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Financial repression, inflation and growth in Egypt, 1974-1991

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FINANCIAL REPRESSION
INFLATION AND
GROWTH IN EGYPT

BY

ABEAR EL-SHENNAWY

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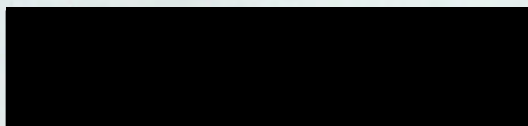
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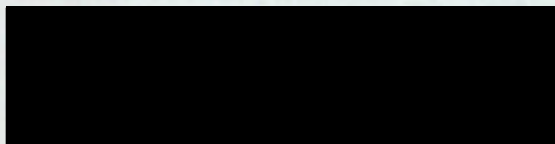This Thesis for The Master of Arts Degree
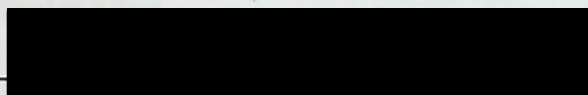
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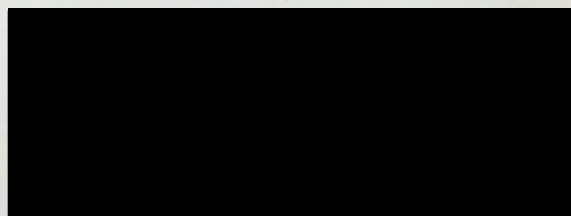Has Been Approved

December, 1992

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Acknowledgment

I.Introduction :

Manifested in a set of government administered prices (interest rates, exchange rates, agricultural prices, energy prices, ...etc.), partial as opposed to complete economic liberalization has been one of the salient features of Egypt's development policy since the initiation of the open door policy in 1974. Effectively, this meant that the economy had been functioning for almost a decade and a half under a set of prices which by no means reflected the relative scarcity of resources, opportunity costs or comparative advantage. This has accentuated long run structural problems on both the real and financial sides of the economy.

On the real side, the distorted structure of incentives resulted in a sub optimal pattern of investment whereby GFI in agricultural and irrigation as a share of GFI in the economy as a whole fell from 16% in 1973 to 9% during 1981/82-1985/86 while that for manufacturing and mining fell from 27% to 21% over the same interval, compared to an increase in the share of GFI in services. [Handoussa, 1989]. The persisting inward-looking import substituting industrial strategy combined with an overvalued exchange rate created an anti-export bias that pushed the country further away from comparative advantage. Meanwhile the taxing of agriculture -through both price and output controls- "to finance continuing import substituting industrial growth sapped real output, ". [Hanson and De Melo, 1985].

On the financial side, Egypt displayed a typical illustration of a Financially Repressed economy, the characteristics of which- as outlined and analyzed in the theoretical and applied works of Mckinnon(1985), Fry (1988) and Bradley (1991) - include expost negative real rates of interest on virtually all forms of financial assets, negative real loan rates of interest, pervasive credit rationing, selective credit policies, the imposition of stringent balance sheet constraints on financial institutions and the existence of strong barriers to entry into the financial sector. "Financial Repression" induced destabilizing portfolio shifts from financial to unproductive tangible assets and along with the indiscriminate taxation of financial intermediaries have "reduced the real size of the financial sector relative to nonfinancial magnitudes" [Fry, 1988].

The role of the financial sector in mobilizing savings and providing capital - particularly long run risk capital- was seriously curtailed and instead, its resources have been largely directed to finance government budget deficits that often displayed negative balance on the current account. Disequilibrium

negative real loan rates of interest not reflecting the true scarcity of capital were mainly responsible for the increasing capital intensity and deteriorating efficiency of investment throughout the economy.

The interaction of structural problems on both the real and financial sides resulted in an unbalanced and unsustainable growth path. By the mid 80's, the real rate of growth in GDP started to decline sharply, averaging -3% over 1985-1990 after peaking at an average of 9% over boom decade 1974-1984. Open unemployment amounted to 14.7% in 1986 and inflation averaged to 21.8% over the period 1985-1990. The Egyptian economy thus entered a phase of "stagflation". In addition, budget and current account deficits (excluding official grants) continued to materialize accounting respectively for 10.2% and 8.8% of GDP in 1992.

Administered interest rates, exchange rates and other distortionary government financial policies are among the key reform targets of the structural adjustment program initiated and designed jointly by the government and the IMF. [Handoussa, 1991]. Financial reform that ranges from an upward adjustment of interest rates to complete liberalization of the financial sector constitutes a central part of the standard IMF reform package. Eventually it is stipulated that the success of the stabilization/adjustment in the case of Egypt will depend on the ability of the monetary authorities to conduct appropriate financial and interest rate policies .[Dailami and Din, 1991].

The objective of this research is to evaluate the effect of government financial policies on growth and inflation since the mid 70's and to analyze the effect of financial liberalization -that is allowing interest rates to reach their competitive levels - on growth and inflation in Egypt. The main hypothesis that will tested here - as developed by Mckinnon (1973) - is that financial liberalization can simultaneously reduce inflation and raise the rate of economic growth. The research will be organized as follows: chapter one surveys the literature on financial repression. Chapter two briefly reviews the Egyptian financial sector, highlighting the linkages between the government fiscal, monetary and financial policies and their impact on growth and inflation. Chapter three introduces a macro economic model which analyzes the impact of financial liberalization on private capital formation , growth and inflation. Finally the concluding section presents the findings and policy implications of the study.

Chapter I
Financial Repression:Theoretical Background

I.Financial Repression, Investment and Growth

The existing literature addressing the effect of financial policies-particularly interest rate policies- on growth and inflation consists of three main bodies of theoretical arguments[1] . These comprise the arguments of Neoclassicals, early Keynesians and Neoliberals.

In a neoclassical world of perfect capital markets, perfect divisibility of inputs and perfect substitutability between physical capital and real money balances, both an increase in interest rates or a decrease in the real rate of return on money is desirable since they induce savers to shift from real money balances to capital or claims on capital. In that sense, real money balances are explicitly included as one of the explanatory variables in the neoclassical investment function and thus one of the factors that influence the rate of economic growth. [Mckinnon, 1973]

At the other extreme, early Keyensians call for maintaining interest rates at low levels on the grounds that the reduction in the cost of loanable funds will stimulate the demand for investment [Fry, 1988], increase the rate of capital formation and therefore speed up the rate of economic growth, [Roe, 1982]. Furthermore, it is stated that this reduction in costs will actually serve as a tool to curb inflationary pressures. [Roe, 1982]. An expansionary monetary policy that reduces interest rates is therefore perceived as growth enhancing by proponents of this argument. In the meantime, the inflationary impact of such a policy-though totally ignored by Early Keynesians [Roe, 1982]- is desirable from the standpoint of neoclassical theory since it reduces the real rate of return on money. [Mckinnon, 1973].

Adopting a different orientation from Neoclassicals and in stark contrast to early Keynesians, Neoliberals hypothesized a close relationship between financial deepening -defined as the accumulation of both monetary and nonmonetary assets - and the rate of capital formation in the economy. In this context, financial flows play an important role in providing the necessary funds for capital formation. [Gupta, 1984]. Within this orientation one can identify two

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[1] For a more comprehensive Review of the Literature on Financial Repression, see Mohie El Din, 1992

broad perspectives ; Shaw's (1973) debt intermediation view and Mckinnon's (1973) complementarity hypothesis. Both these arguments were attempts to analyze and explain how the accumulation of financial assets- especially indirect claims such as time and saving deposits- tend to affect the rate of capital formation and in turn the rate of economic growth.

On the one hand, the debt intermediation view states that the greater the volume of time and saving deposits that can be channeled through formal financial intermediaries, the greater the ability of these intermediaries to expand and create credit . Assuming that the availability of external finance is one of the main constraints facing most investors , the greater volume of credit now available can finance a greater volume of investment. [Molho, 1986]. On the other hand-and in sharp contrast to the neoclassical contention of perfect substitution between real money balances and physical capital- according to the complementarity hypothesis , the accumulation of money balances can itself serve as a 'conduit' to capital formation. [Mckinnon, 1973]. Assuming that there are constraints on availability of internal finance to most investors, and because of the indivisibility of physical capital, savers might find it more appropriate to place their savings in the form of time and saving deposits until they have enough resources to invest and accumulate physical capital. [Molho, 1986]. This implies that while in the short run, time deposit and capital are considered as substitutes, in the long run , however, t hey are complementary.[Molho, 1986].

Backed by the above two arguments , Neoliberals challenged the case for low administrated interest rates. It is argued that in an inflationary environment maintaining interest rates at low levels will result in negative real rates of interest and will eventually drive the economy into a state of financial repression. Financial repression defined as " the unintended consequence of low fixed interest rates combined with high and rising inflation, " [Fry, 1988 P.15] is considered as one of the main impediments to financial deepening, capital formation and growth. [Gupta, 1984]

The prevalence of negative real rates of return on financial assets, it is postulated, induces portfolio shifts out of these assets and into tangible assets held as inflation hedges. This reduces the volume of financial savings that can be channeled through formal financial intermediaries and consequently constrains the ability of these intermediaries to create and expand credit. Investment is therefore frustrated by the lower volume of credit available to finance both fixed and working capital. [Fry, 1988] . The relationship between

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financial savings and the real rate of interest is illustrated in fig (1) . The schedule Sg represents -at a given rate of economic growth g - the quantity of <u>financial savings</u> available to financial institutions as an increasing function in the real interest rate offered by these institutions. [Roe, 1992]. If real interest rate falls to r_0 as the result of the government administered nominal rate, the quantity of financial savings will decrease, limiting the volume of investment that can be financed through financial institutions to OI_0.

Fig (1)
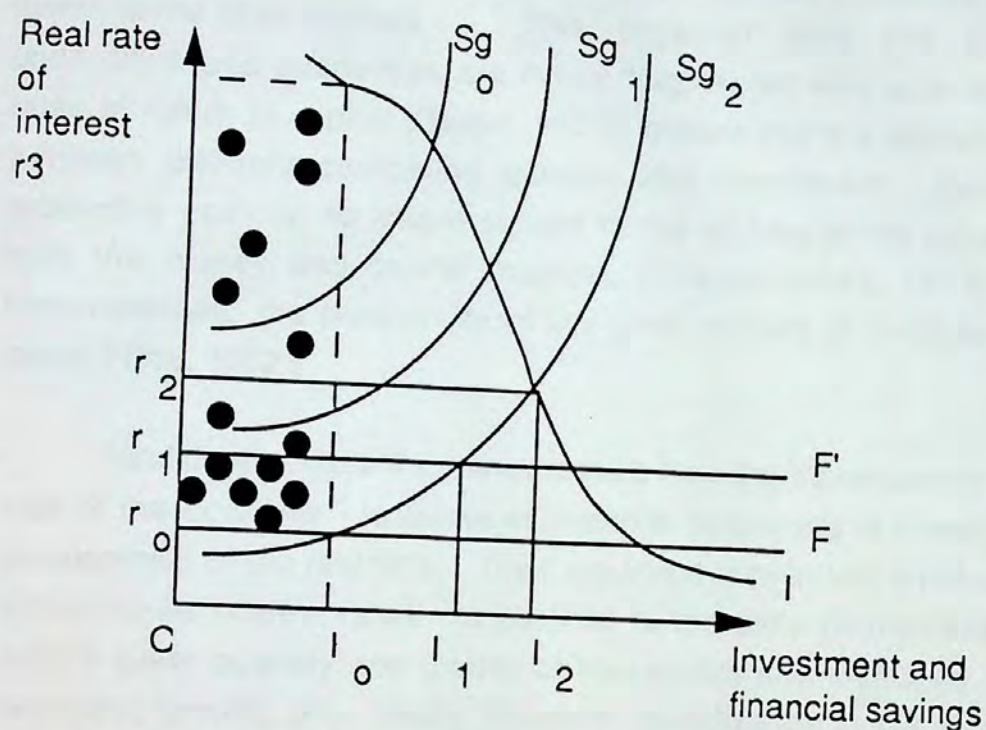
Source: Fry, 1988

At r_0 investors will have to pay a real loan rate equal to r_3 which is the rate that clears the market for credit given the quantity of financial savings forthcoming . [Fry, 1988]. However, if interest rates ceiling are also applied to loan rates, then borrowers will actually pay a real loan rate less than r_3. In such cases the quantity rationing of credit becomes inevitable and the allocation of loanable funds takes place according to non price criteria. [Fry, 1978]

This implies that low administered interest rates in the formal financial market are no more a reflection of either the availability of capital, or the " liquidity and risk elements in the capital transaction " [Dorrace, 1963] . Projects that have access to credit are not necessarily those which yield the highest rates of return on capital in the sense that some of them might be completely unprofitable at higher interest rates. By encouraging the undertaking of such

projects, which are represented by the dots lying above in fig (1), the interest rate fails to be the relevant price variable that guides investment decisions towards the most productive use causing the rate of return to capital to fall for the whole economy . [Roe, 1982]

In addition, the repression of the formal financial markets in most underdeveloped countries, has generally led to the creation and expansion of curb markets and has diverted the flow of financial resources away from the former to the latter markets.   This together with the fact that most underdeveloped economies are highly fragmented with wide disparities in the rates of return to capital [Galbis, 1977] means that the allocation of savings - between different competing assets- and investment - towards the most productive use - is no longer subject to the working of the price mechanism of both the money and capital markets. [Chandavarkas, 1971]. Under such circumstances, the productivity of any given amount of funds tends to be much lower. [Roe, 1982]

Neoliberals have thus emphasized how the development of the financial side of the economy - in terms of financial deepening is closely related to the development of the real side. Their argument has in fact emphasized that low administered interest rates - in contrast to the early Keynesians - will result in both a lower quantity and quality of investment and ultimately a lower rate of economic growth. [Fry, 1988]. Financial liberalization in the form of abolishing interest rate ceilings and allowing interest rates to reach their competitive level is therefore the main policy prescription for financially repressed economies. [Fry. 1988] . The feed back to the real side of the economy takes place through " eliminating the monetary constraint on internal capital accumulation, through raising the real interest rate on deposits and stimulating investment of higher productivity " [Mckinnon, 1973]

However, the theoretical argument put forward by Neoliberals is based on two implicit assumptions: [Wijnbergen, 1983].
1. agents are assumed to allocate their portfolios between currency, inflation hedges, time deposits and loans in the curb market.
2. the portfolio shifts into time deposits in response to an increase in the real deposit rate of interest comes , mainly, out of unproductive assets such as inflation hedges. It is therefore the satisfaction of these assumptions that will insure that financial deepening in the form of the accumulation of time deposits will yield favorable results on the rate of economic growth.

At this stage , it is worth pointing out that financial liberalization can achieve the above objectives only to the extent that raising nominal deposit rates would lead to substantial increases in the real rate. [Fry, 1988]. However , the real deposit rates can remain low or even negative following an increase in the nominal rate , if inflationary pressures continue to persist. This underscores the importance of reducing inflation. It will be shown though that high nominal deposit rates - besides being a growth enhancing policy, is considered an anti inflationary policy which contrary to traditional monetary theory succeeds in reducing inflation without producing any recessionary effect on the economy. [Mckinnon , 1973].

Before proceeding to explain how high nominal deposit rates of interest can reduce the rate of inflation as compared to cut in the money supply (M), the relationship between money and inflation - both in the short and long run- must be analyzed . Whereas the analysis will show that inflation in the long run is a purely monetary phenomena, in the short run however , factors other than money expansion will prove to affect the rate of inflation.[Dornbush and Fisher, 1992]

II.The relation between money and inflation:
a) Long run:
Following Dornbush and Fisher (1992) The long run or the steady state , is defined here to be a situation where interest rate and output are both constant. Output is at its potential level and the growth rate of potential output is zero. The relationship between the growth in money supply and inflation can be analyzed by using the equilibrium condition in the money market

$$M/P = L(i, Y) \text{------------------------------}(1)$$
$$M = P L (i, Y) \text{----------------------------}(2)$$

where M/P is the real money balances and L(i, y) is the demand for real money balances which is decreasing in the rate of interest (i) and increasing in income (Y) . Equation (1) states that real money supply equals real money demand , while equation (2) states that nominal money supply is equal to nominal money demand.

The assumption of constant interest rates and output means that the demand for money must also be constant in the long run. In this case, any change in the money stock must be reflected into an equal change in prices, if money market equilibrium is to be maintained. Equation (2) therefore implies that in the long run

$$\Delta M/M = \Delta P/P \quad \text{or} \quad m=\Pi \tag{3}$$

ie, the rate of inflation Π must be equal to the rate (m) of money growth. In other words the steady state, the rate of inflation is fully explained by the rate of monetary growth.

b) The Short Run:

In the short run, inflation is determined by the interaction of aggregate demand and supply. To illustrate this interaction, the conventional AD, AS analysis which is usually conducted in the price output plane must be modified to represent both the AD and AS schedule as a function of the inflation rate instead of the price level. The modified function takes the form:

$$\Pi = \Pi^e + \alpha \psi (Y-Y_p) \tag{4}$$
$$Y^d = Y^d_{-1} + \delta f + \phi (m-\Pi) \tag{5}$$

Equation (4) is the aggregate supply schedule (AS) , were inflation is an increasing function in GNP gap -measured by the deviation of output (Y) from full employment or potential output (Y_p)and the expected rate of inflation Π^e . This function is based on an expectation - augmented Phillips curve. Equation (5) is the aggregate demand schedule which is an increasing function in lagged aggregate demand Y^d_{-1}, autonomous spending including government spending f , and the real money balances (M/P). finally δ and ϕ are fiscal and monetary multipliers.

Combining equation (4) and (5) determines the level of output and inflation in the short run as shown in figure (2) below.

Figure (2)
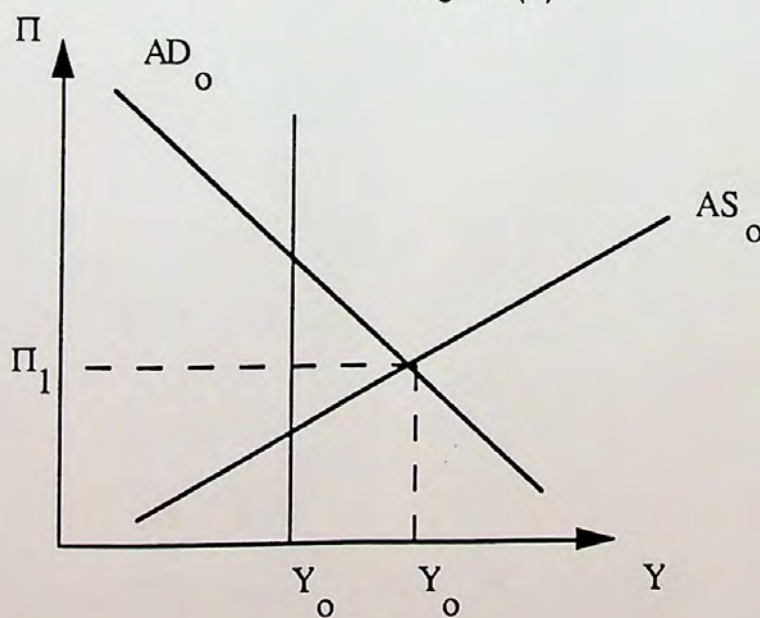
Source: Dornbush and Fisher, 1992

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Manipulating any of the variables that determine AD as Yd_{-1}, f or m and those that determine AS as P^e will lead to a change in the position of these functions therefore changing both the level of output and the rate of inflation. Combining fig (2) and the standard IS/LM framework together with simple illustrations of the money market, can help us trace the impact of a cut in the money supply as compared to raising the deposit rate of interest on output and inflation in the short run.

The Impact of Cut in the Money Supply

In Figure (3) below, the Money Market is presented in panel A. r is the interest rate, P is the price level, and M is the nominal stock of money, where money is narrowly defined to include currency in circulation and demand deposits. In panel (B), the IS/LM is presented and in panel (C) AD is aggregate demand, and AS is aggregate supply. In panel (A), a cut in the money supply is represented by an inward movement of the nominal stock of money, to M1. This produces an excess demand for real balances at the initial interest rate r0. The excess demand for money then exerts an upward pressure on the interest rate and the money market rests at the new higher rate r1 [Branson, 1979]. The higher interest rate r1 shifts the LM curve in panel (B) to the left to intersect the IS curve at a lower level of output decreased. This is reflected in panel (C) by a leftward shift of the AD1 curve to AD1, indicating a lower level of output demanded at each given level of inflation to intersect the AS curve at both a lower level of inflation and a lower level of output. This is the conventional Phillips curve trade-off between output and inflation [Branson, 1979].

Fig (3)

Panel a   Panel b   Panel c

Source: Panels a and b : Branson, 1979
        Panel c : Dornbush and Fisher, 1998

Manipulating any of the variables that determine AD as Y^d_{-1}, f or m and those that determine AS as P^e will lead to a change in the position of these functions therefore changing both the level of output and the rate of inflation. Combining fig (2) and the standard IS/LM framework together with simple illustrations of the money market, can help us trace the impact of a cut in the money supply as compared to raising the deposit rate of interest on output and inflation in the short run.

I.The Effect of a Cut in the Money Supply:-

In Figure (3) below, the Money Market is presented in panel A, r is the interest rate, P is the price level, and M is the nominal stock of money, where money is narrowly defined to include currency in circulation and demand deposits. In panel (b), the IS/LM is presented and in panel (c) AD is aggregate demand, and AS is aggregate supply. In panel (a), a cut in the money supply is represented by an inward movement of M_0, the initial stock of money, to M_1. This produces an excess demand for real balances at the initial interest rate r_0. The excess demand for money then exerts an upward pressure on the interest rate and the money market clears at the new higher rate r_1. [Branson, 1979]. The higher interest rate r_1 shifts the LM curve in panel (B) to the left to intersect the IS curve at a lower level of output demanded. This is reflected in panel (c) by a leftward shift of the AD_0 curve to AD_1 -indicating a lower level of output demanded at each given level of inflation- to intersect the AS curve at both a lower level of inflation and a lower level of output. This is the conventional Philips curve trade off between output and inflation. [Branson, 1979]

Fig (3)

Panel a   Panel b   Panel c

Source: Panels a and b : Branson, 1979
        Panel c Dornbush and Fisher, 1992

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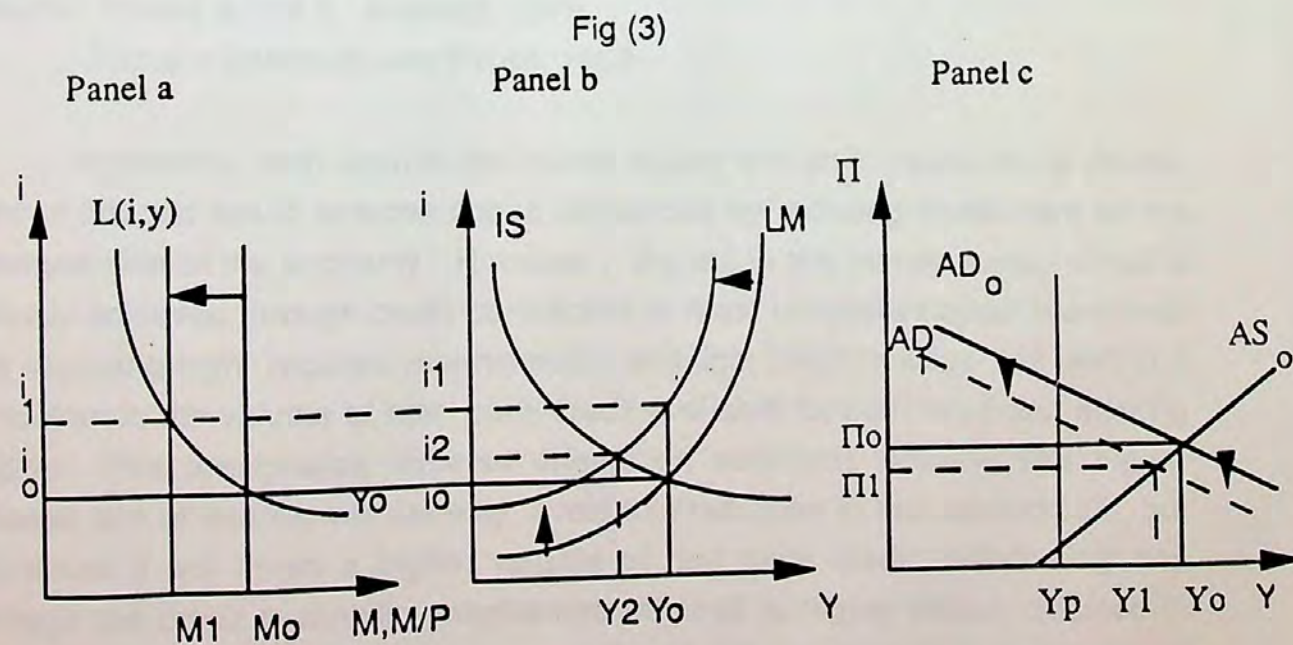
II. The Effect of an Increase on the Rate of Return on Money:

Taking money to be broadly defined to include saving and time deposits, the previous result can be attained through raising the rate of return on money or the deposit rate of interest (d). [Calvo, 1992]. The increase in the deposit rate of interest to d_1 produces excess demand for money at the initial level of interest and thus leads to the same effect on the (AD) curve as the cut in the money supply.

Figure (4)

Panel a   Panel b   Panel c
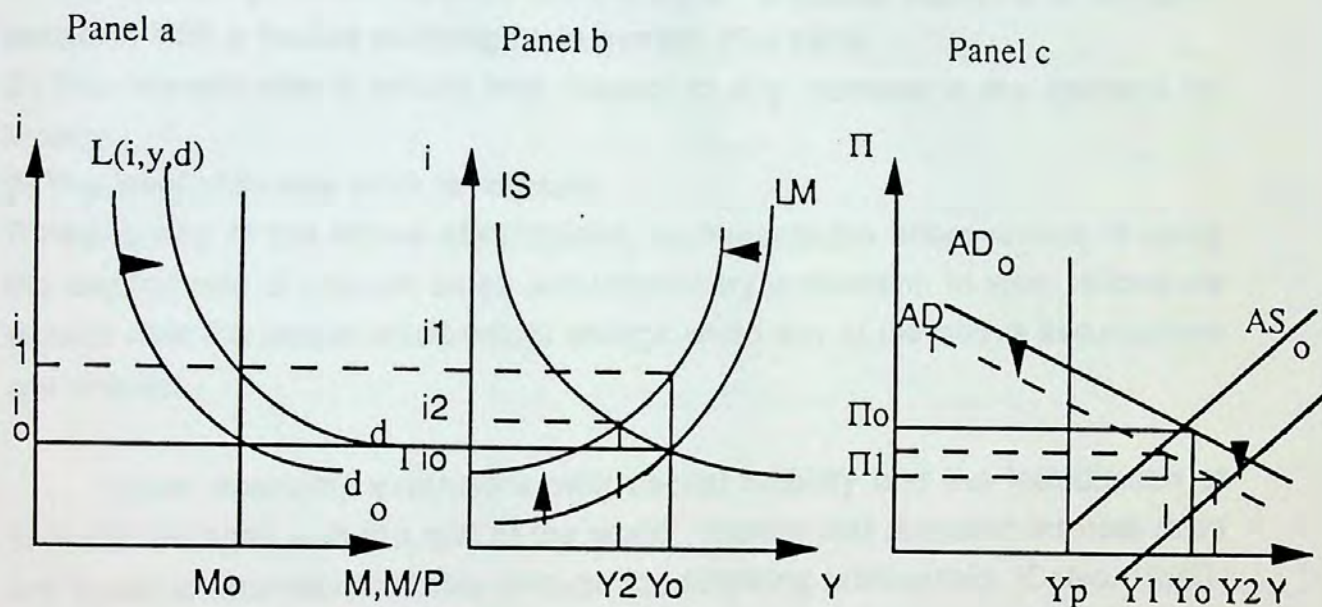
Source: Panels a and b : Branson, 1979
        Panel c Dornbush and Fisher, 1992

Apparently, both a cut in the money supply and an increase in the deposit rate of interest would reduces output demanded by reducing investment on the demand side of the economy. However , the cut in the money supply which is usually achieved through credit contraction in most underdeveloped economies -by imposing high required reserve ratios and tight credit ceilings- will lead to a reduction in the volume of real bank credit available for both fixed and working capital. This precipitates adverse effects on economic activity. The higher deposit rate of interest will not only avoid this reduction in real bank credit , but moreover it will mean a higher volume of real bank credit forthcoming and through the credit availability mechanism will lead to higher output reflected in an outward shift of AS. Now the new AS and AD intersect at a lower rate of inflation but at a higher output Y2. Meanwhile it is postulated that the weeding

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out of low yielding investment that is expected to occur at higher interest rates will further stimulate output growth through the increasing efficiency of investment. In that sense, "The interest rates on money is an instrument that achieves the goals of a cut in the money supply at a lower cost in the short run ." [Calvo, 1992, P. 58]

III.Prerequisites for Successful Financial Liberalization:

The discussion so far together with the conclusion reached concerning the impact of raising the deposit rate of interest on inflation are valid only under three restrictive conditions:

1- The economy under consideration is either a closed economy or an open economy with a flexible exchange rate system. [Fry 1988]

2- The interest rate is elastic with respect to any increase in the demand for money.

2- The level of money stock is constant.

Relaxing any of the above assumptions counteracts the effectiveness of using the deposit rate of interest as an anti-inflationary instrument. In what follows we explain how the above result would change when any of the above assumptions are relaxed.

Open economy extensions with capital mobility and the introduction of financial linkages with the rest of the world , means that domestic interest rates are linked to international rates through the following relationship. [Calvo, 1992)

$$r = R + \varepsilon^e + K \qquad \text{-------------------}(6)$$

where i is the domestic interest rate, R is the international interest rate , ε^e is the expected rate of devaluation and k is the risk premium . Equation (6) states that for a given level of risk (K) , the relative attractiveness of holding domestic interest bearing assets compared to foreign interest bearing assets, will depend on the expected rate of devaluation ε^e.[Tanzi and Blejer, 1982]

If domestic interest rates rise - following an increase in domestic deposit rates - so that $i > R + \varepsilon^e$, this will lead to an inflow of capital where people would sell dollars for interest bearing domestic assets. The domestic currency will tend to appreciate thus exerting downward pressure on the exchange rate. Equality between the two sides of the above relationship is maintained through a higher rate of devaluation . Apparently such adjustment of the exchange rate is possible only under flexible exchange rates system. However , under fixed exchange rates , the exchange rate is not allowed to adjust to any discrepancy between domestic and foreign interest rates. The inflow of foreign capital in response to

interest rate differential with the consequent appreciation of the domestic currency will induce the monetary authority to intervene by buying dollars to restore purchasing power parity. Such forms of intervention automatically leads to an increase in the money stock therefore reducing the impact of higher deposit rates on nominal interest rates and consequently on inflation. [Calvo, 1992].

The above argument shows that one of the prerequisites for successful financial liberalization is control of the money supply which necessitates not only a floating exchange rate system, but also fiscal discipline. [Fry, 1988], This stems from the fact that government budget deficits are one of the important factors that instigate monetary expansion in most of underdeveloped economies.

In Summary, high deposit rates of interest that lead to an increase in real deposit rate is considered as a multi-objective policy tool which raises the rate of economic growth through both a higher quantity and quality of investment and reduces inflation through a higher demand for real money balances. In turn, the reduction in inflation will increase the real rate of interest, further leading to even higher output and lower inflation in the short run. Such results can be attainable only to the extent that fiscal, monetary and exchange rate policies are completely consistent with the initial objectives of high deposit rates of interest.

Chapter II
Financial Repression : The Egyptian Experience

This chapter seeks to analyze the effect of government financial policies on growth and inflation in Egypt within the theoretical framework outlined in the preceding chapter. Such an analysis , however , cannot be possible in the absence of an adequate understanding of the nature of financial markets in Egypt, along with the actual linkages between the government fiscal, monetary and financial policies. Emphasizing and analyzing these linkages will also prove useful in determining the prerequisites for successful financial liberalization in the case of Egypt.

I.The Egyptian Financial Sector:-

At the very general level, the Egyptian formal financial sector is characterized by a fragmented- bank oriented- capital market and underdeveloped money market whereby "bank deposits of different maturities are almost the only near cash asset available" [Mohareb, 1986]. No future or forward markets for currency and securities exist with nearly all listed securities being acquired in the primary market [Kazarian, 1991]. Money, broadly defined to include currency, interest and non-interest bearing bank deposits is the dominant financial asset available. The role of non-bank intermediaries in the mobilization and allocation of funds is quite insignificant [Kazarian, 1988], and the monetary system plays the leading intermediary role between savers and investors.

Until 1991, the financial sector was isolated from the effect of exchange rate changes through a system of exchange controls on the capital account of the balance of payment. The absence of strong financial linkages between the financial sector and the rest of the world have further reinforced this state of isolation. This is mainly attributed to the limited possibility of substitution between domestic and foreign assets. [Dalami and Din, 1991]. "Considerations of country risk, lack of market mechanism to hedge exchange rate risk, and the very limited menu of financial instruments available" [Dailami and Din, 1991], are perhaps the main factors underlying such limited substitutability.

This relatively underdeveloped, shallow, and fairly isolated financial structure, has basically evolved within a prohibitive regulatory and legislative framework. For almost two decades, the financial sector has been afflicted by

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two implicit taxes- the financial repression tax defined as the difference between market and below market interest payment on the government debt, and the inflation tax defined as the product of inflation and the stock of reserve money, an extensive array of government regulations and the existence of strong barriers to entery. That set up besides fundamentally affecting the structure, and depth of the financial sector in addition to the pattern of financial asset holdings- has stifled competition, inhibited innovation and constricted the ability of the financial sector -particularly nonbank intermediaries- to mobilize and allocate resources. The result was a suboptimal pattern and level of financial deepening, a suboptimal allocation of real credit and a generally declining yield curve on capital throughout the economy.

II. Financial Repression and Portfolio Shifts:-

The degree of government involvement and intervention in the financial sector varied considerably over the past three decades. During the sixties and early seventies, the government administered interest rates throughout the financial sector and financial institutions were completely state owned. Nominal creditor interest rates were fixed at a level which ranged from 1.2% to 2.4% net of taxes (2%-4% pre-tax) while debtor interest rates ranged from 5.5% t0 7% subject to a constitutionally fixed upper ceiling of 7% . The rationale behind low administrative loan rates of interest was to provide cheap credit, to permit a nonprice allocation of credit to high priority sectors of the economy and to control inflation. [Kazarian, 1988]. In 1975, the government embarked on a new financial reform program exemplified by the promulgation of law number 120 concerning the "Central bank and the banking system" which laid the foundations for financial deregulation by granting the central bank the authority to determine the structure of interest rates and permitting the establishment of new private financial institutions.

Interest rate determination

Interest rate reforms introduced in 1975 took the form of upward adjustment of both deposit and loan rates while that on corporate securities remained subject to the 7% ceiling. The deposit rate of interest increased from a low level of 3% in 1976 to 12% in 1990 and the loan rate , in turn, increased from 8% to 18% over the same interval. (See table 1). However, throughout this period the adjustment process took place with virtually no role for market forces and interest rates, continued to be administratively determined on the basis of agreements with the central bank. (Mohareb, 1986). The fact that domestic and international markets are highly segmented together with the administrative

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Figure 1

Inflation

Year	N. deposit rate (1)	N. loan rate (2)	real deposit rate (3)	real loan rate (4)	N. deposit rate on $	real deposit rate on $
1976	3.0	8.0	-4.8	0.2	6.12	9.94
1977	4.7	8.8	-4.6	-0.52	6.37	9.56
1978	5.9	10.2	-8.9	-4.57	9.2	9.20
1979	7.0	12.0	-2.7	2.27	12.15	16.97
1980	8.3	13.3	-13.4	-8.41	14.03	26.90
1981	10.0	15.0	2.0	6.98	16.72	40.48
1982	11.0	15.0	1.7	5.68	13.6	21.55
1983	11.0	15.0	-5.0	-1.0	9.93	24.63
1984	11.0	15.0	1.0	5.0	11.29	22.75
1985	11.0	15.0	-2.2	1.8	8.64	16.35
1986	11.0	15.0	-6.3	-2.3	6.85	26.62
1987	11.0	16.3	-2.7	2.6	7.3	25.54
1988	11.0	17.0	-15.2	-9.2		
1989	11.7	18.3	-15.6	-9.0		
1990	12.0	19.0	-4.8	2.2		
1991	16	18	-1.92	0.08		
1992	17.1	22	6.08	10.98		

Source: IMF International Financial Statistics Yearbook, 1992
        1992= First quarter

Table 1
Nominal and Real Deposit and Loans Rates of Interest

Source: 1, 2,3, 4, IFS International Financial Statistics Yearbook, 1992
           5, 6, Abdel Latif, 1990

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Figure 2

Finanical Deepening
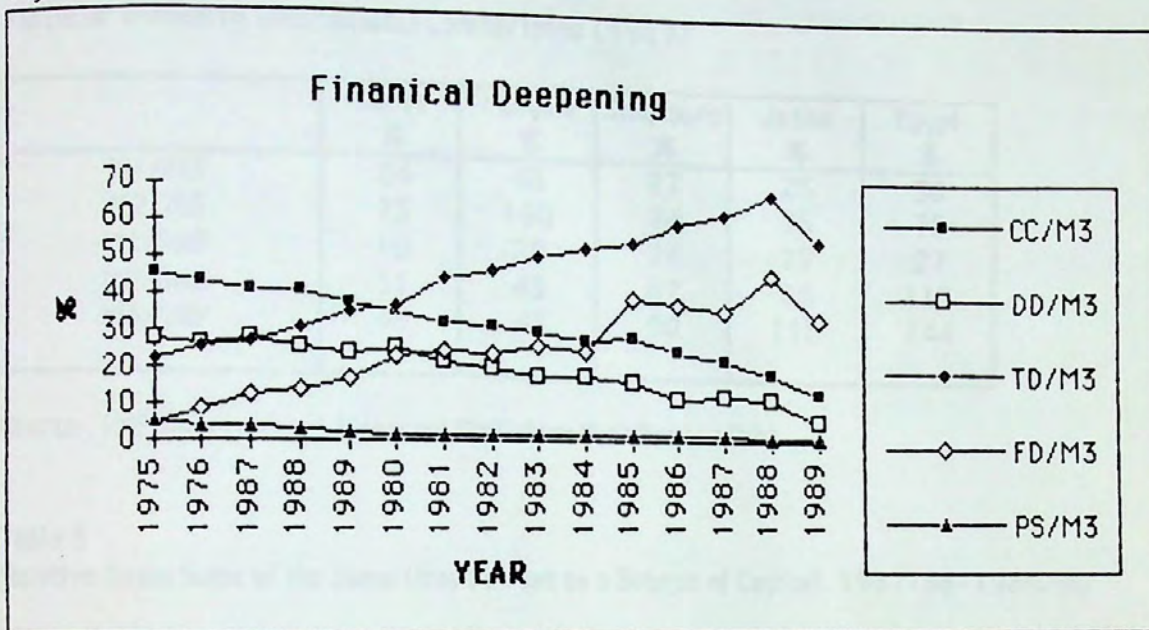
Source: 1975-1988, Kazarian, 1991
        1989, Central Bank of Egypt, Economic Review. 190/1991

Figure 3
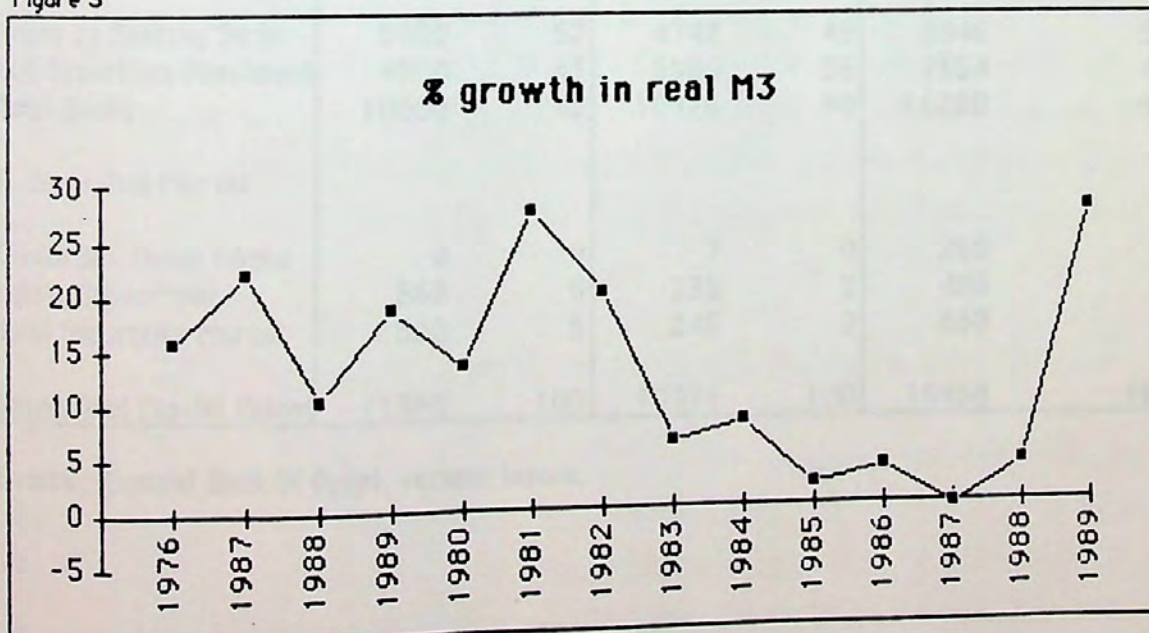
% growth in real M3

Source: 1975-1988, Kazarian, 1991
        1989, Central Bank of Egypt, Economic Review. 1990/1991

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Table 2
Financial Deepening International Comparisons (1989)

	Korea %	Malysia %	Singapore %	Japan %	Egypt %
M1/M3	24	45	27	25	30
M2/M3	73	100	74	75	78
M1/GNP	10	20	24	29	27
M2/GNP	31	43	67	86	113
M3/GNP	43	43	90	115	144

Source : IMF International Financial Statistics YearBook, 1990

Table 3
Relative Importance of the Securities Market as a Source of Capital: 1987/88-1989/90

	--1987/88--		--1988/89--		--1989/90--	
	LE MM	% of Total	LE MM	% of Total	LE MM	% of Total
A. Banks						
Loans by Banking Sector	5900	52	4742	43	8846	52
GOE Securities Purchased	4900	43	5984	55	7354	44
Total Banks	10800	95	10726	98	16200	96
B. Securities Market						
Quoted GOE Bonds Issued	0	0	7	0	260	2
Equity Subscribed	568	5	238	2	408	2
Total Securities Market	568	5	245	2	668	4
Grand Total Capital Raised	11368	100	10971	100	16868	100

Source : Central Bank Of Egypt, various issues.

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nature of interest rate determination in Egypt implies that interest rates are inelastic with respect to domestic monetary conditions and are completely independent of movements in foreign interest rates. Eventually this was not equally true for both domestic real interest rates and nominal deposit rates of interest on foreign currency denominated bank deposits.

The effect of these discrete but significant increases in the nominal rates of interest which took place during the period 1975-1990 was, however more than wiped out by the increase in the inflation rate. Although price inflation-measured as percentage growth in the whole sale price index- was significant at a level of 7.8% in 1976 it started to accelerate reaching a maximum of 27.2% in 1989 , (see fig 1) resulting in negative real rates of interest. Real Deposit rates of interest ranged from -4.8% in 1975 to -15.6% in 1989 to -4.8% in 1990 while real loan rates ranged from 0.2% to 9% and 2.2% during the same period, in addition to negative - pre and after tax - real rates of return on government and corporate securities. (See table 1)

Nevertheless, a rapid increase in the volume of monetary assets took place following the interest rate reforms of 1975. The ratio of M3 to GNP increased from 54% in 1974 to 114% in 1989, and that of M1/GNP decreased from 39% to 27% between 1974-1989, still indicating a relatively high ratio of assets held in transaction form [Kazarian, 1991]. The break down of the figure for M3 into its major component, that is into currency outside banks (CC), demand deposits (DD) and, time deposits (TD) gives a more illustrative picture of financial deepening. The ratio of CC/M3 declined from 45% in 1974 to 13% in 1989, DD/M3 fell from 26% to 6% while the share of time and saving deposits rose sharply from 23%-nearly 1/3 of the share of both currency and demand deposits- in 1974 to 55.9% in 1989 being more than twice as great. (See figure 2).

Such a high ratio of M3/GNP -although relatively high by international standards as evident from table 2 - must be carefully interpreted. In fact, this increase occurred mainly due to the rise in the share of assets denominated in foreign currency. Between 1974 and 1989, the share of these assets in M3 increased from 4.1% to 34%. This took place in response to a number of factors. Firstly, the promulgation of law number No 97 of 1976 on the "Organization of Foreign Exchange Transaction ended the prohibition of holding and dealing with foreign exchange through registered banks. [Mohareb, 1986]. Secondly, much of the period has coincided with an increase in workers remittances. Thirdly, the

interest rate offered on these deposits is not regulated by the central bank and follow to a great extent movements in international rates. (see table 1) [Abedel Latif, 1990]. When further adjusted for the expected rate of devaluation of the Egyptian pound vis a vis foreign currencies, these rates yield a rate of return which is far higher than that secured on time and saving deposits held in domestic currency. [Abdel Latif, 1990]. By taking into consideration that the Egyptian pound has been devalued from 0.53/$ in 1970 to 2.32 in 1989, it becomes clear that much of the increase in the volume of monetary assets taking place during 1974-1989 was largely the result of the increase in the value of deposits denominated in foreign currency [Kazarian, 1991] rather than a reflection of the reforms enacted.

Another point that is worth emphasizing is the significant increase in the share of deposits held in domestic currency in M3, i n spite of the deep negativity of interest rates offered on these assets. This increase can be partly attributed to the promulgation of Law number No27 for 1977 which exempted time and saving deposits and government debt securities from all forms of taxes rendering both the nominal and real after tax rates of return on corporate securities relatively unattractive. In addition, a significant group of savers would seem to suffer from money illusion [Din and Giugale, 1991] given Egypt's record of very low inflation throughout the 1950s and 1960s. Also some forms of foreign exchange controls were still operative which together with the relative attractiveness- in terms of liquidity- of holding interest bearing assets to tangible assets left people with no alternative other than domestic interest bearing deposits.[Din and Giugale, 1991]

The fact that interest rates were well below their competitive levels and negative in real terms, implies that the volume of domestic interest bearing monetary and nonmonetary financial assets is suboptimal. [Fry, 1988]. Actually. the prevalence of negative interest rates have -in general- instigated considerable portfolio shifts away from financial assets. However, in the absence of reliable data on both the magnitude and direction of such shifts in the case of Egypt, one has no alternative but to rely on estimates. Inflation hedges -real estate, land, precious metals- were the common substitutes for financial assets since their value have consistently increased in line with- or sometimes even surpassing - the rate of inflation. It is estimated that by the end of 1986, a total of 1.79 million housing units with a rough opportunity cost of $9 billion were found to be unused. [Handoussa, 1987]. Such destablizing portfolio shifts, clearly "magnifies the initial inflationary shock" [Fry, 1988] as evident from the

skyrocketing of the prices of real estate and land. Negative real rates of interest have also encouraged the accumulation of foreign deposits in non resident banks. The world bank estimates that the deposits of Egyptians in non-resident banks increased from $1.19 billion at the end of 1981/82 to $4 billion in 1989.

The repression of formal financial markets has also led to the creation and expansion of informal money markets. Towards the beginning of the 1980's , this phenomenon culminated with the emergence of a remarkable financial hybrid known as the "Islamic Investment Companies". By offering depositors an average rate of return of 24%-which was close to the rate of inflation prevailing- these companies were able to attract one million savers and to mobilize up to US$ 7.5 billion - as estimated by the world bank- of uninsured deposits.

However, these companies were more of investors rather than financial intermediaries since lending on the credit market was not among the e activities they undertook. The resources they were able to mobilize were directly invested by the owners and therefore are more likely to fall under loans in the curb market rather than deposits. Meanwhile, the 20-30 rates of return that these companies were able to secure on the investment they undertook can be attributed to speculation, the holding of foreign exchange, gold and real estate. [Shafik, 1989]. Nevertheless, the experience of the Islamic Investment Companies provide ample evidence on the effectiveness of high interest rates in the mobilization of financial resources in the case of Egypt.

On the micro level, i.e. within the financial sector, financial repression and the government discriminatory taxing policy have induced portfolio shifts out of currency, direct financial claims and time deposits held in domestic currency into time deposits denominated in foreign currency. This exerts upward pressure on the black market exchange rate and raises problems of monetary control [Abedel Latif, 1990]. On the macro level, financial repression induced portfolio shifts away from financial assets- in general- and into unproductive tangible assets- held as inflation hedges- foreign assets and curb market assets. As a result, the inflation adjusted rate of growth in real M3 have sometimes recorded rates of growth as low as 1.95% in 1985 reaching even negative rates as -0.27 in 1987.(See fig 3).

III. Structural Change and Financial Widening:-

Currently, the financial sector consists of, the Stock Exchange, 9 insurance companies (4 public and 5 private), t he Social Insurance fund, 383 Private Complementary Pension Funds (PCPF), 8 Private Alternative Pension Funds (PAPF) and the banking system. In turn, the banking system consists of the Central Bank representing the monetary authority, 44 commercial banks (4 public), 33 investment banks 11 of which are private and joint banks while the remaining are foreign bank branches, 4 specialized banks (the bank of industrial development, 2 real estate banks and the bank of development and agricultural credit with 17 government affiliates). In addition, there are 3 more banks which are not registered at the Central Bank these are Nasser Social Bank, Arab International Bank and one bank operating in the free zone area.

Finally, the financial sector also include the National Investment Bank (NIB) which is a government financial-rather than intermediary- institution responsible for extending funds to both the government and Public sector companies. The NIB mainly raises its resources from issuing medium term investment certificates and through the monopolization of the social security pension system reserves and post office savings in return to low below inflation rates of interest. [Dalami and Din, 1991].

This limited financial structure is dominated by state owned financial institutions. In the insurance market, the 4 public sector companies sell 85% of total premia, while state owned banking institution account for 70%-including 20% share of NIB- of the total resources of the banking sector.

The number of banks increased significantly following the 1975 reforms to reach 101 units in 1991 up from only 6 in 1975 (4 nationalized commercial banks, 2 specialized banks: a mortgage and an agricultural bank). However, bank density is still equal to 0.2^2 which is considered low by international standards. [Kazarian, 1991].

The relative importance of the securities market as a source of capital to both the private and public sectors declined substantially over the past three decades. It's share in total funds raised by the capital market-defined to include the securities market and the banking system - amounted to an average of 5% during the three years 1987/88-1989/90. (See table 3). Furthermore, the share of

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[2] Bank Density = Number of Bank Branches * 10,000/ Total Population. Bank Density of 1 is high, from 1-0.5 moderate while below o.5 is considered low.

Table 4
Stock Exchange Statistics

	1953	1958	1961	1975	1980	1985	1989	1990
					(millions unless otherwise noted)			
Number of Listed Companies (#)	211	275	261	55	61	318	510	573
Number of Shares listed (#)	22	48	65	21	48	242	358	375
Market Capitalization (LE)	91	170	175	49	130	1874	4384	5274
Market Turnover (LE)	16	30	39	8	11	63	204	342
Turnover Ratio	17.58%	17.65%	22.46%	16.94%	8.31%	3.36%	4.64%	6.48%
Year end FX Rate (LE per US$)	0.35	0.35	0.35	0.39	0.7	1.33	2.56	2.87
Average FX Rate (LE per US$)	0.35	0.35	0.35	0.39	0.7	1.3	2.52	2.71
Gross Domestic Product (LE)a/	950	1.329	1.459	4.886	15.47	32.516	64.688	84.748
Market Capitalization as Percent of GDP	9.58%	12.97%	11.99%	1.00%	0.84%	5.76%	6.78%	6.22%
Net Change Bank Credit (LE) b/	-5	26	6	294	-222	1.861	3.098	4.026
Value of Shares Issued (LE) c/	5	10	8	1	4	33	32	40
Shares Issued as a Percent New Capital Raised in Year	nm.	26.76%	56.20%	0.20%	-1.83%	1.74%	1.01%	0.98%

Sources : Capital Market Authority, Cairo and Alexandria Stock Exchanges,
and IMF, "International Financial Statistics".

data are for GNP in 1953, national income in 1958 and GDP in Following Years, as calculated
by the IMF, except of 1990 which is a world Bank estimate.

net change from previous year in "claims on the private sector" as recorded by the IMF, IFS, A break
in comparability in 1980.

paid- in capital of joint stock companies, new issues and capital increases.

private sector in these funds have not exceeded an average of 1% down from 25%-50% during 1958-1961. Apart from an unconducive legal framework, the declining importance of the securities market can be mainly attributed to factors affecting the supply and demand of securities: [Mohareb, 1986].

The Supply Side

Firstly, following the nationalization decree of 1960, the state assumed the central role in virtually all areas of economic activity relying totally on state controlled sources of funds to finance it's investment while the private sector confined itself to activities which did not require raising funds on the securities market. Consequently, both the size and volume of transactions were greatly reduced. The number of listed companies decreased from 275 in 1958 to 55 in 1970 and early 80's and turnover declined from LE 66.7 million in 1958 to an average of LE 4 million in 1975. (See table 4). Although a relative revival of the securities market took place following the initiation of the open door in 1974 where the number of listed companies increased from 55 in 1975 to 573 in 1990, market capitalization as a percentage of GDP reached 6.22% almost half the pre-nationalization level and trading volume reached LE 341 million exceeding the pre-nationalization level, much of the above circumstances have continued to persist throughout the 70s and 80's.

Secondly, , over the period 1980-1990 , 80% of the 418 companies listed on the stock exchange and accounting for 64% of all listed securities were closely held. In addition, during 1982-1986, founders shares constituted 54% of total shares issued by the 106 public offering by prospectus. The predominance of closely held and founders shares rendered the security market as highly illiquid where only 20% of listed securities trade yearly. Thirdly, for a corporate issuer-given a corporate tax rate of 42%- the fact that interest payment are deductible while dividends are distributed out of net of tax income makes the cost of raising funds through securities market about double the cost of borrowing from the banking sector.

The Demand Side

Fourthly, The absence of institutional investors such as Mutual Funds[Saad, 1991] and imposing balance sheet constraints on existing ones have greatly reduced the demand for securities. The existence of strong barriers to entry is the main reason behind the absence of Mutual Funds. Such investors can greatly promote public share holdings through evaluating new companies, exploring investment opportunities and by providing portfolio risk

diversification.[Saad, 1991]. Insurance companies were allowed to invest only 20% of their resources in securities [Kazarian, 1991]. Similarly, (PAPF) where allowed to invest only 20% of their resources in securities (10% in bonds and 10% in equity shares).

Sixthly, Interest rates offered on corporate bonds are subject to a low below inflation 7% ceiling, thus yielding negative real rates of return. In addition, the government , 8 year maturity bonds , denominated in US$ yield a rate of return fixed by the Central Bank at a relatively low rate- if compared to the LIBOR rate.- of 8%. [Kazarian, 1988].

Fifthly the most important factor underlying the declining importance of the securities market lies in the prevailing tax structure. While bank deposits and government debt securities are all exempt from taxes by virtue of the 1977 tax laws, corporate securities are subject to the following taxes:

1. Equities: dividends on equity shares are exempt from the general income tax up to 50% for individuals if issued by listed a Joint Stock Companies, while corporations receive 90% tax exemptions on such shares and full exemptions on founders shares.

2. Corporate Debt Securities: for individuals, interest income on corporate debt securities is subject to the general income tax ranging from 8% to 65% and to the tax on movable capital of 32%. The tax laws of 1981 exempted interest income on Corporate bonds up to rates equal to that pertaining to Treasury bills of the same maturity provided that the bonds is issued by a listed Joint Stock Company. Apparently such tax concessions ignores the relatively high risk inherent in investing in corporate bonds as compared to treasury bills. [Saad, 1991]. For corporate investors interest income is subject to a minimum of 32% tax rate with exemptions reaching 90%. In addition, listed and unlisted equity shares and corporate bonds are subject to stamp duties of 1.2% and 0.8% respectively.

Finally, Transaction costs that include 1%- 0.5% on both the buyer and the seller- on equity shares and 0.4% - 0.2 on both buyer and seller- on debt instruments is considered high by international standards.[Saad, 1991] and specially discriminates against debt securities which are usually sold in large numbers. [Saad, 1991]

The present tax structure, the high transaction costs and the fixed 7% ceiling on corporate securities distorted the risk/reward relationship between different competing financial assets in the sense that net of tax rates of returns on the least risk bearing assets is considerably higher than that on risky assets such as corporate securities as evident from tables 5 and 6.. This discriminate tax treatment have discouraged the holding of such assets in favor of bank deposits and government debt securities. In 1990, the value of all listed securities outstanding did not exceed 0.61% of M3. . Consequently, the securities market- once the world's most active stock exchange during the 40's and 50's [Brown, 1991] - became of marginal importance as a source of long run risky capital for both individual and corporate investors with the bulk of capital being raised through the banking sector.

The suppression of the securities market , as conceptualized by Fry (1988), through high transaction costs and the indiscriminate taxation of direct financial claims have enabled the government to artificially channel private savings through the banking sector where it is relatively easy to rechannel the increasing liquidity of this sector to finance the government budget deficit. This goal was basically accomplished through a deflationary monetary policy that relied solely on credit contraction to reduce the money supply combined with selective credit policies. The latter embedded in heavy reliance on specialized banks and subsidized interest rates to high priority sectors of the economy. Together, the above set of policies raised the share of bank finance of the budget deficit from 35.4% in 1974 to 91.3% in 1989. (See Figure 4 and 4a).

Monetary Policy

In the absence of any significant open market operations, instruments of monetary policy-apart from the required reserve ratio- were purely administrative in nature. These included liquidity ratios , fixed loan to deposit ratios, and subcredit ceilings. the latter two being first introduced in 1981. Eventually, these policies have been directed in large to accommodate the budget deficit. The 65% loan to deposit ratio was not extended to loans provided to the government and public sector companies . In addition banks were required to keep 8% of the 30% liquidity ratio in the form of low yielding government bonds earning an average rate of return equal to 8% at the same time when interest rates on loans was equal to 12%. [Kazarian, 1988].

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Table 5
Comparative After-tax Rates of Return on Financial Assets

INDIVIDUALS

(LE)

A. Bank Deposit 1/
7-month CD
Interest @ 17.25% p.a.

Principal Amount	1000
Interest Earned	173
General Income Tax 2/	no tax
Movable Capital Tax 3/	no tax
Stamp Duty 4/	no tax
Exemptions 5/	n.a.
Total Tax Payable	0
Net Income	172.5
Effective Tax Rate (%)	0%
Effective Rate of Return (%)	17%

B. Treasury Bill
90-Day
Interest @ 19% p.a.

Principal Amount	1000
Interest Earned	190
General Income Tax 2/	no tax
Movable Capital Tax 3/	no tax
Stamp Duty 4/	no tax
Exemptions 5/	n.a.
Total Tax Payable	0
Net Income	190
Effective Tax Rate (%)	0%
Effective Rate of Return (%)	19%

C. Development Bond
July 1985 @ 9.5%
Coupon 9.5% p.a

Principal Amount	1000
Interest Earned	95
General Income Tax 2/	no tax
Movable Capital Tax 3/	no tax
Stamp Duty 4/	no tax
Exemptions 5/	n.a.
Total Tax Payable	0
Net Income	95
Effective Tax Rate (%)	0%
Effective Rate of Return (%)	10%

D. Housing Bond
of 1992/2007
Coupon @ 8% p.a.

Principal Amount	1000
Market Price @ 6.3.91	810
Interest Earned	80
General Income Tax 2/	no tax
Movable Capital Tax 3/	no tax
Stamp Duty 4/	no tax
Exemptions 5/	n.a.
Total Tax Payable	0
Net Income	80
Effective Tax Rate (%)	0%
Effective Rate of Return (%)	10%

E. Listed Corporate Bond
(Hypothetical)
Interest @ 19% p.a.

Principal Amount	1000
Interest Earned	190
General Income Tax 2/	22.75
Movable Capital Tax 3/	0
Stamp Duty 4/	8
Exemptions 5/	22.75
Total Tax Payable	30.75
Net Income	159.25
Effective Tax Rate (%)	16%
Effective Rate of Return (%)	16%

F. Listed Common Stock
Mohandes Inssurance
June 3, 1991 data

100 shares @ LE 22.6	2260
Divident @LE1.76/share	176
General Income Tax 2/	19.74
Movable Capital Tax 3/	0
Stamp Duty 4/	18.08
Exemptions 5/	19.74
Total Tax Payable	37.82
Net Income	138.18
Effective Tax Rate (%)	21%
Effective Divident Yield (%)	6%
Nominal Divident Yield	8%

Source: Provided by Dr. Handoussa from World Bank, summer, 1992.
1. Current rate on a seven-month bank deposit.
2. General income tax @ 25% after deduction of applicable tax on movable capital and stamp duty; no personal allowances considere
3. Tax on movable capital @ 32% applicable to interest income only. In principle, the only portion taxable is the amount above the interest rate declared by the central Bank of Egypt (currently the Treasury bill rate) of a period equal to that of the bond. Deposit interest from accredited banks is exempt for corporations, as is one half of the interest and dividend income

Table 6
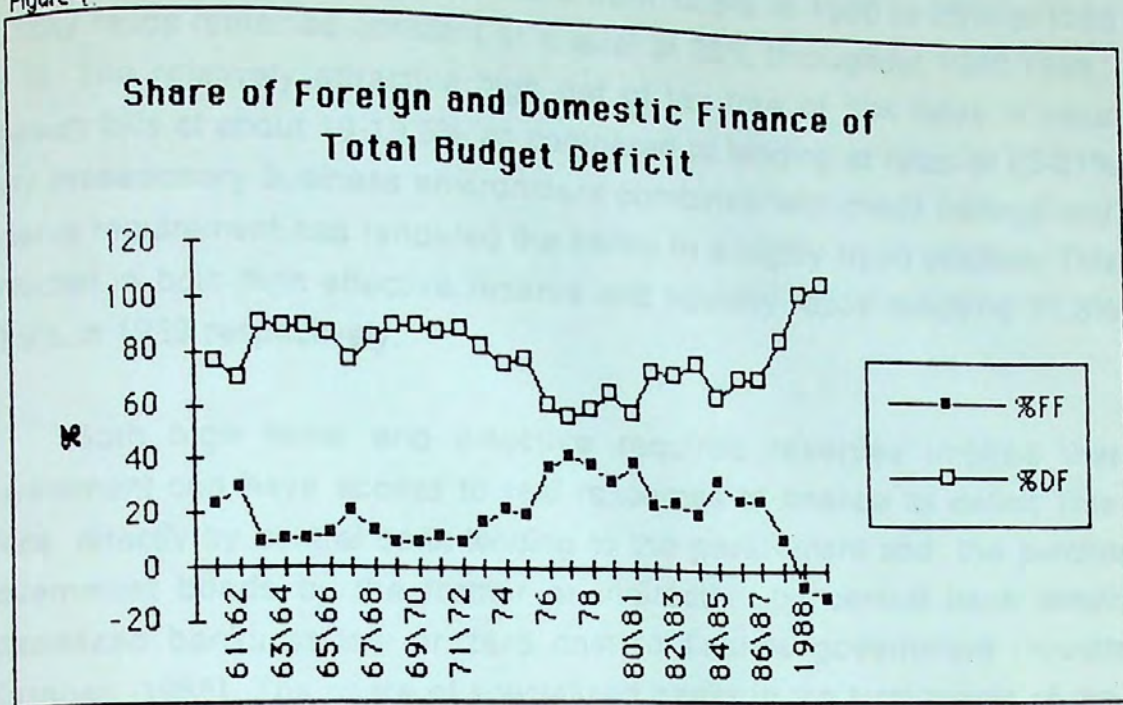Comparative After-tax Rates of Return on Financial Assets

CORPORATIONS

(LE)

A. Bank Deposit 1/
7- month CD
Interest @ 17.25% p.a.

Principal Amount	1000
Interest Earned	173
Corporate Inc. Tax 6/	7.25
Movable Capital Tax 3/	no tax
Stamp Duty 4/	no tax
Exemptions 5/	n.a.
Total Tax Payable	7.25
Net Income	165.26
Effective Tax Rate (%)	4%
Effective Rate of Return (%)	17%

B. Treasury Bill
90-Day
Interest @ 19% p.a.

Principal Amount	1000
Interest Earned	190
Corporate Inc. Tax 6/	7.98
Movable Capital Tax 3/	no tax
Stamp Duty 4/	no tax
Exemptions 5/	n.a.
Total Tax Payable	182.02
Net Income	
Effective Tax Rate (%)	4%
Effective Rate of Return (%)	18%

C. Development Bond
July 1985 @ 9.5%
Coupon 9.5% p.a

Principal Amount	1000
Interest Earned	95
Corporate Inc. Tax 6/	3.99
Movable Capital Tax 3/	no tax
Stamp Duty 4/	no tax
Exemptions 5/	n.a.
Total Tax Payable	3.99
Net Income	91.01
Effective Tax Rate (%)	4%
Effective Rate of Return (%)	9%

D. Housing Bond
of 1992/2007
Coupon @ 8% p.a.

Principal Amount	1000
Market Price @ 6.3.91	810
Interest Earned	80
Corporate Inc. Tax 6/	3.36
Movable Capital Tax 6/	no tax
Stamp Duty 3/	no tax
Exemptions 5/	n.a.
Total Tax Payable	3.36
Net Income	76.64
Effective Tax Rate (%)	4%
Effective Rate of Return (%)	9%

E. Listed Corporate Bond
(Hypothetical)
Interest @ 19% p.a.

Principal Amount	1000
Interest Earned	190
Corporate Inc. Tax 6/	7.98
Movable Capital Tax 3/	no tax
Stamp Duty 4/	8
Exemptions 5/	n.a
Total Tax Payable	15.98
Net Income	174.02
Effective Tax Rate (%)	8%
Effective Rate of Return (%)	17%

F. Listed Common Stock
Mohandes Inssurance
June 3, 1991 data

Principal Amount	2260
100 shares @ LE 22.6	
Dividend @LE1.76/share	176
Corporate Inc. Tax 6/	7.39
Movable Capital Tax 3/	0
Stamp Duty 4/	18.08
Exemptions 5/	n.a.
Total Tax Payable	25.47
Net Income	150.53
Effective Tax Rate (%)	14%
Effective Dividend Yield (%)	7%
Nominal Divident Yield	8%

Figure 4.

Share of Foreign and Domestic Finance of Total Budget Deficit

Source: 1961-1987 Abdel Latif, 1990
IMF Government Financial Statistcs Yearbook, 1991

Figure 4a

Share of Bank and Nonbank Fianance of the Budget Deficit as a % of Domestic Finance

Source: 1961-1987 Abdel Latif, 1990
IMF Government Financial Statistcs Yearbook, 1991

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Reserve requirements increased from 12.5% in 1960 to 25% in 1988 and liquidity ratios remained constant at a level of 30% throughout 1960-1989. (See fig 5). The relatively attractive high net of tax free of risk rates of return on treasury bills of about 19-19.5% as compared to lending at rates of 20-21% in a risky recessionary business environment combined with credit ceilings and high reserve requirement has rendered the banks in a highly liquid position. This was reflected in both high effective reserve and liquidity ratios reaching 31.3% and 49.9% in 1989 respectively.

Both high legal and effective required reserves implied that the government can have access to real resources to finance its deficit This took place directly by central bank lending to the government and the purchase of government bonds by the former or indirectly by central bank lending to specialized banks at low or zero cost to finance government investments [Kazarian, 1988]. The share of specialized banks in the total assets of the CBE rose from 5% in 1981 to 6.4% in 1989 and that of treasury bills rose from 14% to 62.8%. (See Figure 6). The overall share of Central Bank finance in total domestic bank finance has increased from 40.6% in 1975, to 90.0% (see fig 4b) reflecting in part increasing reliance on money creation in financing the deficit. High effective reserve requirements in fact redirected the lending capacity of commercial banks to satisfy the requirements of the government. The cumulative effect of all the above policies, the dominance of state owned banks and the system of nonprice allocation of credit that was formulated in conjunction with administered interest rates, was raising the share of net claims on both the government and public sector companies in net real domestic credit to reach 68% as compared to only 25% for the private sector in 1991. (see fig 7)

The net effect of the deflationary monetary policies pursed is quite Ambiguous. On the one hand, this policy have indeed failed to reduce inflation by restraining bank credit since the increase in net domestic credit- obviously to the government- was the main factor underlying money expansion especially after 1974. [Abdel Latif, 1990]. (See fig 8) . On the other hand high effective reserve requirement have in fact helped curb the inflationary pressures of huge budget deficit monetization by serving as the base for the inflation tax.

The inflationary impact of the government fiscal deficit depends in part on the extent to which the government resorts to inflationary as opposed to non inflationary methods to finance the deficit. The most important inflationary
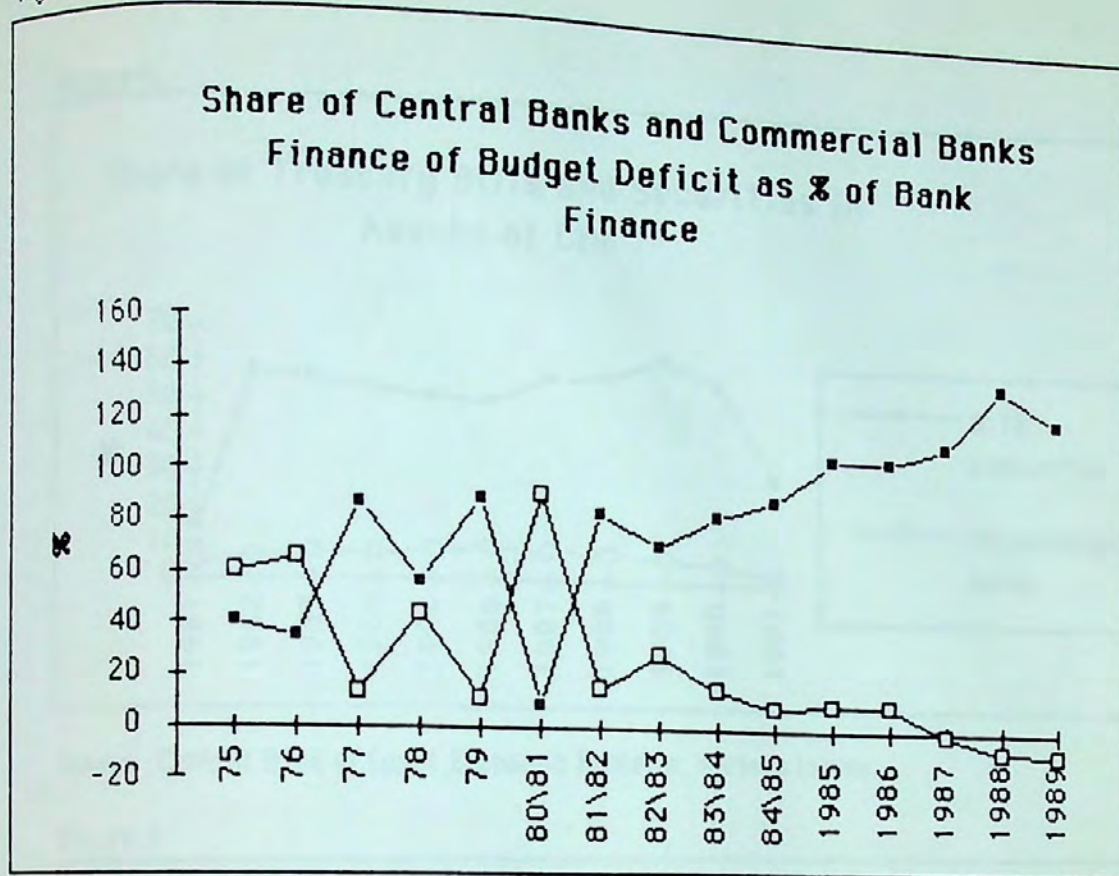
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The inflationary impact of the government fiscal deficit depends in part on the extent to which the government resorts to inflationary as opposed to non inflationary methods to finance the deficit. The most important inflationary

Figure 4b

Share of Central Banks and Commercial Banks Finance of Budget Deficit as % of Bank Finance

Figure 5

Legal and Actual Required and Reserve Ratios

Legend:
- Legal Reserve
- Actual Reserve
- Legal Liquidity
- Actual Liquidity

Figure 6

Share of Treasury Bills and Securities in Assets of CBE

Source : Central Bank of Egypt, Economic Bulletin, Various Issues.

Figure 7

Share of Government and Private Sector in Real Domestic Credit
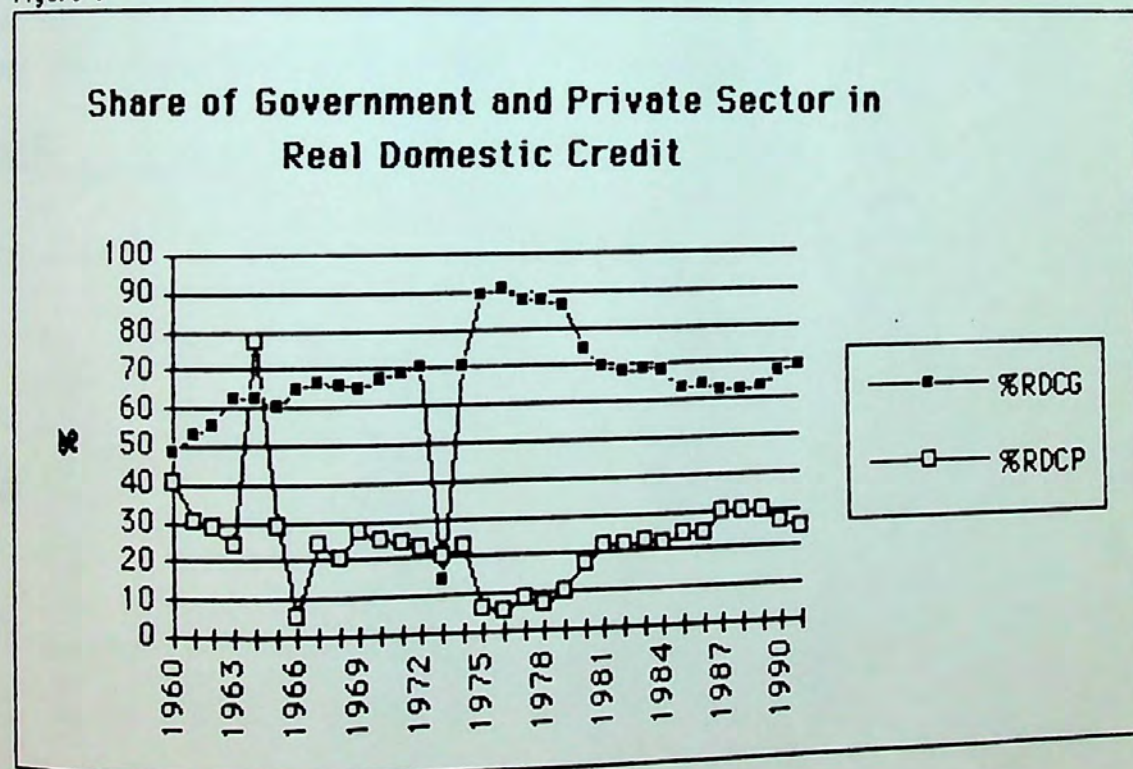
Source: 1960-1987, Abdel Latif, 1990
        1988-1990, Central Bank of Egypt, various issues

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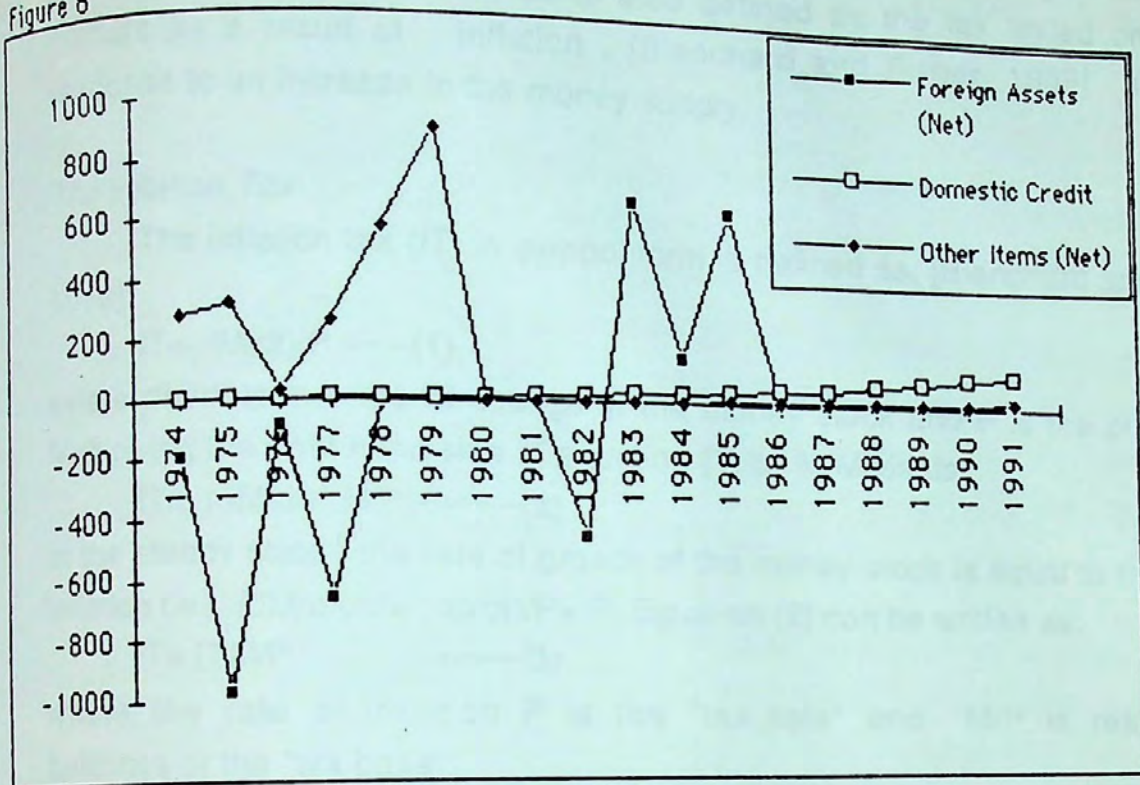
Figure 8

Source : IMF, International Financial Statistics YEARBOOK, 1992

Figure 9
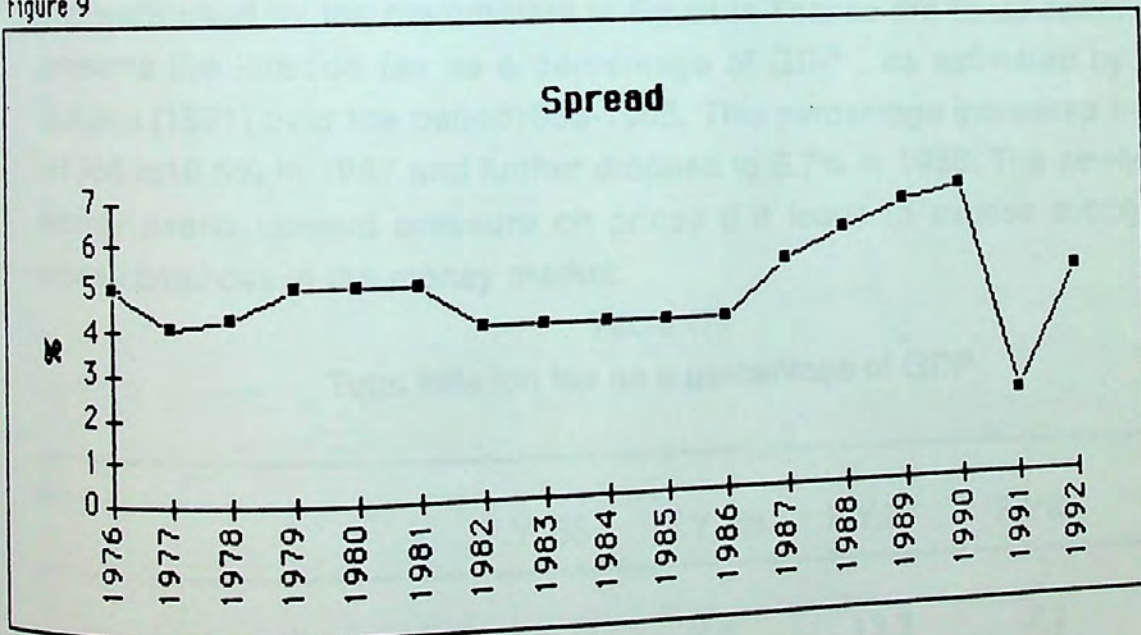
Source : IMF, International Financial Statistics YEARBOOK, 1992

method for financing the deficit is printing money . This method of finance is known in the literature as the inflation tax, defined as the ability of the government to issue high powered money to finance the deficit. [Blanchard and Fisher, 1989]. The inflation tax is also defined as the tax levied on money holders as a result of inflation , [Blanchard and Fisher, 1989] arising in response to an increase in the money supply.

The Inflation Tax

The inflation tax (IT) in symbol form is defined as, [Blanchard and Fisher, 1989]

$$IT=(dM/dt)/P ------(1)$$

where dM/dt is the rate of change in the money stock and P is the price level. Multiplying the right hand side of equation (1) by M/M yields:

$$IT= (dM/dt)* M/P----------(2)$$

In the steady state , the rate of growth of the money stock is equal to the rate of inflation i.e., (dM/dt)/M= (dp/dt)/P= P. Equation (2) can be written as:

$$IT= \Pi M/P -------------(3)$$

where the rate of inflation P is the "tax rate" and M/P is real money balances or the "tax base".

Inflation taxation is considered as one of the main sources of revenue that were used by the government in Egypt to finance the fiscal deficit. Table 7 presents the inflation tax as a percentage of GDP , as estimated by Din and Guigale (1991) over the period1985-1988. This percentage increased from 4.8% in1985 to10.6% in 1987 and further dropped to 6.7% in 1988. The newly created money exerts upward pressure on prices if it leads to excess supply of real money balances in the money market.

Table (7)

Total inflation tax as a percentage of GDP

	F.Y. 85	F.Y. 86	F.Y.87	F.Y88
Net Nominal Tax	5.4	7.0	13.3	7.7
Net Real Tax	4.8	6.1	10.6	6.7

Source: Hinh T. Din and Marcelo Guigale. World bank Working papers. May 1991

However, the fact that agents in Egypt were willing to increase their holdings of real money balances made it possible for the government to finance huge budget deficit through excessive creation of money but with little effect on inflation if compared to other countries. [Din and Guigale 1991]. In other words the large tax base (M/P) generated enough revenues for the government and therefore precluded the need for raising the tax rate (Π). [Din and Guigale, 1991].

The tax base M/P consists of two forms of money holdings [Din and Guigale 1991] : non interest earning component and that is currency in circulation and an interest earning component in the form of time and saving deposits. The dilution in the real value of the first component is equal to the rate of inflation while that of the second component is equal to the nominal interest rate paid on these time and saving deposit less the rate of inflation. This implies that the revenue generated from the inflation tax will be greater the more asset holders are willing to receive negative real rates of return.

High unremunerated reserve requirements represent an effective tax on the banking sector amounting to 0.2% of GDP and 1.5% of bank capital in 1990 [WB Draft, 1992]. Such an implicit tax is bound to increase the cost of intermediation as reflected by the wide spread between deposit and loan rates. In 1990, this spread reached 7% up from 5% in 1976. (See figure 9). High reserve and liquidity ratios have specially discriminated aganist small banking units by constraining their ability to expand and create credit. [Kazarian, 1988].

Social Insurance repression tax

Besides the banking sector, the government also relied heavily on other non bank sources of funds to finance the government budget by imposing various forms of balance sheet constraints on all non-bank financial institutions. The most important source of non-bank domestic finance is extracted from insurance institutions where their share in total non-bank finance of the budget deficit have accounted to 82.2% in 1986/87. (See figure 10). As mentioned before insurance companies were allowed to invest only 20% of their resources in securities while providing 75% to the government at fixed interest rates, the rest being invested in land real estate and deposits in the banking sector. [Kazarian, 1991].

As to the Pension system the government stipulates that 25% of the reserves of (PCPF) must be in the form of government guaranteed securities and

50% of the reserves of (PAPF) must be invested in the (NIB) in the form of low yielding government securities, . Finally, the government stipulates that social insurance reserves must be deposited at the (NIB) in return to low interest rates which ranged form 6% to reach 14% in 1991/92. These rates of return are highly negative in real terms. The above balance sheet constraints together with those previously mentioned have prevented these intermediaries from playing a significant role - as in most of industrial economies- as active institutional investors in the securities market when world wide they are the main driving force underlying the development of such markets.

The predominance of state owned financial institutions, the imposition of foreign exchange controls, interest rate ceilings, high reserve and liquidity ratios, the monopolization of the resources of post office saving, pension system. social insurance fund, insurance companies and the suppression of the securities market made possible the extraction of sizable amount of resources from the financial sector to finance the budget deficit without higher taxes or inflation. As a result Egypt's seigniorage revenue - the sum of the financial repression tax, the social insurance tax, the growth effect on money and high stock of reserve money to GDP - accounted for 2.5% of GDP in 1991, not only surpassing the 1% level in the average OECD countries, but also exceeded the 2.5% level of the average developing country.

IV. Financial Repression : Real Side Effects

Low administered interest rates and credit rationing were introduced for the ultimate objective of providing cheap credit and to permit a non-price allocation of credit to high priority sectors of the economy, particularly industry and agriculture. The fact that the banking sector was the main source of capital to the economy made it possible for the monetary authority to influence both the volume and allocation of credit. This took place, as previously mentioned, through credit ceilings, high reserve requirements and selective credit policies . However, these policies - apart from successfully being used to extract considerable seigniorage from the banking sector- have defeated it's own objectives, resulting instead in a state of <u>disintermediation</u>

The allocation of real credit

The build up of inflationary expectations combined with low administered interest rates resulted in negative ex-ante and expost real rates of return on money which in turn reduced real money demand far below the socially optimal level. [Mckinnon, 1973] and along with the deflationary policies pursued have constrained the ability of the banking sector to create and expand credit. The burden of the overall reduction in the volume of bank credit and the rising claims on the government lead to an effective crowding out of the private sector from the financial sector. This was a result not of higher interest rates usually associated with bond financed government deficits -since interest rates were fixed-[Shafik, 1989], but through a credit squeeze in <u>real</u> terms.

Moreover, the limited lending resources of the banking sector were mainly in the form of loans with short run maturity [Kazarian, 1988] (See fig 11). In 1991 13% of bank loans were of maturity more than one year which implied -in the absence of an active well functioning securities market, that both private and public investors have no access to <u>long run</u> capital. Under such circumstances it is likely that investments with long run nature would drop out of the credit market. In addition when loan rate ceilings are binding, two kinds of perspective borrowers are likely to be rationed out of the credit market., risky borrowers and small scale enterprises. <u>First</u> the possibility of charging differential risk premia is totally ruled out and therefor risky types of investment are deterred regardless of their expected rates of return. [Fry, 1988].

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Figure 10

Share of Insurance Institutions and Post Office Savings in Nonbank Finance of The budget Deficit

Source: Abdel Latif, 1990
IIs=Insurance Institutions   POS=Post Office Savings

Second, in the absence of adequate information and collateral, loan rates as low as 18 % cannot makeup for the high administrative cost of the high probability of default risk associated with lending to small scale enterprises. [Mckinnon, 1973]. Consequently, most of bank lending was directed to large scale public and private enterprises . A recent survey has shown that 9% of small scale enterprises had access to bank credit. This comes in sharp contrast the to the increasing role of this sector in generation of employment whereby in1986 it accounted for 90% of total private employment outside agriculture and provided more than 52% of employment in the nonagricultural sector (80% construction and trade, 50% in transport, 40% in manufacturing). Moreover, production techniques where highly labor intensive, where every one million of capital invested by these enterprises was translated into 2000 new employment opportunities as compared to 200 in the formal private sector. [Handoussa and Potter, 1992].

Regarding the sectoral distribution of credit, it is clear that top priority sectors of the economy where the lowest recipients of both nominal and real credit. In 1982, interest rate ceilings were fixed at a max of 15% for loans granted to both the industrial agricultural sectors while a minimum rate of 16% was set for loans to service and 15% for the trade sector. In 1989 these rates increased to reach a maximum of 15% for the industry and agriculture a minimum of 17 % for the service sector 18% for the trade sector. To increase their revenue, banks responded to this policy by increasing the share of both the trade and services sectors in total credit [Kazarian, 1988]. In 1991 the share of industry in bank credit accounted to 32% and that of agriculture. accounted to 8.7% in contrast to 51 % for both trade and services. The picture is even worse in real terms. The share of the services and trade sectors in real bank credit increased from L.E 29 million in 1981 to L.E 50 million in 1991 While that for industry increased from L.E 15 million to L.E 31 and that for Agriculture increased from L.E 2 million to L.E. 9 million over the same time interval. It becomes clear, then that the growth path of the Egyptian economy over the period 1974-1991 was characterized by suboptimal allocation of real credit. (see fig 12)

The efficiency of investment

Perhaps the most damaging effect of negative loan rate of interest can be detected on the efficiency of new investments. The overall incremental capital/output ratio- measured in real terms- as revealed by the figures presented in table 8 has increased from 1.09 in 1970 to 3.79 in 1974 and

reached 12.04 in 1986/87. The figures for the public and private sectors presented in the same table experience a similar upward trend , but those for the public sector increased at higher rates than those of the private sector throughout this period.

Low nominal loan rates and negative real loan rates can be considered a major reason behind the deteriorating productivity of new investment in both public and private sectors. Under the current system of credit rationing and administered interest rates, both public and private sectors have access to credit at nominal loan rates that does not truly reflects the opportunity cost of scarce capital in the economy. In addition the allocation of credit according to non-price criteria simply means that projects with the highest rates of return are not necessarily the same projects that have access to rationed credit. For example the criterion for selecting investment projects that are undertaken by the public sector is based on the social rate of return that these projects are to secure , which can be sometimes even lower than the administered interest rate. [Dailami and Din, 1991] Given that the bulk of investment during this period has been largely undertaken by the public sector makes the upward trend in ICOR for the economy a logical outcome. In addition , negative real loan rates of interest makes it possible for projects with negative real rates of return on capital to remain in operation. [Dailami and Din, 1991]. Under such circumstances it is reasonable to expect the rate of return on capital to fall for the whole economy.

Financial repression affects the efficiency of allocating and utilizing scarce resources by distorting the structure of relative factor prices in the economy. In fact low nominal loan rates made capital relatively cheaper to labor and therefore have encouraged the adoption of high intensive techniques again by both public and private sectors. This is evident from the increase in the incremental capital / labor ratio presented in table 7.

In general , one can conclude that the financial policies pursued by the government during the last three decades have been in large consistent with the early Keynesian view in the sense that interest rates continued - despite the liberalization policies introduced in 1975- to be fixed at low -sometimes below inflation- levels. The outcome of these policies was to a great extent consistent with the Noeliberal view. Although the Egyptian economy does not represent a classic example of a financially repressed economy since considerable financial deepening did actually occur in response to exogenous factors, it has

in fact displayed the symptoms of a financially repressed economy with a suboptimal volume of financial assets and a suboptimal allocation of real credit.

The analysis presented in this chapter has provided evidence on the existence of close and strong linkages between the government fiscal, monetary and financial policies and the pattern of resource mobilization and allocation within the economy. In fact the root cause of many of the problems of financial repression lied in a deflationary monetary policy which not only relied primarily on credit contraction, but assumed also-in every instance- an important fiscal role.[Bradely, 1991]. Financial repression, high reserve requirements, the imposition of loan to deposit and liquidity ratios implied that the financial sector had to bear the burden of generating funds from real resources to finance the ever increasing fiscal deficit without higher taxes or inflation.

The distortions created on the financial side of the economy affected the real side through the crowding out of private capital formation, a suboptimal allocation of real credit, the deteriorating efficiency of new investment and the increasing capital intensity throughout the whole economy. This has no doubt helped precipitate and then prolong the economic crises[Bradly, 1991] that the economy started facing after 1984.

Chapter Three
Financial Liberalization, Inflation and Growth
Macroeconometric Evidence

In 1991, the deregulation of the financial sector went a step further. Firstly, interest rates were liberalized and banks became fully free to determine both debtor and creditor interest rates. Secondly, foreign exchange controls were eliminated and the exchange rate became market determined. Thirdly, Both reserve and liquidity ratios were considerably reduced to reach 15% and 20% respectively on domestic currency deposits and 15% and 25% respectively, on foreign currency deposits. Fourthly, , the system of subcredit ceilings was replaced by a "bank by bank specific credit ceiling" where the monetary authorities allocate quarterly expansion of credit- authorized by the standby agreement- on administrative basis depending on each bank past lending activity. In September 1992, this mechanism was totally abolished and banks became free to allocate credit. Interest rate liberalization would still however, seem not to be fully effective. The adjustment of deposit and lending rates to their competitive levels have not yet taken place. Banks may in fact be engaging in informal agreements that coordinate interest rate increases, barriers to entry of new banks are still in existence and the capital reforms have not been fully implemented.

Apparently, Egypt's experience with financial liberalization -apart from being incomplete - is still in it's very early stages. Assessing it's impact on growth and inflation can therefore be possible only within the discrete period of partial financial liberalization taking place between 1974-1986. For this purpose a simple macroeconometric model for an open economy will be introduced. The model is designed to capture the interrelation between the financial and real sides of the Egyptian economy with the ultimate objective of providing a practical operational-rather than a theoretical-assessment of the effect of financial liberalization on inflation and short run economic growth. The financial side is represented in the model by the money stock and the real deposit rate of interest. Real deposit rate of interest affects economic growth through both the quantity and quality of investment and affects inflation through the demand for real money balances.

The economy is assumed to be initially in a state of financial repression, implying that there is disequilibrium-an excess of demand over supply- in the credit market . Walras Law states that an excess demand in one market must correspond to an equal excess supply in another market. It is assumed here that the excess demand for credit at the regulated interest rate is matched by an equal excess supply of labor. This is not an implausible assumption in the case of Egypt due to the existence of widespread unemployment.

Financial repression is embedded in disequilibrium interest as well as foreign exchange rates. In this context, inflation expectations and factors shaping these expectations affect both real exante interest as well a foreign exchange rates. In turn real exante interest and exchange rates affects real variables as savings, investment [Din and Giugale, 1991], growth and inflation. Starting from a situation of a high inflation, low growth and a trade deficit, the objectives of the policy maker is to reduce inflation, raise the rate of economic growth and create a non-negative trade balance. These objectives can be achieved by using 3 instruments, the rate of change in the money supply, the nominal deposit rate of interest and the exchange rate. (Fry, 1988).What follows is a detailed explanation of the model relations and equations.

The Model:-

I. Money creation:-

The rate of growth of the money stock is considered one of the main variables affecting the rate of inflation in Egypt. [kheir El Din, 1989] . Since inflation affects inflation expectations and the latter affects the real variable previously outlined, the modeling of the sources of money creation becomes crucial to asses the impact of higher deposit rates of interest on growth and inflation. Following Giugale and Din (1991):

$$\delta M_t = \theta_t \, \mu_t \, [\, TB_{t-1} + NISA_{t-1} \,] \, e^*_t + \phi_t \, [\, NINSFD_t + B^d_{t-1} i^g_t + (aB^f_{t1-} i^f_t e^*_t$$

$$1 > \theta \qquad , \phi > 0 \qquad a > 0$$

Equation one states that the net change in the supply of money (δM) will depend on :

1. The non-sterilized portion (θ)of the section (μ) of the (TB) and (NISA) that must be surrendered at the Central Bank at the official exchange rate $e*$.

2. The non- sterilized portion (ϕ) of the fiscal deficit monetization which is composed of:

    a. NINSFD: non- interest fiscal deficit net of social security surplus financing .

    b. $Bd_{t-1} \, ig_t$: interest payment on the public sector net foreign debt paid in domestic currency at the free market exchange rate (e).

    c. ($a_t B^f_{t-1}$ - FA_{t-1}) $if_t \, e_{t-1}$: interest payment on the public sector net foreign debt after taking into account the accumulation of arrears (a_t)

II. The Money Market Equilibrium:-

$$M/P = c_0 Y^{c1} \exp[\, c_2(d-\Pi^e)\,]$$ ---------(2)

Taking money to be broadly defined to include time and saving deposits, equation (2) states that the real demand for money is a function of real income (Y_t) and the real deposit rate of interest ($d-\Pi^e$) where d is the nominal deposit rate of interest and Π^e is the expected rate of inflation, and c_0 c_1 c_2 are constants.

There are three implicit assumptions underlying the above specification of the demand for real money balances and the money market equilibrium condition:-

1. The fact that ($d-\Pi^e$) is the price variable that measures the opportunity cost of holding money implies that in a financially repressed economy -where interest rates are administratively determined- inflation hedges rather than bonds are the dominant substitute for holding money [Fry, 1988].

2. The nominal interest rate on bonds is constant and therefore is part of the constant term c. [Blanchard and Fisher 1989].

3.The money market is assumed to be initially in equilibrium and any discrepancy between the demand and the supply of real balances is fully reflected into price changes. [Fry, 1988].

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III. Inflation:-

$$\Pi_t = \delta \ M_t/M_{t-1} - c_1 \ \delta Y_t/Y_{t-1} - c_2 \ \delta(d-\Pi e) \qquad \text{-------------(3)}$$

The equation for inflation is derived by log differentiating the money market equilibrium condition. This equation implies that the growth in money supply is not the only factor affecting the rate of inflation. The demand for real money balances and factors influencing it as the growth in real income $(\delta Y_t/Y_{t-1})$ and the change in the real deposit rate of interest $\delta(d-\Pi e)$ are among the factors that determine the rate of inflation.

IV. Real Private Investment:-

The function for real private investment as specified here is based on both micro and macro foundations that are believed to govern investment decision making in Egypt. "At the macro level , the model has features of the putty - clay , Keynsian , Keleckian , and structuralist approaches. " (Shafik, 1989, P.178) .

$$KP^*_t = f(R_t) \qquad \text{------------------(4)}$$

Where (KP^*_t) is the desired private capital stock at time t, and R is profits.

$$R_t = g(\tau^e_t , y^e_t -1, C^e_t) \qquad \text{------------------(5)}$$

Profits are a function of expected Markup over price (τ^e_t)- reflecting monopolistic power enjoyed by most of private investors in Egypt due to protectionist policies pursed by the government - , expected lagged output (y^e_t) and Expected Costs (C^e_t) [Shafik, 1989].

$$C^e_t = L(ICOSTS, \ d-\Pi^e/W) \qquad \text{-------------(6)}$$

The costs of capital facing the firm is represented by two distinct variables:
1. ICOSTS: representing the price of capital goods
2. $d-\Pi^e/W$: representing relative factor costs measured as the ratio of the real deposit rate of interest$(d-\Pi^e)$ to averages wages in the economy(W) In fact the distinction between the cost of credit and the price of investment goods is particularly advantageous in the case of Egypt since in a financially repressed economy it is more likely that the neoclassical interest rate and Keynes marginal efficiency of capital are not equal. [Shafik, 1989].

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In deriving the investment function , a partial adjustment mechanism for the capital stock was adopted allowing the actual capital stock to(KP_t) to adjust to the difference between the desired level of capital(KP^*_t) and the capital sock in the previous period(KP_{t-1})

$$KP_t = KP_{t-1}(1 - \rho) + \beta_t(KP^*_t - KP_{t-1}) \text{ ---------(7)}$$

where ρ is the rate of depreciation and β_t is the coefficient of adjustment which is assumed to vary according to economic conditions. The factors that are hypothesized to affect the speed of adjustment are:

1. The state of the economic cycle (Cycle). [Khan, 1984]

2. Real domestic credit to the private sector(RDCP)

Again, In a financially repressed economy where credit is allocated to nonprice criteria, the quantity rather than the price of credit becomes the relevant variable that affects private capital formation.

$$\beta_t = b_0 + \frac{1}{(KP^*_t - KP_{t-1})} \quad (b1Cycle + b2RDCP_t) \text{ ------------(8)}$$

substituting (8) into (7)

$$KP_t - KP_{t-1} = b_0(KP^*_t - KP_{t-1}) + b1Cycle + b2RDCP_t - (bo + \rho)KP_{t-1}$$

$$\text{-------------(9)}$$

substituting (5) and (6) into (9)

$$PIR_t = \beta_0 \tau e_t + \beta_1 y^e_t - \beta_2 (d-\Pi e/W) - \beta_3 ICOSTS_t + \beta_4 Cycle + \beta_5 RDCP_t$$

V. Real Credit to the Private Sector:-

$$RDCP_t = h_0 + h_1(d-\Pi e) - h_2 RTDCG_t \text{ -------------------(11)}$$

Equation (11) states that the volume of real credit forthcoming to the private sector will depend on the real deposit rate of interest- since it is one of the main factors that determine the volume of time deposits - and the quantity of credit channeled to the government (RDCG).

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VI. The Efficiency of investment:-

The impact of higher real deposit rates of interest on the efficiency of investment can be examined through it's impact on the incremental output / capital ratio σ :(Fry, 1988)

$$\sigma = s_0 + s_1 (d - \Pi^e). \qquad \text{---------------(12)}$$

VII. The rate of economic growth in the short run:-

$$\gamma = f \{ (\Pi - \Pi^e),\ PIR_t ,\ GIR_t ,\ \sigma) \qquad \text{----------------(13)}$$

Equation (13) determines the actual rate of economic growth. It is based on an expectation augmented Phillips curve. The first explanatory variable in this relation, is the difference between actual and expected inflation. The second variable is real private investment and the third is real government investment(GIR_t). The last explanatory variable is the efficiency of investment. Equation (13) states that the rate of economic growth will depend on both the quantity and the quality of investment.

VIII. The Trade Balance:-

$$TB_t = \Omega (e_t^*/e_t)^{\mu t} (e_t/P_t)^{(1 - \mu t)} \text{------------(14)}$$

Following Din and Guigale (1991) equation (14) states that the trade balance result will be affected by incentives offered to both official and non official traders. The former is represented by the difference between the official and market exchange rates, while the latter is represented by the real unofficial exchange rate. [Giugale and Dinh, 1991].

VIIII. The Forex Market:-

$$e_t = P_t - P_t^* \qquad \text{----------------------------(15)}$$

Equation (15) states that the black market exchange rate is determined by the difference between domestic prices P_t and world prices P_t^*

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<u>VIIIII. Expectation Formation:-</u>

The model contains one source of dynamic adjustment and that is rational expectation

$$\Pi^e = \Pi$$

$$\tau^e_t = \tau_t$$

$$y^e_t = y_t$$

$$C^e_t = C_t$$

Finally the model is closed by adding the GNP identity

$$Y_t = C + I + G + (X-M) + NFI$$

The model contains 4 key relationships.

1. between the real deposit rate of interest, the growth in real money demand and inflation

2. between inflation and the real deposit rate of interest.

3. between the real deposit rate of interest , real private investment , the efficiency of investment and short run growth

4- between the real exchange rate and the trade balance.

The mechanism of the model runs as follows:the resulting rate of money expansion as determined from equation (1) , will put upward pressure on the inflation rate through the money market. The higher rate of inflation will have an immediate impact on the real exante deposit and exchange rates. The real deposit rate will affect short run growth through both the quantity and quality of investment and the real exchange rate will affect the trade balance. The higher rate of economic growth feeds back into the money market through the real demand for real money balances. The reduction in inflation resulting from both higher real deposit rates and higher output will increase the real rate further increasing output and the system finally reaches equilibrium. In this respect money is not neutral . The rate of money growth affects inflation which in turn affects - through the real deposit rate of interest -the real variables of the model . In other words the model does not dichotomize and the classical assumption which states that money is neutral does not hold. (Sargent 1987)

<u>Endogenous variables of the model:-</u>

M^s_t = nominal supply of money base

M = equilibrium nominal money stock

Π = domestic inflation

PIR_t = change in real private investment

$RDCP_t$ = real domestic credit to the private sector.

σ = incremental output/capital ratio

γ = rate of change in real GNP

TB = trade balance result (in dollars)

δ = change (eg. $X_t - X_{t-1}$ for any X)

Π^e = expected inflation

Y_t = Real GNP

<u>Exogenous variables:-</u>

NISA = Non interest service account (Suez Canal, Tourism, workers' remittances, etc.).

NINSFD = non interest , net social security financing and social financing of the fiscal deficit.

B^d_t = outstanding stock of government and central bank domestic debt

B^f_t = outstanding stock of foreign debt for which C.B. is the ultimate payment agent

FA_t = change in the foreign assets of C.B. (in dollars)

i^g = nominal, average interest rate on domestic government debt

i^f = foreign interest rate

d = nominal deposit rate of interest

τ = markup proxied by the ratio of WPI to an index of wages in the economy

ICOSTS = cost of capital proxied by the ratio of Investment deflator to GDP deflator

GIT_t = Real government investment

$RTDCG_t$ = real domestic credit to the government

e_t^* = official exchange rate

e_t = black market exchange rate

P_t = World Prices

Y_{t-1} = Real non oil GDP   =

$W \quad t = A v e r a g e \qquad w a g e s$

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Empirical Results:-

The reduced form equations of the model were estimated using quarterly data for the period 1976-1986. Quarterly date were available for foreign trade , monetary variables, and prices while national income and fiscal in addition to interest rates variables were statistically interpolated form annual data by following the "Spline Filter Technique". The choice of the estimation period was governed by considerations of data availability and the fact that throughout this period the Egyptian economy had a fairly stable structure. The equations of the model were estimated using Ordinary Least Squares and Two Stage Least squares. The latter technique was applied to gain efficiency. The OLS results are presented in the statistical appendix and two stage least estimates of the model equations are presented below with the t statistics appearing between parenthesis.

I. Money Creation:-

$$\delta M_t = -0.034 \ [\ TB_{t-1} + NISA_{t-1} \ ] \ e^*_t + 0.044 \ [\ NINSFD_t + Bd_{t-1} \ ig_t +$$
$$\quad\quad (-3.29) \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad (4.13)$$

$$(aBf_{t-1} - FA_{t-1} \ )i^f \ et-1]$$

The coefficient for the money creation equation all have the right sign and are statistically significant. The negative sign appearing for the non interest current account is expected to occur since the non interest current account was in deficit and therefore much of this period have witnessed losses in international reserves. This had a contractionary effect on the stock of money. [Abdel latif, 1990]. The positive and significant coefficient for budget deficit is consistent with priori expectations concerning the monetization of huge budget deficits starting the mid seventies.

II. Inflation:-

$$\Pi_t = \ - 0.034 + 0.043\delta \ M_t/M_{t-1} - 0.027 \ \delta(d-\Pi e)_t \ + 10.388 \ Markup_t$$
$$\quad\quad (-35.15) \quad (35.59) \quad\quad\quad\quad (-1.39) \quad\quad\quad\quad (9.41)$$

$$- 0.148 \ ICOSTS_t +9.934 \ (d-\Pi e/W)_t - 2.902(d-\Pi e)_t + 0.199 \ Cycle_t$$
$$\quad (-2.51) \quad\quad\quad\quad (5.94) \quad\quad\quad\quad (-5.79) \quad\quad\quad (2.37)$$

$$- 0.015 \ RDCG_t + 2.651 \ GIR_t - 2.627 \ y_{t-1}$$
$$\quad (-0.24) \quad\quad\quad\quad (7.21) \quad\quad\quad (-9.56)$$

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The two important variables affecting the rate of inflation- as indicated by the high level of significance , are the rate of growth in the money stock and the real deposit rate of interest. The significant coefficient of the real deposit rate of interest is consistent with the findings of the study concerning the effect of the stock of reserve money on inflation. Markups appear with a positive and significant coefficient. This indicates that the increase in monopolistic power enjoyed by private investors in Egypt was mainly reflected in rising prices. The insignificance of the coefficient of real domestic credit to the government can be attributed to the fact that the expansion in credit occurring over most of this period was largely offset by loses in reserves. During the 80's around 69% of credit expansion were offset by losses in international reserves. This result is also consistent with the negative and significant sign of $NICA_{t-1}$ in the money creation equation. The remaining three variables , Cycle, ICOSTS and GIR all appear with significant wrong signs which can be attributed to data inaccuracy.

Short run economic growth:-

$$\gamma = -0.033 \ + \ \ \ 0.044 \ Markup_t \ - \ 0.027 ICOSTS_t \ + \ 10.388(d-\Pi^e/W)_t$$
$$\ \ \ (35.15) \ \ \ (44.19) \ \ \ \ \ \ \ \ \ \ (-1.72) \ \ \ \ \ \ \ \ \ \ \ \ (11.69)$$

$$+1.66 \ (d-\Pi^e)_t \ + \ 3.843 \ Cycle_t \ - \ 0.148 \ RDCG_t \ + \ 9.93 \ GIR_t$$
$$\ (0.80) \ \ \ \ \ \ \ \ \ \ \ (4.19) \ \ \ \ \ \ \ \ \ \ (-3.12) \ \ \ \ \ \ \ \ \ (7.38)$$

$$-2.902 \ \ y_{t-1}$$
$$(-7.20)$$

All variables included in the growth equation appears with the right sign except for relative factor costs and y_{t-1}. The significant and positive sign of $(d-\Pi^e/W)_t$ can be explained by the fact that increase in relative factors prices would lead to a more efficient allocation of resources and therefore to a higher rate of economic growth. The wrong but significant coefficient of y_{t-1} can be attributed to data inaccuracies. The insignificance of ICOSTS arise from two factors. First is that the high monopolistic power -reflected by highly significant coefficient of markup - simply means that the firm can pass whatever cost to the consumer with no significant impact on the level of production. Second, the share of imported investment goods in GFI accounts for 80.6% [Shafik, 1989]. Given the overvalued exchange rate prevailing during this period means that capital goods were relatively cheap.

The most important economic result deduced from this equation lies in the insignificance of the real deposit rate of interest. Actually, such an outcome is very likely to happen in light of the existence of high reserve and liquidity ratios in addition to tight credit ceilings. Under these circumstances and together with the negative significant effect of Real credit to the government changes in the real deposit rate of interest will have an insignificant effect on real credit to the private sector and therefore on private capital formation and economic growth.

The Trade Balance:-

All variables included in the trade balance equation except for the rate of devaluation of the official exchange rate -which also appears with the right sign- appear with insignificant coefficients. Clearly the trade balance equation is the most sensitive among the models equation to data inaccuracies.

$$\delta\, TB/TB_{t-1} = -0.034 + 0.044\ \delta\, e_t/e_{t-1} - 0.027\ \delta\, M_t/M_{t-1} + 10.388\ \delta\,(d-\Pi^e) -$$
$$\qquad\qquad\quad (-4.083)\ (5.133) \qquad\qquad (-0.20) \qquad\qquad (1.357)$$

$$3.843\ \text{markup} + 1.66\ \text{ICOSTS} -0.147\ d-\Pi^e/W_t + 9.934\ d-\Pi^e - 2.902\ \text{cycle} +$$
$$(0.4860) \qquad\qquad (0.094) \qquad\quad (-0.362) \qquad\qquad (0.857) \qquad (-0.836)$$

$$0.198\ \text{RDCG}_t - 0.015\ \text{GIR} + 2.651\ y_{t-1} - 2.627\ W\Pi$$
$$(0.341) \qquad\quad (-0.034) \qquad\quad (1.04) \qquad\quad (-1.38)$$

The results of the estimation has not supported the hypothesis stating that financial liberalization can simultanously reduce inflation and increase the rate of economic growth due to the reasons just mentioned above. These results are, however, consistent with the analysis conducted in chapter two. In a sense, higher deposit rates of interest had a significant effect of inflation. The negative and significant effect of real domestic credit to the government is an indication of the growding out of the private sector from the financial sector. Further, the significance of the relationship between the fiscal defict, money creation and inflation highlights the importance of controlling the money supply -as stated in chapter 1- as an essential prerequiste to the success of finanical liberalization in curbing inflation. In this context, fiscal and monetary discipline - Financial discipline - becomes the important prerequistes determining both the success and credibility of financial reforms

Financial discipline can best be attainable through the implementation of a "Reserve money programming mechanism" [Ghali, 1991] combined with market management of the government domestic debt. [Mohareb, 1986]. According to the reserve money programming mechanism, the CB determines the amount of reserve money- including that issued to finance the government

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budget deficit- that is consistent with stable prices. [Ghali, 1991]. The remaining necessary funds needed to finance the budget deficit would be raised by issuing treasury bills that are auctioned at competitive interest rates. In this case fiscal imbalances and any subsequent monetary disequilibrium will be translated into interest and exchange rate changes. In other words public spending will have important real side effects.

> " The financial discipline required for the proper management of a flexible interest rate is not limited however to issuing the proper amount of treasury bills each week. It has to extend to investigating the structure of the National Budget. A policy of successful financial discipline will therefore have to address the resources of this budget. Taxes on specific income groups, specific activities, such as consumption and importing and specific assets, such as real estate and inventories, will have to be levied to increase the flexibility available to the policy maker in directing, through flexible interest rates, the national resources to their most productive uses. Similarly, a thorough cost benefit analysis will have to be undertaken concerning public spending. Are the cost associated with higher interest rates really worth the political, social and economic benefits, of public spending? It is under this constant revaluation that the low inflation rates affected by the monetary system will best benefit the economy" [Ghali, 1991]

Conclusion and Policy implications

This research has reviewed the financial policies pursued by the Egyptian government since the mid seventies and analyzed their effect on growth and inflation. The fiscal driven nature of these policies and the distortions they have engendered were to a great extent responsible for the relatively underdeveloped and shallow financial structure emerging over the period of study. In addition, such policies gave rise to a growth path characterized by a suboptimal allocation of scarce capital. Their effect on inflation - though ambiguous- has indeed made it possible for the government to monetize huge budget deficits with little impact on price stability- if compared to other developing countries.

Despite the recent efforts to deregulate the finanical sector, complete financial liberalization does not yet exisit. However, the analysis conducted in chapter two and the econometric evidence presented in chapter three as they pertain to the discrete financial liberalization taking place over the period 1976-1986 - can provide the policy maker with valuable insights into the factors that might well affect the course of financial liberalization and consequently it's impact on growth and inflation. To the extent that interest rates remain below their competitive levels, reserve and liquidity ratios are still operative and credit allocation for specialized banks takes place according to a nonmarket mechanism, the pattern of resource allocation and utilization is bound to remain socially suboptimal.

Although the econometric results have not supported the low inflation high- growth hypothesis, two major policy implications can be drawn from them. The first policy implication has been inferred from the insignificance of the real interest rate in the growth equation and the fact that such insignificance can be attributed to the presence of high reserve requirement, high liquidity ratios and credit ceilings. To the extent that the above constraints - particularly the administrative allocation of credit continues to persist, interest rate increases will tend to have minor effects on real credit availability and thereby on growth.

The second major policy implication was inferred from the interrelation between the budget deficit, monetary expansion and inflation as illustrated by the model equations. If such an interrelation continues to hold in the sense that budget deficits lead to excessive money creation, the higher demand for real money balances - expected to take place in response to the higher interest rates-will have much less impact on price stability. In the meantime, the rising

inflation will raise inflationary expectations which in turn reduces the real rate of interest causing destablizing portfolio shifts away from financial assets. In the first place. such shifts will certainly reduce the base for the inflation tax, inducing the government to raise the rate of inflation (the tax rate) to compensate for the reduction in the tax base leading to an inflationary spiral. [Dinh and Guigale, 1991]. The shift form money to goods which likely to occur in this case will further fuel inflation. In other words, financial liberalization-in itself- will not necessarily help curb inflationary pressures unless other macro economic policies are consistent with and firmly tied with this objective.

Finally, a sound and competitive financial sector, with well developed and properly functioning capital and money markets, is crucial for the sustainability of the private led growth strategy adopted by the Egyptian government. Such a goal can best be attained through the elimination of barriers to entry removing the existing tax bias against direct financial claims and government restrictive regulations. Within properly functioning capital and money markets, all kinds of investments will have equal access to capital at prices which reflect it's true scarcity. In that sense, the interest rate becomes the relevant signaling mechanism that guides investment decisions towards their most productive use. Moreover, " holding of excessive cash funds will no longer be necessary, nor would any investor be stuck with his long term capital investment" [Mohareb, 1986].

Appendix

OLS RESULTS

I. MONEY CREATION:-

$\delta M_t = 127.9 + 0.005[TB_{t-1} + NISA_{t-1}]$ $e^*_t + 0.02$ $[NINSFD_t + Bd_{t-1}$ $ig_t +$
   (3.79)   (0.72)   (2.47)

$(aB^f_{t-1} - FA_{t-1})i^f$ $e_{t-1}]$

$R^2 = 0.17$ DURBAN WATSON=1.84

II. Inflation:-

$\Pi_t = 2.187 - 0.001$ $M_t/M_{t-1} - 0.003$ $\delta(d-\Pi^e)_t + -0.581$ $Markup_t$
   (6.08)   (-1.80)   (0.62)   (-8.98)

   $+7.477$ $ICOSTS_t +0.07$ $(d-\Pi^e/W)_t - 1.004$ $(d-\Pi^e)_t + -0.042$ $Cycle_t$
   (8.72)   (0.03)   (-38.82)   (-5.115)

   $- 0.0006$ $RDCG_t + 0.07$ $GIR_t - 0.019$ y_{t-1}
   (1.63)   (2.76)   (-2.65)

$R^2 = 0.99$ DURBAN WATSON= 1.47

Short run economic growth:-

$\gamma = 41.41 - 5.745$ $Markup_t - 1.547$ $ICOSTS_t + -72.356(d-\Pi^e/W)_t$
   (2.93)   (-2.34)   (-0.05)   (-0.76)

   $+ 0.393$ $(d-\Pi^e)_t + 1.277$ $Cycle_t - 0.018$ $RDCG_t + 0.343$ GIR_t
   (0.38)   (4.02)   (1.32)   (0.36)

   -0.97 y_{t-1}
   (-3.59)

$R^2 = 0.77$ DURBAN WATSON= 1.83

The Trade Balance:-

δ $TB/TB_{t-1} = -633 + -2.00$ δ $e_t/e_{t-1} + 0.153$ δ $M_t/M_{t-1} + 13.463$ δ $(d-\Pi^e) -$
               (-1.25) (-1.01)   (0.11)   (1.71)

   10.54 markup $+ 1868$ ICOSTS $- 1778 d-\Pi^e/W_t + 4.709$ $d-\Pi^e - 17.786 cycle +$
   (0.09)   (1.64)   (-0.54)   (0.13)   (-1.47)

   -0.558 $RDCG_t + 14.76$ $GIR_t + 8.407$ $y_{t-1} - 0.266 W\Pi$
   (-1.24)   (0.42)   (-0.77)   (-0.05)

$R^2 = 0.27$ DURBAN WATSON= 2.36

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The Investment Deflator

Following Shafik (1989) , the investment deflator was constructed using weighted average of price indices constituting investment costs. The weights used for the period 1961-1981 were based on data presented in The Shoura Council Report(1982) While those for the period 1982-1986 are based on those presented in the five year plan 1992/1993- 1995/96. The price indices and their sources are presented below.

I.Index for domestic machinery:-

Before 1975 : whole sale price index (The WPI was not available in disaggregated form before that date)

After 1975: the WPI of machinery and Equipment

Source: CAPMAS Statistical Year Book, various issues

II. Index for imported Machinery:-

Before 1980: index price exports of major industrial countries

After 1980: index price of machinery exports of major industrial countries

Source: UN Monthly Bulletin of Statistics, Various Issues.

The weights of domestic to imported machinery is assumed at 14% and80.6% of the machinery component of Gross Fixed Investment. The price Index is multiplied by the black market exchange rate to get a the cost of imported machinery.

III. Index 'For Construction Material:-

Before 1970: whole Sale price index

After 1970: Index of Construction Material

Source: Assad , Ragui. (1991)

IV. Index of Transport:-

Before 1975: Whole Sale Price Index

After 1975: Whole Sale Price Index of Transport

Source: CAPMAS Statistical Year Book, various issues

The Investment Deflator 1979=100

Year	Value
1961	34.8
1962	34.83
1963	34.54
1964	35.78
1965	38.57
1966	40.64
1967	43.18
1968	43.72
1969	44.39
1970	37.61
1971	38.4
1972	39.76
1973	41.13
1974	47.51
1975	54.44
1976	97.25
1977	62.01
1978	77.56
1979	100
1980	104.27
1981	130.84
1982	132.66
1983	142.37
1984	153.51
1985	177.24
1986	216.8

Overall and Current Account Budget Deficits as a % of GDP

L.E. Million

Year	1 Overall budget Deficit/Surplus	2 Current Account Deficit/Surplus	3 GDP	4 Overall budget Deficit %	5 Current Account Deficit %
1975	-938.40	-4313.30	4886.00	-0.19	-0.88
1976	-1556.80	-461.40	6276.00	-0.25	-0.07
1977	-1113.60	31.60	8210.00	-0.14	0.00
1978	-1245.60	227.60	9788.00	-0.13	0.02
1979	-1964.30	-173.60	12610.00	-0.16	-0.01
1981	-1096.00	1551.00	17150.00	-0.06	0.09
1982	-3554.00	-237.00	20881.00	-0.17	-0.01
1983	-2364.00	977.00	24834.00	-0.10	0.04
1984	-3285.00	-569.00	27886.00	-0.12	-0.02
1985	-3439.00	135.00	32516.00	-0.11	0.00
1986	-4655.00	-153.00	36039.00	-0.13	0.00
1987	-2613.00	510.00	45249.00	-0.06	0.01
1988	-4716.00	-24.00	54553.00	-0.09	0.00
1989	-4126.00	1631.00	64688.00	-0.06	0.03

Source: 1,2 IMF Government Financial Statistics Year Book 1990
3 IMF International Financial Statistics Year Book 1990

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