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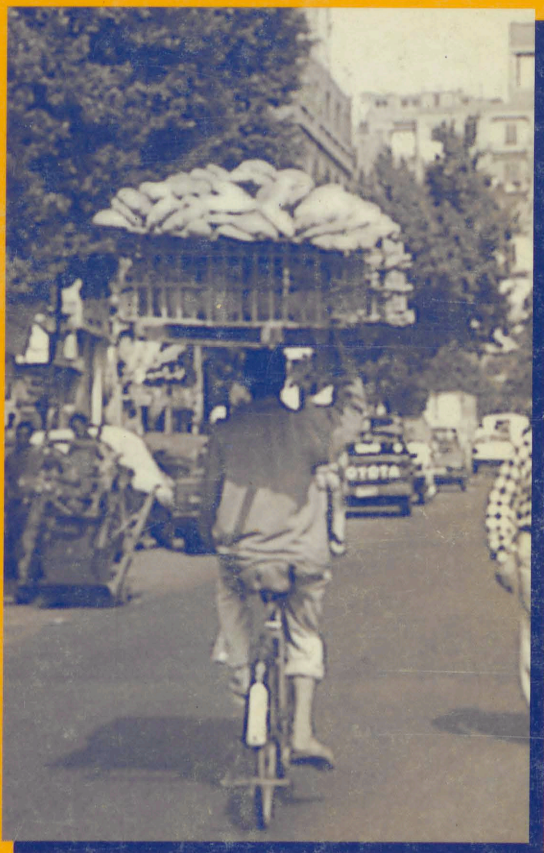
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Fiscal Policy Measures in Egypt

Public Debt and Food Subsidy



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During 1996/97 domestic public debt rose by 13.6%, and its service rose proportionately. The stock of treasury bills, the short-term component of domestic public debt, rose by 21.4% during the same year. It even rose by 29% in the third quarter of 1997. This indicates a worsening of the structure of domestic debt. In the 1990s, domestic public debt surpassed foreign public debt both in terms of stock ratios to GDP and flows of debt.

DOMESTIC PUBLIC DEBT IN EGYPT: MAGNITUDE, STRUCTURE AND CONSEQUENCES

GOUDA ABDEL-KHALEK

In the present paper, we analyze available data related to domestic debt in order to shed some light on the questions raised above. First, we will examine the magnitude and structure of domestic debt, discussing whether the rise of borrowing represents an over-borrowing syndrome. Then we shall deal with the underlying causes of debt accumulation followed by the various consequences of domestic debt. Finally, we will address debt management and policy options.

We hypothesize that the increase in domestic debt under ERSAP is the logical consequence of the nominal exchange rate anchor and a strong monetary stance in the context of capital mobility. It is a familiar story that, with liberalization of capital transactions in many countries, the policy response to massive capital inflows, predominantly driven by changes in international interest rates, was sterilization (Dooley et al. 1996). In Egypt's case under ERSAP, this led to large accumulation of foreign reserves. Rising domestic debt was the other side of the coin.

DOMESTIC PUBLIC DEBT IN EGYPT:
MAGNITUDE, STRUCTURE AND
CONSEQUENCES

GONDA ABDEL-KHALIK

Introduction^{*}

During 1996/97 domestic public debt rose by 13.6%, and its service rose proportionately. The stock of treasury bills, the short-term component of domestic public debt, rose by 21.4% during the same year. It even rose by almost 29% in the third quarter of 1997. This indicates a worsening of the structure of domestic debt. In the 1990s, domestic public debt surpassed foreign public debt both in terms of stock ratios to GDP and flows of debt-service expenditure.

The development of domestic public debt, especially under ERSAP, raises a number of questions. Why did such debt accumulate despite a strong fiscal stance? How is it related to macroeconomic policy under ERSAP? What is the impact of the accumulation of domestic debt on investment expenditure and social expenditure? How sustainable is this level of domestic debt?

In the present paper, we analyze available data related to domestic debt in an effort to shed some light on the questions raised above. First, we will examine the magnitude and structure of domestic debt, discussing whether the rate of borrowing represents an over-borrowing syndrome. Then we shall deal with the underlying causes of debt accumulation followed by the various consequences of domestic debt. Finally, we will address debt management and policy options.

We hypothesize that the increase in domestic debt under ERSAP is the logical consequence of the nominal exchange rate anchor and a strong monetary stance in the context of capital mobility. It is a familiar story that, with liberalization of capital transactions in many countries, the policy response to massive capital inflows, predominantly driven by changes in international interest rates, was sterilization (Dooley et al. 1996). In Egypt's case under ERSAP, this led to large accumulation of foreign reserves. Rising domestic debt was the other side of the coin.

^{*} This is a revised version of a paper for the *Human Development Report-Egypt 1997*.

Magnitude and Structure of Domestic Debt

Issues of Definition. We start the discussion by dealing with the definitional problem.

Public debt is simply the debt of the public sector. But the delimitation and coverage of the public sector relevant for measuring debt may be different in different countries. For example, in most OECD countries, the public sector is the general government, which is defined as follows (Stournaras 1983:406):

- The general government
- = The central government + local authorities
- (1) + non-private social security and other organizations
- + non-financial public corporations

On the other hand, in a recent World Bank report on Egypt (World Bank 1992, III:174), the public sector is defined as the consolidated government, which includes state budget, National Investment Bank (NIB), and the Central Bank of Egypt (CBE). According to this definition, debt includes both monetary debt (debt of CBE), and non-monetary debt (debt of the government and NIB).

Distinction is often made between gross debt and net debt. Net debt is equal to gross debt net of public sector deposits with banks and net of treasury bills owned by non-private social security and other organizations as well as by public corporations. In short,

- (2) Net debt = gross debt – public sector liquid assets

For our purposes, we are only concerned with debt which carries service obligations, at least in principle. Thus, we leave out monetary debt. According to Egyptian official sources, domestic public debt consists of government debt, NIB debt, and debt of public economic authorities. It should be noted that government debt comprises debt of central and local

administrative units and state service authorities, but does not include debt of public economic authorities since the latter are not part of the state budget.¹

Official statistics on public debt often leave out potential government obligations that may not strictly qualify as government debt. In the Egyptian context, such obligations include several important items--public enterprise debt to foreigners, loans of cotton trading companies, claims of infrastructure companies on public-sector enterprises, and non-performing loans in the banking system.

Domestic public debt is public debt placed or generated inside the country (at home), while foreign public debt is public debt placed or generated outside the country (abroad). Domestic debt is mostly held by residents in domestic currency, and foreign debt is mostly held by non-residents in foreign currency. We may illustrate the distinction in matrix form as shown in Figure 1.

Figure 1
Classification of Public Debt

	Domestic Currency		Foreign Currency	
	Residents	Non-Residents	Residents	Non-Residents
Domestic Debt	Mostly	Occasionally	Occasionally	Never
Foreign Debt	Never	Rarely	Never	Mostly

In the context of this paper, domestic public debt is composed of two main components: government debt and National Investment Bank (NIB) debt. Government is roughly general government in the sense of equation 1 above: it consists of the central government, local government, and non-financial public corporations. As such, it is different from the consolidated government, whose accounts cover the government budget, the NIB, and the Central Bank of Egypt (World Bank 1992, vol. III:173). The narrower definition suits our purpose better, since we are only interested in debt that

¹ The only exception is the item called net balances with the banking system, which includes net balances of public economic authorities. See Central Bank of Egypt, *Report on Monetary and Credit Conditions 1993/94*, p.106.

carries service obligations. Moreover, debt figures discussed here are net of deposits with banks.

Magnitude. Domestic public debt has been rising consistently since the beginning of the 1980s. Table 1 shows that it has increased more than 15-fold over the period 1981-1997. GDP increased less than 13-fold over the same period. In per capita terms, this implies a rising level of domestic debt per individual Egyptian from LE 254 in 1981 to LE 2,823 in 1997. As a proportion of GDP, domestic public debt has risen over the period from 63.6% to 78.2%, notwithstanding strong fluctuations. The behavior of this ratio over the period exhibits some interesting features (Figure 2).² First, the ratio rose sharply in the first half of the 1980s; this was the height of the monetization of the budget deficit (El-Edel & Abdel-Hamid 1992). It jumped from 64% in 1981 to 99% in 1985. Second, there was some decline in the ratio in the second half of the 1980s followed by a significant jump in the early 1990s to a new height of 99% in 1991. Third, there is a significant decline in the ratio between 1992 and 1996. Fourth, it appears that the ratio of domestic debt to GDP has increased, though slightly, in 1997. Whether the increase in the debt/GDP ratio for the last year is the beginning of a new trend (i.e., 1996 is a turning point) remains to be seen. This point will be examined later. Finally, over the 17-year period (1981-1997), the domestic debt/GDP ratio witnessed two peaks of equal height: in 1985 and in 1991. The saddle-like shape of the debt/GDP ratio is rather interesting and calls for explanation.

Consider the off-peak values of the debt/GDP ratio of 70 - 80%.³ Is this ratio too high or too low?

² Note that Figures 2-5 are double-scaled graphs, where the left-hand scale refers to the first variable in the legend. The other variables are all measured along the right-hand scale.

³ The World Bank (1995, vol I: p.6) estimates the ratio of overall domestic debt in June 1994 at 78.9 percent of GDP. According to this source, domestic debt was LE 115.6 billion, which implies a GDP figure of LE 149.5 billion. These compare to our own estimates of LE 123.7 billion and LE 149.1 billion, respectively.

We address this question both in terms of Egypt's own past experience, and in comparison with other developing countries. Regarding Egypt's experience this compares with public domestic debt of LE 175 million in June 1951, equivalent to about 20% of national income, and LE 579.3 million in November 1961, equivalent to about 40% of national income (see Issawi 1963: 284-85). Of course, these two points may not adequately represent the situation prior to the 1980s and 1990s, and thus may not provide a solid basis for comparison. We may surmise that there has been a significant increase in the ratio of domestic public debt in the latter decades.

On the basis of Egypt's own postwar historical record, the level of debt shown in Table 1 may be a bit too large. The high ratio of domestic public debt in the 1980s and 1990s reflects a shift in deficit financing from foreign borrowing and inflationary financing to domestic debt. This, and the use of treasury bills to sterilize capital inflows, has led to a significant change in the composition of total public debt. Domestic debt has been increasingly replacing foreign debt during the 1990s (World Bank 1995, vol. I:6). If we compare it with the ratios for other developing countries, it appears to be too high. Thus, compare this ratio with ratios of public debt (domestic and foreign) ranging between 25% and 68.5% for Latin American countries--Argentina, Brazil, Mexico and Venezuela (Dooley et al. 1996: 36).⁴ It is clear that by the standards of developing countries, the observed ratio of domestic public debt is rather high. It is also high, judged against the convergence criteria of the Maastricht Agreement (Dec. 1991) of 60% for public debt/GDP ratio. Egypt's ratio of domestic public debt is much higher than the above-mentioned ratios of total public debt taken as reference. This raises questions of sustainability of such levels of indebtedness.

Another indicator of domestic public debt is debt service, particularly interest payments. Annex II shows interest payments on domestic public debt over the 1981-97 period. It should be noted that interest payments grew significantly faster than domestic debt, reflecting a significant increase of *ex post* interest rate. This is illustrated in Figure 3. The average *ex post* interest rate fluctuated around 3-4% per annum during 1981-1991 but rose

⁴Public debt ratios for these countries cover both domestic and foreign debt of the public sector minus official reserves. It is not clear whether the domestic debt component is recorded on net or gross basis. The foreign debt component, however, is recorded on a net basis.

significantly after that (the ERSAP period) to around 6-8% per annum. Both as a result of higher interest rates and as a result of rising level of debt, interest payments on domestic debt as a proportion of government current expenditure rose dramatically from 10-15% until 1991 to more than 20% after 1992. Interest payments on domestic debt exceeded 25% of government current expenditure in 1994. Accordingly, "it seems that *Egypt's previous foreign debt service problem has been converted into a domestic-debt service problem*" (World Bank 1995, vol. 1:6, emphasis added). The increase of the burden of interest payments on domestic public debt raises some thorny questions.

1. To what extent have interest payments crowded out expenditure on such priority areas as social services and labor compensation (wages and subsidies) and hence, what is the likely effect on equity?
2. What is the likely effect of rising interest rates on savings and investment and hence, on growth performance?

We shall discuss these questions later in the section on consequences of domestic public debt.

Structure of Domestic Public Debt. No less important than the overall magnitude of public debt is the structure of that debt. By the structure we mean the anatomy of debt: how much of it is short-term and how much long-term (term structure); how much of it consists of securities and how much in the form of direct loans (extent of securitization); how much of it represents government debt, and how much is NIB debt. Analysis of such dimensions of the structure of domestic public debt is essential for working out a policy for managing domestic public debt.

Based on the conceptual framework represented by the debt identities c.1 to c.11 in Appendix C, we proceed to analyze the structure of domestic public debt. For reasons related to data availability, the analysis will essentially cover the period 1985 - 1997.

Government Debt vs. NIB Debt. As mentioned before, government debt in the context of this paper consists of debt of the central and local

government as well as non-financial public entities known as service corporations. Government borrows directly from the public (including the financial sector) and indirectly through the NIB.

The NIB, established in 1980,⁵ is really an intermediary fund for investment: it collects resources from the Social Insurance Fund for Government Employees, the Social Insurance Fund for Business Sector Employees, proceeds of Investment Certificates and deposits of the Postal Saving Fund and then allocates it to finance public investment, mostly on a loan basis.

How is domestic public debt divided between government debt, in the sense defined above, and NIB debt according to identity c.1 in Appendix C?

According to available data for 1985-1997, domestic public debt is predominantly government debt. For the entire period, the average government debt was 85-90% of total domestic public debt. NIB debt accounted for the balance, or some 10-15%. Perusal of data does not reveal any significant changes in the division of domestic public debt between these two types over the period 1985-1997.

Securities vs. Indirect Borrowing. One interesting aspect of the structure of public domestic debt is the rising importance of total NIB resources.⁶ Their contribution to total domestic public debt increased significantly under ERSAP: it rose from 40% during 1985-90 to 52% during 1992-97 (see Table 2). Government securities as defined in identities c.5, c.6 and c.9, initially gained in importance during the early years of ERSAP, but tended to revert back to their pre-ERSAP share in 1996-97. It is clear from Table 2 that although under ERSAP the contribution of indirect borrowing (NIB resources) has been rising and the contribution of government securities has been falling, their combined contribution to domestic public debt has been

⁵ According to Law 119/1980 it replaces the Deposit and Insurance Investment Fund (DIIF). DIIF had the mandate of investing the accumulated resources of Social Insurance Funds and Postal Saving Fund. Law 119/1980 instituting NIB granted it a monopsony power over the technical surpluses of Social Insurance Funds and the Postal Saving Fund.

⁶ Total NIB resources are defined by identity c.4 in Appendix C. When government borrowing from NIB is subtracted from total NIB resources, we obtain NIB debt (see identity c.3 in Appendix C).

rising, exceeding 100% over the ERSAP period. According to identity c.8 in Appendix C, government net balances with the banking system have been negative during this period. Data in Annex I confirm this. Such balance averaged about LE 20 billion a year during 1992-97 which means that the government is a net creditor, not debtor, to the banking system.

Figure 4 illustrates this development vividly. According to the data, 1991, the first year of ERSAP, represents a turning point. Until 1991, government securities' share in domestic public debt was more or less stable at about 55%; NIB resources share was about 40%; the remainder was covered by net debit balances of the government and public service corporations hovering around 5%. The beginning of ERSAP in 1991 was a watershed. The government placed proportionately more securities and borrowed more NIB funds only to deposit a significant proportion thereof in the banking system. This may be an indication that on a purely fiscal criterion the government has been over borrowing during the ERSAP years. Hence, one of the hypotheses to be verified in this paper is that the confluence of a strong monetary stance and liberalized capital transactions in the balance of payments, coupled with a nominal exchange-rate anchor, has caused unwarranted accumulation of domestic public debt. There are important fiscal (macro and micro) and equity implications to this, which will be examined in detail in a later section of this study.

Marketable vs. Non-Marketable Debt. Another aspect of the structure of domestic public debt, which is very relevant for the conduct of monetary policy in particular, is the distinction between domestic public debt listed on the stock market, and those not listed. Identities c.5 and c.6 in Appendix C present the details. Listed instruments include dollar denominated development bonds,⁷ housing bonds, and treasury bonds 2000 & 2003. Non-listed instruments are treasury debentures and bonds, development bonds

⁷ Dollar denominated bonds are of two types: development bonds issued by the government according to Law 13/1977, carrying fixed interest, and national development bonds issued by NIB according to Law 6/1986, carrying variable interest. Housing bonds were issued by the treasury according to Decree of Finance Minister 199/1977, to be used for financing low cost housing. Treasury bonds 2000 were issued in April 1995 in an amount of LE 3 billion with 5 year maturity. Treasury bonds 2003 were issued in March 1997 in an amount equal to LE 4 billion with 7 year maturity.

with variable return, alternative-energy bonds, banks' recapitalization bonds, actuarial-deficit bonds, housing bonds, government bonds financed by 5% of public sector companies' profits, investment certificates, and treasury bills.

The development of the relative shares of listed securities, non-listed securities, debt of deposit and insurance institutions (as defined in identity c.7 in Appendix C) and net balances of government and public service corporations with banks, is rather interesting. Figure 5 offers a succinct illustration of the data. Perusal of this figure indicates that listed securities represented a rather trivial proportion of the overall domestic public debt. Its share appears to be higher in the 1990s, but unstable. In 1997, it climaxed to 4% of total debt, mainly due to the placing of treasury bonds 2000 and 2003.

It is interesting to observe that the share of non-listed securities has taken a significant upward turn since 1991; it continued to rise steeply through 1993, but started to decline thereafter. The share of non-listed securities appears to be far more unstable when compared to that of listed securities. The sample mean of the share of listed securities is 1.5% and its standard deviation is 0.01, while that of non-listed securities has a mean value of 66%, with standard deviation of 0.09.

The behavior of the share of listed securities in the 1990s may be explained by the jump in the value of the dollar denominated debt in 1991, the monetization of that debt in September 1993, and the placing of treasury bonds 2000 and 2003 starting in 1995. The fluctuation in the share of non-listed securities in the 1990s may be explained by the issuing of treasury bills in 1991, and the fluctuations in the value of treasury debentures and bonds.

We conclude this part by noting a number of characteristics of the structure of domestic public debt in the 1990s (under ERSAP). First, domestic public debt has grown less securitized, especially in light of the significant increase in the share of debt owed to deposit and social insurance institutions (through the medium of the NIB). According to Annex I, it rose steadily from 30% in 1991 to almost 47% in 1997. This has obvious implications for financial deepening, for debt management, and for the likely effects of domestic public debt.

Second, it appears that during the early phases of ERSAP, domestic public debt has become less marketable. See the bulge in the curve

representing non-listed securities between 1991 and 1996 (Figure 5). This may run counter to the essence of ERSAP: transforming the Egyptian economy from a centrally-planned, public-enterprise economy to one based on private enterprise and the market mechanism. (Abdel-Khalek 1995). It can only be understood in the light of the macroeconomic policies adopted under ERSAP, a point that we shall discuss later in more detail.

Third, government debt to the NIB (debt by the government and public corporations) has quadrupled during the 1990s. As a result, the share of such debt in total government debt doubled between 1991 and 1997 (rising from 29% to 58.6%). Note that this is part of the financial resources of the NIB, which it collects from deposit and social insurance funds--the Postal Savings Fund, the Social Insurance Fund for State Employees, and the Social Insurance Fund for Public and Private Sector Employees. It should be mentioned that according to its by-laws, the NIB has a monopoly power over surpluses of these institutions.⁸ Interest paid by NIB historically fluctuated around 6%. They were raised to 8%, then 13%, and currently 11%. Until 1991, these social insurance reserves used to earn large negative returns which became positive in 1992 (World Bank 1992, vol. II:87).

This type of change in the structure of domestic public debt has clear equity implications which will be considered in another section.

The Government as Financial Intermediary. We have already made the distinction between public debt and government debt. Now we focus on the latter, noting again that government is interpreted here in the broad sense to include public service corporations. Total government domestic debt may be split into three components: securities, debt to the NIB and net balances with the banking system. Table 3 shows the development of the structure of government debt over the period 1985-1997 by applying identity c.2 in Appendix C. The contribution of government securities peaked in the early phase of ERSAP but then plummeted back to its initial level by 1996-97.

⁸ The social insurance system in Egypt is run by two separate administrative bodies: The National Organization for Insurance and Pensions (NOIP) and the General Authority for Social Insurance (GASI). NOIP runs the pension fund for state employees under Law 79/1975, amended by Law 47/1984. GASI operates several funds; the most important is the pension fund for employees of public and private enterprises, under the same laws. (World Bank 1992, III:88).

The most important factor behind this behavior is the change in the stock of treasury bills outstanding. This will be examined separately. It is also interesting to note that the share of government debt to the NIB has been steadily and significantly rising since 1991. Commensurate with this development is the change in the nature of government balances with the banking system, which turned negative since 1992. This represents a creditor position of the government towards the banking system.

Actually, the situation as illustrated in Table 3 reflects the government acting very much like a financial intermediary: borrowing funds and lending at the same time. The magnitude of funds deposited in the banking system since 1992, both in absolute and relative terms, leads one straight to this conclusion. There is one anomaly; the government borrows long and lends short.⁹ This raises the question of costs and benefits of government policy.

Term Structure of Domestic Public Debt: A Bubble in the Making? According to the data analyzed above, most of Egypt's domestic public debt is involuntary, and hence *de facto* it is not short-term. As such, it may not raise serious management problems. This may be so only on the surface of things. We have already noted the relatively high debt/GDP ratio. Also, the mounting service of domestic debt, both amortization and interest payments, should be a cause for concern lest such service should crowd out essential public expenditure on both social services and investment projects. It must be added that the short-term voluntarily held part of that debt, treasury bills, has been rising faster than overall domestic public debt. In 1992 the World Bank observed that the outstanding stock of treasury bills (about 9 percent of GDP at the time) was "not high enough to provoke unsustainable debt accumulation." The problem lies, however, in its short-term maturity (World Bank 1992, vol. II:81). Now that the stock of treasury bills' debt has reached some 15% of GDP at the end of June 1997 (TBs = LE 33.1 billion and GDP about LE 220 billion), the problem is indeed compounded.¹⁰

⁹ To use the jargon of the stock exchange in the United States, borrowing long and lending short means incurring a loss or cost because the borrowing interest rate is higher than the lending rate.

¹⁰ Policy makers should be even more concerned because of the quantum jump in the stock of voluntary short-term debt (treasury bills) in the third quarter of 1997, from LE 33.1 million to LE 42.6 million.

Examination of the development of the stock of each category of TB maturity (3-month, 6-month, and 12-month) based on quarterly data from the Central Bank of Egypt for the period 1991.1-1997.4 shows some interesting features. Average maturity for treasury bills has improved between 1993 and the third quarter of 1995. But it has worsened thereafter.

It appears that there is lack of clear policy direction in the vital area of treasury-bills debt. In an attempt to restructure domestic debt towards longer maturities, 12-month treasury-bill issues were discontinued by the first quarter of 1995. Treasury bonds 2000 and 2003 were issued to replace treasury bills. But the attempt was only short-lived; issues of 12-month treasury bills were resumed in the second quarter of 1997.¹¹ This was apparently under the pressure of increased portfolio capital inflows. Coupled with increased issues of 6-month treasury bills, this raised the total outstanding stock of treasury bills by LE 9.5 billion in the third quarter of 1997. It amounts to almost 30% jump in the stock of TBs during that quarter.

Does this point in the direction of a Ponzi-type domestic debt situation or is it a bubble in the making?

Underlying Causes of Domestic Debt Accumulation

The Dynamics of Public Debt Accumulation. In a strictly accounting sense, a change in the stock of public debt is the result of the overall government deficit. Such deficit may be the result of one or both of two factors: primary deficit and interest payments on public debt.

(3) Overall deficit = Primary deficit + interest payments

¹¹ The sale of 12-month bills was suspended in March 1995, and the government placed LE 3 billion worth of 5-year bonds bearing 12% interest (T Bonds 2000) in April 1995. In September 1996, LE 4 billion worth of 7-year bonds, carrying fixed interest of 11% (T Bonds 2003) were issued in an effort to restructure domestic debt. But placements of 12-month bills were resumed in June 1997.

Such overall deficit determines the public sector (government) borrowing requirements (PSBR). Given the government budget constraint, PSBR may be expressed as:¹²

$$(4) \text{ Primary deficit} + \text{interest payments} = \text{Change in domestic debt} + \text{change in foreign debt} + \text{foreign official unrequited transfers}$$

In plain words, (3) and (4) together state the simple fact that the overall deficit may be financed by various means: change in public debt (domestic and foreign), foreign official transfers and net revenue from issuing money base. We ignore foreign transfers and seignorage,¹³ but allow for revaluation effect on existing debt to reflect changes in effective exchange rate and in the market value of public debt. Rearranging, and using symbols to denote discontinuous variables, we obtain from (3) and (4):

$$(5) \quad B_t - B_{t-1} = D_t + r_t B_{t-1} + a_t B_{t-1}$$

where B = public debt (both domestic and foreign)

D = primary deficit,

r = nominal interest rate on public debt, and

a = revaluation effect on existing debt.

Since we are interested in relative not absolute magnitudes, we divide both sides of (5) through by nominal GDP, Y_t , expressing ratios of variables to nominal GDP in lower-case form, and after some manipulation we obtain our basic equation of debt dynamics. It identifies the determinants of the change in the ratio of debt to GDP. The interested reader may refer to

¹² Seignorage is the net revenue derived by the monetary authority (the Central Bank) out of issuing money base. The PSBR identity for the consolidated government is different, since the government there includes central and local government, NIB, and CBE. Such identity includes six sources of financing the overall deficit: implicit tax from financial repression, implicit subsidy on foreign debt, foreign official unrequited transfers, seignorage revenue (issuing money base), foreign-debt financing and domestic-debt financing (World Bank 1992, III, Annex III.2).

¹³ Alternatively, one may think of the primary deficit in excess of seignorage revenue. The reason for ignoring foreign transfers is that, in long-run equilibrium, they are not a sustainable means for financing the fiscal deficit.

Appendix B for the details of the derivation. Our fundamental relation of the dynamics of public debt is thus:

$$(6) \quad \Delta b_t = d_t + (r_t^* - g_t^*) b_{t-1} / (1 + g_t)$$

where:

d_t is the ratio of the primary deficit to GDP,

g_t is the nominal GDP growth rate between t and $t-1$,

$g_t - P_t = g_t^*$ and $r_t - P_t = r_t^*$, where P_t is the rate of inflation.

According to (6), two factors contribute to the change in the public debt/GDP ratio Δb_t : the primary deficit and a real interest rate different from real GDP growth rate. Specifically, even if the primary deficit is zero, public debt may continue to rise as a proportion of nominal GDP if the real interest rate exceeds the real GDP growth rate. This is the well-known Domar Proposition (Domar 1944). Therefore, whenever $r^* > g^*$, the economy gets caught in an interest-debt spiral: the government borrows just to refinance interest expenditure. Of course, this process carries its own limits.

To apply this analytical tool (the equation of debt dynamics) to the Egyptian case, we refer to Figure 2. Focussing on the ERSAP period, we note that the ratio of domestic public debt to nominal GDP rose sharply in 1990-91. After declining in 1992-96, it rose again in 1997. We also note that during the entire period 1990-1997, foreign debt was falling as a ratio to GDP. The primary deficit in the government budget was also falling steadily in relation to GDP over the same period. From equation 6 it should follow that $(r^* - g^*) > 0$ for the years 1990-91 and 1997.¹⁴ The government must have been incurring new domestic debt to refinance interest payments accruing to existing debt in those years.

Why Did Domestic Public Debt Accumulate. How do we explain the accumulation of domestic public debt observed in the previous section? Before we proceed to answer this question, distinction must be made between new debt instruments and old ones. New debt instruments were essentially two: treasury bills and treasury bonds. These were by far the fastest growing, and they are both related to increased private capital inflows

¹⁴ Actually, the real interest rate exceeded the real growth rate during 1990/91-1993/94. See Subramanian, 1997: Table 1.

to Egypt since 1991. It should be observed that Egypt shared the experience of many developing countries which witnessed net private capital inflows and net official capital outflows simultaneously (Dooley et al., 1996).

Against this background, we may suggest two main factors to explain the accumulation of public domestic debt: the new fiscal stance under ERSAP, characterized by the desire to avoid recourse to monetary financing of domestic debt; and the sterilization of large capital inflows to maintain monetary targets under ERSAP. This implies that a comprehensive external/internal perspective must be followed in order to provide a good understanding of the factors causing domestic-debt accumulation in Egypt.

The Internal Factors. The new fiscal stance under ERSAP rested on curtailing fiscal deficit, and using real resources to finance the deficit. As a result, government borrowing from the NIB more than tripled between 1991 and 1997 (rising from LE 27.3 billion to LE 87.8 billion). On the other hand, the outstanding stock of treasury bills and bonds rose more than tenfold during the same period.¹⁵ This led to a sharp jump in interest rates,¹⁶ which in turn fueled more debt, according to the debt-dynamics equation discussed above.

In addition, the tighter monetary policy adopted under ERSAP generated additional pressures on the domestic interest rate, and thus augmented the impact of the tough fiscal stance on that score.

The External Factors. The main factor here is the easier monetary policy of the industrial countries. Such policy resulted in sharp decline in the interest rates (Kuczynski, 1992). For example, US dollar 3-month LIBOR rate fell from 8.3% in 1990 to 6.0% in 1991 and further to 3.5% in October 1992. A surge in capital inflows to developing countries also took place in the early 1990s (Fernandez-Arias and Montiel 1996; Kuczynski 1992; Corbo and Hernandez 1996; Dooley et al. 1996). Thus, the average annual net

¹⁵ Increased government borrowing at such rates may be reminiscent of Egypt's fiscal experience with the debt debacle of the late nineteenth century.

¹⁶ As domestic interest rates started rising, foreign interest (90-day CD in the US) happened to be falling. The domestic-foreign interest differential peaked at 14 percentage points in the fourth quarter of 1991 and the first quarter of 1992. See World Bank 1995, Table 1.5.

inflow of private capital to all developing countries rose from US \$40 billion for 1982-89 to US \$90.0 billion for 1990-93 and to US \$163.0 billion for 1994-95 (Fernandez-Arias and Montiel 1996; World Bank 1996, vol.1). There are many reasons for the surge in private capital inflows to developing countries. Basically, analysts tend to favor one of two views: the push view and the pull view. The push view stresses the impact of lower rates of return in industrial countries, while the pull view emphasizes the improved domestic policy environment in developing countries.

Applying this framework to the Egyptian case, we find that both the push factors and the pull factors are at work. They produced net capital inflows to Egypt at unprecedented rates, mainly in the form of foreign portfolio investment (FPI) (Abdel-Khalek 1998). The recent reappraisal of Egypt's risk-return outlook¹⁷ provoked significantly larger inflows of portfolio investment. With liberalization of capital transactions in the balance of payments and maintaining a nominal anchor, uncovered interest arbitrage proceeded in full swing. We have already discussed this issue in detail in 1995, and anticipated the more recent surge in portfolio capital inflows to Egypt (Abdel-Khalek 1995).

We would like to re-iterate here that the policy response to large portfolio capital inflows has been to sterilize such inflows in order to avoid unwarranted increase in the monetary base. The end result was accumulation of international reserves parallel with the accumulation of domestic public debt. But this process essentially involves a strange asset swap: exchanging high-yielding domestic assets for low-yielding foreign assets. As already mentioned, it looks like the government is borrowing long and lending short. There is necessarily a fiscal cost involved, which tends to redistribute income from the poor to the rich. We shall deal with this issue later, but it is perhaps telling to refer to the World Bank's designation of recent large capital inflows to Egypt as an "embarrassment of riches" (World Bank 1997). As we shall demonstrate later, it amounts to taking from the have-nots to give the haves.

¹⁷ Standard and Poor's gave Egypt BBB- long-term debt rating in January 1997. Moody's gave Egypt a sovereign-debt rating of Ba2. Moreover, the IFC decided to add Egypt to its global composite index of emerging stock markets, starting January 1, 1997. In addition, the crisis in the financial markets of South East Asia may have pushed some capital to take refuge in Egypt.

Consequences of Domestic Public Debt Accumulation

Theoretical Framework. The domestic public debt has many consequences. There are economic effects: on the level and growth of GDP, on the relation of investment to saving, on the interest rate, the exchange rate and relative prices, particularly tradables vs. non-tradables. The list of economic effects may actually be longer. There are also social consequences of domestic public debt. Of these consequences, we may distinguish in particular income distribution between relevant social groups (classes) and between generations. Interaction of various aspects complicates the analysis and ideally calls for some type of general-equilibrium approach. This is particularly so, since debt is only one alternative means of financing public expenditure, other alternatives are money creation (seignorage) and taxation.

Our analysis in this part of the study will focus on the relation of domestic public debt to social expenditure. Before we discuss this, it is necessary to clear up some confusion in the current debate on domestic public debt in Egypt, especially with respect to the old issue of the burden of debt. It is often maintained that unlike public external debt, domestic public debt does not represent a burden on the national economy. Such confusion is reflected in official statements and even some technical reports dealing with the issue of domestic public debt. Thus, one reads in the Fiscal Statement by the Minister of Finance regarding the budget proposal for 1997/98 that:

Internal public debt--in contrast with external public debt--is not a burden on the national economy; its role is confined to transferring part of the national income from the hands of lenders to the government. It therefore does not increase the burden on national net worth. In addition, it involves using real savings with no inflationary effects. (Ministry of Finance 1997:27) (emphasis added)

This same statement was repeated, almost *verbatim*, in a recent technical report (The National Council for Production and Economic Affairs 1997:22).

Such statements echo what Buchanan, forty years ago, called the new orthodoxy of public debt. At that time, he strongly attacked its intellectual and scientific foundations. Such orthodoxy was based on three basic propositions: (a) the creation of public debt does not entail any transfer of

primary burden to future generations; (b) in all essential aspects, the analogy between public debt and private or individual debt is fallacious; and (c) a sharp distinction exists between internal and external public debt (Buchanan 1958:4). Buchanan showed, quite convincingly, that:

- a. The primary real burden of a public debt is shifted to future generations.
- b. The analogy between public debt and private debt is fundamentally correct.
- c. The external debt and the internal debt are fundamentally equivalent.

These three propositions constitute the crux of the general (pure) theory of public debt. Proposition (c) implies that internal public debt, just as external debt, imposes a burden on the national economy. If proper accounting is made of the combined public debt/public spending operation, internal and external debts are equivalent in terms of the real burden on the national economy. The real burden of debt is the opportunity cost of public goods financed by such debt, whether the latter is internal or external.

It is the arbitrary treatment of interest payments according to the post-Keynesian convention of national economic accounting that leads to the false proposition that only external debt imposes a burden on the economy while internal debt does not. According to this convention, interest payments are part of national income only if paid to non-residents (foreign holders of debt); they are transfer payments if paid to residents (national holders of debt). On the other hand, interest payments on internal private debt are included in national income although they are very much like interest payments on internal public debt. In both cases, such payments involve transferring income from individuals in their capacities as debtors to individuals in their capacities as creditors. This reveals the arbitrariness of national accounting treatment, which should not camouflage the burden of internal public debt. Posner calls this view (that domestically-held debt imposes no burden on future generations) the *naïve* view (Posner 1987).

Distinction is made between two types of burden of public debt, the primary and the secondary burden. The primary burden represents the opportunity cost of the goods financed by the debt. Debt creates an institutional means of moving that opportunity cost forward in time. The

primary burden of debt is thus located in periods subsequent to that of debt issue (Buchanan and Wagner 1967:28-9).

It should be noted however, that if we focus on analyzing the burden of public debt outstanding, then internal debt may be less burdensome than external debt of equal size, other things being equal. This is because in the case of external debt, terms of trade of the country may deteriorate as a result of repayment. This is the familiar transfer problem, which does not arise in the case of internal debt. This is not to say that internal public debt, unlike external debt, does not impose any burden. In fact, the transfer problem distinguishes internal debt, both private and public, from external debt.

Having shown the fallacy in the official position with regard to the burden of domestic public debt, we now turn to analyze its effects. We start by examining the requisite conceptual framework. The discussion here is in the context of the Egyptian case. Given the level of external debt, the accumulation of domestic public debt is the result both of budget deficit (which consists of both the primary deficit and interest payments) and sterilization. This latter source of debt accumulation assumed particular importance during episodes of large capital inflows, such as 1992-94 and 1996-97.

We limit our discussion of the consequences of domestic public debt to the effect on the main variables. In particular, we focus on the following: interest rate; investment, consumption and growth; and the re-distributive effects. According to our aforementioned analysis, domestic debt accumulation affects *growth* and *equity* through a chain of direct and indirect effects. Thus, debt accumulation affects growth directly through its effect on investment or indirectly *via* the interest rate. The ultimate effect of debt accumulation on growth is uncertain *a priori*.

Debt accumulation affects equity (income distribution) indirectly through its effect on consumption and the interest rate. The effect on consumption may be either positive (when debt is used to finance the production of public goods) or negative (if debt results in higher savings). The effect of consumption on equity may go either way, depending on whether public goods financed by debt provide for the needs of the poor or cater to the wants of the rich.

In addition to the above, there is also the effect of debt accumulation on money supply, and the relation of both the nominal anchor and the inflation

target (the two are important aspects of ERSAP) to real appreciation (non-tradables/tradables terms of trade). The resultant impact of the various variables on the trade deficit is also important, but not discussed below.

(a) Effect on Interest Rate. In theory, fast accumulation of domestic public debt may drive down the price of securities, and hence raise interest rates--other things being equal. If, however, the supply of loanable funds increases, then domestic interest rates may even fall. This could happen under capital mobility with an initially significant domestic-foreign interest rate differential. Compared with tax financing of public expenditure of comparable size, internal public debt financing implies higher interest rates. Depending on the rate of growth, this may produce Domar type instability--given the rate of inflation. Higher interest rates in turn, and in a second round, may discourage private investment. Hence, debt finance may result in a lower level of the capital stock compared to tax finance. Moreover, it may trigger large capital inflows, further constraining the conduct of fiscal policy and/or exchange rate and monetary policy.

(b) Effect on Investment and Capital Stock. Classical economists were in general opposed to deficits and a large public debt (Mundell 1993:34). They expressed deep concern about the effect of domestic public debt on investment and the capital stock. For Adam Smith, David Ricardo, and John Stuart Mill, debt finance would be paid out of investment. Public debt, therefore, involves a reduction in investment and leaves society with a lower capital stock compared to tax finance. In fact, classical economists, particularly Pigou, emphasized the injurious effect of a large public debt on what they called the national dividend (GDP in today's jargon). According to their view, such large debt generates expectations of higher taxes necessary for its service thereby reducing the individual incentive to work and leading to a lower level of GDP. This is a supply side argument against excessive levels of public debt.

Fast accumulation of domestic public debt (either to finance the budget deficit or to sterilize the liquidity expansion of capital inflows) pushes up real interest rates if they are not controlled. This raises the user cost of

capital¹⁸ and reduces the profitability of investment (Easterly and Schmidt-Hebbel 1993).

There is also likely to be a negative impact of domestic public debt on investment and the rate of capital accumulation, based on the crowding out thesis. According to this argument, funds for the purchase of public-debt instruments (government securities) are more likely to involve diversion from financing investment in the private sector than are equivalent funds collected through taxes. In other words, compared to tax financing, debt financing entails a relatively larger cut in private investment expenditure (and hence a relatively smaller cut in private consumption expenditure). *Ceteris paribus*, under debt finance, the rate of economic growth is therefore likely to be slower than under tax finance.

(c) Public Debt and Distribution. The relationship between public debt and distribution has always been at the center of both academic and public debates. The classical economists paid a great deal of attention to this relationship.¹⁹ According to Pigou, three dimensions of distribution may be distinguished: distribution between present and future generations; distribution between people with equal wealth but different liquidity; and distribution between people who are wealthy and those who are not. Ignoring the second dimension, the other two are known in contemporary language as inter-temporal and inter-personal distribution.

With regard to inter-temporal distribution, the classical economists were of the view that public debt to finance a given expenditure does not involve any more burden on the future generation than a tax financed expenditure of equivalent amount. Under the debt alternative, people will adjust by reducing their consumption to foot the future tax bill necessary to pay the debt. This is the familiar Ricardian equivalence.²⁰

¹⁸ The user cost of capital is determined by the real interest rate and the price of investment goods-given investment incentives.

¹⁹ More broadly, they argued that tax finance comes out of consumption while debt finance comes out of investment. Pigou took issue with this proposition, however, arguing that it is valid only under the possibility of foreign borrowing (Mundell 1993:45).

²⁰ As is well-known, Ricardian equivalence rests on a number of strong assumptions; in particular, perfect foresight and perfect capital markets.

As to the inter-personal distribution, the alternative of financing public expenditure through debt (as compared to taxes) has clear consequences. We have to admit, however, that this issue is very complicated, and may best be approached by making some distinctions and assumptions. Distinction must be clearly made between the pure *fiscal aspects* and the *economic aspects*. Distinction should also be made between *voluntary* and *involuntary* public debt. We also assume that the government will not default on debt, and will always honor its obligations.

Let us deal with the fiscal end of the issue of the effect of public domestic debt on income distribution between classes or groups of the population. At the fiscal level, and regardless of the purpose for which public debt is being contracted, the government collects debt proceeds from lenders in return for a promise to pay the principal plus interest. We assume that repayment of principal (installments) is exactly equal in value (equivalent) to the loan,²¹ so that interest payments represent net gain to the borrower.

Under these assumptions, issuing domestic public debt today means imposing taxes tomorrow to finance interest payments. In the case of voluntary debt, we should expect buyers of government securities to be the rich individuals, who have a surplus on hand. The interpersonal distributive effect of debt will depend on the nature of the tax system. If the tax system is progressive, the tax burden will fall largely on the rich. In this case, the re-distributive effect of domestic public debt will be minimal. If, on the other hand, the tax system is regressive, then the issuing of domestic public debt will entail a redistribution of income from the poor to the rich.

Take the case where debt is involuntary. The fact that it is involuntary may actually imply that debt terms may be less competitive, meaning that the government may pay below market interest rates.²² If the proceeds of debt collected in this fashion are used to finance public investment projects, then there may be interpersonal redistribution, depending on the most likely beneficiaries of such projects. This will be so regardless of the nature of the tax system.

²¹ Say, through indexation.

²² It may also imply that the government may unilaterally decide to roll the debt over indefinitely, never paying it. But we assume away that possibility.

Application to the Egyptian Case. The assessment of the various consequences of the accumulation of domestic public debt in Egypt's case ideally calls for both identification of such consequences and measurement of their respective magnitudes. Naturally, the consequences will depend, among other things, on the level and structure of debt. We recall from a previous section that in terms of structure, Egypt's domestic public debt has the following characteristics:

- It is predominantly government debt, with clear evidence of over-borrowing since the start of ERSAP.
- The share of marketable debt (listed securities) is rather trivial. Despite some increase in the second half of the 1990s because of the introduction of treasury bonds 2000 and 2003, domestic public debt remains overwhelmingly non-marketable.
- In the 1990s, domestic public debt has become less securitized and less marketable.
- Government debt to the NIB has quadrupled during the 1990s, with its share in total government debt doubling between 1991 and 1997.
- During the 1990s, the government has accumulated a significant creditor position *vis-a-vis* the banking system. Borrowing long and lending short clearly involves a fiscal cost.
- It is largely involuntary, and hence not short term, but the voluntary short-term component (treasury bills) has been steadily rising.

Applying the theoretical analysis to the Egyptian case must also account for such factors as capital mobility, nominal anchor, and sterilization. Our previous analysis has underscored the importance of capital inflows and ensuing sterilization as a new and, in a sense, unique cause of domestic public debt accumulation. In this context, there is a danger of a domestic debt-capital inflow spiral, with all the attendant consequences.

In view of the purpose of the present study, we shall deal with the consequences of the accumulation of domestic public debt in Egypt under two headings: growth and equity.

(a) **Effect on Growth.** The relation between growth and domestic debt accumulation, as we have seen, is very complex and roundabout. Domestic public debt impacts on growth *via* its effect on the rate of capital accumulation (investment). Investment is affected by domestic debt accumulation both directly and indirectly. Directly, debt accumulation generates two opposing forces on investment. One is positive by financing of public projects either in direct production or in infrastructure. The other is negative by crowding out private investment in the market for credit. The nature of the resultant direct effect of domestic public debt on investment may be hard to ascertain on *a priori* grounds. Indirectly, domestic debt accumulation raises interest rates, *certeris paribus*, and results in slower growth.

It is more likely, therefore, that the accumulation of domestic public debt in Egypt has been inimical to growth. Nevertheless, we have to look at the evidence to examine this hypothesis.

From an institutional point of view, domestic public debt is made up of two parts: government debt and National Investment Bank (NIB) debt (see identity c.1 in Appendix C).²³ During the 1990s, the ratio of the first to the second averaged 9:1.

Table 3 provides data on the breakdown of domestic government debt into its two main components: government securities and government debt to the NIB, and the residual component, government balances with the banking system. The latter has been negative since 1992, signaling a creditor position for the government. This is a derivative of stabilization cum-sterilization under ERSAP, which is closely related to treasury bills placement. It may have a negative direct effect on investment and growth to the extent that it crowds out private investment and also *via* its upward pressure on the interest rate.

For the purpose of analyzing the two main components of domestic public debt, *viz.* government securities and government debt to the NIB, we exclude government balances with banks. Accordingly, we find that as an average for the entire period 1985-1997, government securities (including

²³Some sources often forget this important aspect and identify domestic public debt with government domestic debt. Such treatment excludes NIB debt, which, *stricto sensu*, is public debt. See People's Assembly, 1998, p.43.

treasury bills) represent 63% of domestic public debt.²⁴ The share of government debt to NIB is only 37%. It is clear that the larger part of domestic public debt was not used for investment purposes.²⁵

It should be noted that NIB debt is only a minor part (about 20%) of its total resources; the bulk is lent to the government to finance investment projects. NIB is just an investment fund.²⁶ It largely finances investment projects (about 74% of its resources on the average for the 1990s) but also allocates capital transfers to public enterprises and authorities (26%) (see Table 4).

Regarding investment finance, there was a clear shift during the 1990s away from projects of economic agencies and units to investments in public administration (central and local) and services. In the early 1990s, more than 50% of investment finance was for economic projects. This was reduced to only one third by 1997. Less emphasis in the NIB finance of investment was placed on economic sectors, and correspondingly more emphasis was placed on service and administration projects. Thus, although domestic debt funneled through the NIB must have contributed to GDP growth, such contribution was in fact declining during the 1990s. The other part of NIB financing, i.e., capital transfers, is far less related to investment than the financing of projects.

We may conclude, therefore, that there is certainly *some contribution* of part of domestic public debt to investment. In view of the shift of focus from economic projects to administration and service projects, the contribution of domestic debt to growth on that score is waning. In justification of the magnitude of domestic public debt, the argument is often made that it was largely used to build infrastructure and other vital projects for the economy (Ministry of Finance 1997:27). Hence, domestic public debt, so the argument goes, has counterpart assets of national wealth, which

²⁴ This certainly has equity implications, as we shall demonstrate shortly.

²⁵ The shares may be closer to 60-40, since government securities include national development bonds and housing bonds, whose proceeds are earmarked for investment.

²⁶ It is the finance arm of the Ministry of Planning. According to Law 119/1980, its purpose is to finance all projects included in the plan for economic and social development. Although NIB has its own legal entity, it operates directly under the Planning Minister.

such debt was in most part devoted to financing. As we have shown, available evidence hardly corroborates such a claim.

(b) Effect on Equity. We argue in this part of the study that the accumulation of domestic public debt, particularly during the period of ERSAP, involves a two-way redistribution. At one level, it involves redistribution from Egyptians to foreigners. At another level, it involves redistribution from poor Egyptians to rich Egyptians. In support of this thesis, we present the following:

(i) The short-term part of domestic debt (treasury bills) grew extremely rapidly between 1991 and 1998. In fact, it was by far the fastest growing component of domestic public debt. It rose eightfold between 1991 and 1997. The driving force of such increase was not the need to cover the fiscal deficit, but the requirement to maintain monetary aggregates under ERSAP.²⁷ The mechanics of this process was discussed above and elsewhere (see Abdel-Khalek 1997; Schadler 1994; and World Bank 1997). In this section, we focus on its distributional/equity implications.

Since the beginning of ERSAP, Egypt experienced two strong waves of large capital inflows (Subramanian 1997). The first wave spanned the years 1991/92-1993/94, and the second wave started in 1996/97 and appeared to continue through early 1998. The magnitude of the inflows, according to some estimates, averaged 4.5% of GDP per year during the first wave (Subramanian 1997). According to preliminary data for the balance of payments for 1996/97, capital inflows may top \$2 billion (CBE 1997a:112-13). This is mostly portfolio capital from institutional investors (IMF 1997:26). As shown in Annex I, the outstanding stock of treasury bills rose from LE 4.0 billion in 1990/91 to LE 35.2 billion in 1993/94, mainly because of sterilization. Based on the interest differential between TB rates and equivalent US short-term rates for the period, the direct fiscal cost comes close to 4% of GDP. For 1996/97, the interest differential is about 5 percentage points. This produces a direct fiscal cost of sterilization of LE 0.1

²⁷ Subramanian (1997) argues that the issuance of t-bills at such a rate may also be partly explained by the desire of the government to shore up the banking system.

billion, or 1.4% of GDP.²⁸ To the extent that these capital inflows belong to non-residents, a proportionate part of such direct fiscal cost of sterilization gives an indication of the order of magnitude of redistribution from Egyptians to foreigners through the accumulation of short-term domestic public debt (treasury bills).²⁹

The surge in capital inflows beyond 1996/97 fueled a substantial increase in the stock of treasury bills outstanding—rising by LE 9.5 billion during July–September 1997. This represents a 28.7% increase in the stock of TBs in just one quarter. Net issues of treasury bills in 1996/97 totaled LE 5.849 billion and government net deposits with banks rose by almost the same amount (CBE 1997a:19).

(ii) The most important component of long-term domestic public debt in Egypt in recent years has been debt to NOIP and GASI. It has been steadily rising both in absolute and relative terms, accounting for 46.5% of the total domestic public debt in 1997 (see Annex I). During the 1990s, it accounted for 58% of NIB resources³⁰ and was used for financing long-term investment projects. To examine the equity implications of this part of Egypt's domestic public debt, two aspects are particularly relevant. One is the identity of the social groups/classes that benefit most from the investments financed by these funds. The other is the terms according to which such funds were mobilized.

Regarding the first aspect, the identity of the beneficiaries of the investment projects depends on the nature of such projects. If the projects address the needs of the particular social group more than others, then it can be said, admittedly vaguely, that the project concerned will have equity implications. Obviously, much will depend on the definition of the project and the identification of the social group. Although NOIP and GASI surplus funds are largely used in financing, through the medium of NIB, investment projects as we discussed above, there are no data available at the project

²⁸ This estimate of the fiscal cost of sterilization neglects the increase in the cost of other domestic debt components as a result of sterilization.

²⁹ It is widely believed that the first wave of inflows represents both capital repatriation by residents and funds of non-residents while inflows of the second wave belong largely to non-residents (data are extremely scanty).

³⁰ Based on information in the *Annual Follow-up Report* of the NIB for the years 1990/91–1996/97.

level. Rather, we can only observe data on the investment program of the government according to the plan for economic and social development and the contribution of NIB to this program. Such contribution, as shown in Table 4, has fluctuated widely during the 1990s (ranging from 38.8% to 61.2%). While non-availability of data on the specific projects financed through NIB makes it difficult to assess the equity implications of this component of domestic public debt, it can be indirectly inferred from examining the government overall investment program.

Table 5 gives some data bearing on the issue of gauging the equity implications of that component of domestic debt which belongs to NOIP and GASI. We have recorded in that table the pattern of allocation of available finance for investment projects in the plan during the 1990s.³¹ The five most important sectors were identified each year. Four areas seem to dominate consistently during the entire period: housing and new urban communities, transport and communication, electricity and energy, and education. The leading sectors in terms of finance allocations out of domestic public debt are infrastructure and education.

Barring any evidence to the contrary, it may be construed that the benefits of education projects accrue to all various social groups. After all, education is a public good to a large extent. With regard to infrastructure projects, although in principle they benefit the population at large, we may safely assume that the rich stand to benefit more than the poor. By their very nature, public investment allocations for transport and communication, electricity and energy, and housing and urban development cater to the demand of the rich more than the needs of the poor.

It is remarkable that education has consistently claimed second position in terms of available finance for investment; available finance for this sector has doubled in relative terms over the five years 1993-1997 (rising from 7.5% to 15.2%).³² From a human development perspective, this is a significant achievement.

³¹ Note that the data in Table (5) are for *available* finance, *not planned* finance, of investment. But as shown in the very last row of the table, available finance averages about 96.1% of planned finance. So planned finance is almost fully available.

³² If investment finance allocations for higher education were included, the share of education would be higher--perhaps much higher.

On the other hand, more directly relevant for considering the equity implications of this component of domestic public debt is the soft financing provided through NIB. This covers such areas as low-cost housing in the individual governorates, new urban communities, cattle feeding, export projects, emergency housing in various governorates, housing companies, and industrial parks in governorates. Allocations for these purposes averaged LE 350 million annually during the 1990s--their share in total NIB investment finance amounted only to 4.4% on the average for the period 1991-1997. This share has been steadily declining over the period (see memo item in Table 5). The most important item in this list is low-cost housing projects at the level of the governorates, where subsidized loans are given to help governorates build housing units for their population. It may be said that, by and large, this part of domestic public debt, although rather proportionately small, addresses the needs of the poor or low income groups of the population.

It should be mentioned that until 1992, NIB also financed public-sector enterprises (PEs). With the promulgation of Law 203, NIB gradually dropped lending to PEs, but still has a significant exposure to them. According to Law 119/1980 (the legislation instituting NIB), NIB provides long-term financing to public investment projects listed in the Plan for Economic and Social Development. Until very recently, because of low cost funds from NOIP and GASI, interest rates charged to government and public authorities' projects and PEs were negative in real terms.³³

(iii) For a long time, interest paid to both NOIP and GASI were non-competitive. According to NIB sources, until 1980 the fund for Investing Deposits and Social Insurance (the precursor to NIB) used to pay 4% per annum. Table 6 shows that NIB was paying 6% per annum over the period 1980-87. The rate was then raised during the 1990s, peaking at 12% per annum over the period 1992-97. It was then rolled back to 11% in July 1997. We have estimated the implicit tax to which social insurance funds were subjected under these arrangements. It should be noted that such tax was not only due to financial repression, which was a common practice right

³³ NIB has increased its lending rates commensurately with the rise in interest rates on social insurance funds.

through the beginning of the 1990s. It was also the result of monopsonistic power vested in NIB by Law 119/1980.³⁴

Table 6 compares interest rates paid to NOIP and GASI to the interest rate on investment certificates. We assume that the latter represents the opportunity cost of investing NOIP and GASI funds. It is interesting, though not necessarily surprising, that the implicit tax rate imposed on pensioners' funds exceeded 100% of their interest income over the decade 1980-1990. This greatly undermines the capacity of NOIP and GASI to provide for their contributors in old age.³⁵ The implicit tax rate on interest income of social insurance funds has declined since 1991 *pari passu* with the increase of interest rate paid by NIB on such funds. However, corresponding tax revenue for that period did not fall proportionately due to the continuous rise of NIB debt to NOIP and GASI.

For the entire period 1987-1997, the total amount siphoned from pensioners' money through implicit taxation totaled LE 16.778 billion.³⁶ In a sense, this part of domestic public debt involves a mechanism very much like a huge pump, taking financial resources from the poor, only to give the rich. This may serve as a close approximation of the order of magnitude of redistribution from owners of social insurance funds to the government. The latter is just an intermediary, which uses those funds to finance investment projects according to the development plan. We have already seen that at best, such projects broadly benefit the entire population. Perhaps there is redistribution in favor of the rich, who stand to benefit more from expenditure on infrastructure. The only exception might be expenditure on education, where the poor *may* benefit more from public investment.

Owners of social insurance funds are low income people, being workers and employees. In fact, they are identified as poor (Korayem 1991:32). TB holders, on the other hand, are mainly rich (see Table 7). We then conclude

³⁴ According to the World Bank, financial-repression tax revenue averaged 5.7 percent of GDP in Egypt during 1988/89-1991/92. This is much higher than the equivalent for other developing countries in the early eighties, with the exception of Mexico. See World Bank, 1992, Vol. III, p.178.

³⁵ The Ministry of Insurance and Social Affairs claims that it covers the actuarial deficit of NOIP and GASI.

³⁶ The amount is definitely more than that, if account is taken of the period before 1987.

that the accumulation of domestic public debt financed by the surpluses of NOIP and GASI largely entails redistribution from the poor to the rich. One may venture to compare the lot of TB holders (the rich) and social-insurance funds owners (the poor) in the context of the specific characteristics of the Egyptian domestic public debt. The return on TBs is market-determined and tax free,³⁷ while the return on social-insurance funds (as we have already shown) is set by fiat.³⁸ The latter is a carry-over from the *statist* policy environment, and a truly curious remnant of the now extinct compulsory delivery system in Egyptian agriculture.

To conclude this part on the equity implications of Egypt's domestic public debt, we find it fitting to say that the accumulation of such debt has involved redistribution from the working class to the *clipping* class--to use a term coined by Keynes. Furthermore, to the extent that TBs are held by non-residents,³⁹ it may be said that there is also redistribution from the Egyptians to foreigners.

The relevance of this conclusion to social expenditure and human development cannot be escaped. Given the level of total budget expenditure, prospects of social expenditure depend, *inter alia*, on the prospects of domestic-debt interest payments (Zaytoun n.d.:63). To underline that aspect, we compare the evolution of interest payments on domestic debt with such socially significant items in the government budget as total current expenditure, wage payments, subsidies, and expenditure on education and health (see Annex II). Interest payments on domestic debt have claimed almost one-quarter of the total current expenditure in the government budget over the period 1993-95. From being about one half of the average subsidy expenditure prior to 1989, it has become 2-3 times the subsidy expenditure during the 1990s. In 1995, interest payments on domestic debt reached four

³⁷ Until very recently, Law 5/1998 rescinded tax exemptions for income from TBs and bonds. Now income from these sources is subject to tax.

³⁸ This raises the thorny question of efficiency: how do the cost/benefit ratios compare? Does the large cost of borrowing *via* TBs (compared to social-insurance funds) have a commensurate larger benefit? These are interesting questions with clear bearing on debt management.

³⁹ This blurs the distinction between domestic debt and foreign debt, as we discussed above. It is more likely that holders' category V in Table 7 (other) includes non-residents: it is not banks or insurance companies or business sector or households. What else could it be? Institutional investors?

times current non-wage expenditure on education and health combined. In proportion to total wage payments, interest payments on domestic debt were equivalent to 42.5% during 1985-89, jumping to 85.1% during 1993-97. Put in a more telling way, for every pound paid to compensation of labor as wages through the budget, *twice* as much was paid as interest to domestic debt holders during 1993-97 compared to 1985-89.

Debt Management and Policy Options

In general terms, debt management may have several objectives, such as minimizing the borrowing costs, achieving a balanced maturity structure, creating a secondary market for government securities, developing long-term instruments for private savings and improving the distribution of income (OECD 1982). Achieving these (or any other objective) calls for some course of action by the debt-issuing authority, which, in the case of public debt is the government or the Central Bank acting for it.

With regard to the Egyptian case, and on the basis of the foregoing analysis in this study, several of the above mentioned objectives may be relevant, and some of them have indeed been identified elsewhere (National Council for Production and Economic Affairs 1997; Ministry of Finance 1997; CBE 1997). We shall focus here on three objectives: reducing the size of domestic public debt to a reasonable level; restructuring the debt towards longer maturity marketable instruments; and redressing inequalities resulting from the extant methods of borrowing. We deal with each succinctly in the following way.

Reducing the Size of Domestic Public Debt. The main issue here is not the absolute size of domestic public debt, but the relative size—usually relative to GDP.⁴⁰ We have already shown that the ratio of domestic public debt to GDP has been rather high over the past decade, despite some fluctuations. We have also argued that the current ratio of domestic public

⁴⁰ Some may object to this procedure, arguing that debt is a stock while GDP is a flow. But the objection may be easily answered by reference to the standard measure of GDP per capita as the ratio of flow to a stock. Further, debt as a stock generates an important flow: debt service.

debt to GDP is too high compared to the experience of other countries and to Egypt's own experience in this century. It resulted from the policy of monetizing the fiscal deficit in the second half of the 1980s, followed by the policy of sterilizing capital inflows during the 1990s.

In terms of the fiscal equation, such a high level of domestic public debt produces correspondingly large budget allocations for debt service. Such allocations, as we have already shown, compete with social expenditure in areas such as education and health. Reducing the level of domestic public debt helps release more resources for social spending *ceteris paribus*. However, that would require using policies other than sterilization to maintain monetary aggregates on target in the face of capital inflows.

There is only one way to reduce the absolute level of debt *viz.*, repayment. In terms of equation (3), this requires running a primary surplus larger than interest payments if monetary stability is to be safeguarded. Debt monetization has to be avoided, therefore, because of its inflationary potential.⁴¹ Nevertheless, there are two ways to reduce the relative level of debt (the debt/GDP ratio). Consider the equation of debt dynamics (equation 6 above). According to this equation, the ratio of debt to GDP may be reduced either by raising the real growth rate of GDP or by lowering the real interest rate.

There is evidence that the Egyptian government recognizes the need to relieve the burden of debt service (see Ministry of Finance 1997; CBE 1997; National Council for Production and Economic Affairs 1997). However, the Government is yet to formulate a coherent debt-management policy with clear, specific, and monitorable objectives. One of the central questions here is related to the red line or the ceiling for the debt/GDP ratio. There is nothing definitive regarding this parameter in available policy documents.⁴²

Furthermore, one of the means elected to reduce the absolute level of domestic debt is the use of net privatization proceeds to amortize part of

⁴¹ Debt monetization is the process whereby public debt is repaid on maturity or bought in before maturity (as a matter of policy) without a counterbalancing issue of new non-monetary debt. As a result, the money supply increases in the process.

⁴² In fact, there are two factors that may render targeting a level of domestic debt in Egypt rather difficult. The first is the macroeconomic setting. The second is the automatic access of NIB to social insurance funds.

such debt (Ministry of Finance 1997). In this context, the productive assets of the public sector are being looked at as a sinking fund, to be liquidated for repayment of debt. There are problems with this solution, however. On efficiency grounds, it amounts to diverting resources from investment to consumption as far as it obviates the need for reducing unnecessary government consumption. There is no mechanism to ensure that domestic debt will not accumulate again to dangerous levels in the future. In addition, such solution may be detrimental to equity. This would apply particularly if privatization proceeds were used to repay debt in the form of treasury bills.

Debt Restructuring. Restructuring of domestic public debt is essential for at least three reasons. First, it is necessary in order to minimize the problem of debt management. To this end, restructuring would entail replacing short-term debt instruments with long-term ones. One cannot overestimate this point since the analysis in the previous sections of this study has indicated that the share of the short-term component of domestic debt (TBs) has been steadily rising. Although some steps have been taken by the government to replace TBs by longer-term securities, the move proved short-lived. Thus, 5-year and 7-year treasury bonds (TB bonds 2000 and 2003) were issued in April 1995 and September 1996, respectively, to replace one year TBs. Issuing the latter soon resumed, and the total stock of TBs actually rose at the end of September 1997 instead of falling.⁴³ A sensible debt-management policy would require discontinuing one-year TBs and reducing reliance on 3-month and 6-month TBs.

Second, restructuring of domestic debt is also essential to reduce the burden of debt service. There is a potential saving of interest payment if securities carrying high interest rates were replaced by new securities at the now lower interest rates. Third, restructuring domestic public debt by amortizing a part of TBs and replacing it with long-term securities is necessary for boosting financial intermediation. The step taken by issuing T-Bonds 2000 and 2003, both being marketable, is a welcome move towards better management of domestic debt. This process could and should be carried further by transforming existing non-marketable securities, which

⁴³One-year TB issuance totaling LE 2.4 billion was placed to amortize part of government securities covering the General Authority for Supply Commodities debt to public-sector banks (CBE 1997a, p. 20).

represent the overwhelming proportion of government securities, into marketable securities. At some stage, turning TBs into marketable paper should be entertained. That should help broaden the scope of open-market operations and facilitate the conduct of monetary policy.

Redressing Inequalities Associated with Extant Methods of Borrowing. Our analysis has shown that the larger part of Egypt's domestic public debt is involuntary. The discussion in the previous section has demonstrated that social insurance funds in particular have been forcibly, though legally, added to domestic public debt. As we have already shown, such method of borrowing by fiat has inflicted great losses on NOIP and GASI, and through these two institutions, on working people. In terms of implicit tax rate reflecting non-competitive, below-market interest rates on such funds, there is a slashing of interest payments of almost 100% for nearly a decade (Table 6). Such easy money may have encouraged over-borrowing by NIB--witness net deposits by the latter in the banking system.⁴⁴

Restructuring of this component of domestic debt is long overdue indeed. It should entail breaking the monopoly power enjoyed by NIB in this regard. Naturally, a prerequisite for that is to change Law 119/1980 accordingly. In addition, restructuring has to involve securitization of the existing domestic debt owed to NOIP and GASI, a measure that has been recommended by the National Council for Production and Economic Affairs (The Council, 1997).

Concluding Remarks

We have taken pains in this paper to verify the data regarding the total size and composition of Egypt's domestic public debt. Looking at the few tables, which are included here, may give the impression that the task was easy. It was not. The data originally obtained were invariably subjected to a great deal of scrutiny to insure that they represent the facts as accurately as possible. The main conclusions to be drawn from the foregoing analysis are the following:

⁴⁴ Such net deposits averaged LE 4.54 billion a year over the period 1992/93-1996/97.

First, The stock of total domestic public debt has been rising consistently over the period 1981-97. The growth rate was not uniform, however. There was a distinct phase of acceleration in the late 1980s and early 1990s. The debt/GDP ratio peaked during this phase with two clear spikes. Curiously enough, the debt/GDP ratio viewed in Figure 2 over the entire period 1981-1997 gives the imagery of the back of Bactrian camel! Does 1996 represent a turning point? It is not unlikely since the Egyptian economy has just embarked on a new wave of capital inflows.

Second, Two different processes were behind the acceleration of debt accumulation: in the eighties it was the monetization of the fiscal deficit; in the nineties it was the sterilization of capital inflows. Throughout the period, the easy money of social insurance and pension funds also contributed to debt accumulation. The large net creditor position of the government vis-a-vis the banking system during the 1990s may be evidence of an over-borrowing syndrome.

Third, in terms of the Domar proposition, we presented evidence that the real interest rate exceeded the real growth rate in the early nineties which may explain the rise in the ratio of domestic debt to GDP during that period. During the earlier period of debt acceleration (the late eighties) the primary deficit may have been the driving force.

Fourth, we took issue with the official position that the domestic debt is not a burden on the national economy, showing that it echoed what Buchanan called the "new orthodoxy", and noting that domestic debt has a burden which is located in the future.

Fifth, in terms of structure, domestic debt has become of shorter maturity, less securitized and less marketable. Treasury bills in particular have assumed an alarming proportion, engendering a Ponzi-type situation.

Sixth, domestic debt, particularly through the NIB, appears to have contributed to investment and growth. But that contribution is too modest to

justify the argument often made that debt was largely used to build infrastructure and other projects vital for the economy.

Seventh, in terms of its equity and social expenditure implications, domestic debt has definitely redistributed income in the wrong direction: from the poor to the rich, and from Egyptians to foreigners. NIB borrowing from social insurance and pension funds has involved siphoning off close to LE 17 billion of these funds since 1987. The amounts may be higher still if we consider the preceding period back to 1980 (when NIB was established). This, in effect, is taxation without legislation. As we have demonstrated in this paper, the projects financed through NIB do not exclusively benefit the owners of insurance and pension funds, who are actually made to foot most of the bill for such projects. This amounts to the pauperization of working people in old age.

Eighth, Government sales of TBs to mop up liquidity resulting from capital inflows involved a high fiscal cost. That fiscal cost was borne by the tax-paying Egyptians to the benefit of rich Egyptians and foreigners.

Ninth, domestic-debt interest payments are crowding out budget allocations for investment and social expenditure. Interest payments on domestic debt have been rising faster than either wages or current expenditure. Since the former are legal obligations while the latter are more of political obligations, the government may opt to sacrifice the latter under pressure of a fiscal crunch.

Tenth, domestic debt management has to target a reduction in the size of debt, restructuring it towards longer-maturity, securitized, marketable instruments and redressing the inequalities associated with the extant methods of borrowing. Foremost is the need to break the monopoly power bestowed upon the NIB by Law 119/1980. That law has to change.

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APPENDIX A

A NOTE ON GDP DATA

GDP figures are highly important in themselves. They acquire special importance in the context of public-debt analysis. The debt/GDP ratio is the most widely used indicator of the incidence of debt. By construction, such ratio is critically sensitive to the value of the denominator- GDP. The value of GDP becomes even more crucial for making inter-country comparisons of debt/GDP ratios as we do in an earlier section.

In light of the above, the GDP figures in Annex II deserve some explanation. The GDP figures for 1981-1993 are from the World Bank, *World Tables 1995*. For the remaining years, 1994-97 we only have Ministry of Planning (MOP) figures since the *World Tables* were discontinued. Upon examination, GDP figures for 1994-97 appeared significantly out of line with figures for the previous years. If we compare MOP data on GDP at current prices for 1988-93 with those of *World Tables 1995*, we find them consistently higher by some 17.5% on the average. For 1995, they would produce a per capita GDP figure of LE 3511 or US\$ 1039. This is much higher than the figure of US\$ 790 for the same year as reported in the World Bank *World Development Report 1997*.

We therefore assume that the same trend holds for 1994-97, and hence adjust MOP figures for these years down proportionately to bring them in line with GDP figures for the earlier years. We used a factor of adjustment of 0.852 for this purpose. The result was the GDP series in column (2) of the table Annex II.

It should be noted that the unadjusted MOP figures for GDP would produce a domestic debt/GDP ratio of 66.6% for 1997 compared to 78.2%, which is the value reported in the text (see Table 1).

APPENDIX B

Mathematical Derivation of Debt Dynamics

1. Discontinuous Case:

The change in the public sector debt B (both external and domestic) between two time periods (years) t and $t-1$ is given by the government budget constraint:

$$B_t - B_{t-1} = r_t B_{t-1} + D_t + a_t B_{t-1} \dots\dots\dots (B.1)$$

Where:

r_t = average nominal interest rate on public-sector debt.

D_t = Primary deficit (Public Sector Borrowing Requirement-PSBR, net of interest payments)

a_t = revaluation effect on existing debt (due to changes in the effective exchange rate and in the market value of public debt).

Dividing eq. (1) through by GDP, Y_t , we get

$$\frac{B_t}{Y_t} - \frac{B_{t-1}}{Y_t} = r_t \frac{B_{t-1}}{Y_t} + \frac{D_t}{Y_t} + a_t \frac{B_{t-1}}{Y_t}$$

$$\frac{B_t}{Y_t} = (1 + r_t + a_t) \frac{B_{t-1}}{Y_t} + \frac{D_t}{Y_t}$$

Multiplying the first term on the right -hand side by $\frac{Y_{t-1}}{Y_t}$ and re-arranging, we get:

$$b_t = (1 + r_t + a_t) b_{t-1} / (1 + g_t) + d_t$$

where g_t is the nominal GDP growth between t & $t-1$. Subtracting b_{t-1} from both sides.

$$b_t - b_{t-1} = (1 + r_t + a_t) b_{t-1} / (1 + g_t) - b_{t-1} + d_t$$

$$b_t - b_{t-1} = (r_t + a_t - g_t) b_{t-1} / (1 + g_t) + d_t$$

$$\Delta b_t = (r_t + a_t - g_t) b_{t-1} / (1 + g_t) + d_t \dots \dots \dots (B.2)$$

Assuming that there is no revaluation effect on existing debt ($a_t=0$), and

putting $g_t = p_t + \dot{g}_t$ and $r_t = p_t + \dot{r}_t$

where \dot{g}_t = real GDP growth rate

p_t = change in GDP deflator,

\dot{r}_t = real interest rate,

we obtain

$$\Delta b_t = d_t + (\dot{r}_t - \dot{g}_t) [b_{t-1} / (1 + g_t)] \dots \dots \dots (B.3)$$

Our basic equation will thus be:

$$\Delta b_t = d_t + (\dot{r}_t - \dot{g}_t) b_{t-1} / (1 + g_t)$$

It follows that, given the primary deficit, d_t

$$\Delta b_t \left. \begin{array}{l} \geq 0 \\ < \end{array} \right\} \text{ as } (\dot{r}_t - \dot{g}_t) \left. \begin{array}{l} \geq 0 \\ < \end{array} \right\} \dots \dots \dots (B.4)$$

Equation (4) indicates that , in this case, there are two causes for the increase in the ratio of public-sector debt to GDP (Δb_t): the primary

deficit (d_t) and the high real interest rate (r_t) in excess of real GDP growth (g_t).¹

2- Continuous Case:

We can approach this problem alternatively as follows, using continuous rather than discontinuous change:

Define the following:

B = Public debt (both external and domestic)

G = Government expenditure (excluding interest payments)

T = Government revenue

$(G-T)$ = Primary deficit (D)

r = nominal interest rate on public debt.

Neglecting money financing (seignorage), the change in public debt may be defined as equal to the overall budgetary deficit. The latter is composed of the primary deficit and nominal interest payments.

$$\frac{dB}{dt} = (G - T) + rB \quad (B.5)$$

Measuring debt as a ratio to nominal GDP, Y , we derive the formula for the change in the ratio of debt to GDP (B/Y):

¹ If revaluation effects were present, then r would be interpreted as the real effective interest rate.

$$\frac{d(B/Y)}{dt} = \frac{Y(dB/dt) - B(dY/dt)}{Y^2}$$

$$= \frac{Y[(G-T) + rB] - B(dY/dt)}{Y^2}$$

$$= \frac{(G-T) + rB}{Y} - \frac{B(dY/dt)}{Y^2}$$

Put $B/Y = b$ and $\frac{(dY/dt)}{Y} = g = p + \dot{g}$

$$\frac{db}{dt} = \frac{G-T}{Y} + rb - b(p + \dot{g})$$

Put $d = \frac{G-T}{Y}$ and $r = p + \dot{r}$

$$\frac{db}{dt} = d + b(p + \dot{r}) - b(p + \dot{g})$$

$$\frac{db}{dt} = d + b(\dot{r} - \dot{g})$$

(B.6)

Note that $\dot{r} > \dot{g}$ leads to interest-debt spiral.

APPENDIX C

THE ANATOMY OF DOMESTIC DEBT

It is necessary for the analysis in the body of the study to lay down some basic relations among the various components of Egypt's domestic public debt. We use the following identities:

- (c.1) $DMDBT = TGDBT + IBDBT$
- (c.2) $TGDBT = TGS + GBLN + GIBD$
- (c.3) $IBDBT = TIBR - GIBD$
- (c.4) $TIBR = ICRTF + SIFG + SIFB + PSTS + IBLN$
- (c.5) $LSEC = DVB1 + HSB1 + TRB2$
- (c.6) $NLSEC = TRB1 + DVB2 + ENB + CBB + ACT + HSB2$
 $+ GVB + ICRTF + TBS$
- (c.7) $DEP = SIFG + SIFB + PSTS$

Where :	$DMDBT$	= domestic public debt
	$TGDBT$	= total government debt
	$IBDBT$	= National Investment Bank debt
	TGS	= Government securities (including treasury bills)
	$GBLN$	= Government balances with banking system
	$GIBD$	= Government borrowing from NIB
	$TIBR$	= Total NIB resources
	$ICRTF$	= Sales proceeds of investment certificates
	$SIFG$	= Social Insurance Fund for Government Employees
	$SIFB$	= Social Insurance Fund for Business Sector Employees
	$PSTS$	= Post Office Fund savings
	$IBLN$	= NIB balances with banking system
	$LSEC$	= Securities listed on the stock exchange
	$DVB1$	= Dollar development bonds, listed
	$HSB1$	= LE housing bonds, listed
	$TRB2$	= LE treasury bonds (2000 & 2003), listed
	$NLSEC$	= Securities not listed on the stock exchange

TRB1	= treasury bonds , not listed
DVB2	= dollar development bonds, not listed
ENB	= alternative-energy bonds, not listed
CBB	= bonds for recapitalization of public-sector banks, not listed.
ACT	= bonds to cover actuarial deficit of Insurance Funds, not listed.
HSB2	= housing bonds, not listed.
GVB	= government bonds equivalent to 5% reserve, not listed
ICRTF	= Proceeds of investment certificates (including interest on Group A certificates).
TBS	= Treasury bills, not listed.
DEP	= Deposits of insurance/saving institutions

From identities (c.1), (c.2) and (c.3) we have

$$(c.8) \quad DMDBT = TGS + GBLN + TIBR,$$

Where TIBR is defined by identity (c.4), and

$$(c.9) \quad TGS = LSEC + NLSEC - ICRTF - TBS$$

Finally, net public domestic debt may be alternatively defined as:

$$(c.10) \quad DMDBT = LSEC + NLSEC + DEP + GBLN$$

To obtain gross public domestic debt, we leave out of DMDBT net government balances with the banking system, GBLN,

$$(c.11) \quad GDMDT = DMDBT - GBLN$$

Table 1

Domestic Public Debt, GDP, and Population, 1981-97

Year	Debt (billion)	GDP (billion)	Population (million)	Debt/GDP	Debt per Capita (LE 1000)
1981	11.000	17.300	43.322	0.635	0.253
1982	15.300	20.800	44.506	0.735	0.343
1983	18.100	24.200	45.721	0.747	0.395
1984	22.400	28.500	46.990	0.785	0.476
1985	32.698	33.100	47.308	0.987	0.691
1986	37.108	38.40	48.254	0.966	0.768
1987	42.797	45.300	49.257	0.944	0.868
1988	49.780	54.600	50.280	0.901	0.978
1989	58.780	65.800	51.345	0.893	1.145
1990	77.215	78.900	52.391	0.978	1.471
1991	97.416	98.700	53.480	0.986	1.798
1992	106.115	118.200	54.591	0.897	1.941
1993	113.667	131.100	55.726	0.866	2.040
1994	123.667	149.100	56.884	0.829	2.179
1995	134.969	173.808	58.065	0.776	2.323
1996	149.898	195.448	59.272	0.766	2.537
1997	170.800	218.367	60.504	0.782	2.822

Source: Based on data in Annex II.

Table 2

Structure of Domestic Public Debt 1985-1997 (%)

Year	Gov't Securities	NIB Resources	Gov't Balances	Total
1985	51.6	36.7	11.7	100.0
1986	54.1	39.5	6.5	100.0
1987	53.3	41.1	5.5	100.0
1988	55.7	42.1	2.2	100.0
1989	56.2	42.3	1.6	100.0
1990	51.3	39.9	8.8	100.0
1991	56.4	36.7	6.9	100.0
1992	72.2	39.6	-11.8	100.0
1993	78.3	43.4	-21.7	100.0
1994	71.9	48.7	-20.6	100.0
1995	62.3	54.0	-16.3	100.0
1996	55.5	59.5	-15.1	100.0
1997	52.7	63.6	-16.3	100.0

Source: Calculated from data in Annex I using the relevant identities in Appendix C.

Table 3
Structure of Domestic Government Debt, 1985- 1997

(%)				
Year	Debt to NIB	Bank Balances	Securities	Total
1985	28.6	13.2	58.2	100.0
1986	30.8	7.4	61.8	100.0
1987	32.4	6.3	61.2	100.0
1988	34.2	2.5	63.3	100.0
1989	34.4	1.8	63.8	100.0
1990	32.3	10.2	59.5	100.0
1991	29.1	7.8	63.5	100.0
1992	29.9	-13.7	83.9	100.0
1993	35.7	-24.6	88.9	100.0
1994	42.8	-22.9	80.0	100.0
1995	48.7	-18.2	69.4	100.0
1996	53.8	-17.1	63.0	100.0
1997	58.6	-18.6	60.0	100.0

Source: Calculated from data in Annex I, using relevant identities in Appendix C.

Year	Gov't Securities	NIB Resources	Gov't Balances	Total
1985	51.8	36.7	11.7	100.0
1986	54.1	39.2	6.3	100.0
1987	53.3	41.1	5.3	100.0
1988	52.3	42.1	5.3	100.0
1989	58.5	42.3	1.6	100.0
1990	51.3	39.9	8.8	100.0
1991	56.4	36.7	6.9	100.0
1992	73.3	39.6	-11.8	100.0
1993	78.3	43.4	-21.7	100.0
1994	71.9	48.7	-20.6	100.0
1995	63.3	54.0	-16.3	100.0
1996	52.2	59.2	-12.1	100.0
1997	52.7	60.6	-16.3	100.0

Source: Calculated from data in Annex I using the relevant identities in Appendix C.

Table 4

NIB Financing of Investment Expenditure
and Capital Transfers (Adjusted)

Fiscal year	1991	1992	1993	1994	1995	1996	1997
Investment Expenditure							
Admin. & Local Gov.	1607.2	2012.9	3120.1	3879.5	4533.0	5199.4	6094.7
%	23.5	24.7	33.8	27.7	30.7	29.2	30.4
Service Authorities	1164.1	1468.2	1890.4	3408.0	4057.0	5071.5	5353.1
%	17.0	18.0	20.5	24.4	27.4	28.5	26.7
Econ. Authorities	1766.7	2067.3	2632.6	3809.1	3765.4	3914.4	4389.0
%	25.8	25.3	28.5	27.2	25.4	22.0	21.9
Econ. Units	1421.8	1419.9	700.0	658.0	651.8	759.4	1175.5
%	20.8	17.4	7.6	4.7	4.4	4.3	5.9
Surplus Inv. Funds	(781.9)	(1487.3)	(1602.3)	(1365.5)	(1796.4)	(1678.7)	(1984.8)
%	(11.4)	(18.2)	(17.4)	(9.8)	(12.2)	(9.4)	(9.9)
Total	5177.9	5481.1	6740.8	10389.1	11210.3	13266.0	15027.5
%	75.6	67.2	73.0	74.3	75.8	74.6	75.6
Capital Transfers*							
Total	1674.0	2679.1	2490.4	3597.8	3577.9	4525.1	5016.9
%	24.4	32.8	27.0	22.7	24.2	25.4	25.0
GRAND TOTAL	6851.9	8160.2	9231.2	13986.9	14788.2	17791.1	20044.4

* Includes financing liquidity shortages (gaps), payments of obligations for previous years, equity financing and loans to joint ventures, repayment of loans, installments to the treasury, and soft loans.

Source: National Investment Bank, *Follow-up Report of Implementation of the Plan Investments and Financing Activity of the Bank*, Various volumes.

Table 5

**Allocation of Available NIB Finance for Investment
Projects in the Plan**

	(%)						
Fiscal Year	1991	1992	1993	1994	1995	1996	1997
Sector/Activity							
Housing & Urban Communities	11.7	17.9	16.4	5.6	14.5	14.0	18.8
Education			7.5	9.9	10.6	11.6	15.2
transport & Communication	9.0	9.5	6.8	11.0	9.3	9.2	11.0
Electricity & Energy	9.1	8.1	10.5		7.5	8.1	8.4
Public Works & Water Resources		5.9	6.1				6.3
Min. of Interior				7.3		6.3	
Min. of Local Administration				8.1	8.5		
Higher Education		6.1					
Industry	6.8						
Land Reclamation	6.5						
Total	43.1	47.5	46.3	41.9	51.3	49.2	59.7
Total Financing (LE Billion)	4.7	5.3	6.7	10.0	11.0	12.7	14.2
% of Planned Financing	91.2	96.6	100.0	95.9	98.5	96.1	94.4
<u>Memo Item:</u>							
NIB soft loans for housing, land reclamation, etc (LE Billion)	0.415	0.363	0.385	0.327	0.291	0.314	0.389
% of NIB Financing	8.0	6.6	5.7	3.1	2.6	2.4	2.6

Source: National Investment Bank, Follow-up Report for Implementation of Plan Investments and Finance Activity of the Bank, various years.

Table 6

**Implicit Tax Imposed on NOIP and GASI Funds
1985-1997**

Period	(r ₁) Rate on NOIP & GASI funds	(r ₂) Rate on Investment Certificates*	Implicit Tax	
	%	%	Rate (t _{imp}) %	Revenue (LE million) (4)
	(1)	(2)	(3)	
1/7/1985 - 30/6/1987	6 ^x	12	100	710 ⁺
1/7/1987 - 30/6/1989	7	13.25	89	1159 ⁺
1/7/1989 - 14/9/1990	8	17	112	2152
15/9/1990 - 30/6/1991	9	17.5	94	2396
1/7/1991 - 30/6/1992	11	17.5	59	2182
1/7/1992 - 30/6/1997	12	13.9	16	1120 ⁺
1/7/1997 - present	11	12.5	14	
Total, 1987 - 1997				16778

Notes:

x Effective beginning 1/7/1980

* Average for the corresponding period of interest rates on current income certificates, which account for more than 75% of gross sales of investment certificates.

+ Annual average for corresponding period.

Sources: Column (1), unpublished data obtained from the National Investment Bank.

Column (2), CBE, *Annual Report*, various volumes.

Column (3), Calculated from columns (1) & (2) using the formula:

$$t_{imp} = \frac{r_2 - r_1}{r_1} \times 100$$

r_1

Column (4) calculated by applying the implicit tax rate from column (3) to interest income on SIFG and SIFB debt.

Table 7

Holders of Outstanding Stock of Treasury Bills

(L.E.)

End of June Holders	1996		1997	
	Billion	%	Billion	%
Banks	21.948	80.1	26.294	79.4
Commercial Public Sector	12.648	46.4	16.042 ^x	48.4
Joint Venture & Private	9.200	33.7	10.252	31.0
Insurance Companies	2.181	8.0	1.213	3.6
Public Sector	1.115	4.1	0.570	1.7
Private Sector	1.066	3.9	0.643	1.9
Business Sector	1.887	6.9	1.357	4.1
Public	0.108	0.4	0.016	*
Private	1.779	6.5	1.341	4.1
Households	1.366	5.0	1.522	4.6
Other	-	-	2.745	8.3
Total	27.282	100.0	33.131	100.0
Memo item				
Total Public	13.871	50.8	16.628	50.2
Total Private	13.411	49.2	16.503	49.8

Notes:

x Includes its subscription in the full amount (LE 2.4 Billion) of one-year TBs, whose placement resumed at the end of June 1997, after interruption of more than two years.

* Less than 0.1 of one percent.

Source: CBE, Report Submitted to the People's Assembly on Monetary and Credit Conditions During 1996/97 (Cairo: CBE, Sept. 1997), Table (39).

ANNEX I

Main Components of Domestic Public Debt, 1985-1997 (LE Billion)

Fiscal Year Debt Item	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Listed Securities													
National Development bonds (DNB)	0.424	0.421	0.421	0.449	0.449	0.704	2.191	2.244	2.292	0.286	0.258	0.387	0.523
Housing Bonds (HSB)	0.016	0.022	0.028	0.028	0.039	0.039	0.055	0.055	0.062	0.070	0.077	0.090	0.126
Treasury Bonds (2000.2003) (TRB2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	7.000
Non-Listed Securities													
Treasury Debentures (TRB1)	12.604	15.729	19.436	22.874	28.154	34.154	34.108	42.604	41.079	38.007	40.959	36.848	36.846
Development Bonds (DVB2)	0.0	0.0	0.0	0.0	0.075	0.034	0.285	0.059	0.012	0.052	0.177	0.262	0.322
Alternative Energy Bonds (EXB)	0.563	0.597	0.634	0.672	0.713	1.189	3.762	4.040	4.326	4.640	4.881	5.118	5.382
Bank Recapitalization Bonds (CBB)	0.0	0.0	0.0	0.0	0.0	0.0	6.859	6.942	7.007	7.086	7.096	7.092	7.083
Actual Deficit Bonds (ACT)	3.071	3.063	3.029	3.029	3.029	3.029	3.029	3.029	3.029	3.029	3.029	3.029	3.029
Housing Bonds (HSB2)	0.013	0.011	0.010	0.014	0.011	0.013	0.015	0.012	0.011	0.007	0.027	0.063	0.029
Government Bonds (5% Reserve)* (GVB)	0.182	0.221	0.274	0.330	0.390	0.462	0.539	0.645	0.712	0.734	0.739	0.664	0.831
Investment Certificates (ICRTF)	2.202	2.567	3.084	3.499	4.169	5.488	6.188	7.100	9.648	14.393	20.285	24.297	28.758
Treasury Bills (TBS)	0.0	0.0	0.0	0.0	0.0	0.0	4.007	17.053	30.536	35.171	26.882	27.282	33.131
State Employees Pension Fund (SIFG)	4.106	5.019	6.013	7.205	8.926	10.671	12.734	15.284	18.330	21.842	26.351	31.939	38.450
Business Sector Employee's Pension Fund (SIFB)	5.444	6.762	8.178	9.676	11.393	13.349	15.593	18.331	21.672	25.832	30.600	35.745	40.950
Postal Savings Fund (PSTS)	0.440	0.518	0.598	0.669	0.744	0.835	0.945	1.107	1.281	1.730	2.378	3.208	4.387
Net Gov't Balances with Banks (GBLN)	3.821	2.396	2.366	1.084	0.917	6.815	6.716	-12.485	-24.667	-25.434	-22.031	-2.602	-27.800
TOTAL (DMDDBT)	32.898	37.108	42.797	49.204	58.780	77.215	97.416	106.115	113.633	123.667	134.969	150.400	170.800
Government Debt to NIB (GIBD)						21.5	25.2	27.3	35.7	47.5	59.1	71.2	87.8
Total Government Debt (TGDDBT)						66.6	86.5	91.3	100.1	111.2	121.2	132.3	149.9
Investment Bank Debt (IBDDBT)						9.3	10.6	14.7	13.6	12.7	13.8	18.1	20.9
Memo Item: Implicit Tax on SIFG & SIFB	0.573	0.707	0.851	1.052	1.266	2.152	2.396	2.182	0.768	0.915	1.093	1.300	1.524

Notes and Sources:

- * Figures for the period 1985-1989 were estimated by subtracting from the 1990 value of additions for individual preceding years, according to NIB follow-up reports of the Plan for Economic and Social Development. These were LE million 71.9, 59.7, 56.4, 53.2 and 39.3 respectively.
- All data from CBE, *Annual Report*, various years. *Report on Monetary and Credit Conditions*, various years; Ministry of Finance, unpublished data: Specialized National Councils, "Egyptian Public Debt: Domestic and External under Program of Economic Reform and Financial Liberalization, in Arabic (July, 1997). Unpublished.
- Amount of actuarial deficit of pension Funds, plus accumulated interest, through 31/12/1983. See People's Assembly, Plan and Budget Committee, *Report on Final Accounts 1995/96*, p. 43.

ANNEX II

Total Domestic Debt and Some Related Variables 1981-1997

Fiscal Year	Domestic Public debt	GDP	Population (Million)	Current Expenditure			Wages	Subsidies	(LE billion, except population)	
				Total	Education	Health			Interest	Domestic Debt Service Installments
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1981	11.0	17.3	43.3	5.7	na	na	1.5	1.6	0.5	n.a
1982	15.3	20.8	44.5	7.1	na	na	2.1	2.0	0.4	n.a
1983	18.1	24.2	45.7	8.8	.119	.094	2.4	2.0	0.8	0.4
1984	22.4	28.5	46.8	9.9	.155	.106	2.9	1.7	1.0	0.4
1985	32.9	33.1	47.6	11.3	.172	.144	3.2	2.3	1.2	0.5
1986	37.1	38.4	48.3	13.3	.204	.171	3.4	2.9	1.3	0.5
1987	42.8	45.3	49.3	13.1	.198	.172	3.7	1.7	1.6	0.6
1988	49.2	54.6	50.6	16.2	.320	.212	4.6	3.9	1.9	0.7
1989	58.8	65.8	51.3	17.4	.398	.227	5.2	2.6	2.5	0.8
1990	77.1	78.9	52.4	18.9	.459	.291	6.1	1.9	3.0	0.9
1991	96.2	98.7	53.5	25.4	.513	.330	7.1	3.3	4.2	1.1
1992	106.0	118.2	54.6	37.7	.796	.487	8.4	4.5	6.4	1.3
1993	113.7	131.1	55.7	41.3	1.336	.752	10.0	4.1	9.3	3.2
1994	123.7	149.1	56.9	46.1	1.609	.806	11.7	3.4	12.2	6.7
1995	140.0	173.8	58.1	47.6	1.800	1.000	13.6	3.9	11.2	1.9
1996	150.4	195.4	59.3	51.7	2.000	1.200	15.7	4.7	11.6	3.2
1997	170.8	218.4	60.5	54.7	2.400	1.500	18.3	4.5	13.0	3.9

Memo Item: Domestic public debt in 1951 was LE. 175 million, and in 1961 LE 579 million.

Sources and Notes:

Column (1) : for 1981-84, M. El-Banna (1985); for 1985-97, ANNEX I.

Column (2) : for 1981-93, World Bank, World Tables 1995, for 1994-97 Ministry of Planning after adjusting them to be in line with WB figures. (see Note on GDP data in Appendix A)

Column (3) : 1981-85, CAPMAS estimates; 1986 and 1996, census figures; remaining figures based on inter-census population growth rates.

Columns (4)-(10) : Central Bank of Egypt and Ministry of Finance, unpublished figures of actuals, except 1996/97 revised estimates.

Figure (2)
Stock of Domestic Debt and Debt/GDP Ratio, 1981-97

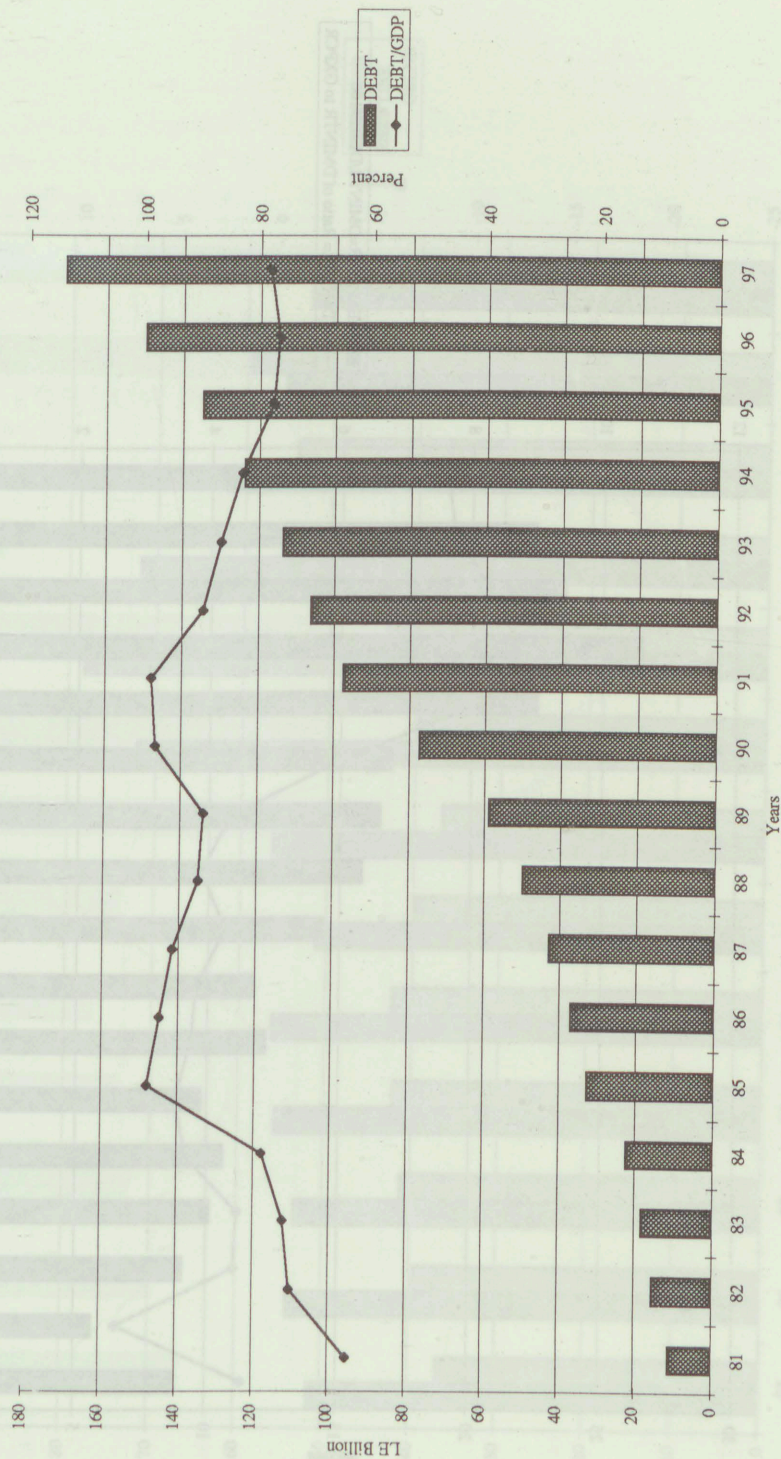


Figure (3)
Ex Post Interest Rate and Interest Payments as % of Current Expenditure

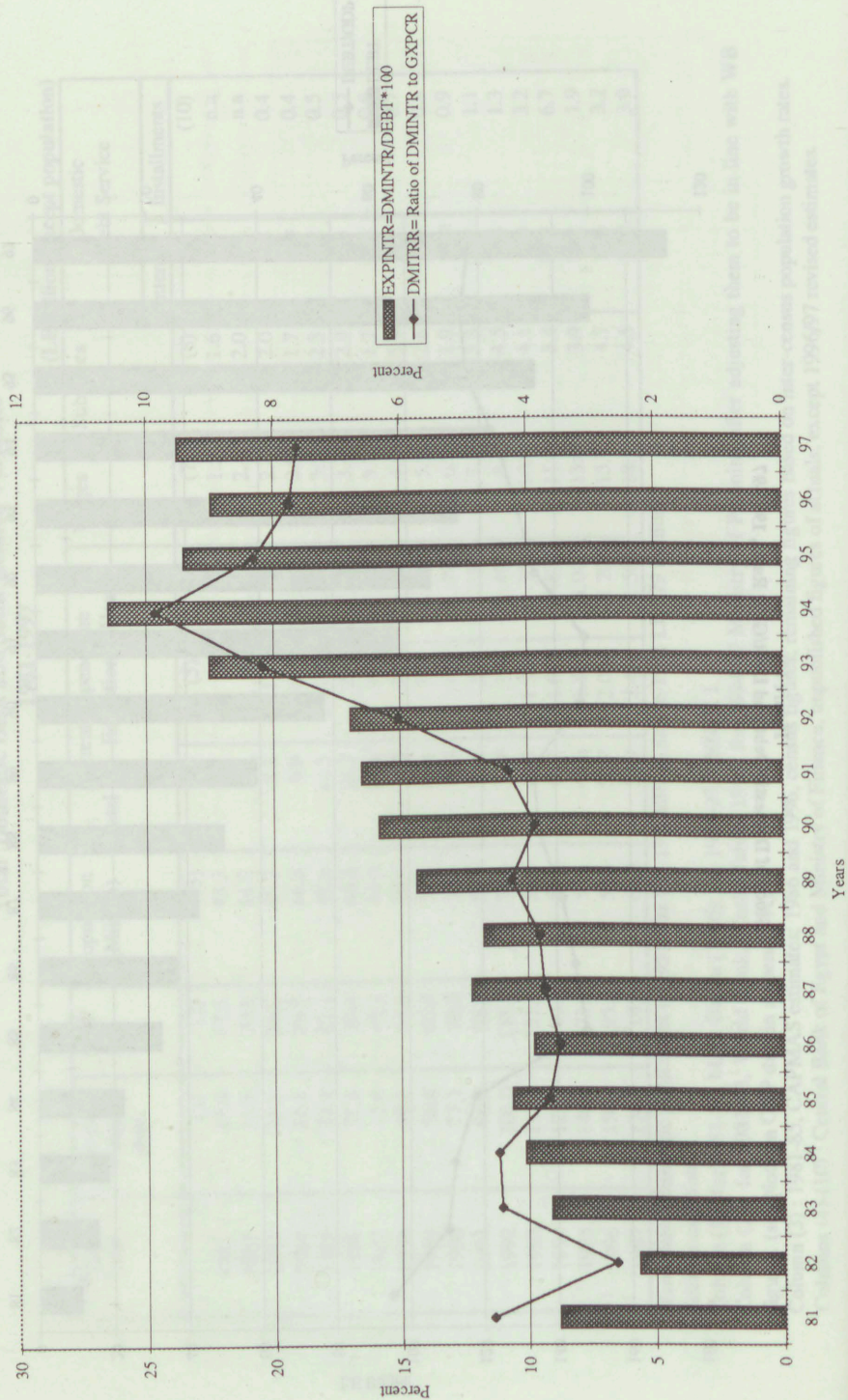


Figure (4)
Structure of Domestic Public Debt, 1985-97

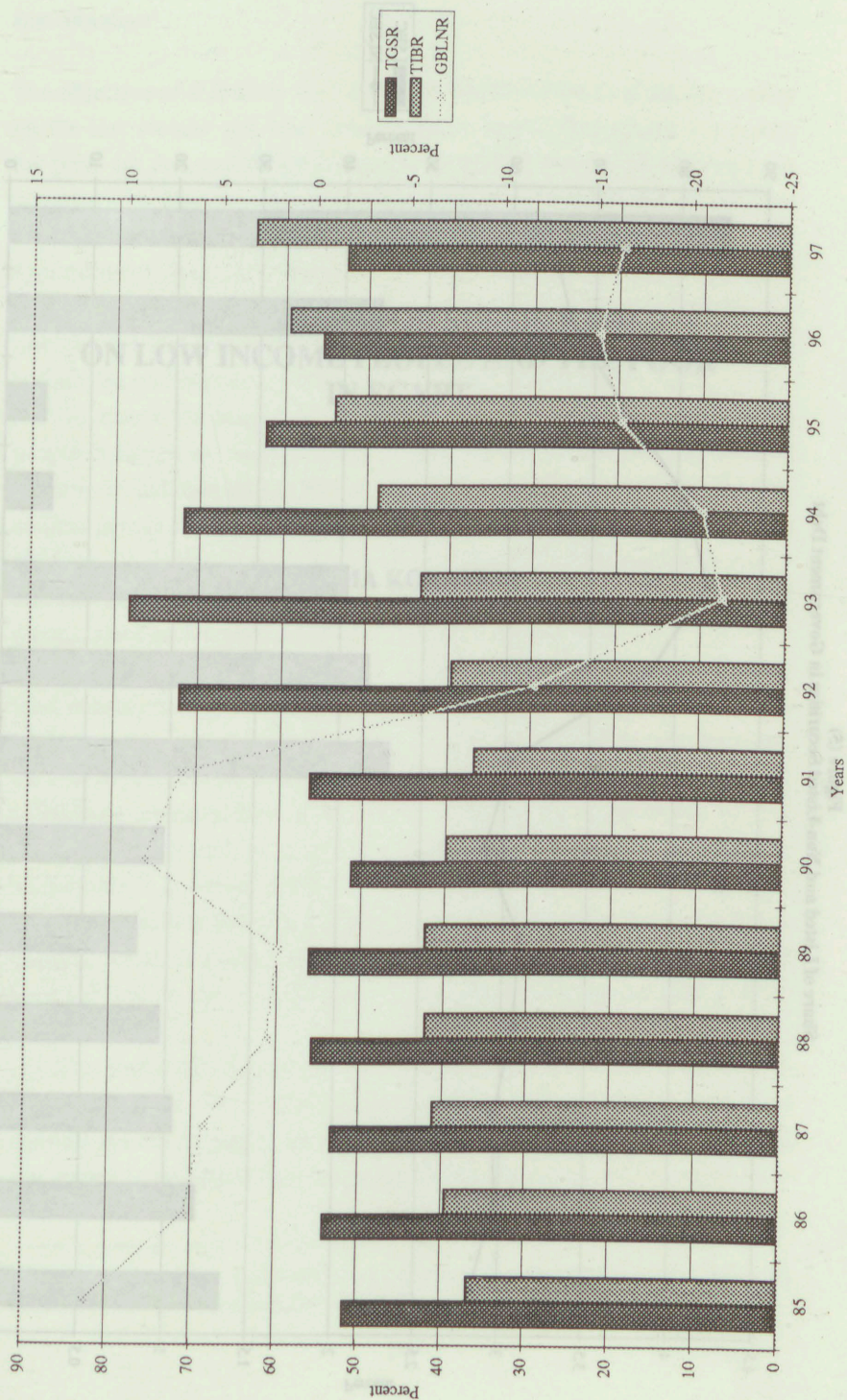


Figure (5)
Share of Listed and Non-Listed Securities in Government Debt

