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FINANCIAL LIBERALISATION IN TURKEY DURING THE PERIOD 1980-2000

Mustafa ÖZER[*]

The main goal of this study is to provide an assessment of the Turkish financial liberalisation process and its macro-economic consequences and to test the McKinnon-Shaw complementarity hypothesis. The study concludes that the results of the financial liberalisation in Turkey for the period under consideration are somewhat mixed. Although the liberalisation of interest rates led to an increase in total deposits and in the ratio of the stock of financial assets to GNP, unlike the expectations, the public sector's share in financial markets remained high. The share of foreign exchange deposits has also increased, indicating a high degree of currency substitution. Finally, based on econometric analyses, the study assesses that the McKinnon-Shaw complementarity hypothesis does not hold for the period under consideration, supporting the argument that it is the cost of capital rather than the availability of finance that constrains investment in financially-repressed economies.

1. INTRODUCTION

The financial system in Turkey has over the last 20 years undergone extensive structural change resulting from regulatory reforms and technological innovations. The system prevailing before 1980 was characterised by various important restrictions on market forces. These included controls on the price or volume of business conducted by financial institutions, market access and, to some extent, controls over the allocation of funds among competing borrowers.

These regulatory systems that repressed Turkey's financial system had evolved to serve a number of social and economic policy objectives of governments (Edey and Hviding, 1995). Especially interest rate repression evolved out of growing State presence in the economy, populism and nationalism (Caprio and Hansen, 1999).

[*] Anatolian University, Faculty of Economics and Administrative Sciences, Department of Economics, Eskişehir, Turkey.

Because of populism, administrative problems and the structure of the economy, the State had limited tax revenues. Therefore, to finance its programmes, the Turkish Government ran huge budget deficits financed by issuing money, raising reserve and liquidity requirements, and, when facing problems in domestic financial markets, borrowing externally. At this stage, it is widely believed that the reserve and liquidity requirements, in addition to being instruments of monetary policy, often were the forms of intersection causing a shifting of resources to the Turkish Central Bank and the Government. Thus, they also generated a non-market-based spread between deposits and loan rates.

Furthermore, capital controls had to be instituted to limit capital flight to countries with higher interest rates. Also, competition to banks had to be limited to discourage disintermediation from the banking system. The resulting inflation and downward pressure on interest rates led to periods of low and sometimes negative real interest rates.

In time, under the controlled regime, Turkey faced a persistent high inflation and serious balance of payments problems. The combination of rapid inflation and limits on interest rates caused substantially negative real interest rates with predictable consequences outlined by McKinnon (1973) and Shaw (1973). Severe disintermediation, capital flight and dependence on foreign funding developed (Caprio and Hansen, 1999, p. 6).

In addition to these problems, a substantial shift to a more market-oriented financial system was driven also by the following factors (Edey and Hviding, 1995):

- Shrinkage of the regulatory base occurred through various types of regulatory avoidance such as the development of offshore financial centres and off-balance-sheet methods of financing by banks.
- Intense financial innovations and rapid technological developments that helped to avoid regulations.
- Macroeconomic developments, especially the increases in fiscal deficits and highly persistent inflationary problems in the late 1970s and serious current account problems which substantially increased the need for a flexible interest rate.

In response to these serious problems, Turkey took, along with an overall programme of structural adjustment called 24 January Decisions, the first step towards liberalisation of the financial system by lifting the ceiling on personal time deposit interest rates in July 1980 (Akyüz, 1989). As mentioned in Snowden (1996), the claim that the financial sector liberalisation led to an increase in the quantity of loanable funds and in the efficiency with which they are allocated and their impact are open to discussion. The results of the financial liberalisation in Turkey have been somewhat mixed. Despite implementing an overall adjustment programme since 1980, the Turkish economy has become vulnerable to both internal and external shocks due to its unsustainable economic policies and structural weaknesses. Therefore, the Turkish economy suffered from a number of periodic financial crises such as the 1994 and the 2000 crises and, as can be seen in Table 1, GNP growth was volatile and inflation remained persistently high.

The purpose of this study is to provide an assessment of the Turkish financial liberalisation process and its results and to test the McKinnon and Shaw's complementarity hypothesis with cointegration techniques. The study is organised as follows: A brief description of both Turkish economy and its financial system prior to the financial liberalisation programme is given, and then the implementation of financial liberalisation measures is explored. Finally, a long-run relationship between financial liberalisation and economic development will be tested using the McKinnon and Shaw complementarity hypothesis with cointegration techniques.

2. THE STATE OF THE TURKISH ECONOMY AND THE FINANCIAL SYSTEM BEFORE LIBERALISATION

Prior to its liberalisation in July 1980, the Turkish economy suffered from serious internal and external economic problems such as a high and volatile inflation rate, a slowdown in the real growth rate which caused a high unemployment rate, an increasing foreign debt, and high current account deficits (Akkurt et al., 1992). The first oil shock and the decline in the volume of world trade, especially for the traditional goods, contributed further to the negative effects on the Turkish economy.

Turkey's development strategy in that era was mainly based on the import substitution strategy supported by a substantial degree of

protectionism (Esen, 2000). Due to the lack of adequate structural adjustments to stabilise the economy, and the insufficiency of foreign exchange earnings, the Turkish economy continued to worsen in terms of debt payments, high and volatile inflation, rising current account deficits, and increasing burden of the State-owned enterprises on the budget.

Although Turkey signed standby agreements with the IMF twice, in 1978 and 1979, for structural adjustments, the real output in the industrial sector and investments continued to decline significantly and unemployment rate increased. During the period 1979-1980, the average GDP growth rate was –0.4 percent and the inflation rate reached over 100 percent, which was historically the highest level (Esen, 2000).

The financial system of Turkey[1] under the above-stated economic conditions prior to the implementation of the financial liberalisation policies revealed all the attributes of a financial repression (Yeldan, 1997) common, in many respects, to the financial sectors of developing countries. The characteristics of this repressed financial system were (1) direct controls on deposit and lending rates, and negative real interest rates resulting from the high and volatile inflation rate, (2) high liquidity and reserve rates resulting in a high intermediation cost of banking operations, (3) credit rationing mostly affecting small companies, and directed credit attempting to channel low-cost credits to 'priority sectors' such as agriculture and small scale industry, (4) high tax burden on financial earnings, (5) excessive reliance of corporations on bank credits rather than on capital or equity financing, (6) no institutionalised capital markets, (7) entry barriers to foreign and new domestic banks, (8) excessive financing of the public sector deficit by monetisation, (9) high degree of interlocking ownership between banks and non-financial corporations, and (10) highly restricted foreign exchange operations (Akkurt et al., 1992; Akyüz, 1989).

With all these characteristics and the dominance of the banking sector in the Turkish financial system, it is widely believed that the system showed inefficiencies, with low-quality bank portfolios, which caused distortions in resource allocation (Yeldan, 1997).

[1] Turkish financial system currently consists of the Central Bank, commercial banks, investment and development banks, special finance houses, leasing companies, credit cooperatives, social security institutions, insurance companies, and the securities market.

3. ELEMENTS, TIMING AND PHASING OF LIBERALISATION

As a part of an adjustment programme, the financial liberalisation attempts, which started in 1980, aimed at increasing the efficiency of the resources allocation and followed the pattern of 'deregulation of industrial product markets', trade liberalisation, deregulation of financial markets, and the liberalisation of capital movements.

The financial reform programmes started by lifting the ceiling on personal time deposit rates in July 1980 (Akyüz, 1989; Esen, 2000). Following the removal of interest ceilings on deposit interest rates, due to the so-called gentlemen's agreement, larger banks fixed their rates on deposit which caused a moderate rise in interest rates coupled with a high inflation rate, that, in turn, resulted in negative real interest rates. Another important development during the early stages of the financial liberalisation process was the introduction of Certificates of Deposit (CDs) through unregulated broker institutions as a new financial instrument that created a 'fierce struggle' among the banks and the so-called bankers.

After a while, small banks broke the gentlemen's agreement by selling CDs through brokers, which in turn offered them to the public at ever-increasing rates. In the absence of secondary markets for those CDs, investors faced the problem of not being able to cash in those securities. As more funds were flown to those bankers, they could not offer enough securities. Therefore, they issued their own promissory notes (Ersel and Sak, 1995). This process was short-lived and resulted in the collapse of many brokers and a few insolvent and illiquid small banks in 1982 (Akkurt et al., 1992). The financial crash of 1982 created serious adverse effects on enterprises and banks, 'necessitating substantial rescue operations and a loosening of the monetary stance' (Akyüz, 1989).

Following the crises, the nine largest banks were authorized to fix the interest rates on deposits. Because of the reluctance of those banks to raise real interest rates on deposits above the positive level, the Central Bank was authorized to determine the interest rates on deposits starting from January 1983. Moreover, the sale of CDs through bankers was forbidden.

From this period on to October 1988, there were some other regulations regarding the interest rates. For example, during the period 1984-85, the term "structure of deposits rates" was used to curb inflationary expectations providing a higher return on shorter maturities

Table 1: Indicators of Financial Depth (Percentage of GNP)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
I. Currency in circulation	3,5	3,3	3,5	3,4,	3,1	2,8	2,8	2,9	2,5	2,5	2,6	2,6	2,3	2,3	2,2	2,1	1,8	1,8	1,8	1,9
II. Total deposits	10,0	12,8	17,8	18,4	18,0	19,9	17,1	17,5	15,7	16,6	15,7	15,9	18,3	17,6	19,8	19,3	21,3	23,0	27,7	39,5
Sight deposits	7,6	7,4	7,3	8,1	5,5	4,8	3,6	4,2	3,4	3,4	3,3	2,8	2,5	2,4	2,0	1,8	1,7	1,9	0,5	0,8
Time deposits	2,2	4,5	8,6	9,3	10,6	11,8	9,7	8,6	7,2	8,8	8,3	8,1	8,1	6,6	7,2	8,1	9,0	9,6	11,2	16,3
Certificate of deposits	0,2	0,9	2,0	1,0	0,8	1,2	1,4	1,2	0,9	0,7	0,6	0,4	0,3	0,2	0,1	0,1	0,1	0,0	0,0	0,0
Foreign exchange deposits	-	-	-	-	1,2	2,1	2,3	3,4	4,2	3,8	3,6	4,7	7,3	8,4	10,5	9,3	10,6	11,5	16,0	22,4
III. Banking system's credits	10,7	12,4	13,9	14,1	12,0	10,9	12,4	15,0	17,6	16,1	16,5	12,4	12,7	14,0	13,3	16,5	18,5	21,7	19,4	20,1
IV. Total private securities	0,7	0,5	1,1	0,3	0,4	0,4	2,4	2,8	2,9	3,5	4,1	5,5	5,5	5,6	3,4	3,8	2,9	3,3	1,0	1,1
Private debt instruments*	0,3	0,2	0,1	0,1	0,1	0,1	0,3	0,7	0,5	0,6	0,4	0,4	0,2	0,2	0,0	0,1	0,0	0,0	-	0,0
Shares	0,4	0,3	1,0	0,2	0,3	0,3	1,6	2,2	2,4	2,9	3,6	5,1	4,5	3,6	2,8	2,8	2,8	3,1	0,8	0,9
V. Total public securities	1,4	1,7	0,7	1,4	2,5	5,1	6,9	7,1	6,5	6,7	6,4	7,0	12,2	13,5	15,4	15,3	19,0	21,0	29,4	38,7
Government bonds	1,2	0,9	0,7	1,4	0,9	1,8	3,0	3,2	3,8	4,7	4,7	3,9	6,6	9,5	6,0	6,0	8,3	12,0	4,0	27,0
Treasury bills	0,2	0,8	0,0	0,0	1,6	3,3	1,6	2,6	2,0	1,5	1,4	2,9	3,8	3,2	7,8	8,0	10,2	8,2	25,4	11,7
Income sharing certificates	-	-	-	-	-	0,4	0,7	0,8	0,5	0,3	0,2	0,0	0,0	0,0	0,5	0,2	0,0	0,0	0,0	-
VI. Total securities (VI=IV+V)	2,1	2,2	1,8	1,7	2,9	5,5	9,3	10,0	9,4	10,2	10,5	12,6	17,7	19,1	18,7	19,1	22,0	24,2	30,4	39,8
VII. Stock of financial assets (I+II+VI)	15,6	18,3	23,1	23,4	24,0	28,2	27,6	30,4	27,7	29,4	28,7	31,1	38,3	39,0	40,7	40,5	45,1	48,7	59,9	81,2
Memo Items:																				
PSBR/GNP	8,8	4,0	3,5	4,9	5,4	3,6	3,7	6,1	4,8	5,3	7,4	10,2	10,6	12,0	7,9	5,2	9,0	9,5	9,0	15,0
Public debt/GNP	13,4	12,3	12,5	22,5	20,4	19,4	20,2	23,0	22,0	18,2	14,4	15,4	17,6	17,9	20,6	17,3	21,0	17,6	19,8	23,4
Foreign debt/GNP	23,7	23,8	27,4	30,4	35,0	38,1	42,7	47,0	45,0	38,8	32,5	33,6	35,2	37,7	49,6	42,8	43,4	41,9	47,5	55,6
Current account/GNP	-5,0	-2,7	-1,5	-3,2	-2,4	-1,5	-1,9	-0,9	1,8	0,9	-1,7	0,2	-0,6	-3,6	2,0	-1,4	-2,6	-2,5	0,9	-0,7
GNP (trillion TL, current)	5	8	10	14	22	35	52	75	129	230	297	634	1103	1997	3887	7854	14978	29393	53518	78283
Real GNP growth (%)	-2,8	4,8	3,1	4,2	7,1	4,3	6,8	9,8	1,5	1,6	9,4	0,3	6,4	8,1	-6,1	8,0	7,1	8,3	3,9	-6,1

* Includes corporate bonds, commercial papers, bank bonds and bank bills.

Sources: Central Bank, Capital market Board, Binay and Kunter (1999), Yeldan (2001), Prime Ministry, State Planning Organisation.

such as 3-month deposits higher than on longer maturity such as 6-months and 1-year deposits (Table 3A).

In spite of the reduction in interest rates later in 1986, negative real interest rates continued due to the accelerating inflation rate starting at the end of 1987. Therefore, monetary authorities allowed commercial banks to determine freely their interest rates. The measure of freeing interest rates was also further supported by adjusting the required reserve ratio (Akkurt et al., 1992).

Besides the liberalisation measures deregulating the interest rates in the banking system, there were some other measures related to the capital markets. The attempt came as an urgent reaction to the financial crises of the early 1980s. The Capital Market Law was enacted in 1981, followed by the establishment of the Capital Market Board in 1982, to regulate and supervise the primary and secondary markets, (Coşan and Ersel, 1986). The Istanbul Stock Exchange was established in 1985 and became operational in 1986. Following this date, the market made substantial improvements, including the significant increase in the number of corporations' share issues, public offerings of bonds and bills, new quotations, and the growing volume of transactions (Akkurt et al., 1992). Despite these rapid positive developments, the public sector's share in the capital market remained high as a result of the government's need to finance its deficits.

The most significant measures towards the liberalisation of the foreign exchange regime (external financial liberalisation) were taken at the beginning of 1984. Both residents and non-residents were allowed to open foreign exchange deposits in commercial banks. On the one hand, the liberalisation of external capital movements was extended significantly. The increased liberalisation attempts concerning the capital movements led to enormous pressures towards currency substitution. On the other hand, there was a massive inflow of short-term capital into Turkey (Yeldan, 1996) with the recognition of full convertibility by decree No. 32 in 1989.

Besides the liberalisation of interest rates and foreign exchange regime, there were some developments regarding the banking system. Firstly, a uniform accounting and reporting system was developed, internal auditing standards were improved, and an independent external auditing mechanism was established to increase the soundness of the

system. Secondly, foreign banks were allowed to open branches with the same rights as Turkish banks. Therefore, the number of foreign banks increased significantly from only four before 1980 to seventeen by 2001, although their market share remained quite low. However, their experience in the international arena, their availability of skilled personnel, and their innovative characters brought a fierce competition in the banking system (Akkurt et al., 1992).

Thirdly, during the second part of the 1980s, the Central Bank organised new markets which helped not only the efficient flow of funds within the banking system but also created a powerful tool to monitor the overall reserve level of the banking system. Following this, an interbank money market for short-term facilities was established in April 1984 by the Central Bank and became operational in March 1986 and the interbank money market experienced a rapid growth of transactions.

Fourthly, the sale of government securities through auctions conducted on a weekly basis started in 1985. Government securities quickly became an alternative investment for financial and non-financial institutions because of their attractiveness in terms of providing a tax-free interest and becoming a risk-free instrument.

Fifthly, the Central Bank started the Open Market Operations and its structure, the instruments traded, and the types of transactions were determined in June 1986 with an amendment of the Central Bank Law. With these operations, the Central Bank gained a strong monetary policy tool to control the liquidity of the banking system.

Finally, 'Foreign Exchange and Foreign Banknotes Markets', established in July 1988, became operational in August 1988. Commercial banks, special finance houses and institutions authorised by the Undersecretariat of Treasury were the major participants of the foreign exchange markets.

All these financial-sector reforms and policies created an enormous impact on the Turkish financial system and led to significant developments in the system. However, it is widely believed that 'the mode and pace of financial reforms progressed in leaps and bounds, mostly following pragmatic, on-site solutions to the emerging problems' (Yeldan, 1997, p. 82). Also, the public sector's share in the financial markets remained high and financial deepening did not progress constantly. The following section gives the reasons for this conclusion

by examining the different indicators of financial deepening and testing of the McKinnon and Shaw complementarity hypothesis.

4. THE RESULTS OF FINANCIAL LIBERALISATION

According to the Orthodox view, the logic of financial liberalisation is to augment the supply of savings and increase the efficiency of investment by enabling interest rates to perform their screening function more effectively. Following the financial liberalisation, the supply of savings will increase and the investment-savings gap will disappear. Moreover, financial liberalisation will lead to an increase in the quality of the entire investment portfolio and the growth rate of the economy (Mosley, 2000).

The experience of the financial liberalisation has of course not always conformed to this prior expectation. First of all, most of the econometric studies, which found significant positive effect of the financial liberalisation on economic growth, are largely confined to developed countries. Second, as is the case in a number of developing and transitional countries undergoing financial reform, savings and investment have not increased. The availability of bank credit has not expanded and the vulnerability of less-developed economies to financial crises has been augmented.

Conventionally, to assess the success of financial liberalisation, there are two criteria to be used (Pill and Pradhan, 1997). These are the extent of financial deepening, and the evolution of real interest rates toward plausible equilibrium levels.

Therefore, to define the results of the financial liberalisation in Turkey at the macro level, we examine at first the trend of financial depth indicators and try to determine how interest rates are influenced by liberalisation. To further evaluate the full success of financial liberalisation, we focus on the effects of liberalisation on domestic savings, especially financial savings. Finally, we try to find out the effects of liberalisation on macro-economic stability and growth.

4.1. Financial Depth

There are several indicators of the extent of financial depth used to evaluate financial liberalisation experiences. Different indicators will proxy different aspects of the financial system. However, those

indicators suffer from certain drawbacks that may prevent us from seeing the effects of financial liberalisation attempts in Turkey and its effects on development.

Initially, because of their availability, monetary aggregates such as M1 or M2 were used widely, since broad money offers a good indication of the banking system's scope of credit expansion and financial savings (time and deposits) as those aggregates are the main source of finance for bank lending. But as Khan and Senhadji (2000) pointed out, they may be a poor proxy for financial development since they are more related to the ability of the financial system to provide transaction services than to the ability to channel funds from savers to borrowers. Different countries with underdeveloped financial systems may have a high ratio of money to GNP since money is used as a store of value in the absence of other more attractive alternatives. Moreover, domestic financial liberalisation precedes external financial liberalisation. Monetary aggregates measures of the success of financial liberalisation efforts focus on domestic deregulation even though, especially for the Turkish case, external liberalisation is at least as important. At this stage, initially higher domestic real interest rates are forced to shift downward by the international capital flows that are other sources of funding for domestic firms. When capital controls are abolished, capital inflows become the new addition to the funds available to banks for credit expansion. This does not lead to an increase in M2 since they are not included in M2 by definition.

As Pill and Pradhan (1997) stressed, capital flows are not the only reason why money and credit-based indicators of financial deepening may diverge. As is well known, excessive government borrowing, as has been the case in Turkey for a long time, will cause a reduction in the amount of credit available to the private sector, thus leading to a 'crowding out effect'.

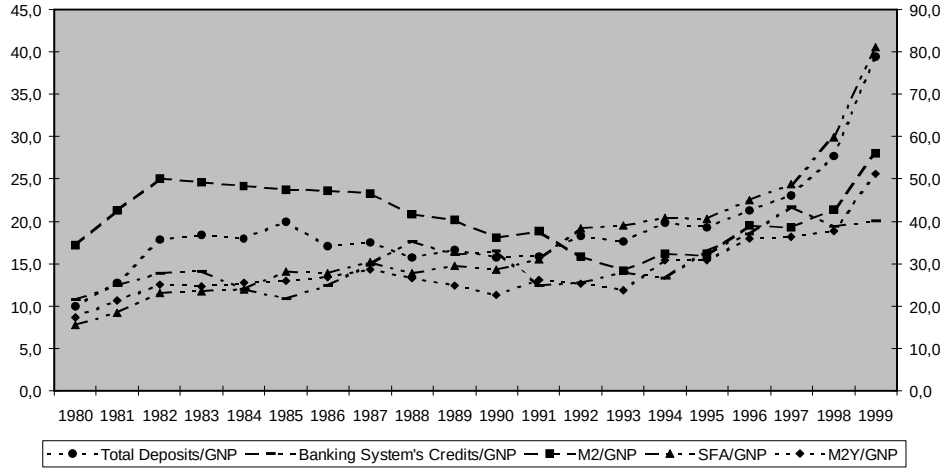
To overcome these drawbacks, researchers have started to use M3, which generally reflects the liquid liabilities of the banking system. Since M3 contains M2, it may be influenced by factors other than financial depth. More recently, credit to the private sector has been favoured as an alternative measure of financial intermediation since M3 excludes credit to the public sector and measures more accurately the role of financial intermediaries in channelling funds to the private sector. However, this indicator also has some weaknesses. It is only a partial

Table 2: Indicators of Financial Depth, 1980-1999 (%)

Years	M1/GNP	M2/GNP	M2Y/GNP	SFA/GNP	M2Y/M2	SFA/M1	Banking system's credits/ GNP
1980	13.8	17.2	17.2	15.6	1.0	1.1	10.7
1981	12.7	21.3	21.3	18.3	1.0	1.4	12.4
1982	13.2	25.0	25.0	23.1	1.0	1.8	13.9
1983	14.8	24.6	24.6	23.4	1.0	1.6	14.1
1984	10.8	24.2	25.4	24.0	1.0	2.2	12.0
1985	9.5	23.7	25.9	28.2	1.1	3.0	10.9
1986	10.3	23.6	26.8	27.6	1.1	2.7	12.4
1987	11.4	23.3	28.6	30.4	1.2	2.7	15.0
1988	8.6	20.8	26.5	27.7	1.3	3.2	17.6
1989	8.4	20.2	24.9	29.4	1.2	3.5	16.1
1990	7.9	18.1	22.6	28.7	1.2	3.6	16.5
1991	7.5	18.8	26.2	31.1	1.4	4.1	12.4
1992	6.2	15.9	25.3	38.3	1.6	6.2	12.7
1993	6.5	14.1	23.7	39.0	1.7	6.0	14.0
1994	5.9	16.2	30.7	40.7	1.9	6.9	13.3
1995	4.9	16.0	30.7	40.5	1.9	8.2	16.5
1996	6.0	19.5	35.9	45.1	1.8	7.5	18.5
1997	5.4	19.3	36.3	48.7	1.9	9.1	21.7
1998	4.8	21.3	37.8	59.9	1.8	12.5	19.4
1999	5.5	28.1	51.3	81.2	1.8	14.9	20.1

indicator of financial development since it only takes into account the banking system and excludes the stocks and bond markets. However, it can still be a useful indicator for developing countries since most of the financial development in those countries has occurred within the banking system. In addition to those indicators, we will use the stock of

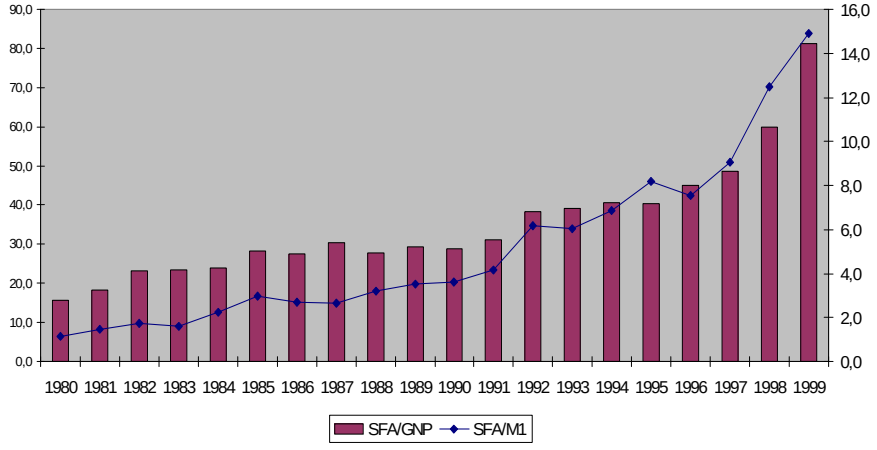
Figure 1- Indicators of Financial Depth



financial assets (SFA)[2] to GNP ratio to evaluate the success of financial reforms in Turkey. Moreover, since there is a high degree of currency substitution in countries like Turkey, M2Y becomes a better indicator.

By examining Table 2 and Figure 1, it can be easily stated that there was a financial deepening in Turkey after 1980, mostly matured by 1990. There is a constant rise in ratios of M2Y and SFA to GNP. The ratio of M2Y to GNP started rising in 1984, the date which marks the abolition of barriers on holding foreign exchange deposits, with an approximately 25 percent of GNP compared to the ratio of 51 percent of GNP in 1999 as the demand for the mentioned asset increased. At the same time, SFA/GNP ratio has risen to 81 in 1999, from approximately 16 in 1980, mostly because of the increase in public sector securities. The speculative and Ponzi finance terms can be used to explain the increased need by the government to borrow. While a speculative unit has a short-term debt coming due that it needs to refinance, a Ponzi unit has some difficulties in meeting its interest payments out of cash receipts to increase its borrowing to repay its debt. As stated in Wolfson (2000), falling profitability of private sector firms can contribute to the increase in the relative proportion of speculative and Ponzi units. For example, as a result of the appreciation of the Turkish Lira, declining exports of Turkish firms created a profitability problem for many small and medium-sized firms.

Figure 2- Composition of Financial Depth



[2] Includes currency in circulation, sight deposits, certificates of deposits, foreign exchange deposits, public sector debt instruments, shares, Government bonds, treasury bills, and income sharing certificates.

Table 3A: Percentage Distribution of Time Deposits, 1979-1999

Years	One year	Six months	One-three months	Commercial	Savings	Certificates of deposits	*Memo item* Time deposits/total deposits
1979	96.5	2.7	0.8	0.8	99.2	0.0	22.0
1980	95.1	4.5	0.4	1.2	85.1	13.7	27.1
1981	50.4	36.6	13.0	0.6	75.4	24.0	49.7
1982	20.8	61.0	18.2	0.7	76.0	23.3	56.8
1983	45.7	44.8	9.5	1.8	89.1	9.1	49.6
1984	4.5	7.0	88.5	5.4	84.7	9.9	66.3
1985	5.9	44.6	49.5	9.8	76.2	14.0	69.4
1986	21.3	33.5	45.2	13.5	74.4	12.1	62.2
1987	47.7	18.9	33.4	15.0	67.8	17.2	57.7
1988	50.3	16.4	33.3	10.2	80.5	9.3	63.9
1989	33.4	20.9	45.7	7.7	83.8	8.5	65.8
1990	30.0	24.2	45.8	8.8	83.9	7.3	63.8
1991	19.3	18.8	61.9	7.4	86.7	5.9	68.3
1992	16.5	19.0	64.5	6.9	88.9	4.2	66.9
1993	12.7	26.1	61.2	8.2	89.2	2.6	63.4
1994	7.7	24.0	68.3	9.3	89.3	1.4	72.7
1995	6.9	30.1	36.0	11.7	87.3	1.0	78.6
1996	4.6	33.5	61.9	6.1	93.2	0.7	73.0
1997	6.0	31.2	62.8	11.2	88.7	0.1	76.7
1998	4.3	26.9	68.8	24.5	75.5	0.0	79.5
1999	9.1	33.9	57.0	21.4	78.6	0.0	82.5

Sources: *Central Bank, Akyüz (1989), Binay and Kunter (1999).*

Table 3B: Composition of the Stock of Financial Assets

Years	Currency in circulation	Sight deposits	Time deposits	Certificates of deposits	Foreign exchange deposits	Private sector debt instruments	Shares	Government bonds	Treasury bills	Income sharing certificates
1980	22.4	48.8	14.8	1.1	-	1.9	2.6	7.7	1.3	-
1981	17.9	40.4	24.9	4.8	-	1.1	1.6	4.9	4.4	-
1982	15	31.6	37.1	8.5	-	0.4	4.3	3.0	-	-
1983	14.4	34.4	39.5	4.5	-	0.4	0.0	6.0	-	-
1984	12.7	22.8	44.0	3.3	5.0	0.4	1.3	3.8	6.7	-
1985	9.8	16.7	41.2	4.3	7.4	0.4	1.1	6.3	11.6	1.4
1986	10.3	13.4	36.2	5.4	8.4	0.9	5.7	11.1	5.9	2.6
1987	9.7	14.1	29.0	4.1	11.6	2.0	7.2	10.8	8.6	2.8
1988	9.3	12.5	26.3	3.3	15.4	1.5	8.9	13.9	7.2	1.7
1989	8.6	11.6	30.3	2.4	13.2	1.2	10.1	16.3	5.3	1.0
1990	9.1	11.5	28.9	1.9	12.5	1.2	12.7	16.6	4.8	0.7
1991	8.5	9	26.3	1.4	15.2	0.8	16.6	12.7	9.4	0.1
1992	6.5	7	22.8	1.0	20.4	0.4	12.5	18.6	10.7	0.0
1993	6.2	6.5	18.3	0.5	23.3	0.2	9.8	26.2	8.9	0.0
1994	5.6	5	18.4	0.3	26.8	0.1	7.2	15.3	20.0	1.3
1995	5.4	4.7	20.8	0.2	23.8	0.1	7.3	16.7	20.6	0.4
1996	4.1	3.8	20.1	0.1	23.7	0.0	6.4	18.7	22.9	0.1
1997	3.6	4	19.9	0.0	23.9	0.0	6.4	25.2	16.8	0.0
1998	3	0.8	18.7	0.0	26.7	-	1.3	6.7	42.4	0.0
1999	2.3	0.9	20.1	0.0	27.6	0.0	1.1	33.3	14.4	-

Sources: *Central Bank, Binay and Kunter (1999), Yeldan(2001), Prime Ministry, State Planning Organisation.*

Furthermore, Figure 2 (SFA/M1) shows the changing composition of financial deepening over time. We observe a rapid shift in focus away from narrow money to non-bank and other interest bearing components, showing the increasing importance of non-monetary components. Also as seen in Table 2, the ratio of SFA to M1 reached its peak in 1999, coinciding historically with the highest ratio of outstanding public securities, which is 38.7 percent of GNP.

This trend of financial deepening in terms of the ratios of M2 and banking system's credit to GNP has been volatile. The increase in M2/GNP ratio from 17.2 percent in 1980 to 25.0 percent in 1982 stems from the increase in TL demand deposits due to the positive interest rates and the resumption of holding financial assets, mostly driven by newly-developed financial instrument certificates of deposits. Its ratio in time deposits was approximately 14 percent in 1980 and reached a peak of 24 percent in the following year (see Table 3A). However, M2/GNP ratio declined until the 1994 currency crisis in Turkey and then started rising again until 1999.

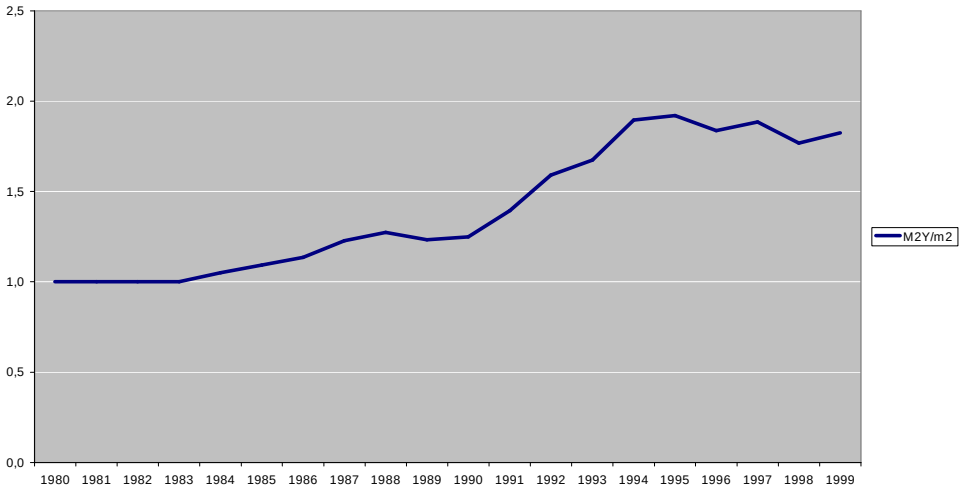
As seen in Table 1, Banking system's credit to GNP ratio was more volatile starting from 10.7 percent of GNP in 1980. It reached a peak of 21.7 percent of GNP in 1997, but most of the time declining during the period, especially during the early 1990s, which is the time when most of the financial liberalisation steps had been taken. This reflected a clear contrast between financial liberalisation and financial deepening process.

The following conclusions can be drawn from these trends of financial deepening indicators. First of all, there was a downward trend in the share of both currency in circulation and the Turkish-Lira-denominated bank deposits (Esen, 2000). The ratio of currency in circulation to GNP declined from 3.5 in 1980 to only 1.9 in 1999 (Table 1). Its share in the SFA declined from 22.4 in 1980 to only 2.3 in 1999 (Table 3). Also, both the ratio of Turkish-Lira-denominated bank deposits (sight and time deposits) to GNP and their shares in SFA declined from 1984 to 1997 in Tables 1 and 3.

Second, there has been a high degree of currency substitution, as Yeldan (2001) indicated, combined with the threat of international speculative capital flows which led the Turkish economy to frequent and serious financial crises in 1994, 2000 and 2001. The effect of currency

substitution on financial deepening can be explored by examining the trend of M2Y/M2 ratio in Figure 3. Starting from 1984, the ratio rose constantly until 1996. It shifted from 1.8 to 1.9. The significance of currency substitution can be easily seen when we examine both the ratios of foreign exchange deposits to GNP and its share in SFA. The ratio of foreign exchange deposits to GNP reached a peak with 22 percent of GNP in 1999 from only 1.2 percent of GNP in 1980. Its share in SFA reached almost 28 percent in 1999 rising from 5 percent of SFA in 1980. This trend also indicates that foreign exchange deposits are a dominant factor behind the sudden and rapid increase in total deposits.

Figure 3- M2Y/M2 ratio



Third, as stated earlier, excessive government borrowing was one of the dominant factors in shaping the financial deepening process. In other words, every measure taken towards liberalisation of the financial markets turned out to be a tool to finance public deficits (Binay and Kunter, 1999). Therefore, on the one hand, an attempt was made to decrease the cost of funds of the financial system. On the other hand, the system's funds were directed to purchasing public securities by increasing the liquidity ratio gradually and decreasing the required reserve ratio. For example, while the liquidity ratio and the required reserve ratio used to be 10 percent in 1983 and 22 percent in 1980, they became 35 percent in 1991 and 7.5 percent in 1997 respectively.

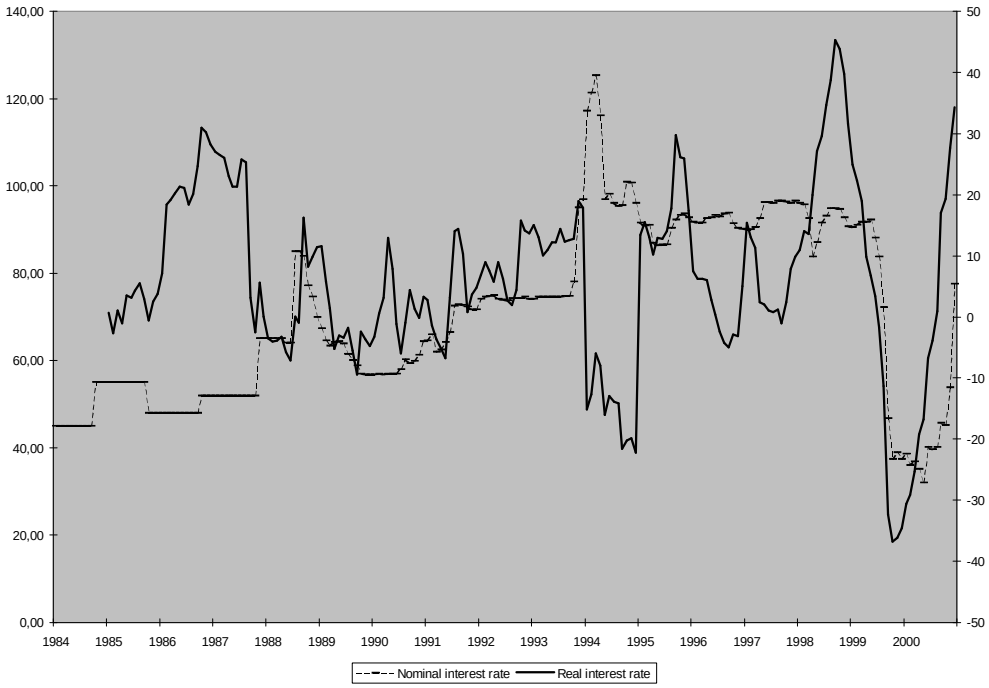
Finally, unlike the expectations, the ratio of the banking system's credit to GNP is not satisfactory. Moreover, because of the frequent and

costly banking and currency crises experienced in 1986, 1988, 1994 along with more recent crises, the quality of bank loan portfolio is open to criticism. It reflects adverse selection and moral hazard problems, clearly indicating, firstly, asymmetric information and, secondly, an inappropriate regulatory and supervisory environment (Özer, 1999).

4.2. Behaviour of Interest Rates After Liberalisation

On an ex-ante basis, the process of interest rate liberalisation can increase the volatility of both nominal and real interest rates. The high and volatile interest rates can be partly due to macroeconomic instability, especially that caused by high inflation and excessive government borrowing to finance its deficits, such as in Turkey (See Table 1). Therefore, liberalisation of interest rates without putting inflation and budget deficits under control can make budget deficits even worse (Brinkman, 1998).

Figure 4- Real and Nominal Interest Rates



Liberalisation of interest rates affects both the level and the dynamics of interest rates. The strength of those effects depends partly on the structure of the financial system, especially the market structure

of the banking system. Figures 4 and 5 and Table 4 show the movements of monthly nominal and real interest rates on time deposits and the yields of different financial assets. Deregulation of interest rates without laying the necessary background starting from 1980 failed to move interest rates at plausible equilibrium levels as real interest rates floated at high levels due to high risk premium. Furthermore, it led to more volatile interest rates. Therefore, it is hard to conclude that deregulation of interest rates was a smooth transition to equilibrium, at a competitive interest rate. Treasury bill rates and deposit and lending rates were the most repressed, while deposit rates showed the greatest increase immediately after liberalisation then leaving the ground to yields on government securities which started to increase significantly after 1989. Of the two latter yields, government bond rates reached their highest level following the 1994 currency crises. Despite the high risk premia contained in the offered rates, liberalisation of interest rates was successful in transforming the negative real interest rates prior to liberalisation to high real rates in the following years.

In sum, Turkey's experience since 1980 has been consistent with the hypothesis that the process of interest rate liberalisation can increase the volatility of both nominal and real interest rates. Also, as mentioned earlier, external liberalisation started earlier than required, especially fiscal and other sources of macroeconomic instability were prominent (Caprio, Hanson and Honohan, 1999). Deregulation without adequate regulation and supervision contributed to banking fragility and banking crises for many years.

To reach a final conclusion about the success of interest rate liberalisation, we will examine, in the next section, whether or not liberalisation of interest rates has reached its primary goal of generating more savings and investment.

4.3. Impact on Savings and Investment

Following the liberalisation, total savings in the banking system maintained an upward trend over the first six years from 1980 to 1985, and then either declined or increased between 1986 and 1995 and regained an upward trend from 1996 to 1999 (Table 1). The ratio of total deposits to GNP increased from 10 percent in 1980 to 39.5 percent in 1999; mostly stemming from the increase in foreign exchange deposits. TL-denominated bank deposits (time and saving deposits) increased, but

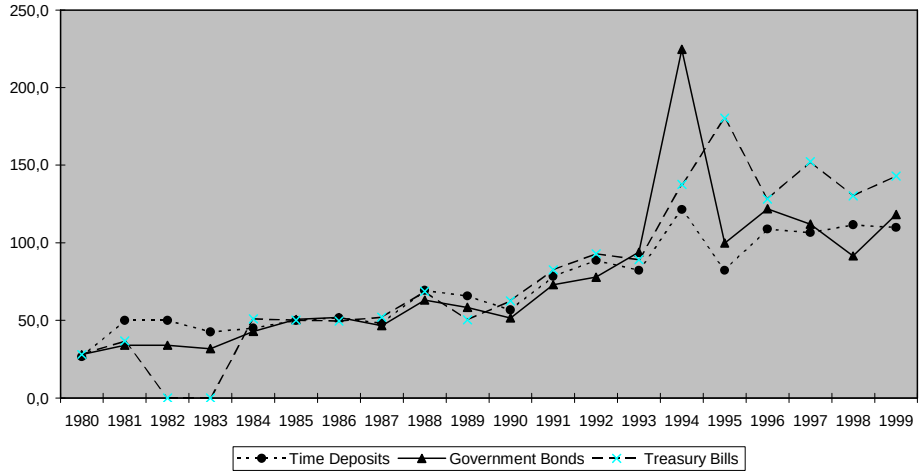
at relatively low levels in an unsystematic way. Despite the reported increase in financial savings and the relative deepening of the financial market, total domestic savings available for fixed investment did not jump as much (Table 5). Hence, as the ratio of SFA to GNP increased

Table 4: Yields of Financial Assets

Years	Time deposits	Private sector corporate bonds	Private sector shares	Government bonds	Treasury bills
1980	26.5	25.6	12.0	28.0	28.0
1981	50.0	36.0	30.4	34.0	36.6
1982	50.0	37.4	79.9	34.0	-
1983	42.5	38.6	110.2	31.8	-
1984	45.0	47.2	-5.2	42.9	51.0
1985	50.0	49.9	46.8	50.6	50.1
1986	51.7	55.3	86.5	51.8	49.6
1987	48.1	53.7	293.8	46.5	52.1
1988	69.3	74.6	-44.4	63.1	68.7
1989	65.7	72.0	493.1	58.4	50.4
1990	56.7	62.0	46.8	51.6	62.6
1991	78.3	76.8	34.2	73.0	82.6
1992	88.7	80.7	-8.4	77.8	93.0
1993	82.2	84.9	416.5	94.0	89.1
1994	121.4	117.3	31.8	224.7	137.6
1995	82.2	96.5	46.8	99.8	180.3
1996	108.9	94.3	143.7	121.9	128.2
1997	106.5	-	253.7	112.1	152.4
1998	111.6	-	-26.9	91.5	130.2
1999	109.8	-	411.7	118.2	143.1

Sources: *Central Bank, Binay and Kunter (1999), Treasury.*

Figure 5 - Interest Rates on Financial Assets



from 15.6 percent to 81.2 percent within the analysis period, total domestic savings, which were 16 percent in 1980, reached a maximum in 1988 with 27.2 percent of GNP and then showed a decline during the following years, realising 20.5 percent of GNP in 1998. Therefore, developments in both total domestic savings and financial savings show that the increase in real interest rates following the liberalisation had been partially successful in attracting the savings into the formal financial sector and turning those funds into effective savings.

Therefore, in terms of overall savings, the financial liberalisation process has not created the expected results. Unlike the McKinnon-Shaw hypothesis, increases in real deposit ratio did not lead to an increase in private savings ratios. According to Akçay and Öğretmen (1995), there was a decline in private saving ratios during the first six years after liberalisation.

Table 5: Total Domestic Savings and Gross Fixed Investments / GNP (Percentage Share)

YEARS	TOTAL DOMESTIC SAVINGS	GROSS FIXED INVESTMENTS
1979	15.7	21.0
1980	16.0	19.6
1981	18.3	18.7
1982	17.1	18.0
1983	16.5	18.9
1984	16.5	17.9
1985	18.9	20.0
1986	21.9	23.1
1987	23.9	24.6
1988	27.2	26.1
1989	22.1	22.5
1990	22.0	22.6
1991	21.4	23.7
1992	21.6	23.4
1993	22.7	26.3
1994	23.1	24.5
1995	22.1	24.0
1996	20.0	25.0
1997	20.1	25.3
1998	20.5	25.6

Source: State Planning Organisation (SPO), Turkey.

As Akçay and Öğretmen (1995) argued, there are two main factors why the private savings ratio remained constant. First, there are negative income and positive substitution effects of real interest rate changes. Therefore, the net effect of real interest changes on savings is determined by the relative magnitude of both effects. The McKinnon-Shaw hypothesis does not consider the negative income effect of real interest changes. Second, according to both Keynesians and Neo-Structuralists, there is a significant difference between the marginal propensity to consume of profit earners and that of interest earners. If the first group's marginal propensity to consume is higher than that of the second group, there will be a redistribution of income from profit earners to interest earners, resulting in a decrease in the savings ratio. Both factors have played a significant role in the case of Turkey.

On the other hand, it is argued that financial savings are directed to real investment by the banking sector (Aleem and Kasekende, 1999). The ratio of gross fixed investment to GNP was 21 in 1979 and fell to 18 percent in 1984. It resumed to increase in 1985 and reached the highest point in 1988, coinciding with the highest ratio of domestic savings to GNP. Therefore, after the liberalisation, there was an unexpected decline in investment during the early years of liberalisation (Table 5). While there was an increase in investments attributed to the housing boom in the late 1980s, there was a significant decrease in productive private investments. This is mainly a result of uncertainty, which is not included in McKinnon-Shaw hypothesis, and high real interest rates following the deregulation.

At this stage, we can mention a structural change in private sector investment behaviour. The private sector realised that government expenditures became less sensitive to changes in real interest rates. They adjusted their investment behaviour according to changes in government expenditures and not to changes in real interest rates. Therefore, most of the investment decisions of the private sector were determined by the domestic demand, which depends on the increase in government expenditures. Finally, when we examine the ratio of total private securities issued to GNP from Table 1, we can argue that most of the investment was financed by retained earnings and very little was financed through equity and bond issues.

4.4. Impact on Growth

As seen in Table 1, Turkey displayed positive economic growth between 1980 and 1999, except during the crises years in 1980, 1994 and 1999. Whether or not the financial liberalisation played a crucial role in this development is questionable. As concluded in the previous sections, financial liberalisation attempts failed to mobilise overall savings and to intermediate them towards productive investment. Also, liberalisation did not lead to an efficient allocation of resources and to efficient uses of production factors, even though there are some minor improvements in the private sector (Uygur 1993).

Moreover, the evidence on the relationship between financial liberalisation and economic growth is mixed. According to a recent econometric study of the Turkish economy by Kar and Tuncer (2001), 'the direction of causality between financial development and economic growth depends upon the selected measure of financial development'. However, there is not any conclusive evidence that either 'supply leading hypothesis' or 'demand following hypothesis' is true for Turkey.

Issues of the direction of causality between financial development and growth have also revived the old debate on the relative merits of 'bank-based financial systems such as in Germany and Japan versus market-based financial system as in the U.K. and U.S.' (Khan and Senhadji, 2000). Even though emerging evidence reveals that neither view is fully correct, some findings suggest that faster growth leads to financial deepening.

4.5. Impact on Macro-Economic Stability

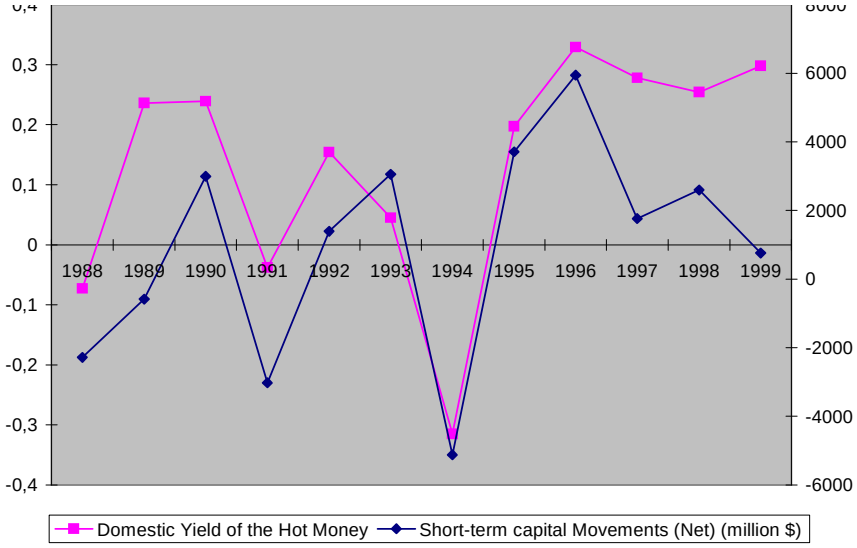
As mentioned earlier, Turkey took the first step towards liberalisation of the financial system along with an overall programme of structural adjustment initiated in July 1980, lifting the ceilings on personal time deposit interest rates. However, the liberalisation process started in an environment where balance of payments deficits and budget deficits were very high, economic growth almost stopped, and inflation reached double-digit numbers.

Turkish authorities also liberalised the financial markets rapidly, without paying attention to the legal, regulatory and supervisory infrastructure. The stage was set for post-liberalisation crises (Caprio and Hanson, 1999). Although episodes of financial crises, such as in 1986, 1988, 1994 and finally 2000 and 2001 in Turkey, were confined to the post-liberalisation period, financial crises appeared to be linked to the liberalisation efforts and were more difficult to manage as a result of the accompanying structural changes (Edey and Hividing, 1995).

When the main macroeconomic indicators in Table 1 are examined, it is hard to say that Turkey has been successful in achieving and sustaining macro-economic stability. Some indicators show even worsening trends of macro-economic stability, such as the worsening of current account and the increase in public debt.

The liberalisation process contributed to macroeconomic instability, with an initial surge in aggregate credit, as financial institutions sought to gain a market share. As a result, overheating had to be damped by monetary authorities or had led to inflation and nominal depreciation, which also fed back onto nominal interest rates (Caprio, Hanson, and Honohan, 2000), as in 1986 and 1988 crises in Turkey.

Figure 6- Capital Flow-Yield Relation



Another destabilising effect of the financial liberalisation process was through the public finance where the Turkish government failed to control deficits in order to respond to higher interest rates. As mentioned already, public sector deficits were refinanced at ever higher interest rates in an unsustainable spiral crowding out private borrowers and therefore feeding back onto economic growth and stability.

The most destabilising effect came from the liberalisation of foreign capital flows. In other words, the financial liberalisation process, especially external liberalisation, increased the vulnerability of the Turkish economy to financial crises. Without taking a cautious approach to liberalising the capital account and not being concerned about the volatility of capital flows that could destabilise the macroeconomic environment, Turkey realised liberalisation in this area too.

Table 6: Short-term Capital Movements

	Domestic Yield of Hot Money	**Short-term Capital Movements (Net) (million $)**
1988	-0.073	-2281
1989	0.236	-584
1990	0.239	3000
1991	-0.038	-3020
1992	0.154	1396
1993	0.045	3054
1994	-0.315	-5127
1995	0.197	3713
1996	0.329	5945
1997	0.278	1761
1998	0.254	2601
1999	0.298	759

Following the liberalisation of foreign capital movements, there was a massive inflow of short-term capital. Table 6 and Figure 6 show the relationship between domestic yield of hot money and short-term capital inflows. It is clear from Figure 6 that, except for the period 1997-1999, high risk perception reigned over the financial markets globally, and the inflow and outflow of short-term speculative capital movements were mainly determined by the domestic yield of hot money (Yeldan, 2001, p. 138-139). This massive inflow of short-term capital led to a growth in the

number of banks and non-financial institutions, and risky lending. This limited the capacity to manage those flows and associated risks in the private and public sectors, and made financial markets extremely dependent since, as mentioned in Yeldan (2001, p. 139), the gross magnitudes of such capital movements, 'where the de-stabilising impacts of speculative short-term capital movements prevail', almost equal the total agricultural and industrial output. In other words, capital inflows to and especially the surge of capital outflows from the Turkish economy leading to the depreciation of the Turkish Lira put the Turkish financial system in a fragile state[3] and led to a serious crisis. In the aftermath of recent financial crises in Turkey, we observed large capital inflows before the crises and large capital outflows after them (Mishkin, 2001).

Table 7: Volatility of Exchange Rate

	Volatility of Exchange Rate
1980-1985	3.8
1986-1989	2.7
1990-1994	6.7
1995-1999	1.8

Lastly, financial markets in general have become progressively more volatile after the liberalisation. Specifically, the foreign exchange market is another source of macro-economic instability in Turkey. Data on monthly variations in US Dollar exchange rate in Table 7 show the increasing volatility of the exchange rate. This volatility[4], measured by standard deviation of monthly percentage changes, increased from 2.7 percent between 1986 and 1989 to 6.7 percent during 1990-1994 and declined to 1.8 percent during the 1995-1999 period, as a result of a vicious cycle of high real interest rates along with currency appreciation[5].

[3] At this stage, we have to mention another aspect of the crises of the Turkish economy that is in common with those of the international crisis: it is a result of the recent changes in the institutional structure of the global financial and economic system that originate from the political and economic demands of neoliberalism (Wolfson, 2000, p. 375). Neoliberalism's vision of an international financial system with no barriers to capital movements has resulted in the dismantling of capital controls in Turkey. Following neoliberalism's new policy prescriptions, as Yeldan (2001) mentioned, an ideology which forced to transform the Turkish economy into 'casino capitalism' has become dominant since 1980.

[4] To compare the OECD member countries' exchange rate volatility, see Edey and Hividing, 1995, Table 24, p. 45.

[5] In Edey and Hviding (1995, p. 18), after examining the monthly movements in stock, bond and foreign exchange markets, it is suggested that there has been no general trend

5. FINANCIAL LIBERALISATION, SAVINGS AND ECONOMIC DEVELOPMENT (Testing the Complementarity Hypothesis)

Economists have used numerous explanations of cross-country differences in growth, including factor accumulation, resource endowments, degree of macroeconomic stability, educational attainment, institutional development, legal system effectiveness, international trade, and ethnic and religious diversity. More recently, they started to mention the role of financial markets in the growth process. Since more developed countries have more developed financial markets, it follows that policies to develop the financial sector would contribute to economic growth.

The theoretical underpinnings of the relationship between financial depth and growth can be traced back to the work of Schumpeter (1912) and more recently to McKinnon (1973) and Shaw (1973). The main policy implication of the McKinnon and Shaw arguments is that government restrictions on the banking system through interest rate ceilings, high reserve requirements, and directed credit programs, hinder financial development and ultimately reduce economic growth. The financial repression thesis of McKinnon and Shaw influenced both the theoretical approaches and practical policy priorities of the IMF and the World Bank in the 1970s and 1980s. This influence is quite evident from the Turkish experience since Turkey started to liberalise its financial markets with an overall liberalisation programme supported by the IMF in 1980. The basic argument of the McKinnon-Shaw thesis is that a low or negative real interest rate, which was the case in Turkey before 1980, leads to lower savings and therefore reduces the amount of loanable funds, constrains investment, and decreases the rate of economic growth (Khan and Hasan, 1998). However, an increase in real interest rate or a positive real interest rate may cause savers to increase their savings, allowing more funds to be invested and in turn increases the rate of economic growth.

This view leads to the conclusion that there is a basic complementarity between the accumulation of money balances, that is financial assets, and the physical capital accumulation. The complementarity hypothesis is based on two crucial assumptions (Khan and Hasan, 1998, p. 582):

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increase in volatility in these financial markets within the post-deregulated period, except in Italy, Finland and Turkey.

- All economic agents are restricted to self-finance,
- Because of the indivisibilities, investment requires prior money balances accumulation.

The complementarity hypothesis can be represented by the long-run real money demand function in which real money demand (M2/P) is the function of real income (y) as a scale variable, real interest rate (r) as an opportunity cost variable, the ratio of private sector investment to GNP (Ip/Y), and a private sector investment function in which private sector investment to GNP ratio is the function of real income, real interest rate, and the ratio of the public sector investment to GNP (Ig/GNP)[6]. Thus, the defined model is given formally and is subjected to an econometric analysis whose details are given in the Econometrics Annex attached to the present paper.

In the econometrics analysis, the complementarity hypothesis is tested by using the cointegration technique. The results of the analyses indicate the existence of cointegrating vectors between the variables but fall short of producing satisfying results for the verification of the complementarity hypothesis during the whole period under consideration. Hence, this conclusion supports the argument that it is the cost of capital rather than the availability of finance that constrains private investment in financially-repressed economies. Even though during the period 1980-2000 there has been an increase in real deposit rate and the financial constraints have been relaxed, we did not observe an increase in investment as well as a smooth pattern in economic growth as implied by McKinnon and Shaw.

6. POLICY IMPLICATIONS AND CONCLUSIONS

Turkey started to liberalise the financial system rapidly, along with an overall programme of structural adjustment initiated in July 1980, by lifting the ceilings on personal time deposit interest rates. The process was intensified in the late 1980s by liberalising the foreign capital accounts. However, the balance of payments deficits and budget deficits were not manageable, leading to a halt in economic growth while inflation reached double-digit numbers.

[6] The ratio of public sector investment to GNP is included in this equation as an independent variable to show the complementarity and substitutability of public sector investment in the private sector investment function.

Therefore, financial liberalisation should have been implemented only after fiscal stability had been achieved. Macroeconomic stability is a necessary, although not a sufficient, condition for avoiding financial crises. In other words, it is a widely recognised notion that fiscal consolidation, a sound banking system, and macroeconomic stability are key prerequisites for successful financial liberalisation.

The strengthening of institutions in financial markets, together with prudent and pragmatic management of financial liberalisation, are preconditions to effective fiscal consolidation in Turkey.

Based on the findings, results of the financial liberalisation in Turkey are somewhat mixed. There is a positive impact of liberalisation of interest rate to increase total deposits. The structure of deposits has changed while the share of time deposits in total deposits has increased. Also, the ratio of the stock of financial assets to GNP has risen significantly. But the success of these indicators of financial deepening should be evaluated carefully. First of all, both the ratio of Turkish-Lira-denominated bank deposits (sight and time deposits) to GNP and their shares in SFA have declined. The share of foreign exchange deposit accounts has increased, indicating a high degree of currency substitution. Secondly, excessive government borrowing was one of the dominant factors in shaping the financial deepening process.

Unlike the positive impact of interest rate liberalisation, which increases total deposits, it did not lead to a plausible equilibrium, a competitive interest rate. Moreover, high real interest rates led to unfavourable conditions in Turkey, such as lower investment, corporate and financial sector distress, destabilising capital inflows, and especially increases in budget deficits and public debt. Moreover, it is hard to say that the overall financial liberalisation attempts have reached their primary goal of increasing investment, contributing to macroeconomic stability and economic growth. Macroeconomic instability and rapid financial liberalisation, especially liberalisation of capital accounts, without achieving macroeconomic stability showed apparent failures to reach the ultimate goal of liberalisation in a fully sound environment.

Mishkin (2001) pointed out that the worst effect of financial liberalisation in Turkey is to lead up to a financial crisis. Glick and Hutchison (1997) also mentioned that the openness of Turkey to international capital flows, combined with liberalised financial structure,

make the Turkish economy particularly vulnerable to twin crises. In other words, taking the rapid approach towards liberalisation of the financial markets, especially rapid and early liberalisation of capital account, led to financial crises.

Our findings of econometric analysis, which do not support the complementarity hypothesis, indicate that although the financial constraint has been relaxed, an increase in real deposit rate did not lead to increases in investment. In sum, we can conclude that Turkey's financial system is in a fragile state. This paper has identified several financial sector indicators issues as the potentially serious obstacles to sustained economic growth and macroeconomic stability (sustainable public and current account deficits and manageable inflation).

As Caprio, Honohan and Stiglitz (1999) stated, if we could turn the clock back, we would like to see 'a much more measured and nuanced approach to liberalisation'. However, since turning back the clock is 'not a practical option' for Turkey right now, the following conclusions and policy measures should be evaluated carefully and necessary lessons have to be taken for sustainable economic growth and stable economy.

First of all, instead of following the approach of a combination of inconsistent reform strategies, Turkey should have taken a gradual approach to financial liberalisation, especially liberalising the foreign capital accounts. Secondly, since implementing the policies towards liberalising the financial markets in isolation can have a potential to impede economic development, financial liberalisation should be considered as a major part of a successful development strategy for Turkey. Moreover, knowing that achieving macroeconomic stability is a prerequisite for successful financial liberalisation, as liberalisation proceeds, structural reform and institutional development, as a form of prudential financial supervision and retaining control especially over portfolio investments, are other necessary policy measures.

Thirdly, capital controls are necessary to counter the negative effects and volatility of short-term speculative capital flows which have the potential to affect the depth of domestic financial markets adversely and thus serve to destabilise the investment plans of the private sector. In this regard, there are some instruments to be used immediately, such as imposing reserve requirements on foreign loans and foreign-owned

deposits of short maturity. This should lead to lengthen the maturity of capital inflows as used by Chile, or impose taxes on short-term inflows where the tax rate will change inversely with the maturity of inflow as used by Colombia and Chile, or impose minimum stay periods for FDI as used by Colombia.

Although the importance of an appropriate macroeconomic policy, institutional developments, and structural reforms are also greatly heightened in a liberalised environment, success on those fronts is not enough for the domestic market to fulfil its function of harnessing private investments. Therefore, as Pill and Pradhan (1997) have mentioned, government policies should continue to play a central role in determining how the financial sector performs. It should not be forgotten that financial liberalisation does not mean 'free banking'. Governments will continue to intervene in the financial sector in a number of ways. Banks will and should be supervised for prudential reasons.

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ECONOMETRICS ANNEX

The complementarity hypothesis can be represented by the long-run real money demand function in which real money demand (M2/P) is the function of real income (y) as a scale variable, real interest rate (r) as an opportunity cost variable, the ratio of private sector investment to GNP (Ip/Y), and a private sector investment function in which private sector investment to GNP ratio is the function of real income, real interest rate, and the ratio of the public sector investment to GNP (Ig/GNP)[7]. The following equations represent the complementarity hypothesis:

$$M / P = f(y, I_p / Y, i - P^e), \tag{1}$$

$$I_p / Y = g(y, I_g / Y, i - P^e), \tag{2}$$

To hold that the complementarity hypothesis is true, partial derivatives have to be positive:

$$\frac{\partial(M / P)}{\partial(I_p / Y)} > 0, \tag{3}$$

and,

$$\frac{\partial(I_p / Y)}{\partial(i - P^e)} > 0, \tag{4}$$

According to these partial derivatives, it is not the cost of capital but the availability of finance that constrains investment in financially-repressed economies. If there is an increase in the real deposit rate, increases in investment should be expected as well since the financial constraint is relaxed.

A non-stationary time series X_t is said to be integrated of order d if it becomes stationary after differencing d times and is denoted by

[7] The ratio of public sector investment to GNP is included in this equation as an independent variable to show the complementarity and substitutability of public sector investment in the private sector investment function.

$\chi_t : \mathrm{I}(d)$. According to Engle and Granger (1987) two time series, X_t and Y_t are cointegrated to the order of d and b; b is less than d if;

- both X_t and Y_t are integrated of order d, that is I(d), and
- a linear combination between X_t and Y_t such as $z_t = X_t - aY_t$ is integrated at any order less than d, that is the residuals of the long-run regression should be stationary, integrated of order zero.

Prior to verifying the existence of a cointegration equation of the form (1) and (2), we perform the augmented Dickey-Fuller tests (ADF) to examine the order of integration of the basic series included in the analysis. To run the ADF tests, the equation below must be run first.

$$\chi_t = \alpha + \beta_t + \lambda\chi_{t-1} + \sum_{i=1}^{p} \gamma_i \Delta\chi_{t-i} + \mu_t \qquad (5)$$

X represents each of the variables under consideration, which are real money demand (RM2), real GNP (RGNP), real interest rate (RR), ratio of private sector investment to GNP (IPGNP), and ratio of the public sector investment to GNP (IGGNP). t represents time trend and μ_t is an error term. To determine the optimal lag length in (5), we minimised the Schwarz criterion.

Table 8: Unit Root Tests (Augmented Dickey-Fuller test)

	Test Statistic	
Variables	**Levels**	**First Differences**
RGNP	-7.52(2)a*(**)	-19.32(1)a*(**)
IPGNP	-6.09(1)a*(**)	-16.25(1)a*(**)
IGGNP	-3.44(2)a	-6.27(1)a*(**)
RM2	-1.49(12)a	-5.25(2)a*(**)
RR	-3.09(4)a	-7.09(3)a*(**)

Notes: a: Numbers inside brackets are the numbers of lags selected by the Schwarz criterion.
*(**) Rejection of unit-root hypothesis significant at 5 percent (1 percent). See MacKinnon (1991).

The results of the ADF unit root tests of the five variables applied to both levels, and the first differences of the variables are reported in Table 8. Comparing calculated ADF statistic to its critical value, it is clear that the level of each variable is non-stationary, except for the real

GNP and IPGNP variable. However, when we applied the ADF test to the first differences of each variable, all first differenced variables are stationary. We expect that the results of the Johansen test dissipate those conflicting results since it supports the characterisation of those series as having a unit root rather than as being stationary (Jadresic and Zahler 2000). Based on these results, we assume that they are all integrated in the same order of one, that is I(1). We examine the effects of assuming that all the variables in the analysis are stationary.

After determining the order of integration of each variable, we determined whether or not variables in (1) and (2) are cointegrated. Since Engle-Granger's (1987) two-step methodology suffers from a number of deficiencies in testing the cointegration, we used the Johansen's multivariate cointegration technique developed in 1988. As stated in MacDonald and Taylor (1991), the Johansen procedure is superior to the Engle-Granger two-step methodology or the residual-based ADF test for cointegration[8] because of the following reasons:

- It fully captures the underlying time series properties of the data.
- It provides estimates of all the cointegrating vectors that exist within a vector of variables.
- It offers a test statistic for the number of cointegrating vectors.
- It allows direct hypothesis tests on the coefficients entering the cointegrating vectors.

Table 9: The Results of Johansen Rank Cointegration Test

Cointegrating Regression	Likelihood Ratio	Critical value at 5% at 1%		Hypothesized No. of Cointegrating Equations
RM2=f(RGNP, RR, IPGNP)	55.79	47.21	54.46	None**
	24.72	29.68	35.65	At most 1
	5.59	15.41	20.04	At most 2
	0.02	3.76	6.65	At most 3
IPGNP=f(IGGNP,RGNP, RR)	58.69	47.21	54.46	None**
	30.8	29.68	35.65	At most 1*
	8.68	15.41	20.04	At most 2
	3.79	3.76	6.65	At most 3*

Note: *(**) Denotes rejection of the hypothesis at the 5 percent (1 percent).

[8] In this test, we actually examine whether a given set of integrated of order one variables are cointegrated. Therefore, this also explains why we choose to use Johansen test even though we assume that all five variables are I(1).

Table 9 presents the results of the Johansen test which determines the number of cointegrating vectors present. In these tests, we examine the null hypotheses stating that the variables under consideration are not cointegrated against the alternatives and that there are at most 1, 2, or 3 cointegrating equations.

The results of the econometric analysis given in the annex indicate that there exists a unique cointegrating vector among the variables in equation (1), and two cointegrating vectors in equation (2). The estimated equations for (1) and (2) respectively are:

$$\mathbf{RM2} = 17{,}461 - 1{,}709\mathbf{RGNP} + 0{,}027\mathbf{RR} + 7{,}38\mathbf{IPGNP} \quad (6)$$
$$(0{,}594) \quad (0{,}018) \quad (2{,}980)$$

$$\mathbf{IPGNP} = -6{,}644 + 0{,}337\mathbf{RGNP} - 0{,}014\mathbf{RR} + 7{,}38\mathbf{IGGNP} \quad (7)$$
$$(0{,}600) \quad (0{,}020) \quad (2{,}799)$$

To hold that the complementarity hypothesis is true, signs of the coefficients of the IPGNP in (6) and that of RR in (6) should be positive. However, the coefficient of RR in equation (7) does not have the expected sign. Therefore, it is not consistent with the complementarity hypothesis.

To sum up, based on econometric estimates, it can be concluded that the complementarity hypothesis does not hold in our examination period. The conclusion supports the argument that it is the cost of capital rather than the availability of finance that constrains investment in financially-repressed economies. Even though during the period 1980-2000 there was an increase in real deposit rate and the financial constraints were relaxed, we did not observe an increase in investment as well as a smooth pattern of economic growth.