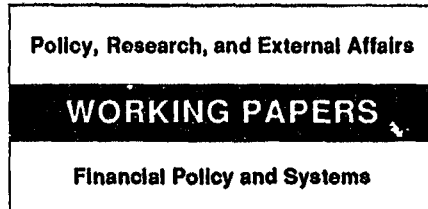


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Interest Rate Policy in Egypt

Its Role in Stabilization and Adjustment

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Raising interest rates is clearly essential to the success of any stabilization and adjustment programs that Egypt undertakes. But to reduce the risks of higher interest rates to its distorted economy, and to increase the benefits, increases in interest rates need to be accompanied by other adjustment measures.

This paper— a joint product of the Financial Policy and Systems Division, Country Economics Department and the Country Operations Division, Country Department III, Europe, Middle East, and North Africa Regional Office — is part of a larger effort in PRE to understand the role of financial markets in the stabilization and adjustment process of developing countries. Copies are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Maria Raggambi, room N9-041, extension 37657 (34 pages, with figures and tables).

An appropriate interest rate policy is considered essential to the success of stabilization and adjustment programs that Egypt might undertake. The broad objectives of such a policy would include deregulating credit and investment, raising the interest rate, and developing a "core" short-term debt market to serve as a reference point for market determination of interest rates. And as the government moves away from a regulated environment of controlled credit and regulated investment toward a more liberal system, interest rates will be the prices that guide investment decisions and ensure allocative efficiency.

Dailami and Dinh describe some of the structural problems Egypt's economy has faced in the past decade and policy initiatives that the government has undertaken, and review the economy's financial sector. They analyze the role that interest rate policy could play in Egypt's stabilization and adjustment program, particularly how it would affect the outcomes of the important objectives of attracting workers'

remittances, encouraging domestic residents to hold deposits in local currency, and increasing investment efficiency.

Interest rates clearly need to be increased. But the complexity and depth of the distortions in both the real and the financial sides of the economy tend to reduce the benefits of a sharp rise in interest rates and increase the pressure on a weak financial system. Of particular concern are the potential effects of higher interest rates on the investment performance of the business sector and the solvency of the banking sector.

The authors recommend that changes in the level and structure of interest rates be planned in several steps and carried out in conjunction with other adjustment measures, such as reducing the budget deficit, reforming public enterprises, and streamlining public investment. But the increases in interest rates should be high enough to mark a clear departure from past policies and to send the proper signal to economic agents.

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I. INTRODUCTION

Crucial to the success of the stabilization/adjustment programs currently under discussion between the government of Egypt and international financial organizations is the formulation of an appropriate interest rate policy. The broad objectives of such a policy are well known and include deregulation of the current rigid structure, an upward adjustment in the level of interest rates, and development of a "core" short-term debt market to serve as a reference point for market determination of interest rates. These measures are to ensure a greater role for interest rate policy both in the conduct of monetary policy and in the allocation of investable resources. On both grounds there is considerable room and need for improvement, particularly as the government moves from a system of tight quantitative control of credit and strict investment regulation to a more liberalized system based on market prices and incentives. In a more liberalized environment, interest rates will be the crucial financial prices to guide investment decisions and to ensure allocative efficiency. But beyond these general statements of objectives, there remains considerable doubt about the magnitude and speed of required increase in the level of interest rates and the implications of such reforms for the liquidity and solvency of both the business and the banking sector.

Underlying this controversy is a set of macro economic, regulatory and institutional concerns which are brought to surface in particular by the current state of the economy. A combination of high fiscal deficit, depressed investment, weak banking sector -- with a heavy weight of non-performing loans -- and a business sector accustomed for long to receiving subsidized loans, have forged strong links between interest rate movements and macro economic conditions, particularly fiscal position on the one hand, and the stability of the banking sector on the other. A long tradition of government reliance on "inflation tax" to finance its expenditures and the heavy subsidization of debt capital to the business, particularly public enterprise sector, through both the administrative setting of interest rates, often at levels significantly below the rate of inflation, and direct allocation of credit, have rendered both the government and the private business highly vulnerable to large increases in the

level of interest rates. Thus, the risk that higher interest rates may exacerbate the fiscal imbalance and/or the financial difficulty of the business sector and, thereby, of the banking sector, cannot be discounted.

Such macro and regulatory concerns need, however, to be viewed against several areas of potential and long-term gain in investment efficiency,^{1/} resource mobilization, and conduct of credit policy which could materialize with the process of interest rate reform. These gains are not trivial in the case of Egypt, where investment efficiency is known to be drastically low, currency substitution in foreign currencies has tended, in recent years, to account for an increasing share of total deposits^{2/} -- with eroding influence on monetary base -- and where credit allocation has been traditionally effected through a rigid system of quantitative ceilings imposed on each bank's asset portfolio.

The purpose of this paper is to discuss interest rate policy in Egypt with the aim of providing a perspective on its role in the country's stabilization and adjustment programs. Section II describes briefly some of the structural problems facing the Egyptian economy over the past decade and policy initiatives undertaken. Section III reviews Egypt's financial sector, including the institutional setting and the current structure of interest rates. Section IV examines the role of interest rate policy in the adjustment process, including its impact on the attraction of workers remittances, domestic residents' holdings of foreign deposits, and investment efficiency. Section V addresses the vexing question of how interest rate reform may affect the economy and focuses on its potential impacts on the investment behavior of the business sector and the solvency of the banking sector. Finally, Section VI summarizes the main conclusions and offers some policy recommendations.

^{1/} The role of interest rates for enhancing investment efficiency in developing countries is central to the interest rate liberalization arguments of McKinnon (1973), and Shaw (1973). For more recent studies see Balassa (1982); IMF (1983); Lanyi and Saracoglu (1985); and Roe (1982).

^{2/} Currency substitution has been intensively discussed in the context of Latin American countries; see, for instance, Ramirez-Rojas (1985); Ortiz (1983); and Ortiz and Solis (1982).

II. STRUCTURAL ADJUSTMENT: BACKGROUND AND POLICY RESPONSES

A. Background

In the decade from mid 1970s to mid 1980s the Egyptian economy recorded the highest rate of growth in its recent history. Stimulated by the open door policy and a favorable external condition which result in high growth in oil exports, increased earnings from workers' remittances, Suez Canal, tourism as well as from foreign aid, the economy grew from 1974 to 1984/85 by about 8 percent per annum. But in a classic display of the Dutch disease symptom, the economy provided insufficient employment opportunities and was unable to generate conditions necessary for long-term growth and development. Since then, economic growth has slowed down, inflation has accelerated, the budget and balance of payments deficits have widened, and a massive foreign debt has been accumulated. This situation originates from decades of resource mismanagement associated with heavy government interventions in the investment and pricing system, and an inward looking trade regime geared towards import restriction and maintenance of an over-valued exchange rate. As a consequence, the economy has moved further and further away from its comparative advantage and has become increasingly dependent on imports of basic foodstuffs, raw materials, and spare parts. Among others, agriculture had been neglected in favor of inefficient, capital intensive, import substituting industries, mostly in the public sector.

With this background the economy was ill prepared for the decline in oil-related sources of foreign exchange which began in FY1986^{2/}: the country rapidly experienced serious economic difficulties. Real GDP growth slowed to about 2.7 percent per annum in FY1986-88 and to even lower rates in subsequent years. Despite strenuous efforts to cut imports and domestic demand including public consumption, the poor performance in export earnings brought about by a combination of falling oil prices, rising interest payments on external debt, and declining workers' remittances, led to a considerable deterioration in the current account deficit of the balance of payments (7 percent of GDP in FY1989). While part of this deficit was financed through grants amounting to about 3 percent of GDP, foreign debt had to be increased, reaching by the end of

^{2/} The Egyptian fiscal year (FY) runs from July 1 to June 30.

FY1987^{4/} over 100 percent of GDP with an associated debt service ratio of 40 percent of exports.

The root of Egypt's structural problems is the large budget deficit which reached 23 percent of GDP in FY1986, excluding debt amortization. Despite the Government's substantial progress in recent years, the budget deficit remains stubbornly high (18 percent of GDP in FY90). The Government increased taxes and improved tax administration. It reformed custom duties by reducing the nominal rates of protection, while raising additional revenues by reducing exemptions and using a more depreciated exchange rate for custom duty evaluation. In addition, it has shown considerable expenditure restraint and has been successful in reducing Government expenditures by over 10 percentage points relative to GDP over the period FY1986-89, resulting in a substantial reduction in the budget deficit as a percentage of GDP over the same period. In other economies, a drop in Government expenditures GDP, or a decline in the budget deficit of that magnitude, would be audacious. In the context of Egypt, however, this still leaves budget expenditures and the budget deficit at unsustainably high levels, with potential adverse implications for inflation and the financial sector.

B. Policy Responses

Against the background of widening macro and structural imbalances, the authorities have since 1986 initiated a series of policy reforms phased roughly in two stages: (i) stabilization measures aimed at correcting the country's fiscal imbalance and the simplification of its multiple exchange rate system; and (ii) adjustment efforts intended to focus on the liberalization of internal and external trade, the deregulation of public enterprises' management and streamlining of labor and investment controls. The main element of the stabilization measures are detailed in the World Bank (1989), with one major area of success merit reporting here relating to the reform of exchange rate regime. That is to say, the authorities have succeeded in reducing the multiple exchange rate regime consisting of at least five different exchange rates to about three, and in implementing a gradual devaluation of over 25 percent in nominal terms.

^{4/} If calculated at the new commercial bank exchange rate, total foreign debt exceeded 180 percent of GDP

But while the exchange rate regime has been considerably improved, there is still a long way to go to full unification; also the new commercial bank rate is not entirely free of official intervention and has shown little movement to reflect market forces. As a result, it is estimated that real effective exchange rate has appreciated since May 1987. With regard to the adjustment measures recently initiated, progress has, so far, been initiated in the areas of agriculture^{2/}, energy, and to a lesser extent, in the managerial autonomy of public enterprise companies. The issues of public sector reform, liberalization of foreign trade, deregulation of investment controls, and privatization of public enterprises are currently being addressed in the context of the on-going SAL preparation.

III. THE FINANCIAL SECTOR IN EGYPT

With capital markets remaining still in an embryonic stage, financial intermediation in Egypt is effected primarily through the extensive banking system.^{3/} There are two important characteristics of the banking system which are relevant to the understanding of interest rate policy in Egypt. First is depth: measured by the ratio of M2 to GDP, the financial sector in Egypt compares favorably to that of other countries at the same stage of development. At the end of 1989, this ratio stood at 94 percent of GDP, about the third highest among all the middle income economies (after Jordan and Malaysia), compared to 21 percent for the Philippines and 31 percent for Cote d'Ivoire. However, it is to be noted that this high ratio reflects, to a considerable degree, the influence

^{2/} In agriculture, significant progress has occurred as the Government has removed the control on inputs and outputs prices, on crop areas, procurement quotas, with the exception of a few products. In energy, the Government has since 1986 increased energy prices by a total of about 217 percent for petroleum products and natural gas and by 180 percent for electricity, with the most recent increases occurring in March 1989.

^{3/} The banking network is, however, fairly extensive, consisting of the Central Bank, 44 commercial banks (4 public sector banks, 39 joint ventures and private, and 1 special Islamic bank), 33 investment and business banks (11 are joint ventures and private banks, of which 10 are authorized to deal in local and foreign currencies, and 22 are branches of foreign banks dealing in foreign currency only), and 4 specialized banks (2 real estate banks, the industrial bank, the bank for agricultural credit and its 17 affiliates in the governorates). In addition there are at least 7 insurance institutions, over 300 Islamic development companies, and a curb (black) foreign exchange market.

of rapidly growing share of foreign currency deposits, amounting by end of 1989 to about 45 percent of money and quasi-money. Second, the Government plays a dominant role in the financial market and its interventions take many forms, not only in terms of deficit financing, but also equity participation and management control in virtually all commercial banks, direct and indirect control of the capital market, control of interest rates and of credit ceiling etc. Partly as a consequence of the Government's pervasive intervention, the financial system has remained relatively undeveloped; with a very narrow range of financial instruments and virtually no active equity or treasury bond markets.

Institutionally, the banking system consists of two distinct types of intermediaries: (i) the depository banking institutions and (ii) the National Investment Bank (NIB). The latter is a government owned entity structured to extend long-term loans to public enterprise companies for the purpose of financing investments in plant and equipment. To finance its loans, the NIB has had the exclusive right to draw on the substantial surplus of the "captive" resources of the Social Insurance Fund, the Pension Fund, and the Post Office Savings. In addition, it has had the privilege to issue medium term bonds (investment certificate) to supplement its resources. The deposit banking institutions have relied, on the other hand, primarily on their own resource mobilization efforts through offering of a wide range of saving instruments, both in local and foreign currency to the public. In aggregate, they represent the dominant force in the process of financial intermediation in Egypt, with a combined asset as of end of December 1989 of LE 66.3 billion (of which 75 percent are owned by the four public sector banks) as shown in Figure 1, compared to NIB's total assets of about LE 30 billion (31 percent of GDP).

In addition to their normal operations in Egyptian pounds, the deposit banks have been authorized since 1975 to receive foreign currency (mostly dollar) denominated demand and time deposits. Interest rates payable on these deposits are market determined and follow, at a slight discount, the trend in international financial markets. In contrast, interest rates on domestic currency deposits are tightly regulated by the Central Bank. The legal basis for this regulation is the Law 120 of 1975 which authorized the Central Bank to determine the level and structure of interest rates applied to both deposit and

lending activities of banking institutions registered with the Central Bank.^{1/} Since then interest rates have been increased in several steps; they are, however, still significantly negative in real terms as of this writing. Increases of one to two percentage points in the Summer of 1987 and two to three percentage points in May 1989 have been insufficient to resolve the situation. In April 1990, the key 3-month deposit rate is still only 8.5 percent, and the top lending rate to agricultural and industrial borrowers for loans with maturity of less than two years is 16 percent (Table 1). In real terms, the return on one-year bank deposits, for instance, is currently about -9 percent, and the real effective (i.e. after tax) cost of borrowing to the industrial business sector is -11.7 percent, after taking into account the tax deductibility of business interest expenses.

^{1/} The interest rates on other debt instruments such as corporate debentures and bonds are, however, still set by the civil code of 1948, which imposes a ceiling of seven percent per annum. Clearly as long as this provision remains in force, the prospects for developing an active bond market in Egypt in order to tap directly the resources of the public at large remain very dim. In that case, banks will continue to operate as the dominant financial intermediary in the Egyptian financial system.

Figure 1, Deposit Banking Institutions:

Total assets as % of GDP, end Dec. 1989

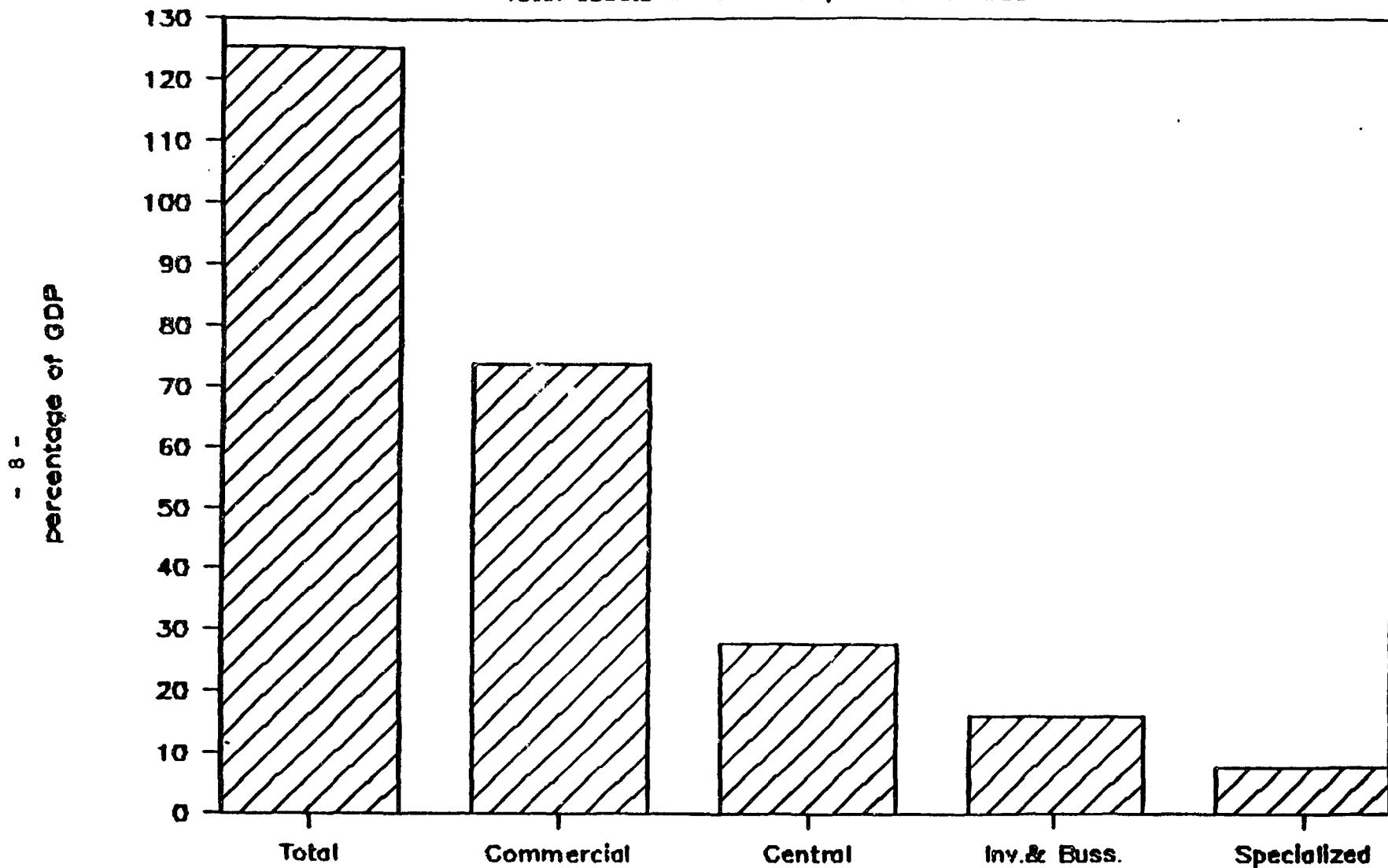


Table 1
Current Structure of Interest Rates
(Annual Percentages)

	Agriculture/Industry Sectors	Services	Commerce
I. Central Bank Rates for Lending and Discounts			
Discount Rates	14%	14%	14%
II. Lending Rates to customers a/			
One Year or Less	13% (15%)	15% (17%)	18% (N/A)
One to two Years	14% (16%)	16% (18%)	18% (N/A)
III. Deposit Rates			
Demand Deposits	0%	0%	0%
Savings			
1-3 months	7.5	7.5	7.5
3-6 months	8.5	8.5	8.5
6m-1 yr	10.0	10.0	10.0
7 ys and longer	16.0	16.0	16.0
Memorandum Items	FY87	FY88	FY89
Consumer Price Index (Three month moving average)	25.6	15.1	20.8

Source: Central Bank of Egypt, Memo 908/89 dated May 11, 1989

a/ Exceptions are export operations (11-14%), import operations of GSAC, secured loans, loans for construction of low and middle income countries, loans to Government and public sector employees (not exceeding 2 months of salary, loans to NIB (11.5%). Figures in parentheses are maximum rates.

There is thus more incentive to borrow than to hold deposits, which has resulted in a strong excess demand condition in the credit market, prompting the Central Bank to resort to a rigid system of quantity rationing. The basic instrument employed has been a fixed loan-to-deposit ratio applied to each bank and supplemented by sub-ceilings for loans and advances extended to the commercial private sector. This ratio was set at 65 percent until September 1988, and since then it has been lowered to 60 percent. While this mechanism of relying on loan-to-deposit ratio seems to have been effective in the sense of controlling aggregate credit supply, it has implied severe limitations on the scope of banking businesses, including the incentive for product innovation. In addition, it has eliminated the need to resort to reserve requirement and open

market operation to control money and credit supply. Indeed, there exists virtually no open market operations by the Central Bank, and reserve requirements serve only to provide a basis for the inflation tax used to finance the Government deficit.

IV. THE ROLE OF INTEREST RATES IN THE ADJUSTMENT PROGRAM

Among the multitude of reasons arguing for interest rate reform in Egypt it is its role in facilitating the country's ongoing process of adjustment that takes, at present, the center stage. Indeed, success in several aspects of such adjustment program depends crucially on the government's ability to formulate and implement an appropriate interest rate policy geared, in particular, towards three objectives: (i) to influence the investors' portfolio balance towards local currency holdings; (ii) to encourage workers' remittances to be invested in financial assets denominated in local currency; and (iii) to encourage investment efficiency. An appropriate interest rate policy must weight these objectives against the adverse impact that higher interest rates may have on business investment decisions and on the solvency of financial institutions. This section will elaborate in some detail the relationships between interest rate and household portfolio composition between local and foreign currency; workers' remittances; and efficiency of investment.^{9/} The subsequent section addresses concerns over the possible adverse implications of higher interest rates on domestic investment in productive assets, and on the financial health of financial institutions.

^{9/} We also examined empirically the relationship between real interest rate movements and pattern of domestic savings in Egypt, but the results were not satisfactory to warrant reporting.

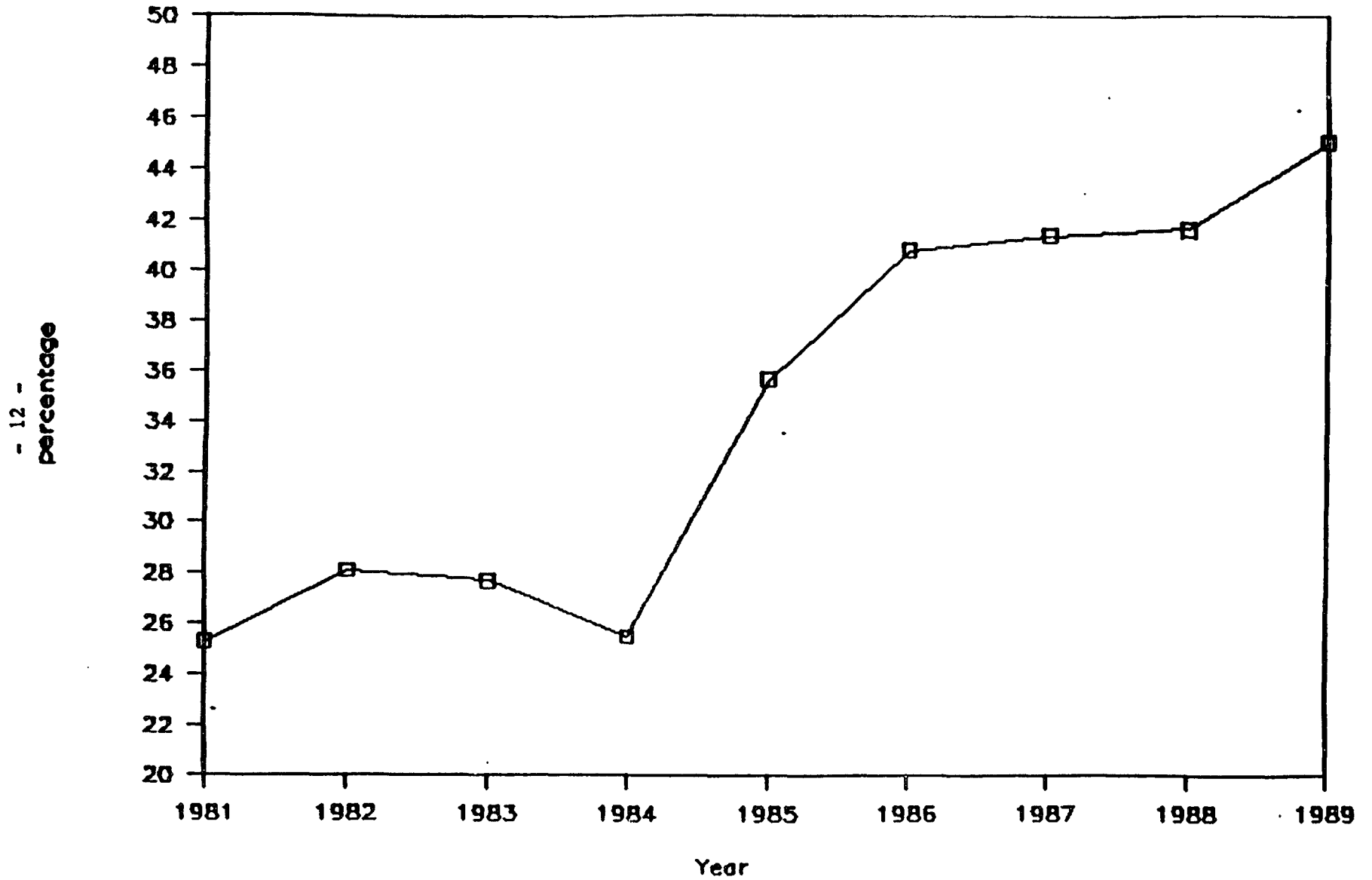
A. Interest Rates and Currency Substitution

The evolution of a parallel foreign currency market in Egypt has been a key feature of this country's financial development over the past decade. Encouraged by a host of factors including a liberal interest rate policy applicable to dollar denominated deposits, a strong pace of demand for foreign currency holdings both for trade related transaction and for investors' portfolio purposes and a favorable supply condition brought about by expansion in tourism and workers remittances, foreign currency deposits have expanded rapidly in the 1980s. The total amount of deposits denominated in foreign currencies (mostly the U.S. dollar), has increased during 1982-1989, at an average annual growth rate of 31.5 percent when measured in terms of the Egyptian pound, and at 15.3 percent when measured in terms of the U.S. dollar, with the discrepancy being due to the depreciation of the Egyptian pound vis-a-vis the U.S. dollar. Measured in terms of Egyptian pound, the growth of foreign currency deposits in aggregate is seen to have exceeded the growth of local currency deposits held in the banking system during the 1981-1989 period, implying an increase in the share of foreign currency deposits in the economy's total money supply. Indeed, as depicted in Figure 2, the ratio of foreign currency deposits held in domestic banks to the total stock of money, i.e. M_2 , has increased from about 25 percent in 1981 to about 45 percent in 1989.

Such an increase in the proportion of total money stock held in foreign currency deposits has important policy implications. First, it limits the government's ability to conduct independent and appropriate monetary policy. Second, it limits the Government's ability to resort to "inflation tax" in order to finance its deficit (see below). Third, to the extent that commercial banks in Egypt have a net short term foreign currency exposure (about \$US 1.4 billion in December 1989) a sudden loss of confidence by domestic holders of foreign currency deposit could create a serious liquidity problem for the banking system. Fourth, in the event of currency devaluation, these deposits could exacerbate

Figure 2, (Foreign Curr. Deposits)/(M2)

1981-89



inflationary tendencies in the economy. A devaluation would increase the value of these deposits in pounds, creating a wealth effect which could fuel domestic demand and may render other stabilization policies ineffective. The observed high growth of foreign currency deposits highlights the strong preference of local investors for financial assets denominated in foreign currencies and draws attention to the increased foreign currency mobility of the domestic banking system and the inherent foreign exchange risk that the banking system is exposed to. Both these issues bear strongly on the scope for interest rate reform in Egypt.

Decomposition of Financial Assets: Table 2 provides a decomposition of total financial assets held by households with domestic deposit banks^{2/} into three broad categories: money, time deposits in local currency, and deposits denominated in foreign currency. The table also indicates the mean nominal returns (over 1980-1989 period) on these asset aggregates. These assets are characterized by large differences in their nominal returns. Thus, the (nominal) return on money is zero; time deposits in local currency have earned an average return of 10.6 percent over the 1980-1989 period, while deposits in foreign currency have earned an average 25.6 percent including the realized devaluation of the LE against the US dollar. The overall return on aggregate household assets is 14.6 percent compared with an average domestic inflation rate of 16.24 percent during the same period.

^{2/} excluding household long-term savings with the NIB which amounted to 26.8 billion Egyptian pounds as of December 1989.

Table 2: Composition of Household Financial Asset Holding and Mean Nominal Return (As of December 1989)

	Value in million Egyptian pound	Fraction in percent	Mean ^a Nominal Return in percent per annum
Domestic Money	14,653.3	26.0	0
Time deposits in local currency	16,181.9	28.7	10.6 ^b
Deposits in foreign currency	25,458.3	45.2	25.6 ^c
Total	56,293.5	100	14.6 ^d

^a Mean of realized annual rates during 1980-1989 period.

^b Rate on time deposits with one to two years maturity.

^c LIBOR + realized rate of devaluation of the Egyptian pound vis-a-vis the U.S. dollar.

^d Weighted average of returns on three asset aggregates; listed above.

As indicated in Table 2, foreign currency denominated deposits have yielded on average a much more attractive (nominal) return than local currency deposits; the average annual differential over the 1980-1989 period, reflecting in essence the depreciation of the Egyptian pound, has been in the order of 15 percentage points, which is considerable. Thus, to the extent that further depreciation of the Egyptian pound is expected, there is a strong argument for raising domestic interest rates to bring them in par with international rates. The required magnitude of such an increase is defined by the expected depreciation of the Egyptian pound vis-a-vis major currencies. The logic behind this argument is straight forward and relies on the standard portfolio balance models of asset allocation, which are predicated on the simplifying assumption that the supply of foreign exchange is infinitely elastic. In other words that

domestic and foreign financial assets are perfect substitutes, once adjustment is made for exchange rate risk and for differences in maturity.

This assumption, however, is not applicable to the case of Egypt. Given the current shortage of foreign exchange and the uncertainty over its future supply, investors holding foreign currency deposits are not likely to be induced to convert their foreign currency holdings into domestic currency, even if local interest rates are raised to achieve parity. Attached to their portfolio decisions to hold financial assets denominated in foreign currency is an important "supply-risk-premium," related to the uncertainty over future supply of foreign exchange. Such a risk premium acts, in essence, to enhance the attractiveness of foreign currency deposits, relative to local currency deposits. Thus, the margin by which domestic interest rates need to be increased to obtain parity with foreign rates is not only defined by the expected exchange rate depreciation, but also by consideration of this risk premium factor. A sufficiently large interest rate differential in favor of foreign currency could, in principle, offset the effect of the risk premium. This does not seem to be a likely scenario in the case of Egypt, however.

The main source of exchange rate risk-premium is the imperfect substitutability between Egyptian and foreign securities which tends to limit the potential pool of investors for Egyptian domestic financial or, for that matter, real assets. Realistically speaking, the pool of potential investors for Egyptian domestic financial assets, such as bank deposits, is not defined by the universe of international investors, but by only a small subset of that. Considerations of country risk, lack of market mechanism to hedge exchange rate risk, and the very limited menu of financial instruments available are powerful factors which tend to render the supply of foreign portfolio capital to the Egyptian economy very interest rate inelastic. Thus, the fact that foreign and local financial assets are highly imperfect substitutes leads, in turn, to weaken the viability of relying on foreign interest rates to serve as a basis for

interest rate adjustment in Egypt. The fact is that the two markets are highly segmented, offering very limited scope for asset substitution.

Real Interest Rate Differentials: It is, however, the consideration of real rather than nominal interest rate differentials between local and foreign markets which are most relevant for assessing the extent to which interest rates can be adjusted in Egypt. Measured in real terms, the differentials are presumably much higher due to both the higher rate of inflation in Egypt than in major foreign markets and due to the nature of exchange rate policy in Egypt, which is subject to a considerable degree of influence and intervention by the Central Bank.

To incorporate the influence of inflation, it is necessary to analyze the portfolio behavior of the household sector in real terms. The starting point is the accumulation of the household sector financial asset holdings in real terms. This is described by the following equation:

$$\begin{aligned} \dot{m} + \dot{d} + \dot{f} &= s + (r^* - x^*) \cdot f + (r - x) \cdot d \\ &- m \cdot x \end{aligned} \tag{1}$$

where:

a dot above a variable indicates its rate of change over time, and

m = real (local) money balance;

d = real time deposits held in local currency;

f = real deposits held in foreign currency (expressed in domestic currency)

s = real household savings;

x^* = foreign rate of inflation, measured by WPI in the U.S.

r^* = foreign nominal interest rate measured by London Inter Bank Borrowing Rate (LIBOR);

x = domestic rate of inflation measured by WPI in Egypt;

and

r = domestic nominal interest, measured by rates on time deposits with maturity of one to two years.

Thus, equation (1) describes the evolution of the household sector financial asset holding in real terms as a function of its real saving and real return on financial assets. The real return on foreign asset, denominated in foreign currency is given by $(r^* - x^*)$. And the real return on interest bearing domestic assets, denominated in domestic currency is $(r - x)$. Note that domestic financial assets, both money and deposits, are subject to the unit rate of capital loss at the domestic rate of inflation.

Figures (3) through (5) show the time-series behaviors of m , d , and f from 1981 to 1989; and Table 3 summarizes their annual average growth rates over this period. It is thus seen that real money balances in local currency in Egypt has declined at an annual rate of 3.3 percent. Interest bearing deposits both in local and in foreign currency have, however, increased in real terms at an annual rate of 7.7 and 13.8 percent respectively. Of particular importance, from the view point of financing government deficit is the dynamics of total financial assets denominated in domestic currency, i.e., $m + d$ (or more appropriately $m + w \cdot d$ where w is the reserve requirement), which provides the base for inflation tax.

Table 3 also shows the capital loss that household sector has suffered as the result of inflation on its financial asset holdings. This loss is decomposed into interest rate loss, i.e. $(r - x) \cdot d$ and inflation tax = $m \cdot x$. In relation to real GDP, interest rate loss has been, on average, in the order of 1.4 percent; and inflation tax, in the order of 5.87 percent, which adds up to a total of 7.31 percent of real GDP per year during the 1981-1989 period. It should be noted that the household sector is a net lender so that as a whole, there is only capital loss accrued to households.

Figure 3: Evolution of Local Real Money - Balance (in mils. of local curr.) 81-89

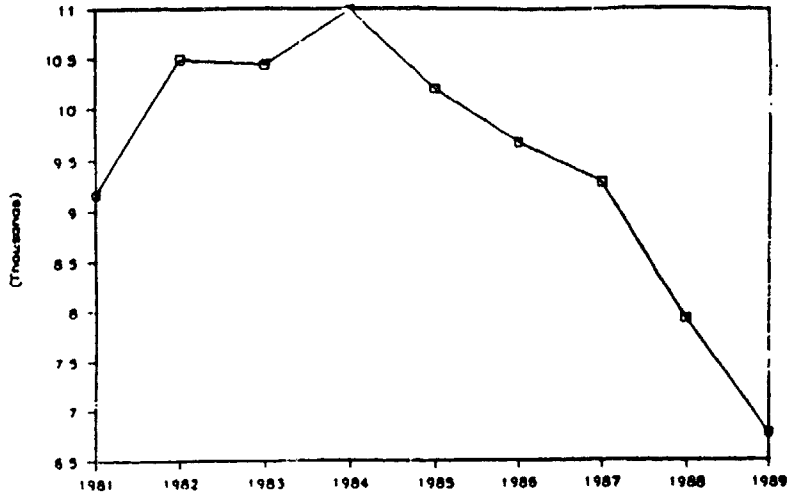


Figure 4 Evolution of Real Bank Time - Deposits (in mils. of local curr.) 81-89

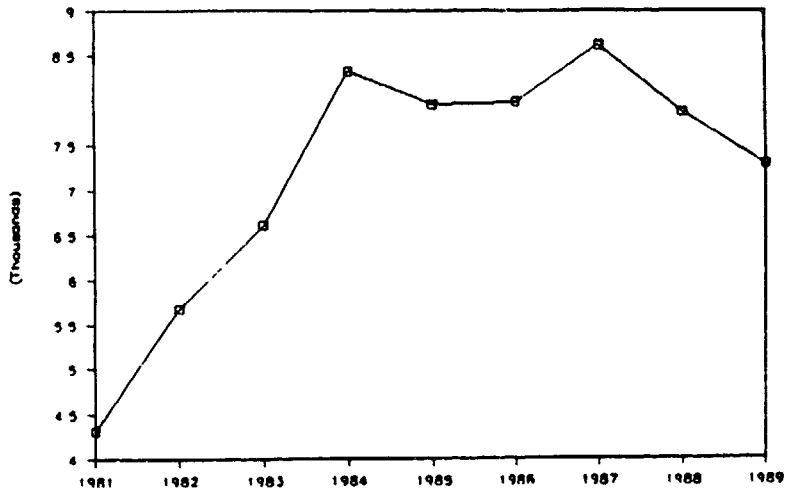


Figure 5: Evolution of Bank Deposits in Foreign Currency (in mils. & real terms) 81-89

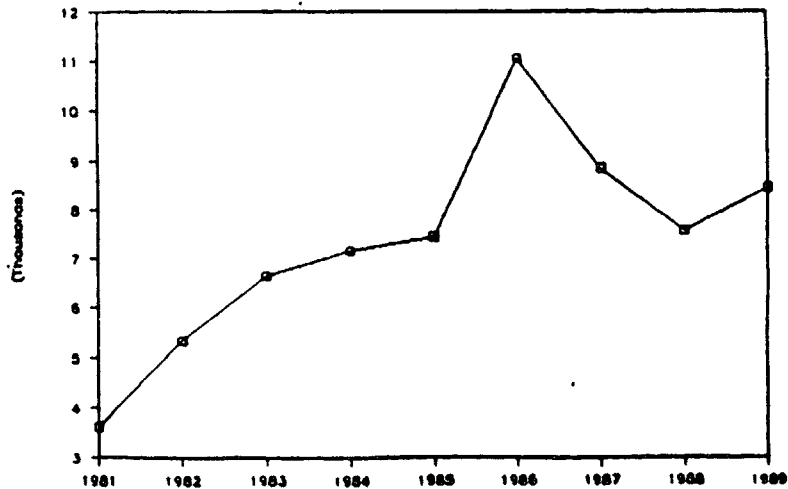


Table 3: Growth of Monetary Aggregates and Inflation Tax

	Annual average growth of financial Assets (percent per annum)	Real capital loss (percent of GDP)
Real money balance	-3.3	5.87
Real deposits in local currency	7.7	1.44
Bank deposits in foreign currency	13.7	

Source: Central Bank of Egypt

B. Interest Rates and Workers' Remittances ^{19/}:

At present, workers' remittances constitute the largest single source of foreign exchange earnings in Egypt. The official figure in the balance of payments is \$3.5 billion in 1989, more than total exports of goods (\$2.5 billion), and more than the sum of the next three largest sources of foreign exchange (Suez Canal, oil and tourism). It is often stated that even this figure is low compared to over 1.5 million Egyptian workers abroad, that these workers' savings are several times higher than this figure but that the remittances have been discouraged by the low level of domestic interest rates. However, this argument looks at only one of the several determining factors in the decision to send home remittances. In reality, there are two main motives for sending remittances: subsistence for family members and investment. The former is largely independent from policy variables such as interest rates or exchange rates. In fact it is possible that interest rate increases, together with a devaluation may reduce this part of the remittances as a devaluation would make it cheaper to support a family, ceteris paribus.

^{19/} At the time this paper was prepared (April 1990), the Gulf crisis had not started. Since August 1990, the effects of interest rate changes on workers' remittances have been further reduced as these remittances have fallen substantially.

Concerning remittances sent home for investment purposes, the Egyptian worker abroad will require a return on his deposits (in pound) equivalent to the international interest rate (or in the host country) plus the expected exchange rate changes relative to the Egyptian pound. Thus exchange rate management plays a critical role in the decision to send remittances home. Moreover, investors in Egypt are facing a substantial risk of not being able to convert their holdings back to foreign exchange as long as the exchange rate is not at an equilibrium level and/or the authorities prevent the black market from developing. Moreover, even if the such a market exists freely, the volume of capital inflow would depend very much on a credible monetary policy which in turn, depends on a credible fiscal policy. Empirical evidence appears to have born out these points.^{11/}

C. Interest Rate and Investment Efficiency

To the extent that the Government may succeed in liberalizing the current restrictive system of investment regulation and in moving towards privatization of public sector enterprises, there will be an added pressure to reform interest rate policy. In a more liberalized investment environment and in a financial system dominated by the banking sector, interest rates will be the key financial prices to guide investment decisions and to ensure allocative efficiency. So far, however, interest rates have been of marginal importance in the process of resource allocation and in determining the efficiency of investment projects. Almost all investment projects undertaken by public sector companies, which account collectively for the lion share of the country's total capital formation, need to be approved by the Ministry of Planning. The key consideration governing the Ministry's decision regarding project selection and

^{11/} In an informal study by the IMF (1989) on the determinants of recorded remittances in Egypt, it was found that recorded remittances are sensitive to the exchange rate differential but not the interest rates. The regression equation fails to show any significant effect of the interest rates. Two aspects of this study is particularly interesting. First, it is based explicitly on the recognition of macroeconomic factors as determinants of remittances, and developed within the framework of portfolio management. Second, the data developed by the author appear to be very comprehensive and painstakingly detailed.

appraisal has presumably been its perception of the social rate of return on investment, which evidently has been taken to be even lower than the regulated interest rate. The extent to which such a procedure may have induced investment inefficiency is difficult to establish, given the high degree of distortion in prices, imperfections in capital markets and subsidization of raw material particularly energy inputs. But as an illustrative example, Table 4 shows how a "standard" project yielding a low real return of even -4 percent per annum would be acceptable under the prevailing tax, depreciation, interest rate and inflation conditions in Egypt. Such conditions, thus, seem to have been conducive to resource misallocation and investment inefficiency.

Table 4: Real Return on a Standard Project

A. <u>Parameters</u>		
(1)	Nominal rate of interest (average 1980-89)	8.16%
(2)	Rate of inflation (average 1980-89)	16.24%
(3)	Corporate income tax rate	40%
(4)	Rate of economic depreciation	8%
(5)	Depreciation schedule, 35% the first year of operations and straight line 10% per year thereafter.	
(6)	Life-time of project	10 years with a scrap value of 25% of initial investment at the end of the ten years
B. <u>The Result</u>		
	Real return on investment	-3.9%

This example can also be used to gain a quantitative perspective on the relationship between interest rate and investment efficiency under the Egyptian company tax code and depreciation allowances. The key idea is the concept of the maximum payable interest rate (MPIR), defined as the highest pre-tax nominal

interest rate at which undertaking a marginal project financed purely by debt could be justified given the provisions of the tax system and the expected rate of inflation.^{12/} Thus, an investment project lasting ten-years and yielding a real return of 3 percent per year could support an interest charge of up to 19.4% in nominal or about 8% in real terms (see Table 5). With the project's real return raised to 10 percent, the MPIR is raised to 30 percent in nominal term. While these calculations are sensitive to the specific parameters assumed, they are indicative of the positive correlation between interest rate and the efficiency of investment. Thus, when interest rates are significantly negative in real terms, as they have been in Egypt for a long time, investment efficiency tends to be very low.

Table 5: Maximum Payable Interest Rate (MPIR) and Real Return on Investments/ (Percentage Points)

1. Real Return on investment	0	3	5	8	10
2. MPIR at 20% inflation	25.1	30.43	33.3	38.6	41.8
10% inflation	14.1	19.0	22.1	26.6	29.5

Note: Based on a simulation model of a project lasting ten years and under Egyptian tax and depreciation code.

The mere positive correlation established between low interest rates and low investment efficiency in Egypt does not necessarily mean that raising interest rates would automatically raise investment efficiency. Enhancing investment efficiency would require actions on more than just the interest rate front. It would require measures to reform the prevailing method of financing of long-term business investment, particularly by the public enterprise companies. The overwhelming reliance of these companies on resources of the NIB to fund their fixed investment expenditures has created an unnecessary degree of

^{12/} For a more detailed discussion of the concept of MPIR, see Feldstein and Summers (1978).

segmentation in the financial system and has effectively insulated managerial responsibilities for project selection, project appraisal and method of finance.

In contrast, for private sector companies, where the scope and the responsibility for the choice of project selection and finance is considerably larger, interest rates are potent instruments to impose financial discipline and to ensure investment efficiency; an upward adjustment in the level of lending rates clearly would help to eliminate inefficient projects. At the same time, consideration should be given to the possibility that raising interest rates beyond a certain threshold may induce some corporate borrowers, particularly those on the brink of financial crisis, to choose more risky projects. This possibility of "moral hazard," which is also present in well developed financial markets, is rather serious in Egypt, where banks are allowed to take equity participation in projects that they finance. Indeed, an examination of several companies in financial distress reveals an interesting mode of response by the lending institution: In the majority of the cases the banks have been compelled to increase their equity share in the company, rather than resorting to legal action to recover their loans. The high legal costs of bankruptcy procedures are often cited as an important consideration; more important is probably the fact that banks have an important equity-stake in the company that they would jeopardize if the company went bankrupt.

V. IMPLICATIONS OF HIGH INTEREST RATES

The concerns on the adverse potential impacts of raising interest rates in Egypt center basically around two issues: (i) the investment performance of the business sector; and (ii) the solvency of the banking sector, which depends on the solvency of the banks' borrowers. These issues are interdependent, and such a degree of interdependence is currently of major concern due to the recessionary conditions in the economy, the stagnation of business investment, and the heavy weight of bad debts in the balance-sheet of

the banking sector. The risk of facing a downward spiral effect through which lower investment demand by the business sector may exacerbate the financial difficulty of the banking sector, cannot be discounted.

A. Interest Rate and Business Investment

The first step in examining how higher interest rates may influence business investment decisions and performances is the understanding of firms' capital structure; i.e. the ways and means by which companies finance their investment and operation. A distinction here needs to be drawn between the financing behavior of public and private companies. In general, public companies are larger in terms of asset size and are more leveraged than their private counterparts. The average debt to asset ratio for 1987/88 is estimated to be 71 percent for a sample of public sector manufacturing companies as compared to a corresponding ratio of about 53 percent for private sector companies. In other words, public sector companies tend to rely much more heavily on credit advanced by the banking sector including the NIB, to fund their investment and growth, than do private sector companies. As of end 1989, it is estimated that such credit advanced to public sector companies amounted to more than two and a half times those given to the private business. Such a difference in company financing behavior reflects a combination of factors including the family-based structure of company ownership in the private sector, the lack of a functioning equity market, and the much favored position of public sector companies with regard to their access to credit. Loans extended to the public sector companies by the NIB are generally at fixed interest rates, and are priced below those paid by the private sector. In contrast, private sector companies do not have access to the resources of NIB and need to depend largely on their own internally generated sources of funds; i.e. net profits and amortization, supplemented by limited amounts of credit received from depository banks.

The average nominal pre-tax cost of debt in 1989 is estimated to be 12 percent for public sector and 16 percent for private sector companies. The effective average cost of debt, i.e., after adjusting for inflation and tax, is significantly negative, amounting to -17.8 percent for public sector companies, and -15.4 percent for private sector companies. The cost of debt is, of course, only one component of the overall cost of capital, which is the relevant factor for business investment decisions. For investment in fixed assets, i.e. plant, machinery, and equipment, the other main components of the cost of capital are: cost of equity, the acquisition price of capital, taxation, depreciation allowances, including the cost of asset decay. The procedure for incorporating these factors into the overall cost of capital in the context of the Egyptian economy is complicated by lack of information on interactions between interest rate, cost of equity and inflation. One difficulty is how higher interest rates may affect inflation; the other is how it may influence cost of equity; or the return required by shareholders to invest in fixed assets in Egypt.

Table 6 presents the result of a simulation exercise designed to yield a quantitative perspective on the relationship between interest rate and corporate taxation on the real cost of capital for the private sector companies. The calculation is based on "representative" parameters for the private sector, detailed in the table. It is, thus, seen that even adjusting lending rates up to 25 percent would leave the real cost of capital still very low. The significant negative real cost of debt continues to affect the real cost of capital to a considerable degree, as suggested by Table 6.

Table 6: Simulating The Impact of Higher Interest Rates on
the Real Cost of Capital: ^{a/} (Percent)

Nominal Lending Rate (R)	16	20	25	30	40
Real Cost of Capital ^{a/} (q)	-4.3	-2.2	.39	3.04	8.34

^{a/} Real cost of capital is defined as the weighted average cost of debt and equity, and calculated under the Egyptian business tax code and depreciation allowances. Specifically, the real cost of capital, q, is given by

$$q = [(\rho + \delta) \frac{1-uZ}{1-u} - \frac{\rho - (1-u)R+x}{1-u}].b]$$

where

- q = real user cost of capital;
- ρ = real required return on equity, taken to be 14 percent which is the real realized mean return on domestic deposits held in foreign currency (i.e. U. S. dollars);
- δ = rate of economic depreciation, assumed to be 5 percent per year;
- b = debt-asset ratio, taken to be 0.53;
- u = corporate tax rate, assumed to be 40 percent;
- z = the present value of depreciation allowances and estimated to be 0.78 under the Egyptian depreciation schedule;
- R = Nominal lending rate as given; and
- x = domestic rate of inflation, taken to be 25.2 per year.

B. Impact on The Banking Sector

The major areas of concern regarding the impact of higher interest rates on the banking sector relate to the financial position of the three main categories of borrowers: private businesses; public enterprises; and the government sector, including both central government and public authorities. There is virtually no bank lending to the household sector^{13/}. Among the major borrowing sectors, the government takes the lion share, as shown in Table 7.

^{13/} Total bank credit extended to households amounted in June 1989 to about 760 million Egyptian pound, or less than 1 percent of GDP.

Table 7: Net Liability of Major Borrowers to
The Banking Sector (including NIB)

	Private Business	Public Enterprises	Central Government and Public Authorities
(In billion Egyptian LE)			
<u>Net Liability Outstanding</u>			
1. Banking Sector	7.0	2.8	37.6
1 a. National Currency	7.4	3.9	37.9
1 b. Foreign Currency	-.4	-1.1	-.3
2. National Investment Bank	0.0	26.8	0.0
(As percent of GDP)			
<u>Net Liability Outstanding</u>			
1. Banking Sector	7.8	3.1	41.2
1 a. National Currency	8.2	4.3	41.6
1 b. Foreign Currency	--	-1.3	--
2. National Investment Bank	--	29.4	--

Source: Authors' estimates based on data from The Central Bank of Egypt.

With a net liability of nearly 38 billion Egyptian pounds (41.2 percent of GDP) outstanding as of December 1989, the government sector is the major debtor to deposit banking institutions. By contrast, public enterprises draw mostly on the resources of NIB to meet their financing requirements, even though over the last few years, more and more public enterprises' investments have been financed through overdrafts on deposit banks. Public enterprises also depend on deposit banking institutions to raise funds for their working capital requirements, and they hold, as a group, a large sum of deposits with these institutions. Their net liability outstanding with deposit banks on the whole is about 4.3 percent of GDP, as of December 1989. To the extent that the adjustment program will succeed in getting public enterprises on the same footing as private enterprises in the financing of their investment program, the yields on the alternative financing sources will be equalized. This would mean, for instance, that for every ten percentage point increase in interest rates, and based on the current

structure of domestic debt of NIB, public enterprises will have to pay an additional LE 390 million to deposit banks and LE 2.7 billions to NIB, for a total of LE 3.1 billion, or between 3 and 4 percent of GDP .

To see what this means to public enterprises, consider their balance sheet for FY1988, the latest year for which data are available. In that year, gross profit (before taxes and earnings distribution) amounted to LE 2.5 billion, while total turnover is estimated at LE 32.3 billion. Thus, an increase in interest rates by 10 percentage points not only wipes out profit of the entire public enterprise sector, it also eliminates the dividends and tax contribution of this sector to the budget. The increase in interest payments represents about 10 percent of total turnover of the public enterprises.

Those public enterprises that belong to the Ministry of Industry appear to have a relatively better financial position than the rest^{14/}. It is estimated that as of end FY88, the total debt of public enterprises under the Ministry of Industry amounted to LE 7.5 billion, and gross and net profit were estimated at LE 830 million and LE 667 million respectively. The impact of a ten point increase in the interest rates therefore on them is milder than the rest, even though it still amounts to more than their total net profit. Concerning the effect on the budget of the central government, a 10 percent increase in interest rates would cost about LE700 million, or about 5 percent of the budget deficit.^{15/}

^{14/} There are currently about 393 PE's in Egypt, of which 116 are under the Ministry of Industry.

^{15/} The effect on the budget of the Central Government, depends on how much of the stock of Government debt is held by the Central Bank. If one assumes that the profits made by the Central Bank will be transferred to the budget, the interest rate charged on this stock of debt needs not be changed. In that case, the only effect of higher interest rates would be on the stock of government debt held by the commercial banks, currently about LE 7 billion.

The private business sector has relied on the other hand only on the deposit banking system to raise funds both for the purpose of working capital and long-term investment requirements. The interest rates applied to these loans are generally adjustable. Thus, the borrower, i.e. the business sector, is left exposed to bear the burden of higher interest costs. An increase of five percentage points in average lending rate, for instance, raises the private business sector interest payments by LE750 million, or less than one percent of GDP.

All in all, a ten percentage point increase in interest rates, if applied uniformly, could have a serious impact on public enterprises and the Government budget, unless the efficiency of public enterprises could be promptly improved. In any event, the impact on private business is less severe. The impact on public enterprises is reduced substantially if the huge debt held by these enterprises to NIB is insulated from interest rate increases^{16/}. This, however, would conflict with the objectives of delinking public enterprises from the budget or to restructure the NIB as a truly financial institution. These objectives are, however, important to the ultimate success of the adjustment program.

VI. POLICY IMPLICATIONS

Given the institutional and operative mechanism of credit and money control in Egypt, and especially the strong linkages with the budget and the exchange rate issues discussed above, interest rate policy as an effective macroeconomic instrument would need to be pursued with caution. While it is clear that interest rates need to be increased, the complexity and the depth of the existing distortions in both the real and the financial sides of the economy tend to

^{16/}Note, however, that not all components of the debt could be insulated. Thus, for example, the debt stock held by NIB to the Postal Savings and to the Investment Certificates, totaling LE 5.3 billion, cannot be insulated as these instruments are now offered at competitive rates.

reduce the benefits of a sharp rise in interest rates and will almost certainly exacerbate the pressure on a weak financial system. From a resource mobilization viewpoint, such increases could only be effective in attracting foreign savings if accompanied by a considerable devaluation in Egyptian pound. A substantial devaluation, on the other hand, would cause distress in the financial system on two accounts. First, it imposes foreign exchange losses both to the Central Bank and to the commercial banks, the latter because they are currently holding net liabilities in foreign currencies. Second, it would exert strong inflationary pressures not only because of higher import costs but also through the wealth effect. In other countries, some of these losses could be born by the budget in order to reduce the pressure on the financial system. In Egypt, however, the budget is already stretched to the limit, with almost 50 percent of the huge budget deficit (16 percent of GDP) being financed by the banking system, virtually all by monetization.

Moreover, to be an effective instrument in resource mobilization and allocation, interest rate policy would need to be accompanied by policies in the real side of the economy. Within the existing framework, even if substantially higher interest rates could lead to higher financial savings in the banking sector, it would do little to investments without providing the necessary incentives or room for banks to expand their lending activities. The main constraint on the banking sector is not lack of liquidity in Egyptian Pound, but the tight credit ceilings imposed by the Central Bank and the high reserve requirements.^{17/} There exists, thus, a strong case to argue for a reduction in the reserve requirement ratio to a more reasonable level of 20 percent. From a resource allocation viewpoint, a notable increase in interest rates would generate the desired improvement in efficiency only if it is accompanied by measures to dismantle price control and to eliminate preferential treatment of

^{17/} The reserve ratio in Egypt, maintained unchanged for some time at 25 percent of domestic currency deposits up to two years maturity, is relatively high, and is an important source of the narrow operative margin observed in Egypt. Such a margin estimated conservatively at about 3.6 percent is low compared to other developing countries.

public enterprises with regard to their access to credit, foreign exchange and raw material imports. Clearly, so long as public enterprise companies rely heavily on the resources of NIB to finance their investment and so long as the existing investment procedures are not completely revised to take into account proper project selection and appraisal, interest rate adjustments would do little to improve the marginal efficiency of investment in the public sector. Concerning private investments, it was shown in this paper that under the prevailing conditions concerning tax rules, depreciation, interest rate and inflation, a standard project yielding a low real rate of return of even negative 4 percent per annum would still be acceptable to the investors. An upward adjustment of interest rates, therefore, is both desirable and needed, provided that the magnitude of adjustment is not too high to raise the moral hazard issue.

More generally, changes in the level and structure of interest rates should be planned in several steps and to be carried out in conjunction with the implementation of other aspects of the adjustment program, particularly the reduction in the budget deficit, the reform of public enterprise, and the streamlining of the public investment program. At the same time, the increases in the level of interest rates should be sufficiently high to represent a clear departure from the past policies and to give the proper signal to economic agents. Ideally, to avoid creating more distortions in the economy, the corresponding increases in the lending rates should be the same. However, it was shown very clearly in Section V.B that the impact on the Government budget and public enterprises would be very severe. To keep the cost to public enterprises at a manageable level, their existing debt to NIB should be kept insulated from the interest rate increases. This means, in turn, that NIB's debt to the Social Insurance Fund and the Pension Fund (but not to the Post Office Savings and the Investment Certificates) should be kept insulated from the interest rate increases. This way, a ten percentage point increase in interest rates on public enterprises would have an impact of about LE .1 billion, still about 40 percent of the entire gross profit of public enterprises, but still about one-third lower

than if all debts became floated. The impact on the budget would be the reduction in dividends and tax contributions from public enterprises.

Attempts to reform the existing credit allocation mechanism need to be accompanied by measures to develop an active money market, beginning with a market for treasury bills. The lack of such a market is currently an impediment to conduct of monetary policy. An active treasury bill market could provide the core vehicle for determination of short-term rates, upon which other rates could be determined.

The second step in building the necessary institutional setting for a credible interest rate policy is the development of a sound prudential regulatory/supervisory framework to replace the existing system of rigid and tight bank control. Such a regulatory framework needs to define a finer asset classification standard, improve the accounting system, and highlight the boundaries between commercial, investment and business, and specialized banking operations. At the moment, the boundaries between these banking activities are blurred by commercial banks' involvement in long-term lending and by investment banks' involvement in commercial and trade lending. All banks also can take an equity position in projects that they finance.

The third, and probably the most complex aspect of this reform process, is to address the existing problem of bad debts weighing heavily in the balance sheet of many banks. This is a very sensitive area which needs to be approached with utmost caution and care. At the moment our knowledge and understanding of loan portfolio quality of the banking sector, at the individual bank level, is very limited. But there are important indications which suggest a series of problems at hand. Of course, the main cause of financial distress of the banking sector is the weak financial position of the business sector, related either to exchange rate devaluation, or inefficient investments which have turned sour. Once again, our knowledge in this regard is still very fragmented. However,

field interviews with banks as well as consideration of total debt position of companies with banks, including NIB, suggest that many companies, particularly public enterprises, are in a serious financial difficulty. In that case, it limits the extent to which lending rates can be increased without further jeopardizing the liquidity or even the solvency of these companies.

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