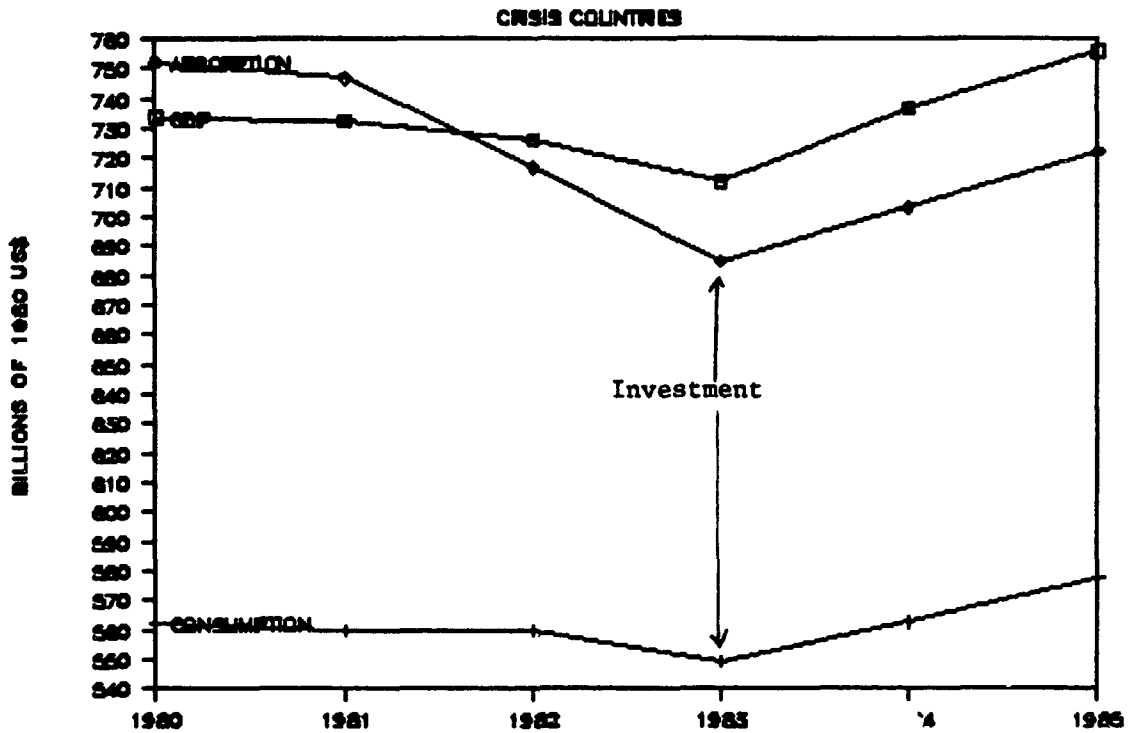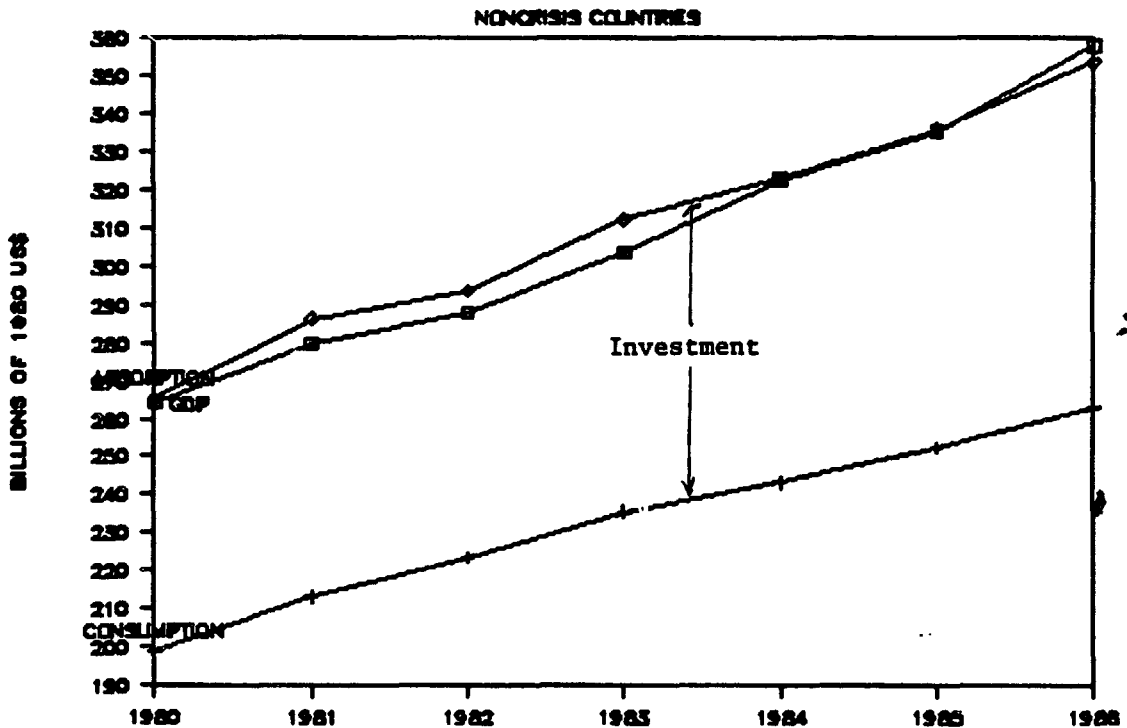
Figure 2:

CURRENT ACCOUNT AND FISCAL DEFICITS
CRISIS COUNTRIES (EXC MOROCCO)
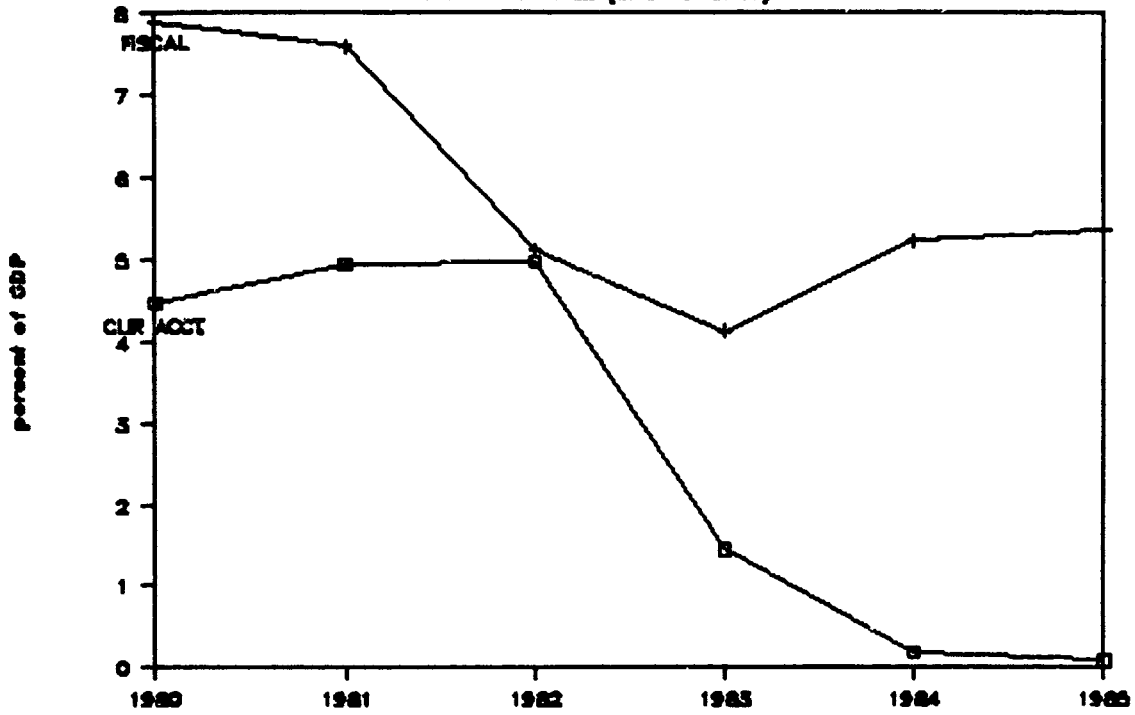
CURRENT ACCOUNT AND FISCAL DEFICITS
NONCRISIS COUNTRIES (EXC INDONESIA)

internal finance from the private sector had to be mobilized. The public sector in the crisis countries was forced to increase its reliance on domestic financing even though its overall deficit was declining. In the non-crisis countries, the current account deficit and public deficit declined gradually together, so that there was a lesser need for internal financing.

IV. Financing of public deficits and macroeconomic outcomes

This section will set out a framework for the analysis of the domestic financing of public deficits and their macroeconomic consequences. The overall flows of financing within the economy will first be discussed to try to pin down what "domestic financing" of the public deficit really means. Then the menu of fi... cing choices faced by the public sector will be detailed. Lastly, the macroeconomic implications of domestic financing choices will be discussed.

A. Financing matrix for the public sector deficit

The matrix shown in Table 5 illustrates the financial inter-relationships which underlie the financing of the fiscal deficit. The nonfinancial public sector is shown in the top row and the first column of the matrix. The row shows the composition of gross financing of the public sector. The column shows any financial assets held by the public sector. The same principle holds for each type of participant in the financial markets -- asset holdings are shown in the column and liabilities are given in the row for that participant. One agent's liability is someone else's asset. Thus the second entry in the first row is central bank credit to the government. This is a liability to the government but an asset to the central bank. In the same way, the lender and borrower are identified for each financial stock shown in the matrix.

Table 5

Financing matrix

asset(down)/
liability(across)

	(g) Public Sector	(b) Central Bank	(f) Financial System	(c) Private Corps	(p) Private Household	(e) External Accounts	Total deficit
Public Sector		ΔQ_g	ΔL_g	ΔA	ΔB_p	ΔEF_g	$-(PSBR+V_g)$
Central Bank			$\Delta H_f + \Delta T_f$		$\Delta H_p + \Delta T_p$	ΔEF_b	$-(QFD+V_b)$
Financial System	ΔD_g	ΔQ_f		ΔD_c	ΔD_p	ΔEF_f	V_f
Private Corps		ΔQ_c	ΔL_c		ΔC	ΔEF_c	$-(S_c - I_c + V_c)$
Private Households			ΔL_p				$-(S_p + V_p)$
External		ΔER_b	ΔER_f		ΔER_p		$-(CAD+V_e)$

List of variables

PSBR	Public Sector Borrowing Requirement
F_i	Foreign Debt of Sector i
E	Exchange rate
B_i	Government Bonds held by Sector i
L_i	Financial system loans to sector i
Q_i	Central bank credit to sector i
QFD	Quasi-fiscal deficit (deficit of central bank)
H_i	Currency held by sector i
T_i	Non-monetary liabilities of central bank held by sector i
D_i	Deposits in financial system by sector i
CAD	Current account deficit
R_i	Foreign assets held by sector i
S_i	Saving of sector i
I_i	Investment of sector i
A	Stock of public arrears to private sector
Vi	Net capital losses of sector i
C	Corporate equity purchases by households

Sector subscripts shown above column headings

The matrix demonstrates that a "snapshot" of the public sector's borrowing does not tell the whole story. For example, the government could borrow entirely from domestic sources, only to have the banking system finance the entire public debt through its own external borrowing. Or the government could vow not to borrow from the central bank so as to avoid money creation, only to borrow from the rest of the banking system. The banks may in turn get rediscounts from the central bank -- with equivalent effects on money creation as would have resulted from direct central bank financing to the government. The government could even allow the central bank to take over certain public expenditures itself, such as credit subsidies or exchange rate guarantees to private enterprises. The nonfinancial public sector deficit might appear low in such cases, but money creation and/or loss of foreign exchange reserves would result from the deficit of the central bank.

This tells us that even knowing the composition of the government's financing, it is quite possible to misread the implications for foreign borrowing and money creation. That is to say, the entire matrix cannot be predicted on the basis of the entries in the first row. To predict the result of government financing choices, it is necessary to have some data on the behavior of the other participants in the financial markets.

Some of these problems can be solved through the consolidation of the public sector and the central bank. High-powered money less net foreign assets and rediscounts of the central bank can be substituted for net domestic credit creation to the public sector. This eliminates any possibility of hiding indirect money creation or central bank deficits.

The other problem of indirect foreign borrowing can be addressed by examining the balance sheet of the financial system. The implications of public borrowing cannot be analyzed without considering the outcome for overall financial flows. In the next sections, a framework will be presented to analyze the implications of government financing for private financial behavior.

B.   Financing choices for the public sector

We could summarize the financing choices as follows:

1.   External Financing

The matrix showed that this is somewhat difficult to measure. Direct foreign borrowing by the government is equivalent to borrowing from banks who in turn borrow abroad. The same goes for the private sector, who may be pushed to borrow abroad by the public sector cornering domestic financing. Indeed, in the extreme case of perfect capital mobility, the division of government financing into direct internal and external borrowing has no analytical significance.

While a high degree of capital mobility held in many of the high debt countries prior to 1982, borrowing ceilings became binding after the debt crisis broke out. The breakdown between external and domestic finance again became meaningful as the reduction in total net external flows led to increased economy-wide reliance on domestic financing.

2.   Domestic Financing

The following details the alternative means of domestic financing available and their advantages and disadvantages.

a.   currency creation

To the extent that currency creation exceeds the growth in demand for real balances, it is a tax on holdings of currency and so has the advantage that excess expenditures are paid for now rather than in the future. However, the cost of current distortions caused by the inflation tax may be very large.

b. **reserve requirements**

These also pay for expenditures now, but through a tax on all financial intermediation and not just currency. They thus increase interest rates to private borrowers and depress rates to private savers. This effect is worse the higher the rate of inflation. The tax is distortionary in that it represses domestic financial intermediation.

c. **required bank holdings of government bonds at controlled interest rates**

This is equivalent to b) except that the degree of distortion is reduced if the controlled interest rate is greater than that on reserve requirements (usually zero). Recall that by aggregating the central bank and nonfinancial public sector we net out "hidden money creation", i.e. banking system purchases of government bonds at controlled rates financed by central bank rediscounts. Controls on government interest rates expand the potential for the inflation tax to include real devaluation of government nonmonetary liabilities.

d. **government controls on all domestic interest rates with credit rationing**

If domestic interest rates are kept below market levels, then credit will be rationed and private investment will be determined by the availability of credit rather than its explicit cost. If there is inflation, the inflation tax will include devaluation of real government non-monetary liabilities, as in (c), but part of this tax will be shared with the private sector through the controlled loan rates.

e.   borrowing from banks at market rates (same as to private
      sector)

This does not distort financial intermediation like b), c) or d).
However excessive reliance on this source will drive real interest rates above
the rate of economic growth and the return to public spending and crowd out
private investment. If there is unanticipated inflation, this will still
generate an inflation tax as in b), c) and d), but without the distortionary
effects.

f.   Direct government bond sales to the nonbank public sector
      at market rates of interest

This is equivalent to the government depriving itself of the tax on
financial intermediation. However, excessive reliance on these bond sales
drives up the domestic interest rate and crowds out private investment in the
same way as borrowing from the banking system.

C. Consequences of deficit financing choices

This section analyzes the tradeoffs facing the government when it
chooses between alternative domestic financing methods for a given fiscal
deficit. The conclusions drawn are based on a simple theoretical model, the
details of which are given in Appendix II. The model integrates portfolio
equations for three assets -- money, debt, and foreign currency -- and an
equation for fixed capital formation. As in the recent work of Buiter (1988)
and Van Wijnbergen (1988), the government financing identity is then used to
draw the consequences for inflation (and in this model, real interest rates as
well) of government financing choices. The case of controls on interest rates
will be examined after first looking at free financial markets.

1. Uncontrolled financial markets

There are two basic relations in the model, corresponding to equilibrium conditions in the domestic debt and money markets. The equilibrium condition for the debt market can be written as:

(1) $\Delta l_g = f(\Delta i_c - \Delta \pi, \Delta \pi)$ $f_1 > 0$ $f_2 < 0$

where l_g is the ratio of government domestic debt to GDP, i_c is the nominal interest rate on corporate loans, and π is the rate of inflation. The government chooses the increase in the domestic debt ratio when it decides the composition of internal deficit finance (external finance is exogenous) between debt and money. As described in appendix II, the increase in the debt ratio will be related negatively to the rate of inflation. Inflation depresses the real deposit rate for a given real loan rate and thus lowers the flow of savings into the banking system. This effect will be only partially offset by a shift from cash into deposits. The relationship between the debt ratio and the real interest rate is positive (see Appendix II). Increased real interest rates increase real deposits and depress private investment for a given inflation rate, increasing the flow of domestic debt to the government. Therefore, the debt equilibrium implies a positive relationship between interest rates and inflation.

The money market equilibrium can be written in similar form:

(2) $\gamma - (\Delta f_g - \Delta r_b) = g(\Delta i_c - \Delta \pi, \Delta \pi)$ $g_1 \gtrless 0$ $g_2 > 0$

Here γ is the primary deficit of the public sector, Δf_g is the increase in the ratio of public external debt to GDP, and Δr_b is the change in the ratio of foreign exchange reserves to GDP. Thus, the expression on the left-hand side gives the domestic financing requirement of the public sector. Since the increase in public domestic debt is already given in equation (1) and money is the residual source of finance, this equation gives the equilibrium in the money market. The left-hand side can be thought of also as the total "domestically financeable deficit" through money creation.

The domestically financeable deficit is a positive function of inflation, as long as we have not passed the maximum point of the inflation tax "Laffer curve". The increased revenues from money creation will offset the decrease in demand for deposits and currency in this case. The relationship of the financeable deficit to the real interest rate depends on the existing level of government domestic debt. If debt is low, then increased real interest rates increase the demand for base money by increasing real deposits and thus make possible a higher domestically financeable deficit. However, real interest rates also raise the need for money finance through higher domestic debt servicing costs. If government domestic debt is high, higher real interest rates will raise the requirement for money finance more than the demand for base money, and thus lower the "financeable deficit".

Figure 3 shows the money market relation for the "low debt" case, where money market equilibrium implies a negative relation between inflation and interest rates. Equation (1), the debt equilibrium, is also shown in the graph. Real interest rates and inflation are thus jointly determined by the money and debt market equilibria. We can use this graph to perform comparative statics. An increase in debt finance (with unchanged domestic financing requirement)

shifts up the debt equilibrium line. Thus, a shift in the composition of debt finance from money to debt raises the real interest rate and lowers inflation. This confirms the conventional wisdom on the effect of "tight money". However, if the government continues to rely on increases in debt to finance its deficit, this will reverse the slope of the money market equilibrium as described above. Figure 4 shows the effect of a shift to debt finance in this situation. Now "tight money" causes an increase in both real interest rates and inflation. This is because additional inflation tax revenues are necessary to generate financing to cover the higher interest costs.

The other comparative static experiment that can be performed with this model is a money-financed increase in the amount of domestic financing (caused for example by a decline in external financing). This shifts upward the money market equilibrium relation but leaves the debt equilibrium unchanged. As shown in Figures 3 or 4, this increases both the rate of inflation and the real interest rate on loans. The increased real interest loan rate comes about because higher inflation raises the "tax" on financial intermediation through the reserve requirement.2/

A last exercise is to combine an increase in domestic borrowing with a money-financed increase in the domestic financing requirement (shifting both curves in the graphs). This can be thought of as substituting domestic for foreign debt. This has the same effect on interest rates and inflation as a debt-financed expansion in the primary deficit. As shown in Appendix II, an exact substitution of domestic for foreign debt increases real interest rates, because of the increased pressure on credit markets. Inflation may go either

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2/ See Reisen and Van Trotsenburg (1988) for a similar result.

CHANGE IN REAL LOAN RATE

CHANGE IN REAL LOAN RATE

FIGURE 3

FREE INTEREST RATES: LOW DEBT CASE

FIGURE 4

FREE INTEREST RATES: HIGH DEBT CASE

CHANGE IN INFLATION RATE

CHANGE IN INFLATION RATE

DEBT

DEBT INCREASE

MONEY

MONEY INCREASE

DEBT

MONEY

DEBT INCREASE
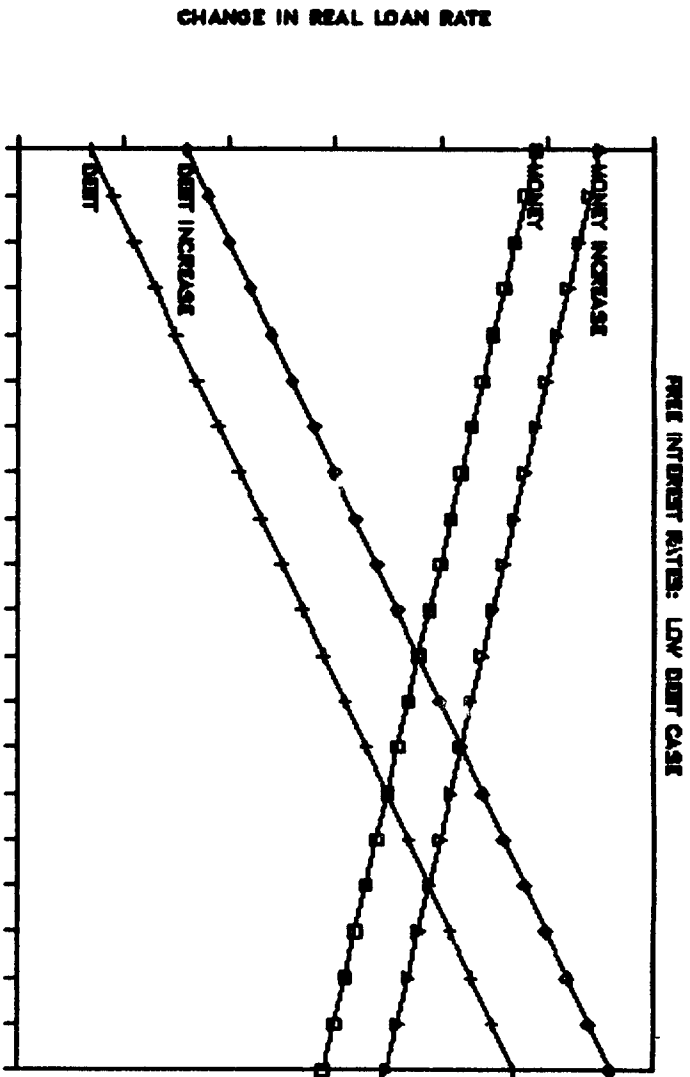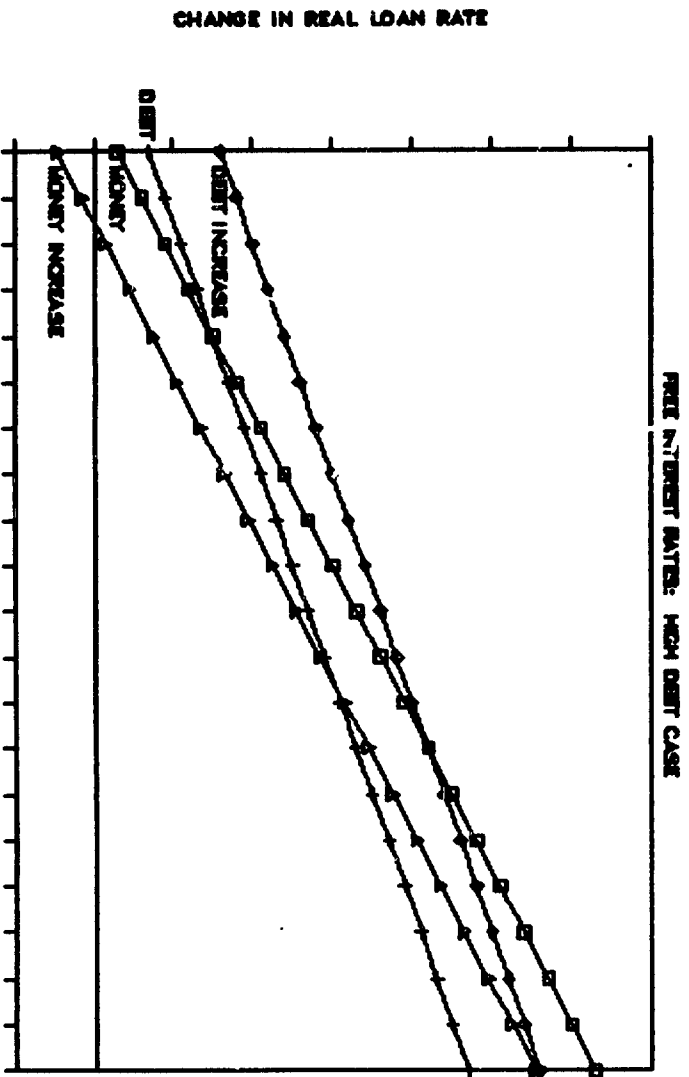
MONEY INCREASE

way. The increase in interest rates increases the demand for money base and so makes possible the same level of inflation tax revenue at a lower rate of inflation. However, the monetization of additional interest payments may partially or fully offset this effect. Thus inflation will decline in the low-debt case (Figure 3) and increase in the high debt case (Figure 4).

It is straightforward to trace the results of these outcomes for other macroeconomic variables. A shift to debt finance for a given domestic financing requirement, a money-financed increase in the domestically-financed deficit, and substitution of domestic for foreign debt all cause a decline in private investment through increased real interest rates.   If we are in the low debt situation of figure 3, a shift to debt finance causes a decrease in capital flight through the increase in interest rates and fall in inflation. However, tight money could perversely cause an increase in capital flight (and fall in reserves) in the high debt situation of Figure 4. This would occur if the negative effect of higher inflation outweighs the positive effect of higher real interest rates on capital flight (see Appendix II). The substitution of domestic fore foreign debt could also increase capital flight for the same reason.

2.   Interest rate controls and credit rationing

When there are controls on interest rates, the nature of the tradeoff between debt and money finance changes. Inflation now worsens the real rate on all domestic financial assets and liabilities. Since there will be excess demand for credit if controls are effective, credit to the private sector must be rationed. This assumes that the government is the preferred borrower and that transactions cost are so high as to prevent the formation of informal credit markets.

The rationing of credit means that the equilibrating variable in the debt and money markets will be private investment instead of interest rates. The equilibrium condition for the debt market can be written as follows:

(3) $I_c/Y = h(\Delta l_g, \Delta r)$ $h_1 < 0$ $h_2 \gtrless 0$

where I_c/Y is the ratio of private investment to GDP (see Appendix II for details). Investment is a negative function of the increase in government debt. The "crowding out" is one to one, since an increase in government borrowing simply subtracts investment-financing credit from the private sector. The relationship between investment and inflation depends on the level of government debt relative to total deposits. If government debt is low and/or total deposits are high, enough of the benefits of the inflation tax could accrue to private firms to offset the negative effect of inflation on total deposits and total credit. However, too much reliance on inflation and interest rate controls will eventually lead to a decline in deposits until the credit crunch effect dominates.

The money market equilibrium condition can be given as follows:

$I_c/Y = j(\gamma - (\Delta f_g - \Delta r_b), \Delta r)$ $j_1 < 0$ $j_2 > 0$

Private investment is a negative function of the total domestic financing requirement. Crowding out is one-for-one regardless of whether domestic financing is through money or debt, since either one displaces private credit. Private investment is a positive function of inflation as long as the maximum point on the inflation tax "Laffer curve" has not been passed. The base of the

inflation tax now includes both currency and deposits (i.e. M2) and not only high-powered money, since the interest rate is fixed on all domestic financial assets. When inflation increases, part of the inflation tax accrues to private firms, making possible an increase in investment unless the increased "tax" is more than offset by the decline in M2 and thus total credit.

The money and debt equilibria are graphed in figure 5 for the case where government debt is low relative to deposits. The slope of both are positive, but the loci of debt equilibria is flatter than the loci of money equilibria (see appendix II). A shift from money to debt finance in this case will lower private investment by even more than one to one. This is because in addition to crowding out through the credit market, it lowers inflation also and thus increases the real interest rate to corporations, decreasing the net resources left for investment. An increase in the domestically-financed deficit covered by money creation will increase private investment for the same reason. Higher inflation and lower real interest rates will make more resources available for investment.

However, inflation will cause financial disintermediation which will eventually reverse the slope of the debt equilibrium line, as shown in figure 6. A money financed increase in the domestic borrowing requirement will now lead to a fall in investment because the fall in deposits and credit more than offsets the inflation tax benefit to firms. A shift to debt finance will still lead to a fall in investment, but now less than one-for-one. The fall in inflation from tight money will have enough of a positive effect on the supply of credit to mitigate the crowding out of investment in credit markets.

The substitution of domestic for foreign debt has a particularly simple result in the credit rationing model. It will have no effect on the rate of inflation and will decrease private investment one-for-one, regardless of the level of government debt. The control on interest rates means that no

FIGURE 5

CREDIT RATIONING: LOW DEBT CASE

PRIVATE INVESTMENT RATE

DEBT

DEBT INCREASE

MONEY

MONEY INCREASE

CHANGE IN INFLATION RATE
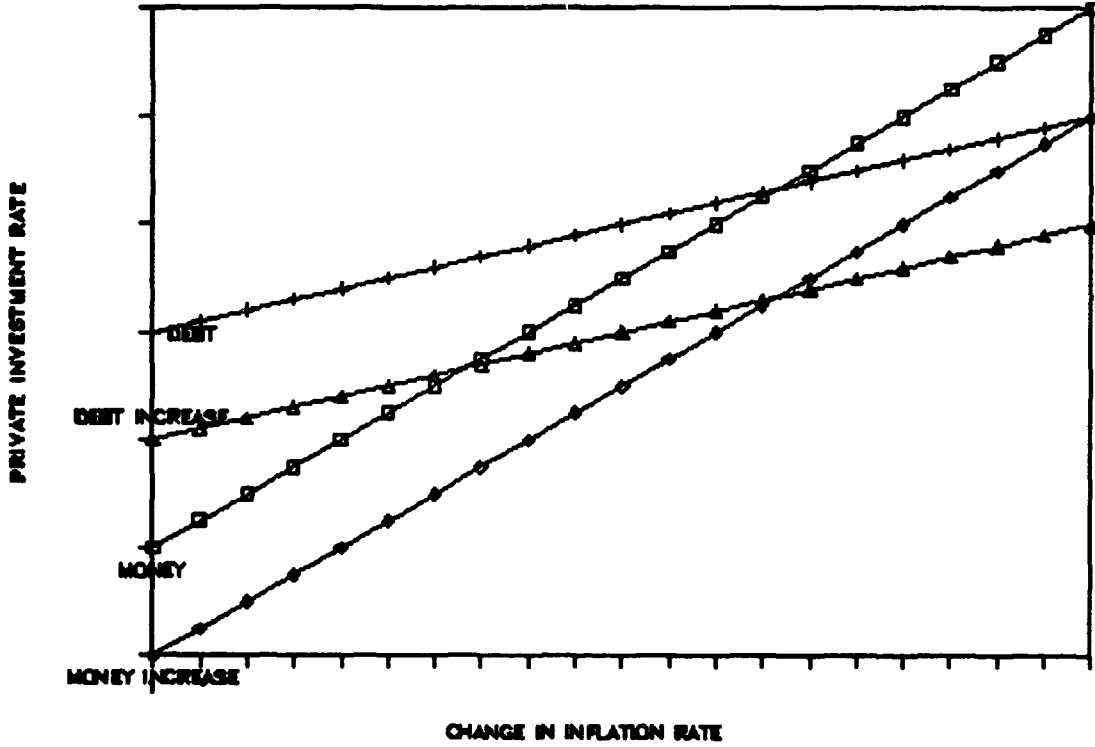
FIGURE 6

CREDIT RATIONING--HIGH DEBT CASE

PRIVATE INVESTMENT RATE

DEBT

DEBT INCREASE

MONEY

MONEY INCREASE

CHANGE IN INFLATION RATE
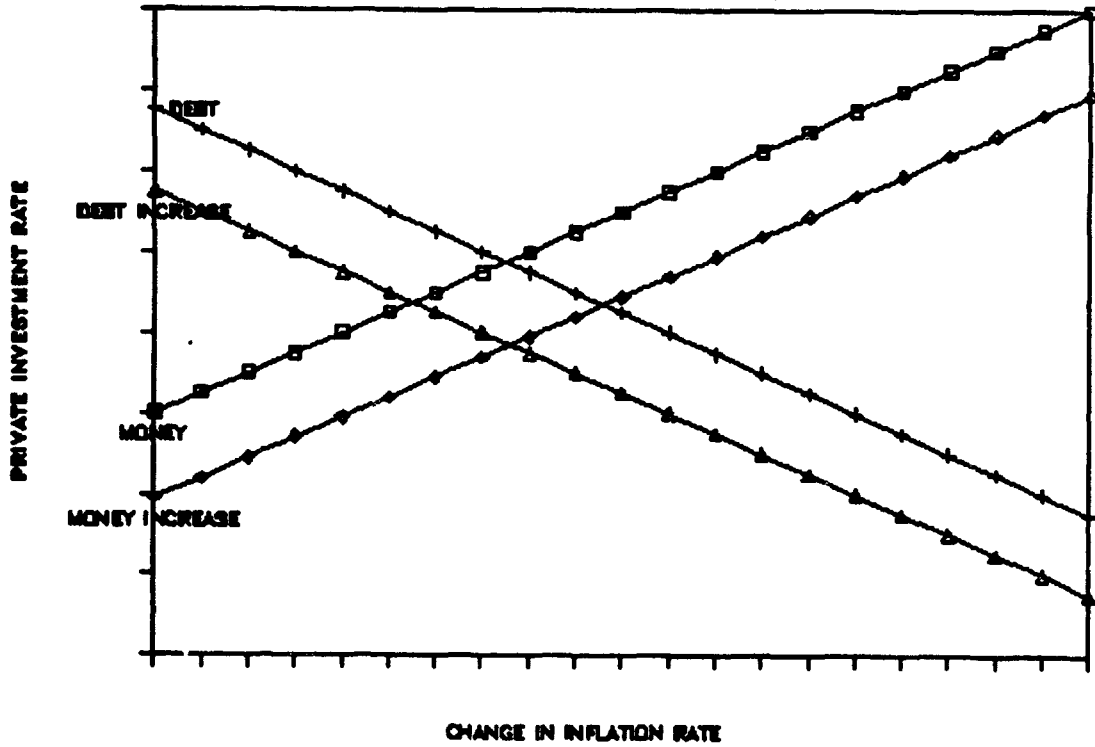
additional interest costs will arise and so no additional monetization or inflation is necessary. With no change in either inflation or interest rates, there will be no change in total credit supply and the increase in public domestic borrowing will simply displace private credit.

How can the effects of these policy experiments be compared across regimes -- free market interest rates versus interest rate controls? The comparisons depend very much on the initial conditions. If government debt is high, then the inflationary impact of substituting money creation for foreign debt will tend to be less in the controlled regime. This is because of the effect on inflation of monetizing additional interest costs in the free market regime, as opposed to the erosion of real domestic debt service in the controlled regime. The effect on private investment could also be more favorable under controlled interest rates because part of the inflation tax will be passed onto the private sector. However, as total deposits shrink under the impact of negative real interest rates, the ranking is reversed. The base of the inflation tax -- although broader at the beginning -- declines more rapidly under the controlled regime, so a given amount of money creation will lead to more inflation than under free markets. Investment will also be damaged more under the controlled regime in these circumstances by the erosion of credit flows caused by inflation.

The substitution of domestic for foreign debt could also have less of a negative effect under the controlled regime if government debt is high. Such substitution could cause more than one-for-one crowding out under free markets because of the double effect on real loan interest rates of higher inflation and greater government credit demand. Under the controlled regime, crowding out is always one-for-one regardless of the level of government debt. However, this ranking is peculiar to the special case of an internal "debt trap". Under more normal circumstances, private investment has the crowding out mitigated by the decrease in inflation and rise in total domestic credit caused by "tight money" policies in uncontrolled financial markets.

V. Defi̇cit financing in the high debt countries

In this section, the framework of the previous section is applied to the experience of the crisis and non-crisis countries. Since the key variables which reflect financing choices of the public sector are interest rates and inflation, data on these variables will be presented first. Monetary data will then be used to show the actual financing choices made in the crisis and non-crisis countries.

A. Interest rate behavior

Table 6 shows nominal spreads and ex-post real rates on deposits, loans, and government securities for the sample countries. There is enormous variety in levels of real interest rates in the crisis countries, not only between countries but also for the same country over different years. Argentina and Yugoslavia followed a policy of financial repression which resulted in high negative real interest rates for most of the period. Mexico and the Philippines did the same for part of the period, while Brazil lurched back and forth between high positive real rates and financial repression. (In these countries, the variability of inflation also led to ex-post negative real rates in some years even when financial repression was not a conscious policy). Chile had market-determined interest rates which were extremely high in real terms in 1981-82, declining thereafter to modest positive levels. Morocco had much lower inflation and more modest swings in real interest rates, although still negative until 1986. Policies determining interest rates on government securities also varied considerably. In Brazil and Chile, rates on treasury bills were considerably lower than deposit rates, so that required holdings of government bonds by banks functioned as an additional tax on financial intermediation. In Mexico and the Philippines, government bond

Table 6

INTEREST RATES, 1980-87
(In Percent)

	1980	1981	1982	1983	1984	1985	1986	1987
ARGENTINA								
Real lending rate	6.1	31.2	-18.7	-22.9	-29.7	-6.3	3.9	2.7
Real deposit rate	-4.3	9.7	-27.3	-30.4	-39.0	-21.9	-12.0	-14.8
Real government rate	NA	NA	NA	NA	NA	NA	NA	NA
Nominal spread	9.8	19.6	11.8	10.7	15.4	20.0	18.1	20.5
BRAZIL								
Real lending rate	-2.5	4.9	26.2	0.2	7.5	-0.1	-0.1	NA
Real deposit rate	-3.6	-3.0	11.6	-1.4	10.7	-0.8	-1.8	NA
Real government rate	-24.3	-3.9	9.3	0.3	-0.5	2.7	-16.8	NA
Nominal spread	1.1	8.2	13.1	1.7	-2.9	0.7	1.8	NA
CHILE								
Real lending rate	12.1	38.8	35.7	15.9	11.5	11.1	7.6	4.9
Real deposit rate	4.8	28.5	22.5	3.9	2.5	4.1	1.4	3.1
Real government rate	-23.8	-8.7	7.5	0.2	-2.6	-2.7	-0.7	-1.4
Nominal spread	7.0	8.0	10.8	11.6	8.8	6.7	6.1	1.8
MEXICO								
Real lending rate	-1.3	6.2	-26.6	-9.8	-2.8	NA	NA	NA
Real deposit rate	-2.8	0.7	-23.3	-14.4	-6.8	-2.6	-10.2	NA
Real government rate	-5.7	1.6	-26.8	-11.9	-6.2	-0.5	-13.3	-25.8
Nominal spread	1.6	5.4	-4.3	5.4	4.3	NA	NA	NA
MOROCCO								
Real lending rate	-2.5	-5.5	0.3	-4.9	-0.5	-2.0	4.2	NA
Real deposit rate	-4.4	-6.4	-0.3	-5.4	-1.0	-1.9	3.9	NA
Real government rate	NA	NA	NA	NA	NA	NA	NA	NA
Nominal spread	2.0	0.9	0.6	0.5	0.5	-0.2	0.3	NA
PHILIPPINES								
Real lending rate	NA	4.2	8.9	-5.4	-15.0	21.7	17.9	NA
Real deposit rate	NA	2.7	4.8	-9.9	-19.7	12.6	11.6	NA
Real government rate	-2.8	2.1	5.4	-9.0	-18.5	19.9	15.9	NA
Nominal spread	NA	1.4	3.8	5.0	5.8	8.2	5.6	NA
YUGOSLAVIA								
Real lending rate	-18.9	-17.5	-8.8	-13.8	-3.7	3.6	-4.5	NA
Real deposit rate	-23.0	-20.9	-15.6	-30.0	-14.6	-8.5	-18.8	NA
Real government rate	NA	NA	NA	NA	NA	NA	NA	NA
Nominal spread	5.3	4.3	8.0	23.2	13.2	12.1	17.6	NA
COLOMBIA								
Real lending rate	NA	NA	NA	NA	NA	14.1	11.8	9.5
Real deposit rate	NA	3.9	4.4	9.7	8.8	10.5	8.2	6.0
Real government rate	NA	NA	NA	NA	NA	NA	NA	NA
Nominal spread	NA	NA	NA	NA	NA	3.3	3.3	3.3
INDONESIA								
Real lending rate	NA	NA	10.9	9.9	16.4	17.4	13.1	14.3
Real deposit rate	-2.4	3.1	5.9	4.8	9.3	12.7	5.0	7.8
Real government rate	NA	NA	NA	NA	NA	NA	NA	NA
Nominal spread	NA	NA	4.7	4.8	6.6	4.1	7.7	6.0
KOREA								
Real lending rate	-12.3	5.1	6.6	7.9	7.4	6.6	8.6	NA
Real deposit rate	-11.2	4.0	3.0	5.9	6.0	6.6	8.6	NA
Real government rate	-13.5	3.9	3.0	5.9	5.4	NA	NA	NA
Nominal spread	-1.3	1.0	3.5	1.9	0.7	0.0	0.0	NA
THAILAND								
Real lending rate	1.4	5.9	16.0	13.3	19.2	15.2	15.1	NA
Real deposit rate	-3.8	0.2	10.2	8.8	13.4	9.4	7.9	NA
Real government rate	-4.3	0.5	10.4	7.0	12.9	7.6	6.2	3.7
Nominal spread	5.4	5.8	5.3	4.1	5.1	5.3	6.6	NA
TURKEY								
Real lending rate	-0.6	50.2	37.7	28.0	28.7	42.0	51.0	NA
Real deposit rate	-40.9	-1.4	6.5	10.8	3.1	3.5	7.9	NA
Real government rate	NA	NA	NA	NA	NA	4.2	13.8	NA
Nominal spread	68.3	52.3	29.3	15.6	24.9	37.2	39.9	NA

NOTE: Real interest rates calculated from nominal rates: [(1+r)/(1+p)-1]*100, where r is interest
rate and p is the inflation rate. Spreads calculated as [(1+i)/(1+r)-1]*100, where i is the loan
rate and r is the deposit rate.

rates were similar to other interest rates, all of which were negative in real terms when inflation accelerated. Interest rate spreads -- reflecting both costs of intermediation and implicit taxes on intermediation such as reserve requirements -- were very high in Argentina, Chile, and Yugoslavia throughout the period. In Argentina, for example, the high spread is because the banking system has over 70 percent of total deposits tied up in reserve and forced saving requirements. Other countries do not show high spreads, although data can be misleading since quotes on deposit and loan rates do not necessarily reflect the average rates paid and received by banks for all types of assets and liabilities. The overall conclusic is that all of the crisis countries put substantial taxes on financial intermediation at one time or another in the adjustment process, either through overall financial repression or through negative real interest rates on government bonds or central bank liabilities.

In the non-crisis countries, on the other hand, policies of positive real interest rates were consistently followed from 1982 on. In all of the countries interest rates reached fairly high levels by historical standards --most of the loan rates were in double-digits in real terms throughout the period. The most extreme case was Turkey, where loan rates reached 51 percent in real terms in 1986. Government bond rates were ai positive in real terms. Spreads were fairly modest except in Turkey, where the large spread explains the extreme interest rates on loans. Thus, except for Turkey, most of the non-crisis countries did not rely heavily on taxes on financial intermediation.

B.   Inflation outcomes

Table 7 shows the inflation rates for the sample countries.
Inflation accelerated in all of the crisis countries except Morocco in the
period beginning in 1982. The aggregate inflation rate accelerated from 41
percent in 1981 to 57 percent in 1982. There was further acceleration during
1983-84 led by the more than doubling of triple-digit inflation in Argentina
and Brazil and the development of high inflation in the Philippines. In
1985-86 there was a significant drop in inflation as a result of the Austral
and Cruzado anti-inflation programs in Argentina and Brazil, respectively.
The Philippines also returned to near price stability. However, the
improvement proved transitory, as the breakdown of the Austral and Cruzado
plans and the acceleration of inflation in Mexico and Yugoslavia caused
average inflation in the crisis countries to exceed 100 percent in 1987. In
the non-crisis countries inflation fell in Korea and Thailand and remained
roughly stable in Indonesia. Colombian inflation was higher than in the East
Asian countries, but stable at around 20 percent. Inflation was more erratic
in Turkey, accelerating in 1984 and in 1987 after temporary declines. The
aggregate inflation rate in the non-crisis countries is much lower and more
stable than in their crisis counterparts.

Table 7

CPI INFLATION RATES
(December over December rate)

	1980	1981	1982	1983	1984	1985	1986	1987
Argentina	88	131	210	434	688	385	82	175
Brazil	86	101	102	178	209	249	64	432
Chile	31	10	21	23	23	26	17	21
Mexico	30	29	99	81	59	64	106	159
Morocco	10	13	7	13	8	10	4	2
Philippines	16	11	8	26	51	6	0	7
Yugoslavia	37	36	33	60	53	75	92	169
CRISIS COUNTRIES AVERAGE	40	41	67	85	93	84	46	102
Colombia	26	26	24	17	18	22	21	24
Indonesia	17	7	10	12	9	4	9	9
Korea	35	12	5	2	2	3	1	6
Thailand	16	12	3	4	0	3	2	4
Turkey	86	30	36	37	50	44	31	55
NON-CRISIS COUNTRIES AVERAGE	34	17	15	14	15	14	12	18

NOTE: Averages are unweighted, geometric averages.

Source: World Bank data.

C.   Domestic financing public deficits

The results in this section are from a flow-of-funds exercise following the framework set out in Table 5 and described in section III. This will allow us to see what types of domestic finance were actually used in the crisis and non-crisis countries. To be consistent with the theoretical framework developed above, the data are presented in the form of the change in the financial stock (end-of-year) as a percentage of GDP. All flows are analyzed in inflation-adjusted terms except for the money base and rediscounts, where both the inflation-adjusted and nominal flows are given. The nominal flows are relevant for the money base because they represent the total "revenue" from the inflation tax. The inflation-adjusted flow represents the real change in demand for the money base, which can be interpreted as the real seignorage accruing to the public sector. The nominal flow of central bank rediscounts also is important when no interest is effectively paid on these rediscounts. The inflation-adjusted flows are calculated as the nominal flow minus the inflation adjustment applying to the previous year's stock.

For some cases it is appropriate to make adjustments for the negative real interest rates paid on government debt. This is done in the analysis for loans from the financial system and for sales of government securities. The adjusted figure can be interpreted as the net domestic transfer, i.e. the real net flow minus interest payments on that particular liability. The adjustment factor to get from the inflation-corrected flow to the net transfer can be . interpreted roughly as the real interest on government debt times the outstanding stock of debt. Where data on government bond rates are not available, the deposit interest rate is used as a proxy. Where interest is paid on bank reserves by the central bank (Argentina, Chile, Mexico), the same correction is made for reserves.

1. Total domestic financing

Table 8 shows the aggregate public domestic financing as percent of GDP for the crisis and noncrisis countries (Appendix III contains the detailed data for each country broken down by source of financing). Most of the crisis countries shows a marked increase in domestic financing in 1982 or afterwards. Argentina, Chile, and Mexico show an increase immediately, even if bank reserves are treated as debt.3/   After the initial burst of financing in 1982, domestic financing slows in Argentina and Mexico, even turning negative if reserves are treated as debt.   In Brazil, Morocco, and Yugoslavia, the increase in domestic financing is more gradual, but still significant.   The Philippines is the only crisis country which does not show a sizeable increase in domestic financing in the period beginning in 1982.

The non-crisis countries shows a different pattern.   None of them show a marked increase in domestic financing over the period.   Some years show a moderate increase for some countries, such as Thailand for alternating years, Korea in 1986, and Turkey in 1984-85.

2. Tax on financial intermediation

Even the high numbers shown for domestic financing in the crisis countries underestimated the impact on the financial system in some cases. This is because negative interest rates were paid on government debt in some cases, which meant the real change in debt was artificially depressed by the

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3/   If interest is paid on reserves, we should treat them as debt and include the real flow rather than the nominal flow in the domestic financing calculation. This correction is done only for Argentina, Chile, and Mexico, where interest is paid on reserves and information is available. However, the correction is overstated, since not all reserves receive interest in these countries. The numbers presented for Argentina, Chile and Mexico should thus be thought of as upper and lower bounds for domestic financing.

Table 8

AGGREGATE PUBLIC DOMESTIC FINANCING
(Percent of GDP)

		AVERAGE							
	1971-75	1976-78	1979-81	1982-86*	1982	1983	1984	1985	1986
Crisis Countries									
Argentina 1/	14.65	13.07	6.18	14.72	28.09	17.38	17.70	6.84	3.58
2/	5.00	-1.54	3.78	3.64	25.10	-4.60	-2.01	-0.41	0.12
Brazil	NA	NA	4.17	6.07	4.08	6.84	6.40	8.46	NA
Chile 1/	NA	3.28	0.41	2.85	4.35	2.35	1.86	NA	NA
2/	NA	1.19	-0.61	1.03	3.72	2.08	1.61	NA	NA
Mexico 1/	NA	NA	6.95	10.83	23.45	2.68	4.07	7.57	13.88
2/	NA	NA	4.67	4.08	15.45	-4.69	-1.16	2.31	8.48
Morocco	2.88	3.99	1.97	3.54	1.56	3.33	0.43	3.95	8.46
Philippines	NA	1.85	0.50	0.68	1.60	0.24	-0.17	1.05	NA
Yugoslavia	NA	NA	5.50	10.19	7.09	11.13	10.25	9.71	12.77
Non-Crisis Countries									
Colombia	NA	4.91	2.72	1.98	2.50	1.14	2.28	NA	NA
Indonesia	NA	1.75	1.67	1.51	1.35	1.83	1.86	0.95	1.55
Korea	2.12	2.78	0.22	1.75	1.25	0.43	1.65	1.81	3.61
Thailand	2.36	1.74	0.93	3.04	3.30	1.31	4.48	1.38	4.72
Turkey	NA	4.35	2.58	3.04	2.02	1.65	4.60	5.58	1.36

* Period average for years for which data are available.

1/ Including nominal flow of bank reserves.
2/ Substituting inflation-adjusted flow of bank reserves.

Source: International Financial Statistics, International Monetary Fund.

Table 9

TAX ON FINANCIAL INTERMEDIATION
(Percent of GDP)

		AVERAGE							
	1971-75	1976-78	1979-81	1982-86*	1982	1983	1984	1985	1986
Crisis Countries									
Argentina 1/	NA	NA	5.70	15.24	7.90	29.18	26.00	7.36	5.75
2/	NA	NA	2.73	10.22	7.47	17.09	17.15	6.09	3.29
Brazil	NA	NA	NA	2.27	1.25	3.27	2.54	2.03	NA
Chile 1/	NA	NA	2.16	1.49	2.72	0.91	0.84	NA	NA
2/	NA	NA	0.80	NA	1.82	0.63	0.64	NA	NA
Mexico 1/	NA	NA	3.52	11.64	16.42	13.63	8.32	6.95	12.90
2/	NA	NA	0.83	7.12	12.74	8.23	3.95	1.76	8.90
Morocco	NA	NA	2.32	1.24	0.93	2.50	1.20	1.63	-0.07
Philippines	NA	0.56	1.20	0.89	0.18	2.11	3.69	-0.85	-0.70
Yugoslavia	NA	NA	7.12	10.87	6.35	12.12	10.63	12.49	12.77
Non-Crisis Countries									
Colombia	NA	1.70	2.48	1.21	2.09	0.76	0.74	1.26	NA
Indonesia	NA	0.85	1.01	0.28	0.50	0.52	0.24	-0.28	0.42
Korea	1.29	1.12	1.82	0.23	0.33	0.29	0.29	0.23	0.03
Thailand	NA	NA	1.31	-0.74	-0.61	-0.38	-1.25	-0.74	-0.70
Turkey	NA	NA	7.32	2.80	2.48	2.79	3.82	3.28	1.66

* Period average for years for which data are available.

1/ Including nominal flow of bank reserves.
2/ Including only negative real interest rate paid on reserves.

Source: International Financial Statistics, International Monetary Fund.

amount of a "tax" which was collected from the holders of the debt.4/
Summing this and the "inflation tax" on the money base (which includes both
currency and bank reserves) gives the total "tax on financial intermediation."
As shown in Table 9 for crisis and non-crisis countries, the tax on financial
intermediation was an important source of finance for the crisis countries of
Argentina, Mexico, and Yugoslavia after 1982 (it is still important even if we
make the correction for the interest paid on reserves in Argentina and
Mexico). It was also significant in some years in Brazil and in the
Philippines compared to pre-crisis levels. Even these "revenues" from
financial intermediation taxes do not fully reflect the increase in the
"rates" of the tax, since the "base" of the tax was at the same time being
eroded. For example, Brazil had very high inflation and negative real
interest rates throughout the period, but shows only moderate inflation tax
revenues because of its miniscule financial base. Only in Chile and Morocco
is there little change from pre-crisis levels. In the non-crisis countries,
Turkey and Colombia show a significant level of revenue from the tax on
financial intermediation, but this was a decline from the 1979-81 period.
Indonesia, Korea, and Thailand do not have significant revenues from this
"tax."

3. **Financial savings**

The reliance on taxes on financial intermediation had consequences
for the level of financial saving in the crisis countries. Table 10 shows the
inflation-adjusted change in currency and in financial system liabilities to
the private sector and as percent of GDP. Those countries that had high
revenues from financial intermediation taxes also saw their "tax base" begin
to disappear. Argentina, Mexico, and Yugoslavia had negative real financial

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4/ In the absence of sufficient information to evaluate the equilibrium
   real interest rate, we suppose it to be zero for all countries. If the
   equilibrium rate is positive, the tax will be underestimated.

savings for most or all of the period beginning in 1982, as well as a decline in real currency balances. The Philippines had negative financial savings and a decline in real currency holdings in 1983-84 -- the same years for which it had a higher than usual financial intermediation tax. The other crisis countries had mostly positive financial savings. Brazil increased financial savings compared to poor performance in 1979-81, but it remained relatively low by international standards and currency still declined. Chile had one year of negative financial savings immediately after the crisis (1983). Only Morocco -- which had moderate taxes on financial intermediation -- had fairly steady improvement in financial savings throughout the period. Morocco was also the only country that avoided a decline in currency balances after 1982.

The non-crisis countries had much stronger performance in the growth of financial savings on the whole. Korea and Thailand had outstanding growth in financial assets which surpassed their experience in the 1970's. Indonesia, Colombia, and Turkey had more erratic performance but still superior to most of the crisis countries, as well as comparable or superior to performance in the 1970's.

4. <u>Credit to public and private sectors</u>

Table 11 shows the inflation-adjusted credit flows from the financial system to the public and private sectors for crisis and noncrisis countries. In 1982, there is a surge of credit to the public sector in Argentina, Chile, and Mexico, with more modest credit flows in the other crisis countries. In 1983-84, however, the inflation-adjusted flow of credit to the public sector turns negative in Argentina, Brazil, Mexico, Morocco and the Philippines. In 1985-86, public credit flows increase sharply again in Mexico and Morocco, but decline in Argentina and Yugoslavia. These erratic flows reflect the

Table 10

FINANCIAL SYSTEM LIABILITIES TO PRIVATE SECTOR
(Percent of GDP)
(Inflation Adjusted)

	AVERAGE				1982	1983	1984	1985	1986
	1971-75	1976-78	1979-81	1982-86*					
Crisis Countries									
Argentina									
currency	-0.69	-0.35	-0.31	0.06	-0.40	-0.02	-0.97	1.27	0.42
deposits	-3.08	3.41	1.71	-2.54	-9.76	-2.39	-3.32	-0.20	2.95
Brazil									
currency	0.73	-0.12	-0.24	-0.26	-0.31	-1.04	C.15	0.15	NA
deposits	NA	1.51	0.02	1.72	1.21	0.48	3.69	1.49	NA
Chile									
currency	NA	0.69	0.33	-0.31	-0.89	-0.07	0.02	NA	NA
deposits	NA	4.15	3.48	-0.15	2.24	-5.08	2.40	NA	NA
Mexico									
currency	0.35	0.34	0.31	-0.54	-0.61	-1.35	0.13	-0.22	-0.65
deposits	NA	NA	3.38	-3.37	-9.15	-2.60	1.42	-3.54	-2.95
Morocco									
currency	0.92	0.87	0.31	0.33	0.08	0.16	0.27	-0.19	1.34
deposits	NA	NA	1.28	3.07	2.10	3.89	0.94	3.93	4.97
Philippines									
currency	-0.06	0.37	-0.14	0.11	0.02	0.94	-1.44	0.17	0.85
deposits	NA	3.37	-0.18	-2.53	1.65	-4.84	-10.44	1.28	-0.29
Yugoslavia									
currency	0.38	0.27	-0.44	-0.45	0.05	-1.82	-0.74	-0.07	0.32
deposits	NA	NA	NA	-4.44	-0.23	-8.88	-2.49	-6.50	-4.12
Non-Crisis Countries									
Colombia									
currency	0.10	0.54	-0.14	-0.11	0.17	0.51	0.35	-1.49	NA
deposits	NA	1.37	2.46	1.31	-0.04	2.70	1.27	NA	NA
Indonesia									
currency	0.48	0.56	0.37	0.29	0.21	0.07	0.08	0.62	0.49
deposits	NA	1.33	2.02	2.11	0.47	2.84	2.22	4.13	6.88
Korea									
currency	0.58	1.00	-0.35	0.41	0.85	0.41	0.24	0.10	0.45
deposits	3.33	4.82	1.10	4.47	5.44	4.26	1.84	4.75	6.09
Thailand									
currency	0.25	0.47	-0.08	0.36	0.59	0.39	0.42	-0.16	0.54
deposits	2.79	6.66	1.35	8.12	8.82	8.14	10.23	5.52	7.90
Turkey									
currency	0.36	0.47	-0.80	-0.04	0.35	-0.15	-0.46	-0.18	0.24
deposits	NA	-0.78	0.68	1.66	3.12	-1.50	1.62	2.60	2.46

* Period average for years for which date are available.

Source: International Financial Statistics, International Monetary Fund.

increased need for credit to the government at the same time as financial disintermediation made such credit provision difficult.

This fatal squeeze had an even larger effect on credit to the private sector in the crisis countries. Table 11 shows that inflation-adjusted flows of credit to the private sector were negative in most years for the crisis countries beginning in 1982, with the exception of Morocco. The private sector was the residual that absorbed the effects of increased public financing demands and lower financial savings.

In the non-crisis countries, the credit pattern is drastically different. All of the non-crisis countries improved the flows of credit to the private sector compared to the late 1970's. Only Turkey had a negative inflation-adjusted flow in one year (1984). Thailand and Korea had particularly high rates of real delivery of private credit. Credit provision to the public sector was more modest, but was positive for the period for Indonesia, Korea, and Thailand. Turkey and Colombia had more erratic flows of public credit, averaging close to zero for 1982-86.

5. Central bank rediscounts

The remaining piece of the puzzle is the provision of credit by the public sector -- through central bank rediscounts -- to the banking system and private sector. As shown in table 12, these flows (measured here in nominal terms as percent of GDP) were very important in some of the crisis countries, increasing the total financing needs of the public sector in those countries. Argentina, Chile, and Mexico had a surge in such credits in 1982, which continued afterward for Argentina and Chile, though not for Mexico. This reflected some form of bailouts of banks and private firms in these countries after the outbreak of the debt crisis. In Brazil and Yugoslavia, previously

Table 11a

FINANCIAL SYSTEM CLAIMS ON PUBLIC SECTOR
(Percent of GDP)
(Inflation Adjusted)

| | AVERAGE | | | | | | | | |
	1971-75	1976-78	1979-81	1982-86*	1982	1983	1984	1985	1986
Crisis Countries									
Argentina	1.82	-5.29	0.89	-0.64	21.24	-10.11	-7.07	-4.73	-2.52
Brazil	NA	NA	1.37	0.71	1.11	1.23	-0.83	1.32	NA
Chile	NA	0.90	-1.53	1.84	3.87	0.94	0.70	NA	NA
Mexico	NA	NA	3.15	2.05	11.70	-6.53	-3.15	1.25	7.00
Morocco	1.03	1.71	0.18	2.10	0.59	1.47	-0.88	2.78	6.55
Philippines	NA	1.48	-0.82	-0.11	0.66	-1.78	-0.79	1.50	NA
Yugoslavia	NA	NA	-0.57	0.22	1.00	1.90	1.05	-2.47	-0.39
Non-Crisis Countries									
Colombia	NA	1.60	0.08	0.04	-0.73	0.33	0.50	NA	NA
Indonesia	1.09	0.28	0.31	0.73	0.77	1.00	1.41	0.03	0.46
Korea	0.83	0.78	-0.65	0.91	1.20	-0.71	2.17	1.55	0.36
Thailand	1.13	0.71	-0.08	2.52	2.52	0.64	4.09	1.29	4.04
Turkey	1.93	2.73	-4.07	-0.06	-1.00	-1.75	1.26	2.17	-0.99

* Period average for years for which data are available.

Table 11b

FINANCIAL SYSTEM CLAIMS ON PRIVATE SECTOR
(Percent of GDP)
(Inflation Adjusted)

| | AVERAGE | | | | | | | | |
	1971-75	1976-78	1979-81	1982-86*	1982	1983	1984	1985	1986
Crisis Countries									
Argentina	-1.98	2.69	5.49	-4.93	-2.18	-13.22	-8.50	-0.98	0.17
Brazil	6.75	2.48	-0.66	-0.31	2.32	-3.26	2.57	-2.87	NA
Chile	NA	7.30	8.77	2.23	10.69	-8.19	4.19	NA	NA
Mexico	NA	-1.85	1.76	-2.55	-9.17	-2.75	2.09	-0.35	-2.58
Morocco	2.36	1.92	1.17	1.35	2.25	0.50	2.22	0.45	NA
Philippines	2.11	3.99	3.45	-6.31	2.36	0.51	-17.95	-8.54	-7.92
Yugoslavia	0.21	8.60	-1.64	-6.62	-4.20	-12.53	-1.72	-8.91	-5.73
Non-Crisis Countries									
Colombia	NA	0.88	2.24	2.97	1.83	4.07	3.03	NA	NA
Indonesia	NA	1.24	1.58	2.63	2.50	1.92	3.04	2.73	2.97
Korea	4.98	5.97	4.69	7.52	9.01	7.54	5.84	8.22	6.98
Thailand	2.76	8.08	0.78	6.66	6.02	9.65	7.58	8.51	1.61
Turkey	2.31	-0.57	0.22	1.45	1.72	1.99	-2.17	1.65	4.05

* Period average for years for which data are available.

Source: International Financial Statistics, International Monetary Fund.

Table 12

SUM OF CENTRAL BANK REDISCOUNTS TO BANKING SYSTEM AND PRIVATE SECTOR
(Percent of GDP)

	AVERAGE				1982	1983	1984	1985	1986
	1971-75	1976-78	1979-81	1982-86*					
Crisis Countries									
Argentina 1/	10.59	3.76	3.19	NA	29.61	13.40	15.36	NA	NA
Brazil	NA	5.34	4.67	3.72	3.83	3.57	3.34	4.15	NA
Chile	NA	1.63	0.46	18.08	11.97	23.78	18.48	NA	NA
Mexico 1/	NA	0.38	0.23	0.37	2.77	-1.06	0.20	-0.13	0.05
Morocco	NA	NA	NA	1.62	0.84	0.21	1.88	1.81	4.35
Philippines 1/	1.08	0.26	2.23	0.08	1.11	1.79	1.75	0.46	-4.72
Yugoslavia	2.22	5.48	4.86	4.36	4.78	4.48	4.94	3.58	4.03
Non-Crisis Countries									
Colombia	1.28	1.46	0.46	1.34	1.01	1.91	1.23	1.22	NA
Indonesia	NA	NA	1.32	2.93	4.63	1.36	4.61	0.95	3.08
Korea 1/	1.88	1.19	1.91	2.03	1.07	1.72	2.69	2.63	2.05
Thailand 1/	0.58	0.11	0.79	0.47	0.16	0.21	0.43	0.59	0.96
Turkey 1/	NA	5.06	2.43	0.13	-0.35	2.26	-1.98	0.28	0.45

* Period average for years for which data are available.
1/ Rediscounts to financial system only.

Source: International Financial Statistics, International Monetary Fund.

high levels of central bank rediscounts continued in the 1980's. These flows were comparatively less important in Morocco and the Philippines.

In the non-crisis countries, the flows of central bank rediscounts are important in all of the countries except Thailand, but do not show dramatic increases over the period as a whole. Indonesia and Colombia both show the effect of financial crises, but not on the same scale as Argentina or Chile.

5. Summary

The results on financial intermediation taxes and financial savings dramatize the policy dilemmas faced by some of the crisis countries. The tax on financial intermediation -- including the inflation tax -- was one substitute for the external public financing which disappeared beginning in 1982, especially as increased central bank rediscounts demanded more resources. With the poor financial savings performance in these countries, it could generate more financing than conventional borrowing at market rates. However, the tax itself caused further declines in real financial balances, which in turn required even more reliance on inflation or interest controls to achieve the necessary financing. The end result was a severe squeeze on private sector credit, with baleful consequences for private investment. The Scylla of an internal debt trap was avoided only to sail into the Charybdis of financial disintermediation. The non-crisis countries, who had less urgent need for domestic finance to replace lost external credits, escaped the shipwreck altogether.

V. Conclusions and Extensions

What policy lessons should we draw from the country experiences reviewed in this paper? The outcomes of the policies followed in the crisis

countries suggest that policies were not optimal even under the conditions imposed by the debt crisis. The large taxes on financial intermediation through reserve requirements, high inflation, and interest rate controls were severely distortionary both in the short run and in the long run. In the short run, the tax was associated with capital flight and financial disintermediation. This may have implied some inequity in the "tax collection", since wealthier people could move their capital out more easily. By penalizing private investment, the tax also damaged long-run growth. In the non-crisis countries, on the other hand, government borrowing at market rates was less costly for private investment because the growth of financial savings was so rapid.

Further research is needed on how the distortions caused by taxes on financial intermediation compare with the effects of conventional taxes. Although any conclusions are speculative in the absence of such research, it seems likely that small increases in rates or coverage of broad-based taxes (such as those on income or consumption) would generally be less distortionary for the same amount of additional revenue than taxes on financial intermediation. Conventional broad-based taxes penalize mainly consumption, while the tax on financial intermediation falls more upon investment. This might suggest that the long-run damage caused by the latter is more severe.

The choice of public investment as the main locus of fiscal adjustment also may have hurt private investment and growth in the crisis countries. At least some public investments -- such as infrastructure -- are essential inputs into private production. By contrast, the maintenance of public investment in the non-crisis countries may have reinforced the healthy rates of private investment and growth. The magnitudes of these effects should be the subject of further research.

The evidence collected in this paper suggests that the approach followed in most of the non-crisis countries -- modest domestic finance at

market interest rates -- was superior to that followed in most of the crisis countries -- increased domestic finance through taxes on financial intermediation. Although further research is needed, it is likely the crisis countries would have been better off raising conventional taxes and cutting current spending rather than raising taxes on financial intermediation and cutting public investment.

The context in which these policies were made should not be ignored, however. The speed with which external net transfers were reversed required quick action by the crisis countries. Raising conventional tax collections is an inherently slower process than taxing financial balances. Cutting current spending is more politically and institutionally difficult -- and thus slower -- than cutting public investment. It is understandable that countries often resorted to quick, although distortionary, policies. To allow a shift towards sounder policies in the future would likely require some breathing space through new external financing or relief from debt service.

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APPENDIX I
EXTERNAL DEBT, IMPORTS, AND EXPORTS BY COUNTRY

EXTERNAL DEBT FLOWS
(Percent of GNP)

	1980	1981	1982	1983	1984	1985	1986
ARGENTINA							
PUBLIC LT DEBT:	18.14	18.91	30.42	42.81	36.97	58.90	51.70
change in PUBLIC LT debt	2.82	0.70	10.18	16.08	1.80	14.69	3.80
net flows of PUBLIC LT debt	3.02	1.46	7.16	2.30	0.05	4.88	1.17
revaluation	-0.20	-0.55	-0.38	-0.35	-0.66	1.38	1.03
residual	0.00	-0.21	3.40	14.13	2.41	8.44	1.60
PRIVATE LT DEBT:	11.75	21.75	21.50	17.48	14.29	7.56	6.13
change in PRIVATE LT debt	NA	9.97	-1.80	-1.40	-0.07	-9.53	-0.02
net flows of PRIVATE LT debt	NA	9.98	3.87	0.17	-0.04	-0.30	-0 31
revaluation	NA	-0.22	-0.30	-0.11	-0.18	0.36	0.09
residual	NA	0.20	-5.36	-1.46	0.15	-9.59	0.20
SHORT-TERM DEBT:	18.50	23.11	31.63	13.59	11.95	9.84	4.24
change in SHORT-TERM debt	NA	4.54	6.89	-14.21	0.79	-4.45	-3.76
revaluation	NA	-0.34	-0.32	-0.17	-0.15	0.37	0.13
effective change	NA	4.88	7.22	-14.04	0.94	-4.82	-3.89
BRAZIL							
PUBLIC LT DEBT:	17.50	17.64	19.88	31.00	35.49	34.38	30.56
change in PUBLIC LT debt	2.01	1.87	2.17	4.85	5.29	1.68	3.19
net flows of PUBLIC LT debt	1.84	2.38	2.50	3.16	3.75	0.51	0.31
revaluation	-0.01	-0.43	-0.26	-0.36	-0.56	1.10	1.12
residual	0.18	-0.07	-0.07	2.05	2.09	0.07	1.76
PRIVATE LT DEBT:	7.15	7.7/	9.11	11.15	9.74	8.00	5.42
change in PRIVATE LT debt	0.32	1.25	1.31	-0.84	-1.12	-0.98	-0.95
net flows of PRIVATE LT debt	0.10	1.02	0.60	-0.68	-0.36	-0.35	-0.27
revaluation	NA	-0.17	-0.11	-0.15	-0.16	0.28	0.2:
residual	NA	0.40	0.82	-0.01	-0.60	-0.90	-0.89
SHORT-TERM DEBT:	5.83	6.01	6.88	7.36	5.81	5.13	3.34
change in SHORT-TERM debt	NA	0.70	0.84	-1.68	-1.37	-0.22	-0.74
revaluation	NA	-0.14	-0.08	-0.11	-0.11	0.17	0.14
effective change	NA	0.84	0.92	-1.57	-1.26	-0.39	-0.88
CHILE							
PUBLIC LT DEBT:	17.79	14.52	23.50	38.06	62.87	91.75	101.11
change in PUBLIC LT debt	-0.27	-0.68	3.34	8.83	23.01	14.86	14.55
net flows of PUBLIC LT debt	0.00	-0.24	3.65	8.19	10.47	8.16	4.88
revaluation	-0.20	-0.44	-0.28	-0.32	-0.48	1.84	2.32
residual	-0.07	0.00	-0.03	0.95	13.02	4.86	7.36
PRIVATE LT DEBT:	17.62	26.10	38.85	45.00	37.28	33.56	18.88
change in PRIVATE LT debt	7.35	11.05	2.62	-3.33	-9.85	-12.03	-12.78
net flows of PRIVATE LT debt	7.97	11.16	2.68	-1.97	-0.39	-0.81	-0.01
revaluation	NA	-0.36	-0.41	-0.43	-0.51	1.02	0.83
residual	NA	0.24	0.35	-0.93	-8.95	-12.24	-13.60
SHORT-TERM DEBT:	9.61	9.59	14.86	14.39	11.10	11.83	9.90
change in SHORT-TERM debt	NA	1.38	1.55	-4.09	-3.97	-1.75	-1.26
revaluation	NA	-0.19	-0.15	-0.16	-0.16	0.30	0.29
effective change	NA	1.57	1.70	-3.93	-3.81	-2.05	-1.55
MEXICO							
PUBLIC LT DEBT:	18.85	18.72	33.31	50.15	43.48	42.72	61.76
change in PUBLIC LT debt	2.63	3.95	5.52	11.36	2.09	1.23	2.26
net flows of PUBLIC LT debt	2.85	4.16	5.58	1.79	0.76	0.20	1.03
revaluation	-0.15	-0.21	-0.31	-0.39	-0.41	0.66	1.04
residual	-0.07	0.01	0.25	9.96	1.74	0.37	0.20
PRIVATE LT DEBT:	4.05	4.43	5.22	11.12	10.85	9.76	13.26
change in PRIVATE LT debt	NA	1.26	-1.35	5.03	1.67	-0.59	-0.33
net flows of PRIVATE LT debt	NA	1.26	-0.45	0.00	0.24	-0.53	-0.24
revaluation	NA	-0.04	-0.08	-0.05	-0.08	0.13	0.17
residual	NA	0.04	-0.82	5.08	1.52	-0.19	-0.26
SHORT-TERM DEBT:	8.96	10.86	16.86	7.62	3.99	3.22	5.44
change in SHORT-TERM debt	NA	3.83	0.75	-12.02	-2.29	-0.59	0.95
revaluation	NA	-0.08	-0.19	-0.15	-0.06	0.05	0.06
effective change	NA	3.91	0.94	-11.87	-2.24	-0.64	0.89

EXTERNAL DEBT FLOWS
(Percent of GNP)

	1980	1981	1982	1983	1984	1985	1986
INDONESIA							
PUBLIC LT DEBT:	20.01	17.75	20.64	27.99	28.03	32.69	44.36
change in PUBLIC LT debt	2.32	1.94	1.93	2.25	2.14	2.13	2.42
net flows of PUBLIC LT debt	2.16	1.81	3.43	4.71	2.68	1.53	2.68
revaluation	0.16	-0.82	-0.54	-0.51	-1.14	2.90	4.50
residual	0.00	0.95	-0.96	-1.96	0.61	-2.30	-4.76
PRIVATE LT DEBT:	4.20	4.00	3.55	4.40	4.68	4.67	5.32
change in PRIVATE LT debt	NA	0.49	-0.42	0.26	0.49	0.01	0.03
net flows of PRIVATE LT debt	NA	0.49	-0.42	0.26	0.49	0.01	0.03
revaluation	NA	-0.16	-0.09	-0.10	-0.15	0.36	0.52
residual	NA	0.16	0.09	0.10	0.15	-0.36	-0.52
SHORT-TERM DEBT:	3.71	3.66	5.31	6.00	6.63	6.48	8.77
change in SHORT-TERM debt	NA	0.56	1.68	-0.19	0.92	-0.13	1.43
revaluation	NA	-0.14	-0.09	-0.15	-0.21	0.51	0.73
effective change	NA	0.70	1.77	-0.04	1.13	-0.64	0.71
KOREA							
PUBLIC LT DEBT:	26.84	28.27	29.71	29.80	30.26	34.53	30.60
change in PUBLIC LT debt	4.18	3.81	3.64	3.32	3.06	3.02	2.65
net flows of PUBLIC LT debt	3.28	4.65	3.24	2.94	3.40	3.21	-1.50
revaluation	0.40	-0.84	-0.56	-0.25	-0.58	1.47	1.82
residual	0.50	0.01	0.96	0.62	0.24	-1.66	2.34
PRIVATE LT DEBT:	3.81	4.76	4.98	6.28	6.40	7.68	6.46
change in PRIVATE LT debt	2.80	1.29	0.43	1.74	0.61	1.38	-1.30
net flows of PRIVATE LT debt	0.81	1.29	0.34	1.61	0.98	1.36	-1.09
revaluation	NA	-0.11	-0.09	-0.04	-0.10	0.29	0.40
residual	NA	0.11	0.17	0.17	-0.27	-0.27	-0.61
SHORT-TERM DEBT:	17.49	15.43	17.91	15.93	13.87	12.82	9.73
change in SHORT-TERM debt	NA	-0.51	3.17	-0.41	-0.84	-0.83	-1.55
revaluation	NA	-0.51	-0.30	-0.13	-0.26	0.62	0.65
effective change	NA	0.01	3.47	-0.28	-0.57	-1.45	-2.20
THAILAND							
PUBLIC LT DEBT:	12.39	14.64	17.22	17.90	18.62	26.70	27.45
change in PUBLIC LT debt	3.79	3.55	3.49	3.18	3.07	3.37	3.10
net flows of PUBLIC LT debt	3.56	3.42	3.11	2.29	1.92	4.06	0.27
revaluation	0.23	-0.43	-0.35	-0.15	-0.58	1.95	2.86
residual	-0.01	0.56	0.73	1.03	1.73	-2.64	-0.04
PRIVATE LT DEBT:	5.18	5.99	6.50	6.79	8.33	9.15	7.74
change in PRIVATE LT debt	1.40	1.13	0.61	0.87	1.77	-0.01	-0.65
net flows of PRIVATE LT debt	2.07	1.13	0.61	0.91	1.76	-0.01	-0.65
revaluation	NA	-0.12	-0.08	-0.02	-0.15	0.70	0.97
residual	NA	0.12	0.08	-0.02	0.16	-0.70	-0.97
SHORT-TERM DEBT:	7.01	8.22	8.53	8.45	8.77	8.69	7.07
change in SHORT-TERM debt	NA	1.64	0.46	0.68	0.61	-0.95	-0.90
revaluation	NA	-0.17	-0.11	-0.03	-0.19	0.74	0.92
effective change	NA	1.81	0.57	0.71	0.79	-1.70	-1.82
TURKEY							
PUBLIC LT DEBT:	26.76	27.01	31.19	32.22	35.24	37.68	41.38
change in PUBLIC LT debt	7.01	6.96	7.59	7.88	8.12	7.61	6.95
net flows of PUBLIC LT debt	3.16	2.04	1.72	0.90	2.74	0.98	3.01
revaluation	-0.76	-1.43	-1.04	-1.25	-1.48	2.45	2.67
residual	4.62	6.35	6.91	8.22	6.86	4.18	1.27
PRIVATE LT DEBT:	0.96	0.78	0.76	0.80	0.88	0.70	0.89
change in PRIVATE LT debt	-0.17	-0.17	-0.09	0.01	0.05	-0.13	0.26
net flows of PRIVATE LT debt	0.08	0.02	0.03	0.01	0.05	-0.18	0.18
revaluation	NA	-0.04	-0.03	-0.03	-0.03	0.04	0.04
residual	NA	-0.16	-0.08	0.03	0.03	0.01	0.04
SHORT-TERM DEBT:	4.46	3.90	3.42	4.59	6.59	9.25	12.27
change in SHORT-TERM debt	NA	-0.53	-0.83	1.04	1.96	3.07	3.82
revaluation	NA	-0.17	-0.17	-0.11	-0.19	0.32	0.47
effective change	NA	-0.36	-0.66	1.15	2.05	2.74	3.35

EXTERNAL DEBT FLOWS
(Percent of GNP)

	1980	1981	1982	1983	1984	1985	1986
MOROCCO							
PUBLIC LT DEBT:	42.69	57.32	63.87	80.93	93.97	115.79	103.87
change in PUBLIC LT debt	6.80	8.31	8.20	9.25	10.36	10.57	8.33
net flows of PUBLIC LT debt	6.45	7.89	9.37	3.15	8.55	5.43	4.65
revaluation	-0.95	-2.72	-1.73	-2.42	-3.20	5.91	5.64
residual	1.30	3.14	0.55	8.52	5.02	-0.76	-1.95
PRIVATE LT DEBT:							
change in PRIVATE LT debt							
net flows of PRIVATE LT debt							
revaluation							
residual							
SHORT-TERM DEBT:	4.46	9.01	8.19	9.26	10.48	15.01	15.56
change in SHORT-TERM debt	NA	3.57	-0.71	0.03	0.10	4.32	3.73
revaluation	NA	-0.30	-0.22	-0.35	-0.35	0.62	0.44
effective change	NA	3.87	-0.49	0.38	0.45	3.70	3.29
PHILIPPINES							
PUBLIC LT DEBT:	18.53	19.81	22.74	31.06	36.84	42.72	65.84
change in PUBLIC LT debt	3.87	3.55	3.47	4.00	4.32	4.29	4.53
net flows of PUBLIC LT debt	3.45	3.32	3.69	5.10	3.37	2.82	1.95
revaluation	0.41	-0.50	-0.39	-0.13	-0.75	2.30	3.26
residual	0.02	0.73	0.18	-0.97	1.70	-0.83	-0.68
PRIVATE LT DEBT:	6.97	7.18	P.22	9.17	8.58	9.43	5.96
change in PRIVATE LT debt	1.09	0.80	1.19	-0.30	-1.31	0.90	-4.00
net flows of PRIVATE LT debt	0.43	0.57	0.22	-0.06	-0.33	0.42	-0.05
revaluation	NA	-0.18	-0.12	-0.04	-0.17	0.36	0.45
residual	NA	0.40	1.09	-0.21	-0.81	0.12	-4.40
SHORT-TERM DEBT:	21.46	24.51	28.84	27.59	30.05	26.96	17.86
change in SHORT-TERM debt	NA	4.85	4.85	-5.64	0.28	-2.89	-10.61
revaluation	NA	-0.55	-0.41	-0.14	-0.51	1.25	1.29
effective change	NA	5.40	5.26	-5.49	0.79	-4.14	-11.90
YUGOSLAVIA							
PUBLIC LT DEBT:	6.34	7.38	8.65	15.43	19.37	25.13	20.37
change in PUBLIC LT debt	1.27	0.88	0.42	3.75	3.07	6.57	2.42
net flows of PUBLIC LT debt	1.38	1.01	0.48	1.72	0.63	-0.14	-0.73
revaluation	-0.13	-0.14	-0.07	-0.20	-0.32	0.78	1.20
residual	0.02	0.00	0.00	2.23	2.76	5.93	1.95
PRIVATE LT DEBT:	15.23	16.61	17.23	21.45	18.49	13.41	7.39
change in PRIVATE LT debt	1.31	0.99	-1.31	-1.80	-4.17	-4.31	-2.19
net flows of PRIVATE LT debt	1.67	0.73	-0.34	0.16	-0.94	-0.20	-0.19
revaluation	NA	-0.09	-0.18	-0.55	-0.50	0.84	0.69
residual	NA	0.35	-0.79	-1.41	-2.73	-4.95	-2.69
SHORT-TERM DEBT:	2.96	3.54	2.87	2.44	2.32	2.14	2.07
change in SHORT-TERM debt	NA	0.50	-1.08	-1.43	-0.26	-0.08	0.54
revaluation	NA	-0.02	-0.04	-0.09	-0.06	0.11	0.09
effective change	NA	0.52	-1.04	-1.34	-0.20	-0.18	0.46
COLOMBIA ·							
PUBLIC LT DEBT:	12.30	14.11	15.68	18.17	21.69	28.45	36.60
change in PUBLIC LT debt	2.14	1.97	1.86	1.88	1.93	2.15	2.27
net flows of PUBLIC LT debt	2.31	2.92	2.42	2.54	3.26	3.53	5.34
revaluation	-0.08	-0.19	-0.12	-0.16	-0.23	0.67	1.08
residual	-0.09	-0.76	-0.45	-0.50	-1.10	-2.04	-4.15
PRIVATE LT DEBT:	1.55	2.41	3.12	3.38	3.91	4.77	5.07
change in PRIVATE LT debt	0.17	0.98	0.85	0.23	0.43	0.40	0.05
net flows of PRIVATE LT debt	0.13	0.98	0.85	0.23	0.43	0.40	0.05
revaluation	NA	-0.01	-0.01	-0.01	-0.01	0.03	0.08
residual	NA	0.01	0.01	0.01	0.02	-0.03	-0.09
SHORT-TERM DEBT:	7.04	7.71	8.18	8.62	7.81	9.42	5.11
change in SHORT-TERM debt	NA	1.22	0.92	0.36	-1.07	0.70	-4.81
revaluation	NA	-0.06	-0.04	-0.04	-0.03	0.07	0.17
effective change	NA	1.28	0.95	0.40	-1.04	0.64	-4.97

IMPORTS
(millions of US dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
CRISIS COUNTRIES	82178	86386	66298	52875	53210	52686	53288	NA
Argentina	9394	8431	4859	4119	4118	3518	4406	5356
Brazil	22955	22091	19395	15429	13916	13168	14044	NA
Chile	5469	6513	3643	2845	3357	2954	3099	3994
Mexico	18896	24037	14435	8550	11255	13212	11432	12222
Morocco	3770	3840	3815	3301	3569	3513	3477	3850
Philippines	7727	7946	7667	7487	6070	5111	5044	6737
Yugoslavia	13967	13528	12484	11144	10925	11210	11786	NA
NON-CRISIS COUNTRIES	54370	63069	62768	65221	66012	62460	64133	80706
Colombia	4283	4730	5358	4464	4027	3673	3409	3874
Indonesia	12624	16542	17854	17726	15047	12705	11938	12710
Korea	21598	24299	23473	24967	27371	26461	29707	38585
Thailand	8352	8931	7566	9169	9236	8391	8415	11981
Turkey	7513	8567	8518	8895	10331	11230	10664	13556

Source: World Bank data.

EXPORTS
(millions of US dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
CRISIS COUNTRIES	66204	74561	70257	72852	80636	76893	67811	NA
Argentina	8021	9143	7623	7835	8100	8396	6852	6356
Brazil	20132	23276	20173	21898	27002	25634	22392	NA
Chile	4705	3836	3706	3831	3650	3804	4199	5224
Mexico	16066	19938	21230	22312	24196	21663	16031	20655
Morocco	2415	2283	2043	2058	2161	2145	2411	2781
Philippines	5788	5722	5021	5005	5391	4629	4842	5720
Yugoslavia	9077	10363	10461	9913	10136	10622	11084	NA
NON-CRISIS COUNTRIES	52364	58781	56465	57076	66089	63933	70026	91067
Colombia	3986	3158	3114	2970	4273	3650	5331	5700
Indonesia	21795	23348	19747	18689	20754	18527	14396	17206
Korea	17214	20671	20879	23204	26335	26442	33913	46244
Thailand	6449	6902	6835	6308	7338	7059	8803	11595
Turkey	2910	4703	5890	5905	7389	8255	7583	10322

Source: World Bank data.

APPENDIX II

A MODEL OF INFLATION, INTEREST RATES, AND GOVERNMENT DEFICIT FINANCE

The model presented in this Appendix illustrates the tradeoffs facing the government when it chooses between alternative domestic financing methods for a given fiscal deficit. The choice is between taxing financial intermediation -- through currency creation, reserve requirements, and placement of government bonds at below-market interest rates -- or borrowing at market rates of interest. This section will first examine the tradeoffs between borrowing and the inflation tax. It will then address the special case of generalized interest rate controls. The model presented here has antecedents in the work of Buiter (1988) and Van Wijnbergen et. al. (1988). It is not intended to be a general macroeconomic framework -- it is simplified so as to emphasize only the aspects of the economy relevant to the domestic financing of fiscal deficits. The only behavioral detail will be in financial portfolio equations and an investment function, and the main endogenous variables are inflation and interest rates. The model is intended to be for the medium-run, ignoring the many shocks that can affect financial markets, inflation, and interest rates in the short run.

A.   The model

The fundamental equation of the model is the government financing identity, presented in equation 1 (see list of variables in Table A1):

$$(1) \qquad (i_g + \Delta i_g) \, L_g + G = E \, (\Delta F_g - \Delta R_b) + \Delta H + \Delta L_g$$

Table A1: Variable definitions for model

i_g	Interest rate on government loans from banking system
Δ	Operator for derivative with respect to time
L_g	Loans to government from banking system
G	Primary deficit of government
E	Nominal exchange rate (domestic currency per dollar)
F_g	Stock of government foreign debt (in dollars)
R_b	Stock of foreign reserves of central bank (dollars)
H	Stock of high-powered money (money base)
H_p	Currency holdings by nonbank private sector
H_f	Holdings of reserves against deposits by banks
P	Domestic price level
Y	Real GDP
ϕ_h	Ratio of currency holdings to GDP
π	Rate of inflation
D_p	Stock of private sector deposits in financial system
ϕ_d	Share of deposits in financial assets (excluding currency)
r_d	Nominal interest rate on deposits
ϵ	Rate of nominal currency devaluation
NFA_p	Net financial assets of households
R_p	Stock of foreign assets held by households (dollars)
η_p	Ratio of net financial assets of households to GDP
g	Growth rate of real GDP
$\dot{\phi}_h$	Derivative of currency ratio wrt inflation
$\dot{\phi}_d$	Derivative of deposit share wrt real deposit rate
K_c	Stock of physical capital held by corporations
i_c	Nominal interest rate on corporate loans from banks
ψ	Ratio of corporate physical capital to GDP
I_c	Real gross investment by corporations
δ	Rate of depreciation of corporate capital stock
l_c	Ratio of corporate loans from banking system to GDP
s_c	Ratio of corporate noninterest saving to GDP (equals gross return on capital)
$\dot{\psi}$	Derivative of desired capital output ratio wrt real loan rate of interest
η_c	Ratio of corporate equity to GDP
μ	Required reserve ratio against deposits

Table A1 (continuation)

f_g	Ratio of public foreign debt to GDP
r_b	Ratio of central bank foreign reserves to GDP
l_g	Ratio of public debt from banking system to GDP
h	Ratio of stock of high-powered money to GDP

The government deficit is the sum of the primary deficit G and government domestic interest costs $(i_g + \Delta i_g) L_g$. For simplicity, both foreign nominal interest rates and inflation are assumed to be zero. The government interest rate is defined to include the previous level (i_g) plus any change (Δi_g) induced by policy shifts. The alternative sources of financing are foreign borrowing by the government $(E \Delta F_g)$, running down of foreign exchange reserves at the central bank $(-E\Delta R_g)$, creation of high-powered money (ΔH), and domestic borrowing from the banking system (ΔL_g).

High-powered money creation can be split between currency held by the private sector (ΔH_p) and reserves against banking deposits (ΔH_f):

(2) $\qquad \Delta H = \Delta H_p + \Delta H_f$

In addition to currency, private households hold two other assets, bank deposits (D_p) and foreign currency (ER_p). Households have a pure transactions demand for domestic currency, which is related to nominal income. The ratio to income depends inversely on the rate of inflation, however, as increased inflation makes households economize on their use of currency. The remainder of household portfolios is split between bank deposits and foreign currency depending on the deposit rate of interest (r_d) versus currency depreciation (ϵ) (recall that foreign interest rates are assumed to be zero):

(3) $\qquad \dfrac{H_p}{PY} = \phi_h \, [\pi] \qquad\qquad\qquad\qquad \phi_h' < 0$

(4) $\qquad D_p = \phi_d \, [r_d - \epsilon] \, (NFA_p - H_p) \qquad 0 < \phi_d < 1 \quad \phi_d' > 0$

(5) $\qquad ER_p = NFA_p - D_p - H_p$

We have to put a further restriction on the partial derivatives of the portfolio demands to insure that an increase in inflation (and depreciation) does not increase the demand for deposits:

(6) $\qquad (\eta_p - \phi_h) \phi_d' \mu + \phi_h' \phi_d > 0$

To specify private saving, we assume a constant desired ratio of net financial worth to income (η_p). The savings rate will be this ratio times growth and inflation (the rate of inflation is defined as the previous level of inflation (π) plus the change ($\Delta\pi$) induced by alterations in policies.)

(7) $\qquad \dfrac{NFA_p}{PY} = \eta_p$

(8) $\qquad \dfrac{\Delta NFA_p}{PY} = \eta_p (\pi + \Delta\pi + g)$

The change in demand for deposits and currency can then be derived by taking the derivatives of (3) and (4) and substituting from (8):

(9) $\qquad \dfrac{\Delta H_p}{PY} = \phi_h (\pi + \Delta\pi + g) + \phi_h' \Delta\pi$

(10) $\qquad \dfrac{\Delta D_p}{PY} = \phi_d (\eta_p(\pi + \Delta\pi + g) - \phi_h (\pi + \Delta\pi + g) - \phi_h' \Delta\pi)$

$\qquad\qquad + (\eta_p - \phi_h) \phi_d' (\Delta r_d - \Delta\epsilon)$

The other participants in domestic financial markets are private corporations, which have only one asset -- physical capital (K_c) -- and one liability -- loans from the banking system (L_c). The demand for physical

capital relative to income depends on the real rate of interest (i_c-π) on these loans (we assume profitability of capital is constant). Gross investment (I_c) will be net investment plus physical depreciation (δ), given as a ratio to income in equation (12):

(11) $K_c = \psi\ [i_c - \pi]\ Y$ $\psi' < 0$

(12) $\dfrac{PI_c}{PY} = \psi'\ (\Delta i_c - \Delta \pi) + \psi\ (g + \delta)$

The demand for loans by corporations is given as a residual after the investment demand has been determined. The change in corporate loans will be gross investment plus domestic interest costs minus non-interest corporate saving:

(13) $\dfrac{\Delta L_c}{PY} = \psi'\ (\Delta i_c - \Delta \pi) + \psi(g + \delta) - s_c + (i_c + \Delta i_c)\ l_c$

Reserves are determined as an unchanging fraction of deposits, so the change in reserves will be the reserve ratio times the change in deposits:

(14) $\dfrac{\Delta H_f}{PY} = \mu\ \dfrac{\Delta D_p}{PY}$

The interest rates on corporate loans can then be related to the deposit rate received by households. The interest rate paid on government loans is assumed to be the same as on corporate loans. Assuming zero net profits for the banking system and zero intermediation costs as a simplification, the deposit rate will be one minus the reserve requirement (μ) times the loan rate:

(15) $r_d = (1 - \mu) \, i_c$

We assume that currency depreciation equals the rate of inflation (i.e. the real exchange rate is constant, since foreign inflation is zero). Perfect foresight is assumed, so that expected inflation and depreciation equal their realized values:

(16) $r_d - \epsilon = (1 - \mu) \, (i_c - \pi) - \mu\pi$

Loans to the government are the residual item. The change in the ratio of government debt to GDP will be given by the ratio of the change to GDP minus adjustments for inflation and growth:

(17) $\Delta l_g = \left(\dfrac{\Delta D_p}{PY} (1 - \mu) - \dfrac{\Delta L_c}{PY} \right) - (\pi + \Delta\pi + g) \, l_g$

Substituting (1)-(16) into (17), the following expression for the change in the ratio of government domestic debt to GDP can be derived:

(18) $\Delta l_g = - \psi \, (g+\delta) + s_c - (i_c - \pi - g) \, (\psi - \eta_c)$

$+ [(1-\mu)^2 \, (\eta_p - \phi_h) \, \phi_d' - \psi' - (\psi - \eta_c)] \, (\Delta i_c - \Delta\pi]$

$- \left[(1-\mu) \, \phi_d \left[(\eta_p - \phi_h) \dfrac{\phi_d'}{\phi_d} \, \mu + \phi_h' \right) \right] \, \Delta\pi$

This equation can be thought of as the equilibrium condition for the market in domestic debt.

The change in the ratio of money base to GDP is:

(19) $\Delta h = \frac{\Delta H}{PY} - (\pi + \Delta\pi + g) \, h$

Substituting in for the components of high-powered money from equations (1)-(16), we get the following expression:

(20) $\Delta h = \left[\phi_h'(1 - \mu \, \phi_d) - \mu^2 \, (\eta_p - \phi_h) \, \phi_d' \right] \, \Delta\pi$

$\qquad + \mu \, (\eta_p - \phi_h) \, \phi_d' \, (1 - \mu) \, (\Delta i_c - \Delta\pi)$

Monetary finance to the public sector can be derived as the residual from the original financing identity (1):

(21) $\Delta h = \gamma - \left[\Delta f_g - \Delta r_b - (i_c - \pi - g) \, l_g + g \, (f_g - r_b) + \partial l_g \right.$

$\qquad + (\pi + g) \left[\phi_h + \mu \phi_d (\eta_p - \phi_h) \right] - l_g \, (\Delta i_c - \Delta\pi)$

$\qquad \left. + \left[\phi_h + \mu \, \phi_d \, (\eta_p - \phi_h) \right] \, \Delta\pi \right]$

Monetary finance is given by the primary deficit less external and domestic lending, less adjustments for interest rates, inflation, and growth. This equation can be interpreted as the increase in the supply of money by the central bank dictated by government financing needs.

To close the model and solve for the change in inflation and interest rates, we equilibrate the demand for high-powered money to the supply. The change in external debt ratios is presumed to be given exogenously by international credit rationing. The primary deficit of the public sector and saving by the private sector (corporate and household) are given exogenously

as a ratio to GDP. The change in public domestic borrowing is set as a policy target by the authorities. This is the main policy variable in the model, since it determines the inflation and real interest rate outcomes. Thus equation (18) with the left-hand side set to a constant gives one equation in real interest rates and inflation (for the debt market). The other (for the money market) can be derived by equating (20) and (21) and substituting from (18) to get the following:

$$(22) \quad \gamma - (\Delta f_g - \Delta r_b) = g(f_g - r_b) - (i_c - \pi - g) \, \phi_d (\eta_p - \phi_h) + (\pi + g) \, \phi_h - \psi(g + \delta)$$

$$+ s_c + \left[(1 - \mu)(\eta_p - \phi_h) \, \phi_d' - \psi' - (\psi - \eta_c) - (n_p - \phi_h)(1 - \mu) \, 1_g \right] (\Delta i_c - \Delta \pi)$$

$$+ \left[\mu(\phi_d - \phi_d')(\eta_p - \phi_h) + \phi_h + \phi_h' - \phi_d \phi_h' \right] \Delta \pi$$

Equations (18) and (22) give us two equations in two variables, $(\Delta i_c - \Delta \pi)$ and $\Delta \pi$. We can solve the equations to give us the following reduced forms:

$$(23) \quad \Delta i_c - \Delta \pi = \frac{1}{\Phi} \left[(1 - \mu) \, \phi_d \left((\eta_p - \phi_h) \frac{\ddot{\phi_d}}{\Phi} \mu + \phi_h' \right) \left(\gamma - g(f_g - r_b) - (\partial f_g - \partial r_b) - (\pi + g)) \phi_h \right] \right.$$

$$+ \left[\mu \phi_d (\eta_p - \phi_h) \left(1 - \frac{\phi_d'}{\phi_d} \mu \right) + \phi_h + \phi_h' (1 - \mu \phi_d) \right] \left(\psi (g + \delta) - s_c \right)$$

$$+ \left[\phi_d \left((1 - \mu) \, \phi_d (\eta_p - \phi_h) - (\psi - \eta_c) \right) \right] \left[(\eta_p - \phi_h) \frac{\phi_d'}{\Phi} \mu + \phi_h' \right]$$

$$+ (\psi - \eta_c) \left[\mu \phi_d (\eta_p - \phi_h) + \phi_h + \phi_h' \right] \left[i_c - \pi - g \right]$$

$$+ \left[\mu \phi_d (\eta_p - \phi_h) + \phi_h + \phi_h' - \phi_d \left(\mu \frac{\phi_d'}{\phi_d} (\eta_p - \phi_h) + \phi_h' \right) \right] \Delta 1_g$$

$$(24) \quad \Delta\pi = \frac{1}{\Phi}\left[\left[\left(\psi' + (\psi - \eta_c) + (\eta_p - \phi_h)(1-\mu)(1_g - \phi_d')\right)(\psi - \eta_c)\right.\right.$$

$$+ \left[\phi_d(\eta_p - \phi_h)\left((1-\mu)^2(\eta_p - \phi_h)\phi_d' - \psi' - (\psi - \eta_c)\right)\right](1_c - \pi - g)$$

$$+ \left[(1-\mu)^2(\eta_p - \phi_h)\phi_d' - \psi' - (\psi - \eta_c)\right]\left[\gamma - g(f_g - r_b) - (\delta f_g - \delta r_b) - \phi_h(\pi + g)\right]$$

$$+ (\eta_p - \phi_h)(1-\mu)\left[1_g - \mu\phi_d'\right]\left[\psi(g+\delta) - s_c\right]$$

$$+ \left[(\eta_p - \phi_h)(1-\mu)(1_g - \phi_d') + \psi' + \psi - \eta_c\right]\Delta 1_g$$

where Φ is given by:

$$(25) \quad \Phi = -(\psi' + \psi - \eta_c)\left[\mu\left((\eta_p - \phi_h)\phi_d'\mu + \phi_h'\phi_d\right) - \mu(\eta_p - \phi_h)\phi_d - \phi_h - \phi_h'\right]$$

$$+ (1-\mu)^2 (\eta_p - \phi_h)\left[\mu(\eta_p - \phi_h)\phi_d' \phi_d + \phi_d'(\phi_h + \phi_h') - \left(\phi_d'\mu(\eta_p - \phi_h) + \phi_h'\phi_d\right)1_g\right]$$

If (6) holds, then Φ will be positive as long as $\psi' + \psi - \eta_c$ is negative, the inflation tax is below the maximum and government debt 1_g is below a certain critical level which can be determined from (25). We assume for the remainder of the analysis that 1_g is below this level.

From (23), we can now evaluate the partial derivatives of $i_c - \pi$ with respect to the exogenous variables. (27) gives the effect of an exogenous decrease in the level of foreign lending on the real interest rate:

$$(27) \quad \frac{\partial i_c - \partial \pi}{-\partial f_g} = \frac{1}{\Phi}(1-\mu)\phi_d\left[(n_p - \phi_d)\frac{\phi_d'}{\phi_d}\mu + \phi_h'\right] > 0$$

If (6) holds, then a decrease in foreign lending will increase the real interest rate. A decrease in foreign lending is substituted automatically by money creation in this model, since l_g is held constant for the moment. The increased inflation from money creation will cause real deposits to fall (if (6) holds) because of the increased tax on depositors through the reserve requirement.

An increase in domestic debt will have the effect on real interest rates shown in (28):

$$(28) \quad \frac{\delta i_c - \delta r}{\delta l_g} = \frac{1}{\phi} \left[\mu \phi_d (\eta_p - \phi_h) + \phi_h + \phi_h' - \phi_d \left(\frac{\mu \phi_d'}{\phi_d} (\eta_p - \phi_h) + \phi_h' \right) \right] > 0$$

An increase in domestic debt decreases money creation and inflation for a fixed primary deficit. It can be thought of as "tight money" in this model. The derivative in (28) is equal to the real money base plus the derivatives of the money base and total credit with respect to inflation. This can be interpreted as saying that "tight money" will increase interest rates as long as the loss in inflation tax revenues from the fall in inflation is greater than the increase in total credit resulting from the rise in deposits triggered by the fall in inflation.

It is of interest to combine (27) and (28) to see the effect of a substitution of domestic for foreign debt on the real interest rate. (In the model, this has the same effect as a debt-financed expansion in the primary deficit). The effect of substituting domestic for foreign government debt is to increase the real interest rate:

$$(29) \quad \frac{\partial i_c - \partial \pi}{\partial l_g} - \frac{\partial i_c - \partial \pi}{\partial f_g} = \frac{1}{\phi} \left[-\mu \left(\phi'_d (\eta_p - \phi_h)\mu + \phi_d \phi'_h \right) \right.$$

$$\left. + \mu \phi_d (\eta_p - \phi_h) + \phi_h + \phi'_h \right] > 0$$

This expression is equivalent to the level of the money base plus the derivative of the money base with respect to the rate of inflation. This will be positive if the inflation rate that maximizes inflation tax revenues has not been exceeded. This is relevant because the additional interest costs from the increase in interest rates will have to be monetized.

We next turn to the effect of changes in foreign borrowing and monetary policy on inflation. Equation (30) shows the impact of an exogenous decrease in government foreign debt on the rate of inflation:

$$(30) \quad \frac{\partial \pi}{-\partial f_g} = \frac{1}{\phi} \left[(1-\mu)^2 (\eta_p - \phi_h) \phi'_d - \psi' - (\psi - \eta_c) \right] > 0$$

Under the condition that $\psi' + \psi - \eta_c$ is negative, decreased foreign capital flows will increase inflation. This is simply because of the substitution of money creation for foreign debt. The effect of "tight money" on inflation is more subtle, as (31) shows:

$$(31) \quad \frac{\partial \pi}{\partial l_g} = \frac{1}{\phi} \left[(\eta_p - \phi_h)(1-\mu)(1_g - \phi'_d) + \psi' + \psi - \eta_c \right] \gtrless 0$$

If we started from a level of zero government debt, then an increase in government borrowing for unchanged deficit ("tight money") would decrease inflation. However, as government debt reaches significant levels, we have

the complication that additional interest expenditures from the increased interest rates resulting from higher government borrowing will have to be monetized. If l_g is large enough, this effect could cause the inflation to increase. This is analogous to the famous Sargent-Wallace (1984) result concerning the long-run inflationary effect of "tight money", here telescoped into a static model.

The substitution of domestic debt for foreign debt will have the following effect on inflation:

$$(32) \qquad \frac{\partial \pi}{\partial l_g} - \frac{\partial \pi}{\partial f_g} = \frac{1}{\phi} \ (\eta_p - \phi_h)(1-\mu)(1_g - \mu \phi_d')$$

Substitution of domestic debt for foreign debt will decrease inflation if we start from zero government debt. This is because the increase in interest rates resulting from domestic borrowing will increase real deposits and thus increase the real demand for the money base, decreasing the rate of inflation. However, as government debt increases, the monetization of increased domestic interest will partially or even more than offset this effect.

These results can be used to trace the effects of foreign borrowing and monetary policy on other variables in the model. The effect on private investment is straightforward -- any shock that increases real loan interest rates will decrease private investment. Thus, "tight money" or decreased foreign borrowing will decrease investment.

The behavior of capital flight (accumulation of foreign assets) is related to the real rate of interest on deposits. This is affected by both changes in inflation (negatively) and real loan interest rates (positively), as shown in (16) above. The effect of decreased foreign borrowing on the real deposit rate is as follows:

$$(33) \quad \frac{\partial r_d - \partial \epsilon}{-\partial f_g} = \frac{1}{\phi} \left[\phi_h' \phi_d + \mu \ \phi' + \mu(\phi - \eta_c) \right] < 0$$

We see that an exogenous decline in foreign debt in general causes a fall in real deposit rates and increase in demand for foreign assets (capital flight). This is because money creation is substituted for the missing foreign lending, increasing the tax on deposit holders through the reserve requirement.

An increase in domestic debt for given fiscal deficit ("tight money") will have a more ambiguous effect on the real deposit rate of interest. As usual, the results depend on the initial level of government debt:

$$(34) \quad \frac{\partial r_d - \partial \epsilon}{\partial l_g} = \frac{1}{\phi} \left[(1-\mu) \left[\mu \phi_d (\eta_p - \phi_h) + \phi_h + \phi_h' - \phi_d \phi_h' \right] \right.$$

$$\left. - \mu \left[(\eta_p - \phi_h)(1-\mu) l_g + \phi' + \phi - \eta_c \right] \right] \gtreqless 0$$

"Tight money" will increase the real deposit rate if l_g starts at zero. However, as l_g increases, the requirement to monetize the additional interest on the domestic debt leads to increased inflation which could offset the first effect. This could lead to the paradox that "tight money" increases capital flight.

If a decline in foreign debt is offset by an increase in domestic borrowing, the effects are shown in (34):

$$(35) \quad \frac{\partial r_d \partial \epsilon}{\partial l_g} - \frac{\partial r_d \partial \epsilon}{\partial f_g} = \frac{1}{\phi} \left[(1-\mu) \left(\mu \phi_d (\eta_p - \phi_h) + \phi_h + \phi_h' \right) + \mu \phi_d \phi_h' \right.$$

$$\left. - \mu (\eta_p - \phi_h)(1-\mu) l_g \right]$$

Again, the results depend on the level of outstanding government domestic debt. If l_g is initially zero, the substitution of domestic for foreign debt will drive up real deposit rates through the additional demands on domestic credit markets. However, monetization of the interest on government debt could reverse this result as in (34).

B. **Interest rate controls and credit rationing**

As described in the taxonomy of financing in section III, another possible approach to domestic financing is to control all interest rates in the economy. This alters significantly the tradeoffs between the inflation tax and domestic borrowing, since inflation now worsens the real rate on all financial assets and liabilities in the economy. The following describes the alterations in the model for this situation.

The asset demands by households are unchanged. However, corporate borrowing is no longer determined by notional investment demands, since investment will be rationed by available financing (recall that corporations do not have access to external financing in the model). Corporate borrowing will be the residual item in the balance sheet of the financial system:

$$(36) \quad \frac{\Delta L_c}{PY} = \frac{\Delta D_p}{PY} - \frac{\Delta H_f}{PY} - \frac{\Delta L_g}{PY}$$

Private investment will be given by the sum of corporate saving minus interest costs and financial system loans:

$$(37) \quad \frac{PI_c}{PY} = \frac{S_c}{PY} - \frac{(\Delta i_c + i_c) \, L_c}{PY} + \frac{\Delta L_c}{PY}$$

Substituting from the other equations in the model, we can now derive an equation for private investment as a function of government domestic borrowing and the rate of inflation:

$$(38) \quad \frac{I_c}{Y} = s_c - i_c l_c + \phi_d \, (\eta_p - \phi_h) \, (\pi + g) \, (1 - \mu) - \Delta l_g - (\pi + g) \, l_g$$

$$+ \left[(1 - \mu) \left[(\phi_d - \phi_d') \, (\eta_p - \phi_h) - \phi_d \phi_h' \right] - l_g \right] \Delta \pi$$

This equation is the equilibrium for the domestic debt market.

As in the previous solution of the model, government monetary finance will be determined as a residual given the primary deficit and the availability of external financing. Equilibrating the supply of money base to finance the deficit to the demand for base money for a given rate of inflation, we get the following expression for private investment as a function of inflation:

$$(39) \quad \frac{I_c}{Y} = - \left[\gamma - (\Delta f_g - \Delta r_b) \right] - i_c(l_c + l_g) + s_c + g \, (f_g - r_b)$$

$$+ (\pi + g) \left[\phi_h + \phi_d \, (\eta_p - \phi_h) \right]$$

$$+ \left[(\phi_d - \phi_d') \, (\eta_p - \phi_h) + \phi_h + \phi_h' \, (1 - \phi_d) \right] \Delta \pi$$

This equation is the equilibrium condition for the money market. Together with equation (38) this will determine the rates of inflation and private investment, with the latter substituting for the real interest rate as an equilibrating variable.

Solving from equations (38) and (39) simultaneously for π and I_c/Y, we get the following expression for $\Delta\pi$:

$$(40) \qquad \Delta\pi = \frac{\gamma - (\Delta f_g - \Delta r_b) - g(f_g - r_b) - \Delta l_g + i_c l_g + (\pi + g)\left[l_g - \phi_h - \phi_d(\eta_p \phi_h)\right]}{\mu(\phi_d - \phi_d')(\eta_p - \phi_h) + \phi_h + \phi_h' - \mu\phi_d\phi_h' + l_g}$$

The denominator of this expression is the sum of the money base and government domestic debt and their derivative with respect to inflation (plus a small positive interaction term). Both high-powered money and domestic debt are included in the base for the inflation tax under interest rate controls, since inflation erodes the real value of all government liabilities. The denominator will be positive if we have not passed the maximum of the inflation tax revenue curve, redefined for this broader base. The numerator gives the incremental money financing requirement. The derivatives of inflation with respect to foreign borrowing and domestic borrowing are both minus one over the expression in the denominator. It follows that the substitution of domestic for foreign debt has no effect on inflation, in contrast to the increased inflation in the situation of uncontrolled interest rates. This is because the domestic interest rate is not increased by additional domestic borrowing under interest rate controls and thus no additional money creation is necessary.

The solution for the rate of private investment I_c/Y is as follows:

$$(41) \quad \frac{I_c}{Y} = -\left[\gamma - (\delta f_g - \delta r_b)\right] - i_c l_g + g(f_g - r_b) + (\pi + g)\left[\phi_h + \phi_d(\eta_p - \phi_h)\right] + s_c - i_c l_c$$

$$+ \frac{\left[\phi_h + \phi'_h + (\phi_d - \phi'_d)(\eta_p - \phi_h) - \phi_d\phi'_h\right]\left[\gamma - (\Delta f_g - \Delta r_b) - g(f_g - r_b) - \Delta l_g + i_c l_g + (\pi + g)\left[l_g - \phi_h - \phi_d(\eta_p - \phi_h)\right]\right]}{\phi_h + \phi'_h + \mu(\phi_d - \phi'_d)(\eta_p - \phi_h) - \mu\phi_d\phi'_h + l_g}$$

The partial derivatives with respect to foreign and domestic borrowing are as follows:

$$(42) \quad \frac{\delta\left(\frac{I_c}{Y}\right)}{-(\delta f_g)} = \frac{(1-\mu)(\phi_d - \phi'_d)(\eta_p - \phi_h) - (1-\mu)\phi_d\phi'_h - l_g}{\phi_h + \phi'_h + \mu(\phi_d - \phi'_d)(\eta_p - \phi_h) - \phi_d\phi'_h + l_g} \lessgtr 0$$

$$(43) \quad \frac{\delta\left(\frac{I_c}{Y}\right)}{\delta l_g} = \frac{-\left[\phi_h + \phi'_h + (\phi_d - \phi'_d)(\eta_p - \phi_h) - \phi_d\phi'_h\right]}{\phi_h + \phi'_h + \mu(\phi_d - \phi'_d)(\eta_p - \phi_h) - \mu\phi_d\phi'_h + l_g} < 0$$

The derivative of investment with respect to a decline in government foreign borrowing (or an increase in the deficit) financed by money creation is negative (positive) if the benefits of the inflation tax accruing to private firms are more (less) than offset by the decline in total real credit caused by inflation. This will occur if the initial stock of deposits is low (high) relative to government debt. The derivative of investment with respect to government domestic borrowing (for unchanged deficit) is negative. In addition to the direct removal of credit from the private sector, the decline in money creation causes inflation to fall and so takes away some of the inflation tax accruing to domestic firms. However, this may offset by the increase in total real credit caused by the decline in inflation. The

crowding out of private investment under credit rationing is thus less than one for one, if deposits are low relative to government debt.

The effect of substituting domestic for foreign debt can be calculated by summing (42) and (43). The result simplifies to minus one. That is to say, the substitution of domestic for foreign debt leads to one-for-one crowding out of private investment. This is because exchanging domestic for foreign debt has no effect on inflation, as shown in (40).

C. Caveats and extensions

Many limitations of this type of model have been noted in the work of Buiter (1988) and Van Wijnbergen (1988) and others. One limitation is the assumption that the primary deficit is exogenous. As is well known from the work of Tanzi (1985) and others, inflation tends to decrease real tax revenues because of lags in collection and nominally fixed tax payments. Failure to adjust public sector prices one-for-one with the rate of inflation could also lead to deterioration of public enterprise revenues or an increase in subsidies paid to private enterprises. Incorporating this effect into the model could reverse the positive relationship between the rate of inflation and the financeable deficit.

The assumption that growth is exogenous also misses some of the story through ignoring the effects of different public expenditure or tax policies on the productivity of the economy and thus on growth. For example, a primary deficit which results from highly productive expenditure will have different effects than one which derives from pure consumption expenditure. Incorporating this effect would allow for cases where debt finance is high without damaging private investment, as well as for cases where primary deficits and debt finance do not seem that large but cause major disruptions in the economy.

In addition, the assumption of a constant real exchange rate misses the complications of effects on government finance and private borrowers of abrupt changes in relative prices. These effects are very significant in some countries, but are very complicated to model in practice. The effects on public finances of real exchange rate changes include required bailouts of financial institutions that suffer capital losses from devaluation, revaluation of the public sector's own foreign debt service, revaluation of export and import flows in the public sector, and changes in relative prices of domestically consumed tradable goods.

Finally, the model is set up in such a way as to only be applicable to small disturbances from the initial equilibrium. This permits the linear depiction of equilibrium relationships. However, it misses the effects of major shifts in regimes due to large disturbances.

APPENDIX III

PUBLIC DOMESTIC FINANCING: FLOW OF FUNDS BY COUNTRY

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	1.54	1.43	4.00	3.27	5.66	3.78	3.16	4.32	3.28	2.83	2.56	3.86	5.51	5.06	4.32	2.65
INFLATION-ADJUSTED (SEIGNORAGE)	-0.87	-1.63	2.38	1.09	-4.44	-1.89	0.01	0.83	0.01	0.35	-1.28	-0.40	-0.02	-0.97	1.27	0.42
NOMINAL COMPONENT(INFLATION TAX)	2.41	3.06	1.62	2.17	10.11	5.68	3.15	3.48	3.27	2.48	3.84	4.26	5.53	6.03	3.05	2.23
BANK RESERVES	0.77	0.95	26.86	12.04	18.74	22.03	2.06	2.40	0.85	1.06	2.37	22.02	17.09	11.24	6.03	-0.24
INFLATION-ADJUSTED (SEIGNORAGE)	-0.13	-0.27	26.11	4.00	-18.63	2.49	-14.02	-5.81	-2.86	-0.49	0.46	19.03	-4.89	-8.47	-1.23	-3.69
NOMINAL COMPONENT (INFLATION TAX)	0.90	1.22	0.75	8.04	37.37	19.54	16.08	8.21	3.72	1.55	1.92	2.98	21.98	19.71	7.25	3.45
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	-0.30	-5.07	5.12	-2.03	0.29	-1.18	0.21	2.45	1.33	-1.31	5 55	2.21	-5.22	1.40	-3.50	1.17
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED																
DOMESTIC BORROWING 1/	2.01	-2.69	35.98	13.27	24.69	24.63	5.43	9.16	5.47	2.58	10 48	28.09	17.38	17.70	6.84	3.58
DOMESTIC BORROWING 2/	1.10	-3.91	35.23	5.23	-12.68	5.09	-10.65	0.95	1.75	1.03	8.56	25.10	-4.60	-2.01	-0.41	0.12
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	2.12	0.37	-0.84	0.25	1.14	-1.44	-6.64	-2.85	-1.41	5.67	1.10	-4.33	8.29	-1.85	5.21	2.50
NET FOREIGN RESERVES CHANGE(- = INCREASE)	2.12	0.37	-0.84	0.25	1.14	-1.44	-6.64	-2.85	-1.41	5.67	1.10	-4.33	8.29	-1.85	5.21	2.50
OTHER FOREIGN BORROWING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CENTRAL BANK REDISCOUNTS (- = INCREASE)																
TO BANKING SYSTEM	-0.77	-0.95	-25.14	-9.59	-16.50	-15.86	4.62	-0.03	-0.24	-3.84	-5 48	-29.61	-13.40	-15.36	NA	NA
INFLATION-ADJUSTED	-0.17	-0.04	-24.52	-2.11	16.40	1.35	16.73	1.95	0.38	-3.53	-2.60	-23.64	17.03	2.80	NA	NA
NOMINAL COMPONENT	-0.60	-0.92	-0.62	-7.48	-32.90	-17.21	-12.11	-1.99	-0.62	-0.30	-2.88	-5.97	-30.43	-18.16	NA	NA
TO PRIVATE SECTOR																
INFLATION-ADJUSTED																
NOMINAL COMPONENT																
FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED																
NET FOREIGN BORROWING (+)	-2.12	-0.37	0.84	-2.29	2.60	0.33	1.36	0.24	1.48	-0.13	7.23	7.50	-1.80	-2.98	-1.51	-1.80
CLAIMS ON PUBLIC SECTOR(-)	0.43	5.34	-31.23	-1.97	18.34	-1.30	13.81	3.37	1.54	1.80	-6.01	-21.24	10.11	7.07	4.73	2.52
CENTRAL BANK	0.13	0.27	-26.11	-4.00	18.63	-2 49	14.02	5.81	2.86	0.49	-0 46	-19.03	4.89	8.47	1.23	3.69
NONFINANCIAL PUBLIC SECTOR	0.30	5.07	-5.12	2.03	-0.29	1.18	-0.21	-2.45	-1.33	1.31	-5.55	-2.21	5.22	-1.40	3.50	-1.17
CLAIMS ON PRIVATE SECTOR(-)	-0.61	0.60	-2.86	-3.04	15.61	0.52	-7.67	-0.91	-7.80	-3.78	-4.87	2.13	13.22	8.50	0.98	-0.17
LOANS FROM CENTRAL BANK(+)	0.17	0.04	24.52	2.11	-16.40	-1.35	-16.73	-1.95	-0.38	3.53	2.60	23.64	-17.03	-2.80	NA	NA
LIABILITIES TO PRIVATE SECTOR(+)	-8.15	3.89	3.73	4.41	-19.30	2.39	7.11	0.73	6.40	-0.28	-0.99	-9.76	-2.39	-3.32	-0.20	2.95
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	-6.01	3.41	3.57	3.56	-18.57	1.58	4.97	0.47	6.24	-0.55	-1.40	-5.22	-2.15	-2.36	-0.05	2.84
OTHER	-2.14	0.48	0.16	0.86	-0.74	0.81	2.13	0.26	0.17	0.26	0.41	-4.53	-0.25	-0.97	-0.14	0.11
NET OTHER ITEMS(+)	9.98	-9.32	6.75	1.06	-5.26	-0.71	2.08	-1.60	-1.17	-0.65	1.97	-1.80	-1.64	-6.58	NA	NA
NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION																
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	-0.51	0.25	-0.14	-0.09	-0.08	-0.66	-1.67	-0.26	2.94	-0.06
NET TRANSFER	NA	NA	NA	NA	NA	NA	0.72	2.20	1.47	-1.22	5.63	2.87	-3.55	1.66	-6.44	1.23
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE																
NET TRANSFER																
TOTAL DOMESTIC NET TRANSFER	NA	NA	NA	NA	NA	NA	5.94	8.91	5.60	2.67	10.56	28.75	19.05	17.96	3.90	3.64
TAX ON FINANCIAL INTERMEDIATION 1/	NA	NA	NA	NA	NA	NA	19.74	11 44	7.13	4 12	5.84	7 90	29.18	26.00	7.36	5.75
TAX ON FINANCIAL INTERMEDIATION 2/	NA	NA	NA	NA	NA	NA	11.87	1 07	2.33	2 42	3 43	7 47	17.09	17.15	6.09	3.29

1/ Reserves treated as money.
2/ Adjusted for interest paid on reserves.

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(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	1.73	1.16	1.66	1.69	1.79	1.48	1.05	1.22	2.05	1 40	1 45	1.41	1.20	1.71	1.84	NA
INFLATION-ADJUSTED (SEIGNORAGE)	1.00	0.55	1.12	0.40	0.58	-0.10	-0.36	0 09	0.15	-0.48	-0 39	-0.31	-1.04	0.15	0.15	NA
NOMINAL COMPONENT(INFLATION TAX)	0.73	0.61	0.54	1.29	1.21	1.57	1.40	1.13	1.90	1.88	1.84	1.71	2.24	1.56	1.69	NA
BANK RESERVES	-0.30	-0.29	0.83	0.28	0.30	0.80	1.17	0.80	1.31	0.59	0.52	0.71	0.78	0.95	0.82	NA
INFLATION-ADJUSTED (SEIGNORAGE)	-0.84	-0.57	0.66	-0.20	-0.07	0.39	0.68	0 20	0.23	-0.53	-0 45	-0.07	-0.30	0.08	-0.13	NA
NOMINAL COMPONENT (INFLATION TAX)	0 54	0.28	0.17	0.48	0.37	0.41	0.49	0.60	1.08	1.13	0 98	0.78	1.07	0.88	0.94	NA
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	NA	NA	NA	NA	NA	NA	NA	NA	1.73	0 31	2.83	1.18	1.52	-0.90	1.45	NA
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED	NA	0.00	0.00	0 00	0.10	-0.03	-0.02	0 02	-0.04	-0.01	0 36	0.78	1.84	4.64	4.36	NA
DOMESTIC BORROWING	NA	NA	NA	NA	NA	NA	NA	NA	5 05	2 30	5 17	4.08	5.34	6.40	8.46	NA
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	-0.80	-4.31	-2.42	2.15	1.45	-1.40	0.08	-2 02	1.82	1.62	0.44	3.19	6.25	-1.76	0.35	NA
NET FOREIGN RESERVES CHANGE(- = INCREASE)	-1.19	-4.27	-2.40	1.77	1.27	-1.45	0.11	-3.13	0.61	1.66	0.52	4.70	-1.09	-6.73	-0.60	NA
OTHER FOREIGN BORROWING	0.38	-0.04	-0.03	0.38	0.17	0.05	-0.03	1.11	1.21	-0.04	-0.09	-1.52	7.34	4.97	0.94	NA
CENTRAL BANK REDISCOUNTS (- = INCREASE)	NA	-3.77	-3.93	-8.05	-8.56	-7.50	-6.43	-2.07	-5.07	-4.65	-4.29	-3.83	-3.57	-3.34	-4.15	NA
TO BANKING SYSTEM	NA	-1.16	-0.83	-2.68	-2.49	-2.15	-2.05	0 08	-0.51	-0.70	-1.12	-0.79	-0.66	-0.95	-0.74	NA
INFLATION-ADJUSTED	NA	-0.96	-0.57	-2.06	-1.49	-0.58	-0.46	1.59	1 25	0.46	-0.07	0.35	0.72	-0.04	0.22	NA
NOMINAL COMPONENT	NA	-0.20	-0.26	-0.62	-0.99	-1.57	-1 59	-1 51	-1.76	-1.17	-1.06	-1 14	-1.38	-0.91	-0.95	NA
TO PRIVATE SECTOR	-5 30	-2.61	-3.11	-5.37	-6.07	-5.35	-4 38	-2 15	-4 55	-3.95	-3.17	-3.04	-2.91	-2.39	-3.41	NA
INFLATION-ADJUSTED	-4 45	-1.55	-2 11	-2 98	-3.34	-1.24	-0.29	1 49	0.77	0.82	1.70	1 15	2.27	1.31	-0.56	NA
NOMINAL COMPONENT	-0.84	-1.06	-0 99	-2.39	-2.73	-4 11	-4 09	-3 64	-5.32	-4.77	-4 87	-4 19	-5.18	-3.70	-2.86	NA
FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED																
NET FOREIGN BORROWING (+)	NA	NA	NA	NA	NA	NA	NA	NA	1 79	-0.44	2 48	0.90	4.52	0.43	-2.86	NA
CLAIMS ON PUBLIC SECTOR(-)	NA	NA	NA	NA	NA	NA	NA	NA	-1.95	0.22	-2.38	-1 11	-1.23	0.83	-1.32	NA
CENTRAL BANK	0.84	0.57	-0.66	0.20	0.07	-0.39	-0 68	-0 20	-0.23	0.53	0.45	0 07	0.30	-0.08	0.13	NA
NONFINANCIAL PUBLIC SECTOR	NA	NA	NA	NA	NA	NA	NA	NA	-1.73	-0.31	-2.83	-1.18	-1.52	0.90	-1.45	NA
CLAIMS ON PRIVATE SECTOR(-)	-5.73	-8.09	-8.27	-4.97	-6.68	-4.33	-3 02	-0 10	1 98	2.43	-2.42	-2.32	3.26	-2.57	2.87	NA
LOANS FROM CENTRAL BANK(+)	NA	0.96	0.57	2.06	1.49	0.58	0.46	-1 59	-1.25	-0.46	0.07	-0.35	-0.72	0.04	-0.22	NA
LIABILITIES TO PRIVATE SECTOR(+)	NA	5.71	5.65	0.77	3.50	0.86	1.85	1.82	-0.37	-1.57	1.99	1.21	0.48	3.69	1.49	NA
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	NA	3.42	3.04	-0.52	1.01	-0.62	0.59	0.65	-0.41	-1.33	-0.34	-0.72	-1.02	1.65	2.11	NA
OTHER	1.67	2.29	2.60	1.29	2 49	1.48	1.27	1.17	0.04	-0.24	2.34	1.93	1.50	2.04	-0.62	NA
NET OTHER ITEMS(+)	NA	NA	NA	NA	NA	NA	NA	NA	0.17	0.43	0.71	1.93	-6.68	-2.31	0.81	NA
NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION																
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	NA	NA	0.45	0.06	-0.00	0.28	0.01	-0.03	0.13	NA
NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	NA	1.28	0.25	2.83	0.90	1.51	-0.88	1.32	NA
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	NA	NA	-0 01	-0.00	NA	0.97	0.03	-0.07	0.47	NA
NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	NA	-0 03	-0.00	NA	-0.19	1.81	4.71	3.89	NA
TOTAL DOMESTIC NET TRANSFER (EXC BONDS 80-81)	NA	NA	NA	NA	NA	NA	NA	NA	4.61	2.24	NA	2 83	5.29	6.50	7.86	NA
TAX ON FINANCIAL INTERMEDIATION	NA	NA	NA	NA	NA	NA	NA	NA	2 54	2.95	NA	1.25	3 77	2 54	2.03	NA

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	NA	NA	NA	2.17	3.10	2.41	1.67	1.46	1.10	1.00	0.71	-0.14	0.57	0.65	NA	NA
INFLATION-ADJUSTED (SEIGNORAGE)	NA	NA	NA	-1.91	0.22	0.51	0.68	0.88	0.27	0.27	0.45	-0.89	-0.07	0.02	NA	NA
NOMINAL COMPONENT(INFLATION TAX)	NA	NA	NA	4.09	2.88	1.90	0.99	0.58	0.83	0.72	0.27	0.75	0.64	0.63	NA	NA
BANK RESERVES	NA	NA	NA	5.43	4.23	5.52	3.68	1.97	1.41	1.37	-1.37	-1.56	0.15	0.18	NA	NA
INFLATION-ADJUSTED (SEIGNORAGE)	NA	NA	NA	-2.74	-2.50	2.54	1.63	0.73	-0.07	0.19	-1.79	-2.19	-0.12	-0.07	NA	NA
NOMINAL COMPONENT (INFLATION TAX)	NA	NA	NA	8.17	6.73	2.98	2.05	1.24	1.49	1.17	0.41	0.63	0.27	0.25	NA	NA
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	NA	NA	NA	NA	-0.73	0.17	-0.67	-1.72	-0.64	-3.74	1.47	6.06	1.06	0.77	NA	NA
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED	NA	NA	NA	2.44	-2.21	-4.36	-0.29	0.00	-0.07	0.01	-0.00	-0.01	0.57	0.26	NA	NA
DOMESTIC BORROWING 1/	NA	NA	NA	NA	4.39	3.74	4.39	1.71	1.83	-1.37	0.81	4.35	2.35	1.86	NA	NA
DOMESTIC BORROWING 2/	NA	NA	NA	NA	-2.34	0 76	2.34	0.47	0.31	-2.55	0.39	3.72	2.08	1.61	NA	NA
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	NA	NA	NA	NA	NA	-8.05	-1.06	-5.10	-5.90	-4.35	0.94	0.84	11.01	7.55	NA	NA
NET FOREIGN RESERVES CHANGE(- = INCREASE)	NA	NA	NA	NA	NA	-5.95	-1.52	-7.21	-6.64	-2.56	2.49	-0.94	3.04	-2.44	NA	NA
OTHER FOREIGN BORROWING	NA	NA	NA	NA	NA	-2.10	0.46	2.11	0.74	-1.79	-1.56	1 78	7.97	9.99	NA	NA
CENTRAL BANK REDISCOUNTS (- = INCREASE)	NA	NA	NA	NA	NA	-0.70	-2.19	-1.99	0.08	0.39	-1.85	-11.97	-23.78	-18.48	NA	NA
TO BANKING SYSTEM	NA	NA	NA	NA	-1.97	-0.54	-1.56	-0.39	0.23	-0.57	-1.51	-3.47	-22.05	-16.86	NA	NA
INFLATION-ADJUSTED	NA	NA	NA	NA	-0.05	0.68	-1.21	-0.01	0.64	-0.39	-1.42	-2.94	-20.95	-11.77	NA	NA
NOMINAL COMPONENT	NA	NA	NA	NA	-1.92	-1.22	-0 35	-0.38	-0.40	-0.18	-0.09	-0 53	-1.10	-5.09	NA	NA
TO PRIVATE SECTOR	NA	NA	NA	NA	NA	-0.16	-0.63	-1.60	-0.16	0.96	-0.34	-8.50	-1.73	-1.62	NA	NA
INFLATION-ADJUSTED	NA	NA	NA	NA	NA	-0.02	-0.56	-1.47	0.34	1.28	-0.33	-8.41	-0.09	0.05	NA	+
NOMINAL COMPONENT	NA	NA	NA	NA	NA	-0.14	-0.07	-0.13	-0.50	-0.32	-0.01	-0.09	-1.64	-1.67	NA	NA

FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
NET FOREIGN BORROWING (+)	NA	NA	NA	NA	NA	NA	NA	NA	2.71	5.73	6.71	15 74	-5.97	9.39	NA	NA
CLAIMS ON PUBLIC SECTOR(-)	NA	NA	NA	NA	3.23	-2.71	-0.97	0.99	0.72	3.55	0.32	-3.87	-0.94	-0.70	NA	NA
CENTRAL BANK	NA	NA	NA	2.74	2.50	-2.54	-1.63	-0.73	0.07	-0.19	1.79	2.19	0.12	0.07	NA	NA
NONFINANCIAL PUBLIC SECTOR	NA	NA	NA	NA	0.73	-0.17	0.67	1.72	0.64	3.74	-1.47	-6.06	-1.06	-0.77	NA	NA
CLAIMS ON PRIVATE SECTOR(-)	NA	NA	NA	NA	NA	-3.55	-9.27	-9.08	-5.87	-11.12	-9.32	-10.69	8.19	-4.19	NA	NA
LOANS FROM CENTRAL BANK(+)	NA	NA	NA	NA	0.05	-0.68	1.21	0.01	-0.64	0.39	1.42	2.94	20.95	11.77	NA	NA
LIABILITIES TO PRIVATE SECTOR(+)	NA	NA	NA	0.52	-1.71	3.40	4.21	4.84	3.05	3.27	4.12	2.24	-5.08	2.40	NA	NA
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	NA	NA	NA	0.52	-1.71	3.40	4.21	4.84	3.05	3.27	4.12	2.24	-5.08	2.40	NA	NA
OTHER																
NET OTHER ITEMS(+)	NA	NA	NA	NA	NA	NA	NA	NA	0.04	-1.81	-3.25	-6.36	-17.15	-18.67	NA	NA

NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	-0.18	-0.27	0.36	-0.15	-1.80	-1 35	0.00	0.03	0.07	NA
NET TRANSFER	NA	NA	NA	NA	NA	NA	-0.49	-1.45	-1.00	-3.60	3.26	7.41	1.06	0.75	NA	NA
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	0.07	0.02	-0.01	0.00	0.00	0.00	0.00	0.01	0.03	NA
NET TRANSFER	NA	NA	NA	NA	NA	NA	-0.29	0.00	-0.07	0.01	-0.00	-0.01	0.57	0.24	NA	NA
TOTAL DOMESTIC NET TRANSFER	NA	NA	NA	NA	NA	NA	4.57	1.98	1.44	-1.23	2.60	5.70	2.35	1.82	NA	NA
TAX ON FINANCIAL INTERMEDIATION 1/	NA	NA	NA	NA	NA	NA	3.22	2.08	1.96	2.04	2.47	2.72	0.91	0.84	NA	NA
TAX ON FINANCIAL INTERMEDIATION 2/	NA	NA	NA	NA	NA	NA	NA	2.00	0.21	-0.30	2.48	1.82	0.63	0.64	NA	NA

1/ Reserves treated as money.
2/ Adjusted for interest paid on reserves.

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	0.41	0.89	1.01	1.00	0.91	1.97	0.49	1.11	1.14	1.05	1.50	2.36	1.03	1.53	1.35	1.71
INFLATION-ADJUSTED (SEIGNORAGE)	0.21	0.66	0.18	0.22	0.47	0.92	-0.41	0.50	0.39	0.01	0.55	-0.61	-1.35	0.13	-0.22	-0.65
NOMINAL COMPONENT(INFLATION TAX)	0.20	0.22	0.83	0.78	0.44	1.05	0.89	0.62	0.75	1.04	0.95	2.97	2.38	1.40	1.57	2.36
BANK RESERVES	0.41	3.54	1.45	2.33	2.36	-2.70	8.44	2.52	3.16	3.83	4.00	8.51	5.72	4.22	0.46	1.81
INFLATION-ADJUSTED (SEIGNORAGE)	0.32	3.43	0.49	1.40	1.73	-4.44	7.87	1.09	1.42	1.31	1.43	0.51	-1.64	-1.02	-4.79	-3.58
NOMINAL COMPONENT (INFLATION TAX)	0.09	0.11	0.96	0.94	0.64	1.75	0.57	1.43	1.74	2.53	2.57	8.00	7.36	5.24	5.26	5.40
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	NA	NA	NA	NA	NA	NA	NA	-1.44	0.60	0.11	4.59	11.19	-4.89	-2.13	6.04	10.59
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED	NA	NA	NA	NA	NA	NA	NA	-0.03	0.38	0.35	0.12	1.39	0.82	0.45	-0.29	-0.23
DOMESTIC BORROWING 1/	NA	NA	NA	NA	NA	NA	NA	2.17	5.29	5.35	10.21	23.45	2.68	4.07	7.57	13.88
DOMESTIC BORROWING 2/	NA	NA	NA	NA	NA	NA	NA	0.74	3.55	2.82	7.64	15.45	-4.69	-1.16	2.31	8.48
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	NA	NA	NA	NA	NA	NA	-0.92	-0.82	-0.62	-0.23	-0.21	1.18	-1.48	-0.94	1.62	-0.37
NET FOREIGN RESERVES CHANGE(- = INCREASE)	NA	NA	NA	NA	NA	NA	-0.47	-0.28	-0.38	-0.14	-0.21	1.18	-1.48	-0.94	1.62	-0.37
OTHER FOREIGN BORROWING	NA	NA	NA	NA	NA	NA	-0.46	-0.55	-0.23	-0.09	0.00	0.00	0.00	0.00	0.00	0.00
CENTRAL BANK REDISCOUNTS (- = INCREASE)																
TO BANKING SYSTEM	NA	NA	NA	NA	NA	-1.82	0.59	0.09	-0.10	-0.58	-0.03	-2.77	1.06	-0.20	0.13	-0.05
INFLATION-ADJUSTED	NA	NA	NA	NA	NA	-1.70	0.94	0.22	0.02	-0.41	0.19	-2.28	2.51	0.06	0.39	0.12
NOMINAL COMPONENT	NA	NA	NA	NA	NA	-0.12	-0.35	-0.14	-0.12	-0.15	-0.22	-0.49	-1.45	-0.26	-0.26	-0.17
TO PRIVATE SECTOR																
INFLATION-ADJUSTED																
NOMINAL COMPONENT																
FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED																
NET FOREIGN BORROWING (+)	NA	NA	NA	NA	NA	NA	NA	-0.34	0.05	-0.29	3.58	14.51	-4.82	-3.78	4.22	7.99
CLAIMS ON PUBLIC SECTOR(-)	NA	NA	NA	NA	NA	NA	NA	0.35	-2.03	-1.42	-6.01	-11.70	6.53	3.15	-1.25	-7.00
CENTRAL BANK	-0.32	-3.43	-0.49	-1.40	-1.73	4.44	-7.87	-1.09	-1.42	-1.31	-1.43	-0.51	1.64	1.02	4.79	3.58
NONFINANCIAL PUBLIC SECTOR	NA	NA	NA	NA	NA	NA	NA	1.44	-0.60	-0.11	-4.59	-11.19	4.89	2.13	-6.04	-10.59
CLAIMS ON PRIVATE SECTOR(-)	NA	NA	1.82	0.32	-2.87	-2.46	11.32	-3.32	-2.22	-1.65	-1.42	9.17	2.75	-2.09	0.35	2.58
LOANS FROM CENTRAL BANK(+)	NA	NA	NA	NA	NA	1.70	-0.94	-0.22	-0.02	0.41	-0.19	2.28	-2.51	-0.06	-0.39	-0.12
LIABILITIES TO PRIVATE SECTOR(+)	NA	NA	NA	NA	NA	NA	NA	3.91	3.37	2.27	4.50	-9.15	-2.60	1.42	-3.54	-2.95
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	NA	NA	NA	NA	NA	NA	NA	3.45	3.14	1.66	3.88	-7.79	-2.67	1.26	-3.42	-2.53
OTHER	1.77	1.51	0.20	0.41	2.74	5.43	-18.24	0.46	0.23	0.61	0.62	-1.36	0.06	0.16	-0.13	-0.42
NET OTHER ITEMS(+)	NA	NA	NA	NA	NA	NA	NA	-0.58	1.00	0.67	0.10	-7.15	1.83	1.12	0.29	-0.08
NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION																
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	NA	-0.40	-0.47	-0.62	0.17	-5.00	-3.52	-1.45	-0.10	-4.51
NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	-1.03	1.07	0.74	4.42	16.19	-1.37	-0.68	6.15	15.10
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	NA	-0.02	-0.03	-0.05	0.02	-0.45	-0.36	-0.23	-0.02	-0.64
NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	-0.00	0.41	0.40	0.10	1.84	1.18	0.68	-0.27	0.41
TOTAL DOMESTIC NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	2.60	5.78	6.03	10.02	28.90	6.56	5.75	7.69	19.02
TAX ON FINANCIAL INTERMEDIATION 1/	NA	NA	NA	NA	NA	NA	NA	2.47	2.99	4.25	3.34	16.42	13.63	8.32	6.95	12.90
TAX ON FINANCIAL INTERMEDIATION 2/	NA	NA	NA	NA	NA	NA	NA	0.74	0.81	1.10	0.58	12.74	8.23	3.95	1.76	8.90

1/ Reserves treated as money
2/ Adjusted for interest paid on reserves.

MOROCCO

FINANCING SUMMARY
(Percent of GDP)

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	1.05	2.20	1.69	2.17	1.57	2.68	1.87	1.94	2.16	1.21	1.73	0.93	1.79	1.28	1.10	1.88
INFLATION-ADJUSTED (SEIGNORAGE)	0.54	1.91	0.63	0.65	0.85	1.09	0.79	0.73	1.01	-0.07	-0.02	0.08	0.16	0.27	-0.19	1.34
NOMINAL COMPONENT(INFLATION TAX)	0.52	0.30	1.26	1.52	0.72	1.59	1.08	1.21	1.15	1.28	1.75	0.85	1.63	1.01	1.29	0.54
BANK RESERVES	0.23	0.11	0.07	0.18	0.33	0.13	0.14	0.13	0.12	-0.47	0.12	-0.02	0.00	0.31	-0.08	1.18
INFLATION-ADJUSTED (SEIGNORAGE)	0.19	0.08	-0.04	0.07	0 27	-0.02	0.05	0.03	0.03	-0.57	0.05	-0.05	-0.06	0.28	-0.15	1.16
NOMINAL COMPONENT (INFLATION TAX)	0.04	0.03	0.11	0.12	0.06	0.15	0.09	0.10	0.09	0.10	0.07	0.04	0.06	0.03	0.07	0.02
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	0.44	1.36	0.28	2.14	0.36	-0.02	1.49	3.59	0.62	0.53	-0 11	0.65	1.54	-1.18	2.93	5.39
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED																
DOMESTIC BORROWING	1.72	3.68	2.25	4.50	2.26	2.79	3.50	5.67	2.91	1.27	1.74	1.56	3.33	0.43	3.95	8.46
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	-1.50	-1.23	0.13	-0.92	0.46	0.78	0.38	0.70	0.83	2.07	2 25	2.73	2.55	1.28	0.43	-2.91
NET FOREIGN RESERVES CHANGE(- = INCREASE)	-1.50	-1.23	0.13	-0.92	0.46	0.78	0.38	0.70	0.83	2.07	2.25	2.73	2.55	1.28	0.43	-2.91
OTHER FOREIGN BORROWING																
CENTRAL BANK REDISCOUNTS (- = INCREASE)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-1.31	-0.84	-0.21	-1.38	-1.31	-4.35
TO BANKING SYSTEM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-1.39	-0.55	0.19	-1.19	0.38	-2.78
INFLATION-ADJUSTED	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.97	-0.28	0.72	-0.92	0.81	-1.99
NOMINAL COMPONENT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.42	-0.26	-0.53	-0.27	-0.43	-0.79
TO PRIVATE SECTOR	-0.06	-0.23	-0.50	0.40	-0.33	-0.41	0.40	-0.36	-0.66	0.91	0.08	-0.30	-0.40	-0.18	-1.69	-1.57
INFLATION-ADJUSTED	0.04	-0.18	-0.27	0.69	-0.24	-0.20	0.55	-0.25	-0.54	1.08	0.18	-0.26	-0.29	-0.10	-1.57	-1.46
NOMINAL COMPONENT	-0.11	-0.06	-0.22	-0.29	-0.09	-0.21	-0.15	-0.11	-0.12	-0.17	-0.10	-0.04	-0.11	-0.09	-0.12	-0.11
FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED																
NET FOREIGN BORROWING (+)	0.13	-0.03	-0.13	-0.01	0.89	1.01	1.56	0.45	-0.54	-0.45	-0.57	-0.48	0.23	0.10	0.66	1.42
CLAIMS ON PUBLIC SECTOR(-)	-0.62	-1.45	-0.24	-2.21	-0.63	0.04	-1.54	-3.62	-0.65	0.04	0.06	-0.59	-1.47	0.88	-2.78	-6.55
CENTRAL BANK	-0.19	-0.08	0.04	-0.07	-0.27	0.02	-0.05	-0.03	-0.03	0.57	-0.05	0.05	0.06	-0.28	0.15	-1.16
NONFINANCIAL PUBLIC SECTOR	-0.44	-1.36	-0.28	-2.14	-0.36	0.02	-1.49	-3.59	-0.62	-0.53	0.11	-0.65	-1.54	1.16	-2.93	-5.39
CLAIMS ON PRIVATE SECTOR(-)	-1.75	-2.54	-1.01	-2.53	-4.09	-2.17	-2.71	-0.90	-0.73	-1.91	-0.86	-2.25	-0.50	-2.22	-0.45	NA
LOANS FROM CENTRAL BANK(+)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.97	0.28	-0.72	0.92	-0.81	1.99
LIABILITIES TO PRIVATE SECTOR(+)	NA	NA	NA	NA	NA	NA	NA	NA	1.36	1.16	1.32	2.10	3.39	0.94	3.93	4.97
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	1.73	2.87	1.38	3.42	3.71	0.53	2.83	2.17	0.85	0.51	1.28	1.61	1.95	0.90	3.62	3.74
OTHER	NA	NA	NA	NA	NA	NA	NA	NA	0.51	0.65	0.04	0.48	1.45	0.05	0.31	1.23
NET OTHER ITEMS(+)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-1.37	-0.87	-0.55	NA
NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION																
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	NA	-0.50	-0.56	-0.60	-0.95	-0.04	-0.81	-0.16	-0.27	0.64
NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	4.09	1.18	1.13	0.84	0.68	2.34	-1.00	3.20	4.76
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE																
NET TRANSFER																
TOTAL DOMESTIC NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	6.17	3.47	1.87	2.69	1.60	4.13	0.58	4.21	7.83
TAX ON FINANCIAL INTERMEDIATION	NA	NA	NA	NA	NA	NA	NA	1.81	2.84	1 34	2 76	0.93	2.50	1.20	1.63	-0.07

PHILIPPINES

FINANCING SUMMARY
(Percent of GDP)

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	0.48	1.39	0.03	0.86	0.38	0.67	0.70	0 79	0.48	0.38	0.47	0.31	1.80	0.41	0.37	0.84
INFLATION-ADJUSTED (SEIGNORAGE)	-0.37	1.45	-1.65	-0.07	0.32	0.27	0.32	0 53	-0.38	-0.17	0.12	0.02	0.94	-1.44	0.17	0.85
NOMINAL COMPONENT (INFLATION TAX)	0.85	-0.06	1.68	0.93	0.07	0.40	0.38	0 26	0.86	0.55	0.35	0.29	0.86	1.84	0.20	-0.01
BANK RESERVES	0.18	0.21	0.75	0.38	0.36	-0.01	0.53	0.60	1.04	0.38	-0.12	-0.03	0.64	0.68	0.44	1.14
INFLATION-ADJUSTED (SEIGNORAGE)	-0.11	0.24	0.24	-0.05	0.33	-0.21	0.37	0 48	0.60	-0.01	-0.38	-0.21	0.16	-0.22	0.32	1.15
NOMINAL COMPONENT (INFLATION TAX)	0.29	-0.02	0.51	0.43	0.03	0.20	0.16	0.12	0.45	0.39	0.26	0.18	0.48	0.90	0.12	-0.01
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	-0.53	-0.04	-1.90	-0.09	3.00	1.44	0.79	0.21	-1.10	0.22	-0.10	1.50	-1.39	-0.66	1.02	NA
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED	NA	0.68	0 07	0.83	0.62	-0.03	-0.16	0 02	0.53	-0.12	-0.56	-0.18	-0.82	-0.60	-0.77	-0.02
DOMESTIC BORROWING	NA	2.24	-1.06	1.98	4.35	2.07	1.86	1.63	0 94	0.86	-0.31	1.60	0.24	-0.17	1.05	NA
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	-0.80	-2.40	-5.12	-0.81	3.63	-0.23	-1.23	1.19	1.30	1.58	2.91	4.75	5.23	-1.66	-3.58	-6.93
NET FOREIGN RESERVES CHANGE(- = INCREASE)	-0.80	-2.40	-5.12	-0.81	3.63	-0.23	-1.23	1.19	1.30	1.58	2.91	4.75	5.23	-1.66	-3.58	-6.93
OTHER FOREIGN BORROWING																
CENTRAL BANK REDISCOUNTS (- = INCREASE)																
TO BANKING SYSTEM	-0.02	-0.59	0.82	-1.47	-4.12	0.92	0.64	-2 32	-2.37	-2.31	-1.99	-1.11	-1.79	-1.75	-0.48	4.72
INFLATION-ADJUSTED	0.64	-0.63	1.89	-1.03	-4.07	1.57	1.08	-2.11	-1.35	-1.43	-1.26	-0.44	0.31	1.79	-0.02	4.69
NOMINAL COMPONENT	-0.66	0.04	-1.07	-0.44	-0.05	-0.65	-0.44	-0.22	-1.02	-0.88	-0.73	-0.67	-2.09	-3.54	-0.44	0.03
TO PRIVATE SECTOR																
INFLATION-ADJUSTED																
NOMINAL COMPONENT																
FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED																
NET FOREIGN BORROWING (+)	NA	NA	NA	NA	-0.14	2.87	2.42	2.94	1.30	0.80	-0.47	1.88	3.90	-1.87	-4.73	-7.18
CLAIMS ON PUBLIC SECTOR(-)	NA	-0.48	0.02	0.17	-4.39	-1.24	-1.75	-1 44	1.14	0.56	0.77	-0.66	1.78	0.79	-1.50	NA
CENTRAL BANK	NA	-0.53	-1.89	0.08	-1.39	0.20	-0.95	-1.22	0.04	0.78	0.67	0.84	0.39	0.14	-0.48	-1.01
NONFINANCIAL PUBLIC SECTOR	0.53	0.04	1.90	0.09	-3.00	-1.44	-0.79	-0.21	1.10	-0.22	0.10	-1.50	1.39	0.66	-1.02	NA
CLAIMS ON PRIVATE SECTOR(-)	-0.45	-4.94	1.31	-2.39	-4.09	-3.38	-3.25	-5.32	-1.64	-3.55	-5.16	-2.36	-0.51	17.95	8.54	7.92
LOANS FROM CENTRAL BANK(+)	-0.64	0.63	-1.89	1.03	4.07	-1.57	-1.08	2.11	1.35	1.43	1.26	0.44	-0.31	-1.79	0.02	-4.69
LIABILITIES TO PRIVATE SECTOR(+)	NA	2.60	2.25	1.46	6.49	2.60	2.97	4.53	-3.06	0.28	2.25	1.65	-4.84	-10.44	1.28	-0.29
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	-0.17	1.55	-1.18	-0.96	1.58	2.38	2.87	2.60	-1.54	1.26	1.29	2.18	-1.82	-4.95	1.13	1.19
OTHER	NA	1.05	3.42	2.42	4.90	0.22	0.10	1.92	-1.52	-0.98	0.96	-0.52	-3.02	-5.49	0.15	-1.48
NET OTHER ITEMS(+)	NA	NA	NA	NA	-1.36	1.16	0.79	-2.26	1.09	0.85	1.91	-0.24	1.11	-5.11	-3.83	NA
NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION																
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	-0.10	-0.09	0.08	-0.50	-0.15	0.07	0.22	-0.64	-0.88	1.21	0.81
NET TRANSFER	NA	NA	NA	NA	NA	1.55	0.88	0.13	-0.60	0.37	-0.17	1.28	-0.75	0.22	-0.19	NA
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	-0.05	-0.03	0.03	-0.15	-0.07	0.03	0.07	-0.13	-0.08	-0.03	-0.13
NET TRANSFER	NA	NA	NA	NA	NA	0.02	-0.13	-0.00	0.67	-0.05	-0.59	-0.25	-0.69	-0.52	-0.74	0.11
TOTAL DOMESTIC NET TRANSFER	NA	NA	NA	NA	NA	2.22	1.97	1.52	1.59	1.07	-0.41	1.32	1.00	0.78	-0.13	NA
TAX ON FINANCIAL INTERMEDIATION	NA	NA	NA	NA	NA	0.75	0.65	0 27	1.95	1.15	0.52	0.18	2.11	3.69	-0.85	-0.70

YUGOSLAVIA

FINANCING SUMMARY
(Percent of GDP)

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	1.55	3.43	2.21	1.94	1 75	2.63	-0.45	1.82	1.39	1.60	1.37	1.62	0.99	1.18	1.90	2.44
INFLATION-ADJUSTED (SEIGNORAGE)	-0.05	2.02	0.16	-0.19	-0 03	1.81	-1.65	0.65	-0.21	-0.74	-0.36	0.05	-1.82	-0.74	-0.07	0.32
NOMINAL COMPONENT(INFLATION TAX)	1.60	1.41	2.05	2.12	1.78	0.83	1.20	1.17	1.60	2.34	1.73	1.57	2.81	1.92	1.96	2.12
BANK RESERVES	1.50	4.06	2.71	-0.76	1.31	4.44	2.41	11.74	3.32	5.33	4.60	5.79	10.58	9.73	.23	10.09
INFLATION-ADJUSTED (SEIGNORAGE)	0.32	2.97	0.89	-2.80	0.04	3.84	1.27	10.25	-0.40	-0.12	0.20	1.52	2.34	1.47	-2.10	-0.22
NOMINAL COMPONENT (INFLATION TAX)	1.18	1.10	1.82	2.02	1.28	0.60	1.14	1.49	3.72	5.46	4.40	4.26	8.25	8.26	10.34	10.31
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	NA	NA	NA	NA	NA	NA	NA	-0.55	-0.70	-0.47	-0.22	-0.52	-0.44	-0.42	-0.36	-0.17
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED	-0.97	-1.27	1.02	-0.88	-0.46	-0.20	-0.65	-0.04	0.02	-0.08	0.35	0.21	-0.01	-0.24	-0.06	0.40
DOMESTIC BORROWING	NA	NA	NA	NA	NA	NA	NA	12.97	4.03	6.38	6.10	7.09	11.13	10.25	9.71	12.77
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	1.24	-4.12	-2.14	3.45	0.52	-2.53	0.44	-0.36	3.66	2.69	-0.02	2.52	4.72	1.91	-2.15	-4.12
NET FOREIGN RESERVES CHANGE(- = INCREASE)	1.24	-4.12	-2.14	3.45	0.52	-2.53	0.44	-0.36	3.66	2.69	-0.02	2.52	4.72	1.91	-2.15	-4.12
OTHER FOREIGN BORROWING																
CENTRAL BANK REDISCOUNTS (- = INCREASE)	-3.75	-0.50	-3 01	-2.15	-1.69	-3 63	-1.28	-11.53	-5.01	-4.47	-5.08	-4.78	-4.48	-4.94	-3.58	-4.03
TO BANKING SYSTEM	-2.20	-2.72	-1.41	5.59	-2.62	-2.56	-1.46	-11.00	-4.70	-4.10	-4.85	-4.33	-4.23	-4.67	-3.21	-3.39
INFLATION-ADJUSTED	0.06	-0.72	1.13	7.98	-1.86	-2.06	-0.62	-9.95	-1.59	1.00	-0.93	-0.34	3.02	0.86	2.96	1.96
NOMINAL COMPONENT	-2.26	-2.00	-2.54	-2.39	-0.76	-0 50	-0.84	-1.05	-3.11	-5.11	-3.92	-3.99	-7.24	-5.53	-6.17	-5.35
TO PRIVATE SECTOR	-1.55	2.22	-1.61	-7.73	0.93	-1.06	0.18	-0.53	-0.31	-0.37	-0.22	-0.44	-0.26	-0.27	-0.37	-0.63
INFLATION-ADJUSTED	-0.96	2.88	-1.30	-7.18	2.55	-0.52	0.90	0.19	0.57	0.78	0.54	0.15	0.74	0.38	0.23	-0.08
NOMINAL COMPONENT	-0.60	-0.66	-0.31	-0.55	-1.61	-0.55	-0.72	-0.72	-0.88	-1.15	-0.76	-0.59	-0.99	-0.65	-0.61	-0.55

FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
NET FOREIGN BORROWING (+)	1.52	-0.25	-0.65	0.06	-0.07	0.44	1.50	2.06	2.44	3.85	1.15	0.32	2.87	1.77	-0.48	0.17
CLAIMS ON PUBLIC SECTOR(-)	NA	NA	NA	NA	NA	NA	NA	-9.71	1.10	0.59	0.02	-1.00	-1.90	-1.05	2.47	0.39
CENTRAL BANK	-0.32	-2.97	-0.89	2.80	-0.04	-3.84	-1.27	-10.25	0.40	0.12	-0.20	-1.52	-2.34	-1.47	2.10	0.22
NONFINANCIAL PUBLIC SECTOR	NA	NA	NA	NA	NA	NA	NA	0.55	0.70	0.47	0.22	0.52	0.44	0.42	0.36	0.17
CLAIMS ON PRIVATE SECTOR(-)	-1.93	-3.12	2.96	7.22	-6.19	-15.87	2.03	-11.96	-4.96	3.45	6.45	4.20	12.53	1.72	8.91	5.73
LOANS FROM CENTRAL BANK(+)	-0.06	0.72	-1.13	-7.98	1.86	2.06	0.62	9.95	1.59	-1.00	0.93	0.34	-3.02	-0.86	-2.96	-1.96
LIABILITIES TO PRIVATE SECTOR(+)	NA	NA	NA	NA	NA	NA	NA	7.22	-0.47	NA	-4.15	-0.23	-8.88	-2.49	-6.50	-4.12
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	2.99	2.98	4.70	1.14	6.53	14.84	8.16	6.80	-0.41	0.96	-2.09	-0.20	-8.37	-2.11	-4.77	-3.37
OTHER	NA	NA	NA	NA	NA	NA	NA	0.43	-0.06	NA	-2.06	-0.03	-0.50	-0.38	-1.73	-0.74
NET OTHER ITEMS(+)	NA	NA	NA	NA	NA	NA	NA	1.74	0.50	NA	-4.43	-3.51	-1.33	1.32	-0.56	0.79

NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	NA	-0.29	-0.43	-0.65	-0.47	-0.33	-0.55	-0.20	-0.08	-0.10
NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	-0.26	-0.27	0.19	0.26	-0.20	0.11	-0.22	-0.29	-0.07
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	-0.16	-0.08	-0.12	-0.23	-0.18	-0.20	-0.51	-0.24	-0.12	-0.24
NET TRANSFER	NA	NA	NA	NA	NA	NA	-0.49	0.03	0.14	0.15	0.53	0.40	0.51	0.00	0.06	0.64
TOTAL DOMESTIC NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	13.33	4.59	7.27	6.76	7.61	12.19	10.69	9.90	13.11
TAX ON FINANCIAL INTERMEDIATION	NA	NA	NA	NA	NA	NA	NA	3.03	5 87	8.68	6.79	6.35	12.12	10.63	12.49	12.77

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	0.46	1.16	0.69	1.07	1.22	1.50	1.63	1.46	1.14	1.07	0.88	1.15	1.22	1.15	-0.51	NA
INFLATION-ADJUSTED (SEIGNORAGE)	-0.27	0.55	-0.36	0.07	0.52	0.49	0.49	0.62	-0.16	-0.04	-0.23	0.17	0.51	0.35	-1.49	NA
NOMINAL COMPONENT(INFLATION TAX)	0.73	0.61	1.06	1.00	0.70	1.00	1.14	0.84	1.30	1.10	1.12	0.98	0.71	0.80	0.97	NA
BANK RESERVES	0.60	0.72	1.73	0.57	0.67	1.45	1.36	2.96	1.69	1.70	1.48	0.54	0.49	0.90	1.98	NA
INFLATION-ADJUSTED (SEIGNORAGE)	0.05	0.23	0.92	-0.42	0.04	0.63	0.38	2.25	0.21	0.36	0.04	-0.79	-0.33	0.11	1.06	NA
NOMINAL COMPONENT (INFLATION TAX)	0.55	0.49	0.81	0.99	0.63	0.82	0.98	0.71	1.49	1.34	1.44	1.32	0.82	0.79	0.92	NA
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	NA	NA	NA	NA	-0.23	1.51	0.24	-0.20	-0.37	-0.16	0.17	0.06	0.67	0.40	NA	NA
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED	NA	NA	NA	-0.35	-0.35	-0.14	2.15	0.82	0.56	0.77	-0.79	0.76	-1 23	-0.17	2.14	NA
DOMESTIC BORROWING	NA	NA	NA	NA	1.30	4.31	5.38	5.03	3.03	3.38	1.74	2.50	1.14	2.28	NA	NA
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	0.13	-1.66	-1.21	1.20	-0.72	-3.84	-2.40	-1.75	-4.16	-2.31	0.98	2.70	4.31	3.13	-2.70	NA
NET FOREIGN RESERVES CHANGE(- = INCREASE)	-0.14	-1.88	-1.07	1.25	-0.91	-3.76	-2.41	-1.90	-4.12	-2.39	1.00	2.70	4.44	3.05	-3.18	NA
OTHER FORFIGN BORROWING	0.27	0.22	-0.14	-0.04	0.20	-0.08	0.01	0.15	-0.04	0.08	-0.02	0.00	-0.12	0.08	0.48	NA
CENTRAL BANK REDISCOUNTS (- = INCREASE)	-0.13	-0.84	-1.92	-1.15	-2.36	-0.07	-3.05	-1.26	-0.26	-0.26	-0.85	-1.01	-1.91	-1.23	-1.22	NA
TO BANKING SYSTEM	-0.93	-0.46	-1.88	-1.56	-2.08	-0.14	-2.96	-1.17	-0.11	-0.26	-0.67	-0.94	-1.82	-1.25	-0.61	NA
INFLATION-ADJUSTED	-0.28	0.14	-0.97	-0.45	-1.25	1.18	-1.85	-0.15	1.34	0.74	0.20	-0.18	-1.26	-0.50	0.34	NA
NOMINAL COMPONENT	-0.65	-0.60	-0.91	-1.11	-0.83	-1.32	-1.11	-1.02	-1.45	-1.00	-0.87	-0.76	-0.56	-0.75	-0.95	NA
TO PRIVATE SECTOR	0.80	-0.37	-0.04	0.42	-0.28	0.07	-0.09	-0.09	-0.15	0.00	-0.17	-0.07	-0.09	0.02	-0.61	NA
INFLATION-ADJUSTED	1.17	-0.18	0.30	0.70	-0.18	0.23	0.02	-0.01	-0.04	0.11	-0.09	0.02	-0.03	0.09	-0.55	NA
NOMINAL COMPONENT	-0.37	-0.20	-0.34	-0.28	-0.10	-0.16	-0.12	-0.08	-0.11	-0.10	-0.08	-0.09	-0.06	-0.07	-0.06	NA
FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED																
NET FOREIGN BORROWING (+)	NA	NA	NA	NA	-0.23	0.09	-1.60	-0.25	0.99	0.58	-0.14	0.19	-0.31	0.54	NA	NA
CLAIMS ON PUBLIC SECTOR(-)	NA	NA	NA	NA	0.19	-2.14	-0.62	-2.05	0.16	-0.20	-0.21	0.73	-0.33	-0.50	NA	NA
CENTRAL BANK	-0.05	-0.23	-0.92	0.42	-0.04	-0.63	-0.38	-2.25	-0.21	-0.36	-0.04	0.79	0.33	-0.11	-1.06	NA
NONFINANCIAL PUBLIC SECTOR	NA	NA	NA	NA	0.23	-1.51	-0.24	0.20	0.37	0.16	-0.17	-0.06	-0.67	-0.40	NA	NA
CLAIMS ON PRIVATE SECTOR(-)	NA	NA	NA	NA	-1.83	-0.34	-0.10	-2.21	0.25	-4.84	-2.12	-1.83	-4.07	-3.03	NA	NA
LOANS FROM CENTRAL BANK(+)	0.28	-0.14	0.97	0.45	1.25	-1.18	1.85	0.15	-1.34	-0.74	-0.20	0.18	1.26	0.50	-0.34	NA
LIABILITIES TO PRIVATE SECTOR(+)	NA	NA	NA	NA	1.37	1.52	-0.29	2.89	-0.26	4.50	3.15	-0.04	2.70	1.27	NA	NA
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	0.05	1.85	2.07	-0.18	0.32	0.73	0.31	0.80	-0.75	2.71	1.74	-0.72	1.00	0.62	1.11	NA
OTHER	NA	NA	NA	NA	1.05	0.79	-0.60	2.09	0.49	1.79	1.41	0.67	1.70	0.65	NA	NA
NET OTHER ITEMS(+)	NA	NA	NA	NA	1.36	1.99	1.39	-1.30	0.38	0.91	-0.71	0.52	0.71	1.03	NA	NA
NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION																
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	0.08	0.01	-0.00	0.14	-0.03	0.06	0.05	0.06	0.18	0.32	0.28	NA
NET TRANSFER	NA	NA	NA	NA	-0.31	1.50	0.24	-0.35	-0.34	-0.21	0.12	0.01	0.48	0.07	NA	NA
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	-0.17	0.16	0.03	-0.00	0.21	-0.07	0.17	0.18	0.16	0.58	0.53	0.36	NA
NET TRANSFER	NA	NA	NA	-0.18	-0.52	-0.17	2.15	0.61	0.63	0.61	-0.97	0.60	-1.82	-0.69	1.78	NA
TOTAL DOMESTIC NET TRANSFER	NA	NA	NA	NA	1.06	4.27	5.39	4.68	3.13	3.16	1.51	2.29	0.38	1.43	NA	NA
TAX ON FINANCIAL INTERMEDIATION	NA	NA	NA	NA	1.08	1 78	2.12	1.19	2.89	2.22	2.33	2.09	0.76	0.74	1.26	NA

INDONESIA

FINANCING SUMMARY
(Percent of GDP)

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	1.17	1.56	1.57	1.14	1.21	0.83	1.05	1.15	0.95	1.37	0.65	0.62	0.55	0.43	0.79	0.91
INFLATION-ADJUSTED (SEIGNORAGE)	1.06	0.44	0.48	-0.03	0.44	0.24	0.57	0.86	-0.04	0.79	0.37	0.21	0.07	0.08	0.62	0.49
NOMINAL COMPONENT(INFLATION TAX)	0.11	1.11	1.09	1.17	0.77	0.60	0.48	0.29	0.99	0.58	0.27	0.41	0.48	0.35	0.17	0.42
BANK RESERVES	0.46	1.12	0.70	1.74	1.02	0.77	0.74	-0.42	0.90	0.60	0.29	-0.32	0.85	0.22	0.29	0.59
INFLATION-ADJUSTED (SEIGNORAGE)	0.43	0.73	0.21	1.22	0.47	0.33	0.36	-0.64	0.38	0.25	0.14	-0.54	0.66	0.03	0.20	0.38
NOMINAL COMPONENT (INFLATION TAX)	0.04	0.39	0.49	0.52	0.55	0.44	0.37	0.22	0.52	0.35	0.15	0.22	0.19	0.19	0.09	0.21
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	-0.03	-0.15	1.11	0.81	0.65	0.94	-0.05	-0.08	-0.11	-0.02	0.30	1.31	0.34	1.38	-0.17	0.09
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED	NA	0.88	0.24	-0.45	-0.22	0.24	0.05	0.04	0.00	-0.04	0.11	-0.25	0.09	-0.16	0.03	-0.04
DOMESTIC BORROWING	NA	3.40	3.62	3.23	2.66	2.78	1.79	0.68	1.75	1.92	1.35	1.35	1.83	1.86	0.95	1.55
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	NA	NA	NA	NA	NA	NA	NA	-2.08	-2.30	-2.52	0.83	1.20	-1.00	-2.64	-0.56	1.00
NET FOREIGN RESERVES CHANGE(- = INCREASE)	-0.04	-3.73	-1.16	NA	NA	-1.86	-2.86	-2.33	-1.81	-2.52	0.84	1.21	-1.00	-2.63	-0.56	1.00
OTHER FOREIGN BORROWING	NA	NA	NA	NA	NA	NA	NA	0.25	-0.49	-0.00	-0.01	-0.01	0.00	-0.01	-0.00	0.00
CENTRAL BANK REDISCOUNTS (- = INCREASE)	NA	-0.22	-0.70	NA	NA	NA	-0.25	-0.77	-0.94	-1.43	-1.60	-4.63	-1.36	-4.61	-0.95	-3.08
TO BANKING SYSTEM	-0.87	-0.13	-0.67	NA	NA	NA	-0.23	-0.72	-0.90	-1.38	-1.54	-4.15	-1.31	-4.37	-0.77	-2.76
INFLATION-ADJUSTED	-0.79	0.68	-0.06	NA	NA	NA	0.17	-0.52	-0.22	-0.95	-1.32	-3.72	-0.46	-3.72	-0.31	-1.73
NOMINAL COMPONENT	-0.08	-0.81	-0.61	NA	NA	NA	-0.40	-0.20	-0.68	-0.43	-0.22	-0.43	-0.86	-0.65	-0.46	-1.02
TO PRIVATE SECTOR	NA	-0.09	-0.03	-0.02	0.01	-0.06	-0.02	-0.05	-0.04	-0.05	-0.07	-0.48	-0.05	-0.24	-0.18	-0.32
INFLATION-ADJUSTED	NA	-0.08	-0.01	0.00	0.02	-0.05	-0.01	-0.05	-0.01	-0.04	-0.06	-0.46	0.02	-0.19	-0.15	-0.24
NOMINAL COMPONENT	NA	-0.01	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.03	-0.02	-0.01	-0.02	-0.07	-0.05	-0.03	-0.08
FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED																
NET FOREIGN BORROWING (+)	NA	NA	NA	NA	NA	NA	NA	-1.12	-1.33	-2.90	-0.46	1.85	-1.90	-0.53	-1.18	-1.54
CLAIMS ON PUBLIC SECTOR(-)	-0.40	-0.58	-1.32	-2.02	-1.12	-1.26	-0.31	0.72	-0.27	-0.23	-0.44	-0.77	-1.00	-1.41	-0.03	-0.46
CENTRAL BANK	-0.43	-0.73	-0.21	-1.22	-0.47	-0.33	-0.36	0.64	-0.38	-0.25	-0.14	0.54	-0.66	-0.03	-0.20	-0.38
NONFINANCIAL PUBLIC SECTOR	0.03	0.15	-1.11	-0.81	-0.65	-0.94	0.05	0.08	0.11	0.02	-0.30	-1.31	-0.34	-1.38	0.17	-0.09
CLAIMS ON PRIVATE SECTOR(-)	NA	-1.84	-2.86	-1.06	4.20	-0.83	-6.32	3.44	-0.39	-2.00	-2.36	-2.50	-1.92	-3.04	-2.73	-2.97
LOANS FROM CENTRAL BANK(+)	0.79	-0.68	0.06	NA	NA	NA	-0.17	0.52	0.22	0.95	1.32	3.72	0.46	3.72	0.31	1.73
LIABILITIES TO PRIVATE SECTOR(+)	NA	2.72	1.82	2.53	-0.42	1.92	0.78	1.29	1.11	3.13	1.83	0.47	2.84	2.22	4.13	0.88
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	NA	1.89	1.07	1.34	1.62	1.92	0.51	1.20	1.13	2.85	1.98	0.51	2.94	2.25	4.05	0.69
OTHER	NA	0.83	0.75	1.19	-2.03	0.00	0.28	0.09	-0.02	0.28	-0.15	-0.04	-0.11	-0.03	0.08	0.19
NET OTHER ITEMS(+)	NA	NA	NA	NA	NA	NA	NA	-4.58	0.49	0.93	0.14	-2.78	1.52	-0.91	-0.56	2.33
NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION																
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	0.00	0.00	0.02	-0.13	-0.11	-0.04	-0.07	-0.02	-0.19	-0.04	0.11	0.10	0.14	0.27	0.53	0.21
NET TRANSFER	-0.03	-0.15	1.10	0.94	0.75	0.98	0.02	-0.07	0.09	0.02	0.19	1.21	0.20	1.11	-0.70	-0.13
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE	NA	-0.02	-0.11	-0.16	-0.04	-0.01	-0.01	-0.00	-0.04	-0.01	0.02	0.02	0.01	0.02	0.01	0.01
NET TRANSFER	NA	0.89	0.36	-0.30	-0.18	0.25	0.06	0.04	0.05	-0.03	0.09	-0.28	0.09	-0.19	0.03	-0.04
TOTAL DOMESTIC NET TRANSFER	NA	3.42	3.72	3.52	2.80	2.83	1.87	0.70	1.99	1.96	1.21	1.23	1.68	1.57	0.41	1.33
TAX ON FINANCIAL INTERMEDIATION	NA	1.52	1.67	1.97	1.47	1.09	0.94	0.52	1.75	0.98	0.29	0.50	0.52	0.24	-0.28	0.42

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(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	0 83	1.34	1.72	1.32	0.94	1.21	1.53	1.70	0.77	0.66	0.36	1.04	0.49	0.34	0.23	0.50
INFLATION-ADJUSTED (SEIGNORAGE)	0.34	1.04	1.38	0.23	-0.08	0.83	1 12	1.05	-0.16	-0.80	-0.10	0.85	0.41	0.24	0.10	0.45
NOMINAL COMPONENT(INFLATION TAX)	0.49	0.30	0.34	1.09	1.02	0.38	0.41	0.64	0.93	1.46	0.46	0.18	0.08	0.10	0.13	0.05
BANK RESERVES	-1.18	2.01	1.90	0.67	2.01	1.36	1.99	1.32	1.36	-1.26	-1.30	0.90	-0.05	-0.12	-0.14	0.35
INFLATION-ADJUSTED (SEIGNORAGE)	-1.79	1.78	1.57	-0.42	1.11	0.94	1.53	0.56	0.39	-2.95	-1.65	0.82	-0.09	-0.16	-0.19	0.34
NOMINAL COMPONENT (INFLATION TAX)	0.60	0.24	0.33	1.09	0.91	0.43	0.46	0.76	0.98	1.70	0.35	0.07	0.04	0.04	0.05	0.02
NET BORROWING FROM FINANCIAL SYSTEM INFLATION-ADJUSTED	-0.45	-0.32	0.28	-0.60	-0.14	-0.42	0.20	-0.83	-0.88	0.88	-0.32	-0.24	-1.24	0.56	0.02	0.73
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR INFLATION-ADJUSTED	0.00	0.05	-0.02	-0.02	0.25	0.38	-0.24	0.13	0.34	-0.69	0.72	-0.44	1.23	0.87	1.70	2.03
DOMESTIC BORROWING	-0.81	3.09	3.88	1.38	3.07	2.54	3.49	2.31	1.60	-0.40	-0.53	1.25	0.43	1.65	1.81	3.61
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	1.15	0.70	-2.32	4.25	-1.66	-3.26	-3.08	1.23	0.22	0.87	1.45	-0.29	0.76	-0.20	-0.42	-0.20
NET FOREIGN RESERVES CHANGE(- = INCREASE)	1.15	0.70	-2.32	4.25	-1.66	-3.26	-3.08	1.23	0.22	0.87	1.45	-0.29	0.76	-0.20	-0.42	-0.20
OTHER FOREIGN BORROWING																
CENTRAL BANK REDISCOUNTS (- = INCREASE)																
TO BANKING SYSTEM	-0.65	-1.61	-1.86	-5.11	-0.19	0.00	-0.91	-2.66	-2.71	-1.52	-1.51	-1.07	-1.72	-2.69	-2.63	-2.05
INFLATION-ADJUSTED	-0.32	-1.40	-1.58	-4.13	1.47	0.52	-0 49	-2.08	-1.70	0.61	-0.78	-0.74	-1.59	-2.50	-2.33	-1.91
NOMINAL COMPONENT	-0.33	-0.21	-0.28	-0.98	-1.66	-0.52	-0.42	-0.57	-1.01	-2.13	-0.73	-0.33	-0.14	-0.19	-0.30	-0.14
TO PRIVATE SECTOR																
INFLATION-ADJUSTED																
NOMINAL COMPONENT																
FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED																
NET FOREIGN BORROWING (+)	1.36	-2.25	-1.15	2.33	1.95	-0.26	-0.43	0.47	1.80	1.49	1.97	4.02	0.21	1.61	2.23	-3.16
CLAIMS ON PUBLIC SECTOR(-)	1.61	-2.01	-2.27	1.48	-2.95	-0.61	-2.89	1.17	0.65	1.35	-0.04	-1.20	0.71	-2.17	-1.55	-0.36
CENTRAL BANK	1.15	-2.33	-1.99	0.88	-3.09	-1.03	-2.69	0.34	-0.23	2.23	-0.36	-1.44	-0.53	-1.61	-1.54	0.37
NONFINANCIAL PUBLIC SECTOR	0.45	0.32	-0.28	0.60	0.14	0.42	-0.20	0.83	0.88	-0.88	0.32	0.24	1.24	-0.56	-0.02	-0.73
CLAIMS ON PRIVATE SECTOR(-)	-5.22	-5.94	-6.67	-6.27	-0.55	-4.61	-4.94	-8.38	- ;.88	-2.33	-5.85	-9.01	-7.54	-5.84	-8.22	-6.98
LOANS FROM CENTRAL BANK(+)	0.32	1.40	1.58	4.13	-1.47	-0.52	0.49	2.08	1.70	-0.61	0.78	0.74	1.59	2.50	2.33	1.91
LIABILITIES TO PRIVATE SECTOR(+)	2.21	6.79	8.37	-1.50	0.79	5.10	5.84	3.51	1.03	-0.60	2.87	5.44	4.26	1.84	4.75	6.09
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	1.93	5.73	6.10	-0.85	0.75	4.33	5.60	3.45	1.02	-1.20	3.65	5.72	3.92	1.51	3.97	5.25
OTHER	0.28	1.06	2.27	-0.65	0.04	0.77	0.24	0.06	0.02	0.60	-0.78	-0.28	0.34	0.33	0.78	0.85
NET OTHER ITEMS(+)	-0.28	2.01	0.14	-0.17	2.23	0.89	1.94	1.14	0.71	0.69	0.27	0.01	0.77	2.07	0.46	2.30
NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION																
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	-0.35	-0.18	-0.13	0.31	0.31	-0.16	-0.10	-0.05	0.04	0.60	-0.12	-0.10	-0.18	-0.21	-0.15	-0.18
NET TRANSFER	-0.11	-0.14	0.42	-0.91	-0.45	-0.26	0.30	-0.78	-0.92	0.28	-0.20	-0.14	-1.06	0.78	0.16	0.91
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE	0.00	0.00	0.00	-0.00	0.00	0.01	0.02	0.00	-0.00	-0.10	0.00	0.02	0.02	0.07	0.10	0.22
NET TRANSFER	0.00	0.05	-0.02	-0.02	0.25	0.37	-0.25	0.12	0.35	-0.59	0.72	-0.46	1.22	0.80	1.60	1.81
TOTAL DOMESTIC NET TRANSFER	-0.46	3.27	4.01	1.07	2.76	2.69	3.57	2.35	1.56	-0.90	-0.41	1.33	0.60	1.79	1.86	3.57
TAX ON FINANCIAL INTERMEDIATION	1 44	0.72	0.60	1.87	1.62	0 96	0.96	1.44	1.86	2.66	0.93	0.33	0.29	0.29	0.23	0.03

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	0.82	1.36	1.56	0 66	0.63	1.04	0.71	0.96	1.38	0.73	0.24	0.74	0 61	0 39	0.04	0.64
INFLATION-ADJUSTED (SEIGNORAGE)	0.71	0.65	0.13	-0 57	0.32	0.81	0.13	0.48	0.49	-0.24	-0.48	0.59	0.39	0.42	-0.16	0.54
NOMINAL COMPONENT(INFLATION TAX)	0.10	0.71	1.43	1.23	0.32	0.23	0.58	0.48	0.89	0.98	0.72	0.15	0.22	-0.02	0.20	0.10
BANK RESERVES	0.35	0.48	0.10	0.48	0.39	0.08	0.08	0.39	-0.06	0.29	0.24	0.13	0.16	0.03	0.61	0.15
INFLATION-ADJUSTED (SEIGNORAGE)	0.32	0.27	-0.34	0.16	0.29	0.01	-0.10	0.26	-0.33	0.06	0.06	0.09	0.10	0.04	0.56	0.12
NOMINAL COMPONENT (INFLATION TAX)	0.03	0.21	0.44	0 33	0.10	0.07	0.17	0.13	0.26	0.23	0.18	0.04	0 06	-0.01	0.05	0.03
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	2.39	3.29	-0.36	-0 98	0.63	1.21	0.48	0.29	-0.44	0.10	0.30	2.43	0.54	4.05	0.73	3.92
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION-ADJUSTED																
DOMESTIC BORROWING	3.56	5.13	1.30	0.16	1.65	2.33	1.26	1.64	0.88	1.12	0.78	3.30	1.31	4.48	1.38	4.72
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	NA	NA	NA	NA	NA	NA	0.82	-1.61	-0.48	1.52	2.42	0.30	0.89	-1.38	-0.01	-1.80
NET FOREIGN RESERVES CHANGE(- = INCREASE)	NA	NA	NA	NA	NA	NA	0.82	-1.61	-0 48	1.52	2.42	0.30	0.89	-1.38	-0.01	-1.80
OTHER FOREIGN BORROWING																
CENTRAL BANK REDISCOUNTS (- = INCREASE)																
TO BANKING SYSTEM	-0.28	-0.15	-0.80	-0.48	-1.19	0.40	-0.05	-0.69	-1.68	-0.36	-0.34	-0.16	-0.21	-0.43	-0.59	-0.96
INFLATION-ADJUSTED	-0.27	-0.07	-0.66	-0.26	-1.12	0.48	0.10	-0.58	-1.41	0.11	0.01	-0.08	-0.10	-0.44	-0.49	-0.90
NOMINAL COMPONENT	-0.01	-0.07	-0.15	-0.22	-0.07	-0.08	-0.15	-0.11	-0.27	-0 47	-0.34	-0.07	-0.11	0.01	-0.10	-0.06
TO PRIVATE SECTOR																
INFLATION-ADJUSTED																
NOMINAL COMPONENT																

FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
NET FOREIGN BORROWING (+)	NA	NA	NA	NA	NA	NA	1.58	2.04	0.37	-2.45	-0.08	-1.23	2.34	1.07	-1.27	-1.67
CLAIMS ON PUBLIC SECTOR(-)	-2.71	-3.56	0.70	0.83	-0.92	-1.22	-0.38	-0.54	0.76	-0.16	-0.36	-2.52	-0.64	-4.09	-1.29	-4.04
CENTRAL BANK	-0.32	-0.27	0.34	-0.16	-0.29	-0.01	0.10	-0.26	0.33	-0.06	-0.06	-0.09	-0.10	-0.04	-0.56	-0.12
NONFINANCIAL PUBLIC SECTOR	-2.39	-3.29	0.36	0.98	-0.63	-1.21	-0.48	-0.29	0.44	-0.10	-0.30	-2.43	-0.54	-4.05	-0.73	-3.92
CLAIMS ON PRIVATE SECTOR(-)	-1.90	-0.81	-3.30	-3.17	-4.61	-10.24	-6.30	-7.68	-1.27	0.98	-1.89	-6.02	-9.65	-7.53	-3.51	-1.61
LOANS FROM CENTRAL BANK(+)	0.27	0.07	0.66	0.26	1.12	-0.48	-0.10	0.58	1.41	-0.11	-0.01	0.08	0.10	0.44	0.49	0.90
LIABILITIES TO PRIVATE SECTOR(+)	4.23	4.31	0.65	1.23	3.54	9.73	4.97	5.29	-1.15	2.49	2.70	8.82	8.14	10.23	5.52	7.90
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	3.73	3.74	0.48	1.28	3.31	4.82	3.42	3.27	-0.77	2.05	1.70	6.85	7.24	9.51	3.74	5.45
OTHER	0.50	0.57	0.17	-0.05	0.23	4.91	1.55	2.02	-0.37	0.44	1.00	1.97	0.90	0.72	1.78	2.45
NET OTHER ITEMS(+)	NA	NA	NA	NA	NA	NA	0.39	0.82	-0.16	-0.49	0.04	0.68	0.14	0.61	-0.17	-1.17

NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	-0.07	0.02	-0.39	-0.34	0.04	0.80	0.67	1.22	0.99	0.84
NET TRANSFER	NA	NA	NA	NA	NA	NA	0.55	0.27	-0.05	0.43	0.26	1.54	-0.13	2.83	-0.26	3.08
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE																
NET TRANSFER																
TOTAL DOMESTIC NET TRANSFER	NA	NA	NA	NA	NA	NA	1.34	1.62	1.27	1 46	0.74	2.50	0.65	3.26	0.39	3.89
TAX ON FINANCIAL INTERMEDIATION	NA	NA	NA	NA	NA	NA	0.83	0.59	1.54	1.54	0.86	-0 61	-0 38	-1.25	-0.74	-0.70

FINANCING SUMMARY
(Percent of GDP)

(CHANGE/GDP)	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
CURRENCY IN HANDS OF NONBANK PRIVATE SECTOR	1.07	0.90	1.59	1.34	1.29	1.46	2.38	2.42	2.31	1.71	0.98	1.53	1.18	1.03	1.00	1.03
INFLATION-ADJUSTED (SEIGNORAGE)	-0.05	0.35	0.68	0.50	0.30	0.61	0.18	0.61	-1.21	-1.16	-0.05	0.35	-0.15	-0.46	-0.18	0.24
NOMINAL COMPONENT(INFLATION TAX)	1.12	0.55	0.91	0.84	0.99	0.85	2.20	1.81	3.53	2.86	1.03	1.18	1.32	1.49	1.18	0.79
BANK RESERVES	2.41	3.23	1.62	1.83	2.27	0.99	2.70	2.47	2.81	1.72	3.07	1.77	2.26	2.83	1.90	0.96
INFLATION-ADJUSTED (SEIGNORAGE)	1.66	2.74	0.50	0.83	1.05	-0.15	0.08	0.35	-1.14	-1.58	1.93	-0.06	0.35	0.52	-0.29	-0.52
NOMINAL COMPONENT (INFLATION TAX)	0.75	0.49	1.13	1.01	1.22	1.13	2.62	2.12	3.95	3.30	1.13	1.83	1.89	2.32	2.19	1.48
NET BORROWING FROM FINANCIAL SYSTEM																
INFLATION-ADJUSTED	-0.34	-0.04	0.22	2.25	1.29	3.65	-1.25	-1.75	-2.33	-1.74	-1.64	-0.30	-1.77	0.76	2.67	-0.63
OTHER DOMESTIC BORROWING FROM PRIVATE SECTOR																
INFLATION ADJUSTED	NA	0.04	0.19	-0.01	-0.07	0.01	-0.06	0.06	-0.10	-0.02	0.97	-0.98	-0.00	-0.02	0.01	-0.00
DOMESTIC BORROWING	NA	4.14	3.63	5.41	4.78	6.10	3.77	3.19	2.70	1.66	3.38	2.02	1.65	4.60	5.58	1.38
FOREIGN OPERATIONS OF CENTRAL BANK--INFLATION A	-2.97	-0.67	-1.75	2.86	4.93	4.72	-0.56	0.31	-1.33	3.86	-1.56	-1.08	1.99	3.95	2.61	2.48
NET FOREIGN RESERVES CHANGE(- = INCREASE)	-2.97	-0.67	-1.75	2.86	4.93	4.72	-0.56	0.31	-1.33	3.86	-1.56	-1.08	1.99	3.95	2.61	2.48
OTHER FOREIGN BORROWING																
CENTRAL BANK REDISCOUNTS (- = INCREASE)																
TO BANKING SYSTEM	NA	NA	NA	-3.42	-4.41	-5.89	-4.86	-4.42	-3.19	-2.42	-1.69	0.35	-2.26	1.98	-0.28	-0.45
INFLATION-ADJUSTED	NA	NA	NA	-2.67	-3.19	-4.46	0.02	-0.52	4.04	2.78	0.04	2.33	-0.83	3.90	0.28	-0.12
NOMINAL COMPONENT	NA	NA	NA	-0.75	-1.23	-1.42	-4.88	-3.91	-7.23	-5.20	-1.73	-1.99	-1.43	-1.92	-0.55	-0.33
TO PRIVATE SECTOR																
INFLATION-ADJUSTED																
NOMINAL COMPONENT																
FINANCIAL SYSTEM NET FLOWS--INFLATION ADJUSTED																
NET FOREIGN BORROWING (+)	NA	0.17	0.04	-0.09	-0.73	1.14	-0.26	0.01	12.62	-0.80	-0.74	0.24	-0.03	0.51	1.97	2.16
CLAIMS ON PUBLIC SECTOR(-)	-0.90	-2.54	-0.73	-3.02	-2.46	-4.99	-2.45	-0.75	4.58	6.51	1.13	1.00	1.75	-1.26	-2.17	0.99
CENTRAL BANK	-1.24	-2.58	-0.51	-0.77	-1.17	-1.34	-3.70	-2.50	2.24	4.77	-0.52	0.70	-0.02	-0.51	0.50	0.37
NONFINANCIAL PUBLIC SECTOR	0.34	0.04	-0.22	-2.25	-1.29	-3.65	1.25	1.75	2.33	1.74	1.64	0.30	1.77	-0.76	-2.67	0.63
CLAIMS ON PRIVATE SECTOR(-)	0.93	-3.84	-2.64	-2.04	-3.97	-3.13	3.41	1.42	4.27	1.13	-6.07	-1.72	-1.99	2.17	-1.65	-4.05
LOANS FROM CENTRAL BANK(+)	NA	NA	NA	2.67	3.19	4.46	-0.02	0.52	-4.04	-2.78	-0.04	-2.33	0.83	-3.90	-0.28	0.12
LIABILITIES TO PRIVATE SECTOR(+)	NA	3.70	2.51	1.86	1.92	2.03	-3.06	-1.30	-3.14	-2.09	7.27	3.12	-1.50	1.62	2.60	2.48
M2 EXCL CURRENCY AND DEPOSITS AT CENTRAL BANK	NA	3.72	1.98	1.53	1.64	0.85	-2.43	-0.67	-1.70	-1.28	7.34	3.41	-1.71	2.04	2.60	2.35
OTHER	-0.81	-0.01	0.53	0.33	0.28	1.19	-0.63	-0.63	-1.44	-0.81	-0.07	-0.29	0.21	-0.43	-0.01	0.12
NET OTHER ITEMS(+)	NA	NA	NA	0.69	2.03	0.78	2.05	-0.61	-14.65	-2.28	-1.70	-0.18	0.93	0.87	-0.49	-1.68
NET DOMESTIC TRANSFERS AND TAX ON FINANCIAL INTERMEDIATION																
NET DOMESTIC TRANSFER FROM FINANCIAL SYSTEM																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	NA	NA	-4.24	-2.43	0.59	0.41	0.42	-0.00	0.09	0.61
NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	NA	1.90	0.69	-2.23	-0.71	-2.20	0.76	2.58	-1.24
OTHER NET DOMESTIC TRANSFER FROM PRIVATE SECTOR																
ADJUSTMENT FOR REAL INTEREST RATE	NA	NA	NA	NA	NA	NA	NA	NA	-0.06	-0.02	0.00	0.12	0.00	-0.00	0.00	0.00
NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	NA	-0.04	-0.01	0.97	-1.10	-0.01	-0.02	0.01	-0.00
TOTAL DOMESTIC NET TRANSFER	NA	NA	NA	NA	NA	NA	NA	NA	6.99	4.11	2.79	1.49	1.23	4.60	5.49	0.75
TAX ON FINANCIAL INTERMEDIATION	NA	NA	NA	NA	NA	NA	NA	NA	11.77	8.61	1.57	2.48	2.79	3.82	3.28	1.66

APPENDIX IV

DATA SOURCES

EXTERNAL DEBT (Table 1)

External debt flow data are from the World Bank's World Debt Tables, 1987-88 Edition. Additional unpublished data on the revaluation of public and private long-term and short-term debt are from World Bank sources.

FISCAL DATA (Tables 2, 3, and 4)

ARGENTINA: PSBR data and consolidated public sector revenue and expenditure breakdown are from World Bank sources.

BRAZIL: Breakdown of consolidated public sector revenues and expenditures including SOEs are not available. For 1981-86, data on the nominal and operational PSBR, interest payments, capital expenditures, and net transfers are from C.L. Martone, "Fiscal Policy and Stabilization in Brazil," World Development Report 1988 background paper, p.28. Datum for 1987 operational PSBR is from a World Bank source.

CHILE: PSBR data and consolidated public sector revenue and expenditure breakdown are from World Bank sources.

MEXICO: PSBR data and consolidated public sector revenue and expenditure breakdown are from World Bank sources.

MOROCCO: PSBR data and consolidated public sector revenue and expenditure breakdown are very limited. Data used are from World Bank sources.

PHILIPPINES: PSBR data and consolidated public sector revenue and expenditure breakdown are from World Bank sources. Data on transfers for

these last two years include only transfers between the national government and non-financial public enterprises.

YUGOSLAVIA: PSBR data and consolidated public sector revenue and expenditure breakdown are from World Bank sources.

COLOMBIA: PSBR data and consolidated public sector revenue and expenditure breakdown are from World Bank sources.

INDONESIA: PSBR data and consolidated public sector revenue and expenditure breakdown are unavailable.

KOREA: PSBR data and consolidated public sector revenue and expenditure breakdown are from World Bank sources. Domestic interest is for central government only.

THAILAND: PSBR data and consolidated public sector revenue and expenditure breakdown are from World Bank sources.

TURKEY: PSBR data are from World Bank sources. Consolidated public sector revenue and expenditure data are not available, except for investment spending and tax revenues from World Bank sources.

INTEREST RATES (Table 6)

Real interest rates are calculated from the nominal rates given in the sources specified below using the following equation: [(1 + nominal rate)/(1 + inflation rate) - 1]*100. Nominal spreads are calculated geometrically: [(1 + lending rate)/(1 + deposit rate)-1]*100. A geometric average of either monthly or quarterly rates is calculated for the nominal rate.

ARGENTINA: Both the nominal lending and deposit rate are from World Bank sources. Rates are for a 30-day term. Government rates are not available.

BRAZIL: Nominal lending and deposit rates are from the World Bank report Brazil: A Macroeconomic Evaluation of the Cruzado Plan, 1987, p.142. Lending rates are nominal overnight rates and deposit rates are for a 30-day term. Government rates are from Morgan Guaranty, World Financial Markets, various issues. Rates are the average of monthly rates on three-month Treasury bills.

CHILE: Nominal lending and deposit rates are from World Bank sources. Rates are average of rates on 30-89 day operations. Government rates are from Banco Central de Chile, Boletin Mensual. Rates are averages of monthly rate on 30-89 day maturities.

MEXICO: Nominal lending and deposit rates are from International Financial Statistics, IMF. Lending rates are the weighted average of nominal date charged by banks on new loans during the month. Deposit rates are on three-month fixed term deposits. Government rates are from Morgan Guaranty, World Financial Markets, and Banco de Mexico, Indicadores Economicos. They are the average of monthly rates on three-month Federal T-bills.

MOROCCO: Nominal lending and deposit rates are from International Financial Statistics, IMF. Government rates are not available.

PHILIPPINES: Nominal lending and deposit rates are from International Financial Statistics, IMF. Lending rates are the average rate of commercial banks. Deposit rates are on a 61-90 day term. Government rates are from Morgan Guaranty, World Financial Markets, various issues. Until June 1984, rates are average of monthly rate of 91 day T-bills. From July 1984, rates refer to weighted interest on 91 to 183 day T-bills sold to banks under negotiated basis.

YUGOSLAVIA: Nominal lending and deposit rates are from International Financial Statistics, IMF. Lending rates are on "short-term" credits.

Deposit rates are the upper rate of margins on time deposits of less than 12 months. Government rates are not available.

COLOMBIA: Nominal lending and deposit rates until 1985 are from International Financial Statitics, IMF, both for a 90 day term. After 1985 rates are based on World Bank sources. Government rates are not available.

INDONESIA: Nominal lending and deposit rates are from World Bank sources. Lending rates are the average rate for private banks. Deposit rates are on deposits of less than three months. Government rates are not available.

KOREA: Nominal lending and deposit rates are from International Financial Statistics, IMF. The lending rate is the minimum rate charged on loans up to one year. Deposit rates are the maximum rate on time deposits of one year or more. Government rates are from Morgan Guaranty, World Financial Markets. Rates are for three-month T-bills until May 1981. As of June 1981 rates are on one-month T-bills sold by the Central Bank. Government rates given are December rates.

THAILAND: Nominal lending and deposit rates are from International Financial Statistics, IMF. Lending rates are the maximum rate charged for export related loans. Deposit rates are the maximum rate on three-to-six month savings deposits. Government rates are from the Bank of Thailand, Quarterly Bulletin, various issues, Table 32. Rates are median of end-of-year rates except for 1987 which is median of July rates.

TURKEY: Nominal lending rates are from World Bank sources, the terms are not specified. Deposit rates are from International Financial Statistics, IMF. The 1986 deposit rate is from Morgan International Data, Aug. 1987, Table A-27. Deposit rates are on three-month time deposits. Government rates for 1985-1987 are from World Bank sources.

CPI INFLATION RATES (Table 7)

For all countries data for Consumer Price Indices (CPIs) come from the World Bank's Economic and Social Database (BESD).

DOMESTIC FINANCING AND DOMESTIC FINANCIAL FLOWS (Tables 8-12)

Data on domestic financing and domestic financial flows are from International Financial Statistics, IMF. The IFS data allows the construction of a fairly complete picture of domestic financing of public deficits through the financial system. The data include loans to local governments and public enterprises from the financial system. The data also capture any external financing that passed through the financial system, such as foreign exchange reserve changes and foreign loans of the central bank and the rest of the financial system. The assets and loans of the private sector in the financial system are also fully covered. This data thus allows us to fill in most of the entries in the financing matrix presented in Table 5.

There are some flows that cannot be fully captured. Direct sales of government bonds to the nonbank private sector are not included in the IFS. However, data on these flows exist for Brazil (Martone) and Mexico (Indicadores Economicas) and this data is included in the analysis. Any sales of government bonds that pass through the central bank (e.g. in Korea) are already included in the IFS data.

Data on arrears to the private sector (or domestic suppliers' credits in general) are also generally lacking. These may well have been an important source of financing in some countries. For example, arrears in Morocco are

believed to be very important. However, arrears and suppliers' credits have to be excluded from the analysis in this section.

The flow-of-funds exercise is also incomplete in that the IFS data are not reconciled with the data on direct foreign borrowing of the public sector presented in Table 1. It is not possible to reconcile this data without further information, since the external debt data include loans to the private sector or financial system which are publicly guaranteed. Further work is needed in this area to perform a comprehensive flow-of-funds analysis for the public sector.

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