

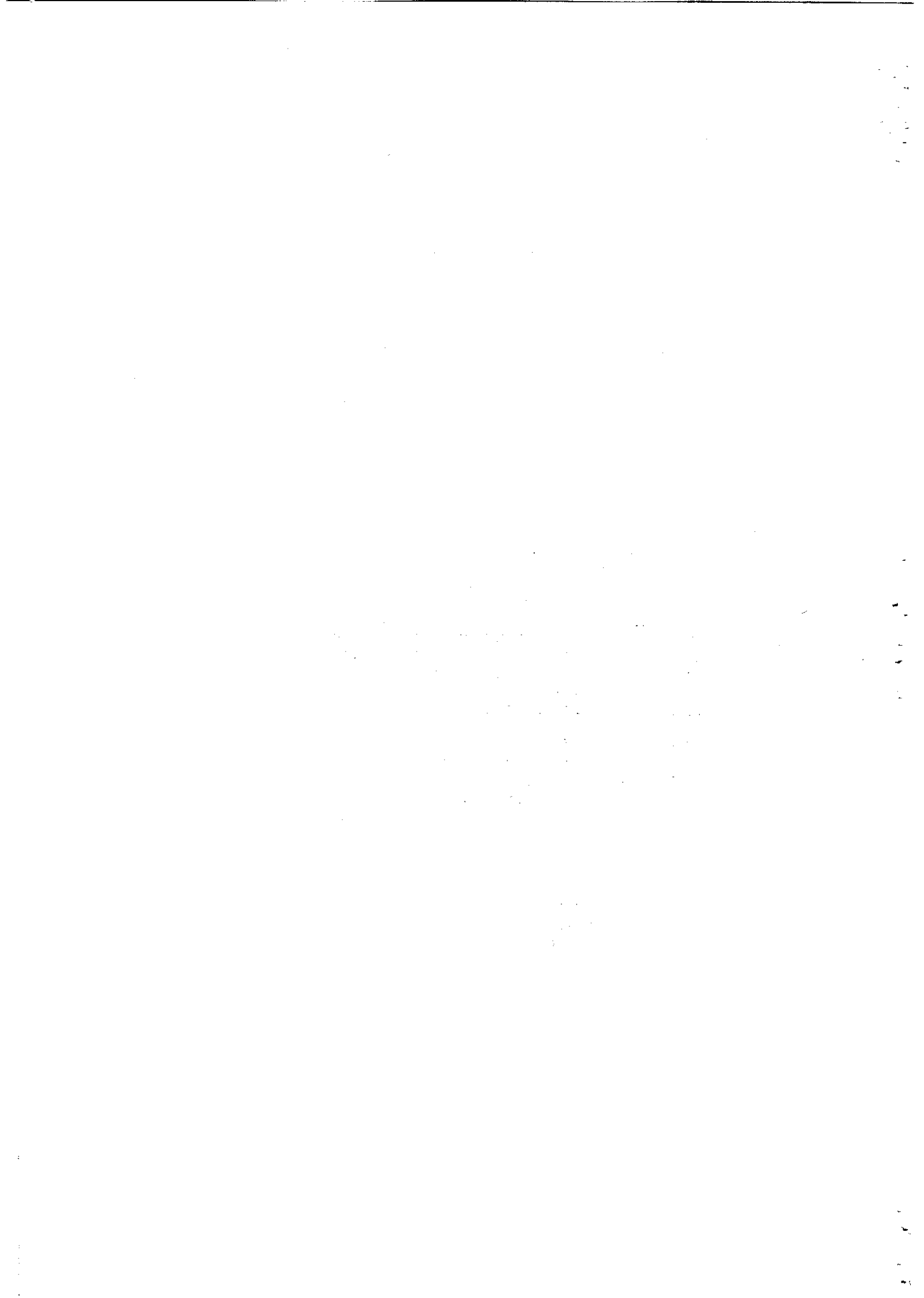
**FINANCIAL LIBERALIZATION AND
THE REAL SECTOR IN TURKEY**

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I INTRODUCTION

Liberalization can be viewed as an act of policy which removes or reduces price and quantity controls in a market. Thus, a market can be considered liberalized if there are no price and/or quantity restrictions attempting to control either demand or supply. Foreign trade, foreign capital transactions, the domestic market for financial assets, the labour market and the market for agricultural and other commodities have recently been the subject matter of liberalization. Since the second half of the 1970s, a growing number of countries, developing and developed alike, have embarked on liberalization programmes. There is by now a wide acceptance that these programmes, if appropriately implemented, raise the rate of growth of the economy and increase the welfare of the population by way of higher efficiency in the allocation and use of resources and expansion in the factors of production.

Given that the number of distorted markets is generally more than one and that the process of liberalization cannot be done instantaneously, the countries which initiate liberalization programmes are all faced with the common problems of sequencing and speed. The need for sequencing arises from the general idea that all the markets can not or should not be liberalized simultaneously. There are arguments in the literature which consider the correct sequencing of the markets as a necessary condition for the success of liberalization policies. The question of speed arises since an instantaneous liberalization might neither be feasible nor optimal.

McKinnon (1973) and Little, Scitovsky and Scott (1970) were among the first who addressed the problems of sequencing and the speed of liberalization programmes in the developing countries and the issues involved have recently been reviewed by Edwards (1989, p.4-19). As regards the speed, there is a fairly general agreement in the literature that due to the presence of adjustment costs and the opposition of those who have vested interests in the controlled markets, liberalization should be carried out gradually. A number of economists such as Krueger (1984) have argued that in order to minimize the short run unemployment effects and other adjustment costs and the political opposition, foreign funds should be made available to those engaged in the implementation of de-control and liberalization programmes.

As regards sequencing, McKinnon (1973) provided the first comprehensive analysis and argued that the capital account restrictions should be relaxed only after the foreign trade, financial market and commodity market controls had been eliminated. Relaxation of the capital account restrictions might bring about foreign capital inflows which in turn would

result in the appreciation of the real exchange rate. The latter development is not wanted since the tradables sector is in need of relative price protection after the reductions in tariffs within the context of trade liberalization. McKinnon (1982) also argued that, even before foreign trade liberalization, the fiscal deficit should be eliminated.

According to Krueger (1984, p. 422), "optimal dismantling of controls might start with foreign trade, agricultural prices, the labour market and the domestic capital market, leaving capital account transactions to the end." In his review of several World Bank and IMF studies and conferences, Edwards (1989) reports that the proposed patterns of sequencing agree in general with that of Krueger, although there are also those which do not agree. Studies which have analysed the experiences of some Latin American countries such as Chile and Argentina agree with and support the ordering given above. These studies, among which McKinnon (1982), Corbo and de Melo (1987), and Edwards and Cox-Edwards (1987) can be mentioned, also stress that the credibility of the policies may be more important than the pattern of sequencing in the success and survivability of liberalization.

Credibility is considered to be important because if there is an expectation that the liberalization process will be reversed, not only that the programme will fail but there will also be a welfare loss. Calvo (1987) argues that if a specific liberalization policy in a particular market is not considered to be credible, then the liberalization attempts in the other markets will also fail and lead to welfare losses and should, therefore, not be tried.

The issues of sequencing and credibility are further complicated by the presence of inflation and other macroeconomic disequilibria in the developing countries that call for stabilization policies. While some economists argue that stabilization and liberalization policies should be implemented simultaneously, others emphasize that stabilization policies should be given priority and should come first. The latter argument is based mainly on the consideration that there is a significant relationship between fiscal deficits, inflation, relative price variability and inefficient allocation of resources. See Edwards (1989, p.14-16) and references therein.

The purpose of this paper is to analyse the effects of financial liberalization in Turkey, which started in 1980, on the real economy. More specifically, the paper attempts to establish whether the liberalization programme led to higher rates of growth by way of changes in the allocation and productive use of resources and/or increases in the quantities of factors of production. An analysis of liberalization within

the context of only the financial market may be too limiting since there have been changes in the other markets and a stabilization programme has been implemented during the same period. Even though the paper concentrates on developments which are thought to be more closely related to financial liberalization, reference is made to the likely effects of the other changes.

The next section looks at the liberalization/stabilization programme of the 1980s after a brief review of the policies and developments in the Turkish economy in the 1960s and the 1970s. Here, a summary examination of the major events of the 1980s are also provided. The following two sections deal with growth and its sources. Section III analyses the changes in growth rate, the savings rate and the gross fixed investment in the 1980s and compares them with the pre-1980 period. Growth and investment variables are examined in terms of both aggregate and sectoral levels. The subject matter of Section IV is productivity growth in industry, which has far reaching implications for growth, competitiveness and inflation and deserves special attention. This section looks into the labour, capital and total factor productivities to see if there have been significant improvements in this sense in the 1980s when compared with the previous periods. Section V provides concluding remarks.

II OVERVIEW OF DEVELOPMENTS AND THE ADJUSTMENT PROGRAMME

A) Policy and Developments Before 1980: An Overview

During the period from early 1960s to mid-1970s, the Turkish economy recorded high growth rates due primarily to an almost uninterrupted investment drive in line with an inward-looking import substitution strategy formulated through five year plans and annual programmes which started to be implemented in 1963. These policies were justified on the grounds that the two-gap model was relevant, in that, for Turkey it was the insufficiency of domestic savings and foreign exchange earnings that limited investments and growth. The investment drive was financed partly by an increase in domestic, especially private, savings and partly by remittances of the migrant Turkish workers in the Western European countries. For any remaining gaps, foreign borrowing was relatively easy for Turkey, as the future looked good with high rates of growth.

With an over-emphasis on investment, export expansion and the efficient use of resources were not treated as issues of central importance and the policies started to be criticized from mid-1970s onwards when the inward-looking industrialization

Table II.1 Main Economic Indicators of Turkey: 1962-89 (1)

	1962-1965	1966-1976	1977-1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
GDP GROWTH	5.4	7.0	1.4	4.4	5.0	3.7	5.7	5.1	8.3	7.4	3.9	1.0
EMPL GROWTH	1.3	1.6	1.8	0.8	-0.5	0.9	1.4	1.6	1.7	2.1	2.4	2.4
FIXED INV/GNP	14.3	18.8	22.4	18.9	18.8	18.8	17.9	20.0	23.1	24.0	24.0	22.5
PRIVATE	7.0	9.5	11.3	7.9	7.3	8.3	8.2	8.4	9.8	11.2	12.6	12.3
PUBLIC	7.3	9.3	11.1	11.0	11.5	10.5	9.7	11.6	13.3	12.8	11.4	10.2
SAVINGS/GNP	13.5	18.9	17.0	18.6	15.9	16.2	16.5	18.9	21.9	24.1	26.3	23.6
PRIVATE	7.4	10.9	10.8	9.5	9.2	8.4	9.2	9.1	11.3	15.6	17.5	17.2
PUBLIC	6.1	8.0	6.2	9.1	6.7	7.8	7.3	9.8	10.6	8.5	8.8	6.4
FOR DEF/GNP(2)	2.9	1.5	4.3	3.2	2.1	3.7	2.8	1.9	2.5	1.2	-2.3	-1.2
EXPORTS/GNP	6.2	6.3	5.5	10.2	14.6	15.7	19.5	20.7	17.9	20.7	24.6	22.5
IMPORTS/GNP	9.0	9.9	11.1	15.2	17.6	19.6	23.1	23.5	20.6	22.3	22.1	23.0
INFL RATE(3)	5.5	13.8	60.8	41.9	27.5	28.0	50.1	43.9	31.0	38.4	65.7	66.9

Sources: SIS (Several Issues) Gross National Product of Turkey; SIS (Several Issues) Statistical Yearbook of Turkey; SPO (Several Issues) Main Economic Indicators. OECD (1990a), Uygur (1987), SPO (1979), SPO (1985) and SPO (1990b).

Notes: (1) Initial years for the growth rates of the three sub-periods are 1961, 1965 and 1976 and all the ratios are calculated in terms of current price variables.
 (2) Foreign deficit(FOR DEF) is defined as the deficit in the trade of goods and services plus the deficit in net factor income from abroad. Negative sign implies a surplus.
 (3) Inflation rate (INFL RATE) is expressed in terms of the annual GNP deflator. Unlike the GDP and Employment growth (EMPL GROWTH) rates, which are compound rates, the inflation rate is calculated as the mean of the rates of inflation.

process had reached its more difficult phase and when, at the same time, there were external and internal shocks to the economy. These developments called for an assessment and reshaping of the policies but that was not done in a vigorous manner. One reason was the migration and remittances of workers which alleviated the problems of unemployment and foreign exchange shortages. It was incorrectly assumed that the upward trend in migration and remittances would continue for some time to come, even though the first petroleum shock had already hit the labour receiving countries of Western Europe. One important positive contribution of Turkish labour migration, however, was that it paved the way for the other sectors of the economy to think that they needed to turn outwards and it also prepared the climate for the implementation of outward-looking economic policies in the 1980s.

By 1977, a turning point was reached and a crisis started. The import substitution strategy had created an industry which was highly protected and was heavily dependent on imports of raw materials, intermediate goods and equipment. The petroleum shock of 1973-74 increased the petroleum import bill sharply. The investment drive was not given up until 1978 and thus imports of investment goods also continued to rise. On the other hand, the upward trend in remittances was reversed from 1975-76 onwards and \$ exports stagnated in the face of the real appreciation of the Turkish Lira. The rising current account deficits were financed by short-term borrowing but the lenders, including the IMF and the World Bank, were becoming increasingly unwilling. Unable to pay her debts, Turkey fell into international insolvency in 1978. During the period 1978-80, the manufacturing industry was especially hard hit, investments declined sharply and unemployment increased. In the same period, average GDP growth was 0.4% with negative rates in 1979 and 1980. See Table II.1 for main economic indicators.

In the 1960s and the 1970s, foreign trade, foreign capital movements, the market for financial assets, and the market for agricultural and other commodities were all controlled. The fixed exchange rate regime ruled throughout the period together with import restrictions, import licences, rules for the allocation of import quotas and multiple exchange rates for different types of exports. Shortages of foreign exchange from 1976 onwards meant a burgeoning parallel market where the US\$ rate exceeded the official exchange rate by 18% in 1977 and by over 56% in 1979, as shown in Table II.2. Premia on import licenses also rose sharply in the second half of the 1970s.

Schemes like the Convertible TL Deposits, instituted in 1967 and revised in 1975 to attract foreign exchange funds, proved to be more harm than help and contributed to the foreign debt crisis of 1977-78. In 1973, short term debt constituted about 10% of total foreign debt. In 1977, the same ratio was about

60%, primarily due to the Convertible TL Deposits. In the 1970s, the TL appreciated in real terms at rates higher than in the 1960s. During 1975-79, for instance, the general price level expressed in terms of the GNP deflator increased by more than 3.5 times whereas the official US\$ exchange rate was raised by about twofold only. The negative bias against exports, inherent in the trade regime, intensified with the real appreciation of the Lira.

The reason for the real appreciation of the currency was that devaluations were either postponed or kept within certain limits for fear of higher inflation and political opposition even from within the ruling parties. Government regulated prices, especially those of the products of State Economic Enterprises (SEEs), were repressed in spite of rising costs, again for fear of accelerating inflation and political opposition. On the other hand, prices of agricultural products were increased faster than what the market called for through support purchases of the agricultural SEEs. The SEEs, ranging from those in agriculture and industry to services, were showing larger losses and they had to be reimbursed continually through budgetary transfers and borrowing from the Central Bank. Added to these there was the borrowing from the Central Bank to finance the large scale public investment projects. These resulted in high rates of growth in monetary aggregates.

In spite of all the price controls, the rate of inflation, which averaged about 5.5% in the 1960s and about 18% during 1970-75, accelerated and reached 71% in 1979 and peaked at an all time high, with just over 100%, in 1980. The government controlled nominal interest rates were increased from time to time but too late and too little. Throughout the 1970s, the after-tax real rate of deposit interest rates were negative, as can be observed in Table II.2. From 1977 onwards, financial repression was so high that saving through financial instruments started to decline in real terms. As for money for instance, the M2/GNP ratio was 0.24 in 1975 but fell down to 0.15 in 1980 implying an increase in velocity from 4.2 to 6.7.

In the 1960s and the 1970s the financial sector was dominated by the banking sector. The shares of the other financial assets such as public and private bonds, marketable equities and insurance policies were quite small. In 1979, for instance, M2 constituted 78% of the stock of financial assets. In the same year, the banking sector made 85% of the new issues of all the financial assets. Akyüz (1989, p.8-9). Considering that there was a decline in M2 and in all the other financial assets in real terms between 1977 and 1980, the financial system was not only repressed but it also contracted during this period.

Table II.2 Financial Indicators of Turkey, Annual Averages

	1973	1977	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
EXCH RATE TL/US\$													
Market	14.2	21.2	48.3	84.5	124.6	182.8	259.1	374.2	536.5	700.6	901.2	1484.3	2135.1
Official	13.7	17.9	30.8	75.3	112.7	160.8	223.8	364.7	519.5	669.0	855.0	1419.9	2120.8
INFL RATE	22.1	24.5	71.1	103.8	41.9	27.5	28.0	50.1	43.9	31.0	38.4	65.7	66.9
DEPO RATE													
Sight	2.5	3.0	3.0	4.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	28.1	13.3
1 Year	9.0	9.0	17.3	26.0	48.6	50.0	42.5	45.0	50.0	52.3	49.8	69.2	67.0
AFTER TAX RDEP RATE													
1 Year	-12.2	-13.9	-33.5	-40.7	-3.1	7.8	4.7	-9.3	0.8	12.3	4.6	-2.1	-4.0
CRE RATE(1)	17.1	19.1	28.7	40.8	46.8	50.8	50.3	58.6	63.0	59.7	60.0	78.1	88.2
STOCK OF FIN ASSETS													
M1/GNP	20.2	19.8	16.1	12.4	11.5	11.3	12.5	9.4	8.5	8.9	9.6	8.2	7.9
M2/GNP	26.5	23.6	19.0	14.9	17.4	22.1	23.4	21.3	22.6	24.3	22.9	19.7	20.6
FXDEP/GNP	-	-	-	-	-	-	0.2	0.7	1.7	3.1	4.3	5.3	5.0
PUBSEC/GNP	4.3	5.0	3.3	2.6	3.8	3.9	3.5	4.8	6.0	6.9	9.2	8.4	9.0
PRISEC/GNP	1.5	1.8	1.5	1.6	1.7	2.6	2.5	2.2	2.1	2.5	3.7	4.1	4.8

Sources: Uygur (1987); Central Bank of Turkey, (Several Issues) Quarterly Bulletin; Cofan and Ersel (1987); Akyüz (1989); Ersel (1990).

Notes: (1) Average of the maximum and minimum rates for medium term credits.
(2) DEPO: Deposit, RDEP: Real Deposit, CRE: Credit, FIN: Financial, FX DEP: Foreign exchange deposits of the residents, PUBSEC & PRISEC: Public and private securities, respectively.

B) Programme for Adjustment

January 1980 witnessed the beginning of the reversal of the earlier policies and, from then on, a series of changes and measures were introduced amounting to a stabilization and liberalization programme. The programme was supported by the IMF with substantial financial sources and five structural adjustment loans were received from the World Bank. Okyar (1983) and Wolff (1987) give detailed accounts of the attitudes of the IMF and the World Bank and explain that both institutions were sympathetic. The sympathy is attributed to the fact that it was not only an orthodox type of programme similar to those proposed by the IMF, but also because it was outward-looking and had a market oriented approach with an expressed desire for the liberalization of the economy.

The first concern of the programme was to reduce the rate of inflation while not causing a reduction, to the extent possible, in the growth of output with the help of the international organizations. The second aim was to promote exports, through exchange rate adjustments and export incentives, and also liberalize imports. The target here was to reduce and eventually eliminate the current account deficits. The third aim was financial liberalization, one of the manifestations of which was that interest rates would be made positive. Financial liberalization, it was thought, would increase the domestic (private) savings and thus investments and, at the same time, the velocity of circulation of money would be reduced. The fourth aim was to liberalize foreign capital movements and take measures for the convertibility of the Lira. This, though, was a rather medium run target. A final major aim of the programme was to reduce the role of the public sector in the economy by both reducing the size of the central government and by privatization of the public sector enterprises.

When taken within the context of the problem of ordering of the stabilization and liberalization policies, the Turkish adjustment programme implemented these policies simultaneously. As far as sequencing is concerned, the programme addressed first foreign trade, then domestic financial markets and finally foreign capital transactions. The sequencing of the liberalization process, therefore, agrees with the pattern prescribed by most of the economists. As regards the speed of the liberalization policies, gradualism was the characteristic of all the attempts in all the spheres including foreign trade and financial markets. The fight against inflation, however, started with a shock treatment in January 1980.

The first moves aimed to correct the misalignment in prices. To this effect, multiple exchange rates, which ranged from TL

35 to TL 47 per US\$, were eliminated and, with a large devaluation, a uniform rate of TL 70 per dollar was established. Prices of the products and the services of the SEEs were likewise increased at high rates ranging between 50% to 100%. Wage earners did not find enough time to adjust to these changes, however, since in September 1980 the military ousted the civilian government of the time and banned wage bargaining of the trade unions. Shortly afterwards, in May 1981, the Central Bank was authorized to make daily adjustments in the exchange rates. The commercial banks were allowed to fix their own exchange rates within a narrow band around the official rate. In July 1985, the banks were freed to determine their own rates.

Changes in the direction of financial liberalization started in July 1980. (1) At this date, ceilings on the deposit and the lending interest rates were abolished, except for the rate on sight deposits, which was set at 5%, and the basic lending rates on preferential credits. However, major commercial banks decided to set the interest rates collectively through a "gentleman's agreement" and prevented further increases in interest rates. With a tight monetary policy and an excess demand for credits, the self-imposed ceiling on deposit rates increased competition of the smaller banks and brokers. After a while, the latter offered interest rates on time deposits and the newly introduced certificates of deposits (CDs) at so high levels that, the larger banks started to pressurize them. The process ended by the collapse of many of the brokers and some of the smaller banks in mid-1982.

After the financial crash, the government authorized the nine largest banks to set the rates and allowed the smaller banks to pay a premium. However, the large banks were once again reluctant to raise the deposit rates. Accordingly, the Central Bank was authorized to determine the deposit rates and to review them, at least every three months. The Central Bank raised the rates on time deposits sharply in December 1983 while lowering the sight deposit rates. Another notable change at this date was that the residents (and non-residents) were allowed to open foreign exchange deposits with the commercial banks. Furthermore, the withholding tax on interest earnings were reduced from 20% to 10%. One particularity of the term structure of the interest rates of this period was that the rates on shorter maturities were higher than those of the longer maturities. This was designed to dampen the

(1) The developments in the financial sector since 1980 are explained in more detail in Akyüz (1989). See also Turkish Delegation to OECD (1986 and 1989), Cosan and Ersel (1987), Inselbag and Gültekin (1988) and OECD (1990b). The explanations in this study rest largely on these works.

inflationary expectations but lasted only until mid-1985 when longer term maturities were made to yield higher rates.

The rise in deposit rates were followed by the rise of the rates of non-preferential credits, as in the earlier instances, and the latter exceeded the former with a margin of at least 10 percentage points. These margins still exist and are high when compared with those in the other countries, indicating that the Turkish commercial banking system was and it still is less efficient and operates with high intermediation costs. To help reduce the cost of borrowing, financial transaction tax rates were reduced from 15% to 3% at the end of 1983. Export credits and agricultural credits were exempted from this tax altogether. The required reserve ratios and the liquidity ratios, which varied according to the size and maturity of deposits and the share of preferential credits within the total credit stock, were unified and reduced. The required reserve ratios were subsequently reduced further but the liquidity ratios were raised to some extent.

At the end of 1985, there was a rise in speculative foreign exchange dealings and this resulted in some restrictions on the foreign exchange transactions and deposits of the commercial banks. Limitations were imposed on the foreign exchange selling rates, required reserves were extended to include foreign exchange deposits and the banks were obliged to sell a certain proportion of the foreign exchange receipts to the Central Bank. In July 1987, interest rates on one year time deposits and on CDs with denominations over TL 10 million were once again left to the banks to determine. Deposit rates increased but not large enough to stop the real rate from becoming negative by the beginning of 1988. This resulted in a considerable rise in currency substitution and the Central Bank intervened once again by raising the deposit rates. Thinking that instability in the financial markets was over and with the fear of an accelerating inflation, interest rates were lowered again in the summer of 1988. (2)

The instability in the financial markets was not over, however, and the decline in the deposit rates was not well received. In October 1988, there was another and much stronger speculative attack on foreign exchange, leading to sharp rises in foreign exchange rates. To this, the Central Bank responded by freeing

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- (2) There were two reasons for lowering the deposit rates in spite of rising inflation. The first was to dampen the inflationary expectations. With the assumption that lower deposit rates would imply lower lending rates, the second reason was to lower the borrowing costs of the corporate sector where bank credits constituted the overwhelming share in financing.

the deposit rates after which the one year rate shot up from 64% to 85%. Real deposit rates turned to positive and they remained positive till the end of the first quarter of 1989. Since then, real post-tax rates on time deposits, in terms of backward-looking rate of inflation, have been negative, as can be observed in Table II.2.

The above account of the events indicate that interest rate liberalization in Turkey was by no means smooth. There were occasions when the commercial banks and the government struggled over the appropriate rate of interest and the latter was used as a weapon against currency substitution and speculative bubbles in the foreign exchange market. These were in a sense tests on the credibility and the sustainability of the stabilization - liberalization programme. Indeed, these events are still observed from time to time. The main reasons for the difficulties and the instabilities were that, (i) macroeconomic disequilibria, originating mainly from public sector deficits, couldnot be eliminated, (ii) policy uncertainties persisted in the face of large variations in policy variables, and (iii) the financial markets were dominated by the commercial banks and the latter were not faced with serious competition from the capital and money markets, at least until 1989. Yet, there were attempts and developments that aimed to increase competition in the financial markets.

In 1981, the Capital Market Board was established for purposes of regulating, promoting and supervising primary and secondary markets. The Istanbul Stock Exchange (ISE) was reopened at the beginning of 1986 where the volume of transactions increased continuously at geometric rates. From 1989 onwards, the ISE has become large enough to attract foreign investors and to absorb the issue of the shares of large SEEs for privatization purposes. The capital market in Turkey has, however, been dominated by the public sector because the financing of the deficits of this sector has been done largely by the auctioning of the Treasury Bills and the Government bonds especially since 1985. This practice has eased the pressure of monetization on the Central Bank, which otherwise would have been increasing at enormous rates.

The banking sector witnessed changes and developments that aimed to rationalize the working of this sector. Firstly, in order to help increase competition in the banking sector, foreign banks were encouraged to open branches. By the beginning of 1990, the number of foreign banks operating in Turkey reached 21. In the early 1980s, there were only two of them. Secondly, the Central Bank created an interbank money market in April 1986, where the Bank acts as a blind broker and where commercial banks transact reserves with maturities varying from overnight to four weeks. Thirdly, the Central Bank started open market operations in February 1987. Although

the size of these operations is small when compared with the monetary aggregates and the stock of financial assets, the process itself is potentially important. Fourthly, a foreign exchange market in August 1988 and a gold market in April 1989 started to operate where, in both, the Central Bank acts as a broker. In both of these markets, the participants are the commercial banks and special financial institutions.

The above measures and changes have certainly contributed to the improvement of the banking sector. But the banking system is still considered to be inefficient. "Bank intermediation in Turkey is inefficient by international comparison: operating costs and gross earnings margins are much higher than in other OECD countries, and there is a large spread between deposit and lending rates." OECD(1990b, p.93).

From the beginning of 1988 onwards, public investment and consumption expenditures were reduced drastically as part of an anti-inflationary package. Consequently, the economy entered a recession in mid-1988, imports stagnated and with an upswing in revenues from tourism and other invisibles, the current account showed a surplus for the first time since 1973. Shortly afterwards, some of the basic ingredients of the adjustment programme were changed. Helped with the current account surpluses in both 1988 and 1989, real depreciation of the Lira turned into real appreciation at rates reaching 30%. The government did not interfere with the appreciation and considered it as an opportunity in the fight against inflation. The real appreciation of the Lira and the government attitude towards this process continued in 1990 as well.

Another significant change that started in 1989 was that, with more freedom in trade union bargaining, real wages increased by about 26% in manufacturing in 1989 and continued to increase in 1990. A third important development was the non-interference of the Central Bank with the near zero or negative real deposit interest rates since mid-1989. These changes resulted in an upswing in demand. Output also responded but the government, afraid of another acceleration in inflation, took the opportunity for significant steps in import liberalization and encouraged imports. This has created enormous trade and current account deficits and questions are being raised about the likelihood of a balance of payments crisis. In the mean time, a high growth rate, in the order of about 9%, is being recorded in 1990.

III GROWTH, SAVINGS AND INVESTMENTS

Growth in output can result firstly from increased use of the factors of production, secondly from reallocation of the factors across sectors and thirdly from increased productivity

in the use of the factors. This section looks at the first two sources of growth and growth itself. Changes in productivity, as the third source of growth, is analysed in the following section.

A) Growth performance in the 1980s

For a brief evaluation of the growth performance of the economy at the macro level, the average rate of GDP growth can be used as a reference, which was 4.3% during the 1981-89 period. This rate is higher than the average of 1.4% recorded in the crisis years, from 1977 to 1980. But it is lower than the average rate of the 1960s and the 1970s and the 5.1% achieved during the last three decades, from 1961 to 1989. The post-1980 growth performance of Turkey is decisively better than those of Southern European Countries of Greece, Italy, Portugal and Spain, all of which recorded average growth rates not exceeding 2.8% during the same period. Although the gaps between Turkey and the above mentioned countries have been narrowed to some extent in the 1980s, the per capita purchasing power parity GNP differential is still large. In 1989, the per capita PPP GNP of Turkey was \$4514. Italy had the highest value with \$13923 and Portugal had the lowest value with \$7392 among the remaining four countries.

As for the distribution of the higher aggregate income attained in the 1980s, the results are not better than before. When the developments in real wages and real agricultural prices are taken as indicators, it becomes evident that income distribution has become more unequal, as evidenced, for example in Celasun (1986 and 1989). It is seen below in Table III.1 that, there was a consistent and continuous decline in real wages until 1987-88. The trend was reversed as late as in 1989 when a considerable rise was recorded. Real agricultural prices, which also decreased in the 1980s, do not seem to have recovered yet. It is possible that such a recovery will never materialize if there is no return to high rates of subsidization of the agricultural prices as in the 1970s. This, however, means that a price has to be paid in terms of higher migration from rural areas to large cities.

If financial liberalization leads to a more efficient allocation of resources, sectors with higher value added should grow faster than the sectors with lower value added. In terms of value added/gross output ratios, there is a significant difference between the agricultural and manufacturing sectors and the latter has a higher ratio. Table III.1 reveals that in the first half of the 1980s, the shares of these two sectors in real GDP has not changed significantly when compared with the late 1970s. In the second half of the 1980s, however, manufacturing growth exceeded agricultural growth and the share of the former in real GDP increased.

Table III.1 Relative Prices and Sectoral Developments in the Turkish Economy

	1973	1977	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
REAL MANUF WAGE(1)	63.4	100.0	88.2	63.7	66.4	62.7	59.4	53.3	51.7	51.0	56.8	52.4	66.4
REAL AGRIC PRICE(1)	94.3	100.0	81.4	78.0	78.8	73.7	72.9	75.2	71.8	70.1	71.7	67.5	71.7
SHARE IN REAL GDP (2)													
Agricul	22.2	21.6	22.4	22.9	22.0	22.2	21.4	21.0	20.5	20.4	19.4	20.1	17.7
Manufac	21.9	22.2	21.1	20.4	21.4	21.7	22.5	23.2	23.4	23.8	24.4	23.9	24.4
CAPAC UTIL IN MANUF													
Unweigh AV	-	63.3	54.7	52.8	54.5	57.4	58.7	60.0	61.2	62.5	67.1	66.3	65.1
Weigh AV	-	-	-	-	-	-	-	-	70.4	70.0	77.5	77.7	69.5
EXCESS DEMAND IN MANUF(3)	-	3.74	2.89	2.06	1.37	1.28	1.40	1.38	1.31	1.29	1.51	1.36	1.24

Sources: SIS (Several Issues) Annual Manufacturing Industry Surveys; SIS, Industrial Censuses 1980 and 1985; SIS (Several Issues) Quarterly Surveys of the Manufacturing Industry; SIS (Several Issues) Gross National Product of Turkey; Uygur (1989a).

Notes: (1) The nominal wage is deflated by the manufacturing wholesale price index. The results are given in index form with 1977 = 100. For the real agricultural price, agricultural sector deflator is divided by the GNP deflator. The resulting ratio is then expressed as an index again with 1977 = 0.

(2) Shares of agriculture and manufacturing in GDP are in terms of real value added.

(3) Excess Demand in Manufacturing is obtained as the ratio of capacity utilization to the percentage of firms which report insufficient demand for underutilization of capacity.

The rather slow increase in relative manufacturing growth could mainly be attributed to the slow rise and/or decline in the fixed investment of this sector. Manufacturing growth in the 1980s was largely due to higher rates of capacity utilization. It is clearly visible in Table III.1 that there was a continuous rise in capacity utilization from 1980 to 1988-89. Existing capacity could be used more intensively because supply shortages, arising mainly from difficulties in the importation of raw materials, spare parts and machinery, were eliminated. In the mean time, domestic demand was reduced, except in 1987 and 1990. These supply and demand developments resulted in a considerable fall in excess demand, as can be observed from the excess demand index provided in Table III.1. Reduction in domestic excess demand implied a rise in exportable production and exports, encouraged also by exchange rate policies and other promotion measures, increased considerably.

Within the manufacturing sector itself, the "machinery and transport equipment" industry (ISIC 38) and the "mineral and soil products" industry (ISIC 36) have the highest value added/gross output ratios. The 1981-88 average of this ratio is 0.38 in the former and 0.47 in the latter. The gross output of these two industries did grow faster in the post-1980 period. Their shares within real gross output of the manufacturing sector were as follows:

	1971-79	1981-88
36 MINERAL & SOIL PROD	4.9	5.4
38 MACHINERY & TRANSPORT	16.3	17.4

B) Saving Rate and Its Relation to Real Interest

One of the stated aims of financial liberalization is to stimulate private financial savings and make larger funds available for fixed investment. It is assumed that the main instrument of financial liberalization, higher real interest rates, would bring about higher saving rates. That did not materialize in especially Turkey in the first half of the 1980s. In fact, the saving rate declined, though by a small amount, in spite of the considerable increase in real time deposits. In an analysis of the 1961-85 period, Rittenberg (1988) found that changes in real interest rates had a positive effect on the saving rate and attributed the fall during the 1980-85 period to the shaken public confidence following the bankruptcy of the major brokerage houses. She also noted that the savings rate increased at a decreasing rate as the real interest rate rose.

Akyüz (1989, pp.24-31) argues that even in the absence of savings from dividends, the savings rate from disposable

profits is substantially greater than the rate of savings from real-interest income. Thus, a redistribution of income from corporate sector to rentiers through higher interest rates would lead to a decline in private savings unless corporate profits are protected by cuts in real wages and/or the propensity to save of the private sector is raised sufficiently. Akyüz also explains that in the first half of the 1980s, interest payments were treated as disposable income and used partly for consumption particularly by the small savers. He points out that portfolio shifts from real to financial assets implied erosion of the real wealth of this group and their real savings declined.

This argument of Akyüz is supported by the quarterly estimations of consumption functions for Turkey within the context of the Central Bank Econometric Model of Turkey. It is explained in Uygur (1989b) that while the real deposit rate had a significant negative effect on consumption, real time deposits lagged three and four quarters had a considerable positive effect on the same variable in repeated estimations. This could be taken as an indication that interest receipts from time deposits were, in part, used for consumption purposes. These explanations and empirical findings are not novel, since interest rate changes produce both a substitution effect and an income effect, which operate in opposite directions. Substitution effect refers to the positive change in saving induced by the decline in the price of future consumption relative to present consumption when (real) interest is raised. The income effect refers to the change in present saving requirements to reach a future consumption target in case of an interest rate rise. After comparing several studies, Sturm (1983) notes that the effect of interest rate on saving rate is by no means clear.

For the changes in the savings rate during the 1980s, one other factor should be considered, and that is inflation. Inflation first of all creates uncertainty and so it raises the precautionary part of savings. Although it is unexpected inflation that should matter here, as explained by Deaton (1977), there is nevertheless a close relationship between the rate and the variability of inflation, where the latter is a measure of uncertainty. Inflation also creates real wealth effects and forces higher saving rates. It is perhaps this forced saving process that operates more significantly in Turkey. Furthermore, (i) transitory income, defined as the difference between the actual and trend incomes, is expected to increase savings, and (ii) following Rittenberg (1988), foreign savings might substitute for domestic savings. With the above considerations, the following gross saving rate equation was estimated by OLS with annual data and for different sub-periods of the 1965-89 period;

Table III.2 Estimation of Saving Equation

$(S/Y) = f\{ (YT/Y), RIR, INF, (FD(-1)/GNP(-1)), RTD(-1) \}$						
CONS	(YT/Y)	RIR	INF	(FD/GNP) (-1)	RTD(-1)	DUMMY
Period: 1965-1989						
.134 (11.65)	.270 (7.634)	.171 (3.429)	.069 (3.924)	-.283 (-2.100)	-.263 (-2.026)	-.033 (-3.421)
n= 25, R**2= .832, RBAR**2= .775, F(6,18)= 14.86, DW= 2.027						
Period: 1969-1989						
.137 (11.71)	.283 (7.744)	.187 (3.663)	.074 (4.112)	-.272 (-2.006)	-.307 (-2.306)	
n= 21, R**2= .847, RBAR**2= .796, F(6,18)= 16.61, DW= 2.015						
Period: 1971-1989						
.143 (11.11)	.290 (8.170)	.206 (4.063)	.076 (4.354)	-.292 (-2.160)	-.362 (-2.670)	
n= 21, R**2= .872, RBAR**2= .824, F(6,18)= 17.71, DW= 1.977						
S: Private gross saving in current price						
Y: Private disposable income in current price						
YT: Transitory disposable income defined as the difference between actual income and trend income						
INF: Rate of inflation in terms of private consumption expenditure						
RIR: Real after tax deposit rate defined as; RIR = $(1 + r(1-t))/(1 + INF)$ where, r is 1 year deposit interest rate and t rate of withholding tax on interest earnings.						
FD: Foreign deficit and the TL equivalent of current account deficit which include deficit on trade of goods and services and net factor income from abroad, in current prices						
GNP: Current price GNP						
RTD: Real time deposits						
DUMMY: Dummy variable which takes the value of 1 for the 1965-68 period and 0 for the post-1968 period.						

On the whole, estimation results are quite meaningful and acceptable. There does not seem to be an econometric problem and all the parameters have expected signs and magnitudes. Because the Chow-test indicated a structural change for the

1965-68 period, a dummy variable was added which took the value of 1 for those years. Interestingly, structural change was rejected for the post-1980 period. There are three points that need to be noted:

- (i) All the parameters, except that of the foreign deficit ratio, increased in both value and significance as the sample period excluded earlier years. The increase in statistical significance can be interpreted to mean that the explanatory variables can account more of the variation in private saving in the more recent years. The increase in the magnitudes implies that the variation in the saving rate rose in time more than the variation in the explanatory variables. While in the first half of the 1980s the saving rate stagnated or declined, in the second half of the decade it almost doubled. One factor in the latter development is the housing boom that started after 1985 with the help of subsidized housing credits.
- (ii) The increase in the magnitude and the significance of the negative parameter of the real time deposit variable lends support to the above mentioned explanation that in the 1980s interest earnings were used in consumption expenditure. Thus, the income effect of higher interest rates and interest earnings are reflected in the equation.
- (iii) Inflation and foreign deficit have opposite effects on the saving rate. While former forces the saving rate upward, foreign deficit and thus foreign savings reduce this force. The results should nevertheless be treated with the consideration that there could be simultaneity bias in the estimated equation.

C) Investment in Sectors and in Education

Financial liberalization seems to have had mixed results on the private saving rate, with different developments in the second half of the 1980s than in the first half. It should be stated at the outset the achievements on the investment front are more bleak. The ultimate goal of the liberalization programme, namely the channelling of the savings towards productive investment, has not yet materialized. Before an examination of private industrial fixed investment, an important aspect of the sectoral distribution of total (public+private) investment is considered. Fixed investment is not limited to the purchase of machines, tools and buildings. It also occurs for the creation of a better trained workforce and for the organisation of a better production environment, which contribute to increased efficiency and, thus, growth. Here, investment in education and training is addressed first.

In a detailed analysis of the growth policy and performance in Korea, Dornbusch and Park (1987, p.397) state that the cornerstone of Korean growth is a highly trained and productive

labour force and that this labour force is a precondition for the high rates of investment and capacity expansion that make the export expansion possible. Kendrick (1976 and 1989) has forcefully argued that productivity growth is a function of the growth of intangible capital per unit of tangible capital, human and non-human alike and asserted that in the United States this type of capital was an important aspect of the growth of total factor productivity.

In the case of Turkey, education has relatively been neglected particularly in the 1980s when compared with other countries. It is documented in a recent OECD study, OECD (1989), that in 1986-87 Turkey had the lowest percentage of those in education, including part-time, within the population aged 3 to 24. While about 42% of this age group were in education in Turkey, the same ratio was 74% in Spain, 69% in Japan, 62% in Finland and 56% in Portugal. It is also shown in the same study that public expenditure on education, as a proportion of total public expenditure, was the lowest in Turkey among the OECD member countries in 1986.

The sectoral distribution of public and private investments, presented below in Table III.3 indicates a relative decline not only in manufacturing investment but also in education and health investments. Considering the public sector investments first, the sharp rise in the late 1960s and the whole of 1970s and the sharp decline in the 1980s in public manufacturing investment reflects the policies adopted. The fall in public education and health investments since the 1960s is very pronounced. This very process can be considered as one of the reasons for growth and productivity differentials between Turkey and developed and high growth developing countries. It is difficult to trace the reasons for the reduced relative investment in education and health. Obviously, if one looks at the problem as an accounting issue, one finds out that the decline is due mainly to relative increases in transportation, communication and energy investments.

As for private sector investments, the decline in the share of manufacturing investment, especially in the second half of the 1980s, is significant. In the 1960s and the 1970s, private manufacturing investment was encouraged by negative real lending rates, preferential credits, high effective protection rates and by several fiscal incentives. But above all, there was a high and increasing demand stimulated by government policies. In the post-1980 period most of these have changed. It is empirically shown in Uygur (1989a) that, among the important factors that determine the private manufacturing investment behaviour during the 1978-1987 period, there are excess demand, itself a negative function of real interest rate, real money supply, industrial credits and the share of housing investments.

Table III.3 Public, Private and Sectoral Investments, % Share (1)

	1963-1967	1968-1976	1977	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
FIX INV/GNP	15.3	19.4	25.8	20.9	19.7	18.9	18.8	18.8	17.9	20.0	23.1	24.0	24.0	22.5
PRIVATE	7.3	10.0	13.1	10.5	9.3	7.9	7.3	8.3	8.2	8.4	9.8	11.2	12.6	12.3
PUBLIC	8.0	9.4	12.7	10.4	10.4	11.0	11.5	10.5	9.7	11.6	13.3	12.8	11.4	10.2
MANUF/TOTAL	19.7	28.7	31.0	27.2	28.7	27.5	25.0	23.8	23.1	21.1	19.6	15.7	15.1	13.5
MAN/TOTPRI	28.0	34.6	40.2	30.2	31.4	35.2	34.6	33.8	33.8	33.0	33.0	26.3	23.5	20.9
MAN/TOTPUB	12.0	22.5	21.6	24.1	26.3	21.9	18.9	15.8	14.0	12.6	9.8	6.5	5.9	4.5
ENERG/TOTAL	6.1	7.3	7.3	11.3	11.5	13.1	15.3	14.5	13.3	13.0	14.5	12.7	13.5	14.5
ENE/TOTPRI	5.0	0.9	0.4	0.5	0.5	0.7	0.7	0.7	0.7	0.6	1.2	1.0	1.4	1.7
ENE/TOTPUB	11.1	14.1	14.4	22.2	21.3	22.1	24.7	25.4	24.0	22.0	24.2	22.9	26.8	29.8
HOU/TOTAL	22.6	19.3	16.6	23.6	21.5	13.3	11.7	13.1	14.4	14.3	16.1	21.2	26.3	28.0
HOU/TOTPRI	43.6	34.8	30.4	43.8	42.9	28.5	27.9	27.5	28.3	30.6	35.2	43.6	48.4	49.7
HOU/TOTPUB	3.5	2.9	2.5	3.1	2.4	2.4	1.4	1.8	2.6	2.6	2.1	1.6	1.8	1.9
EDUCA/TOTAL	6.6	4.0	2.5	1.9	2.3	2.5	2.8	2.6	2.1	2.6	2.4	2.8	2.9	3.1
EDU/TOTPRI	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.6	0.4	0.5
EDU/TOTPUB	12.4	7.9	4.9	3.6	4.1	4.2	4.5	4.5	3.7	4.2	3.8	4.8	5.7	6.3

Sources: SPO (Several Issues) Main Economic Indicators; SPO (1979), SPO (1985) and SPO (1990b).

Notes: (1) All the ratios are calculated in terms of current price variables as follows.
 MAN/TOTPRI: Private Manufacturing Investment as a proportion of Private Total Investment.
 MAN/TOTPUB: Public Manufacturing Investment as a ratio of Public Total Investment. The other ratios are defined in a similar manner.

The drastic fall in the excess demand index from 1980 onwards was explained above and this variable explains a considerable part of the variation in private manufacturing investment. Because this variable is highly correlated with real lending rate, both could not be included in the estimated equation of Uygur (1989a). Anand et. al. (1990) have shown that both the quantity and the cost of credits have a significant impact on private fixed investment. Conway (1990) stressed the negative role of housing investment and the real depreciation of the Lira on non-housing private investment. In OECD (1990, p.16-19) the low propensity to invest in industry is attributed partly to structural imbalances in the incentive system, and partly to taxation and the distribution of profits.

The issue of uncertainty should also be considered as an important factor in the relative slack of private manufacturing investment. With a drastic change in policies and announcements of further changes, it must have been difficult for investors to form expectations with regard to the future course of the events. It became apparent in mid-1990 that private industrial investment has started to move upwards. The rise in domestic demand that started in mid-1989 is perhaps the most important factor in this movement but the considerable rise in foreign investment, which contributed to reduce uncertainty and raised confidence, is another factor that needs to be mentioned.

Since the start of the adjustment programme in 1980, foreign investment in Turkey has been expanding relatively rapidly. It should be noted that the newly established free trade zones and outside developments, such as the changes in Eastern Europe and the Soviet Union, have contributed to this expansion. To invest foreign capital in Turkey, firms must first obtain an authorization. Capital is then transferred in installments over periods which can take up to five years. Authorized and realized investments are given in Table III.4.

Table III.4 Authorized and Realized Foreign Investment (1)

YEARS	AUTHORIZED INVESTMENTS					REALIZED INV	
	MANUF	AGRIC	MININ	SERVI	TOTAL	INFLOW	NET
1960-79 (2)	-	-	-	-	-	-	38
1980	88.76	0.00	0.00	8.24	97.00	35	18
1981	246.54	0.86	0.98	89.13	337.51	141	95
1982	98.54	1.06	1.97	65.43	167.00	103	55
1983	88.93	0.03	0.02	13.76	102.74	87	46
1984	185.92	5.93	0.25	79.26	271.36	162	113
1985	142.89	6.37	4.26	80.97	234.49	158	99
1986	193.47	16.86	0.86	152.81	364.00	170	125
1987	273.75	6.69	6.86	249.18	536.48	171	106
1988	484.14	27.32	5.18	307.83	824.47	387	354
1989	900.99	9.80	10.63	549.04	1470.46	738	663

Sources: SPO (Several Issues) Yabancı Sermaye Raporu.

Notes: (1) Realized investment inflows do not include the reinvested profits of the foreign establishments.

(2) The realized net investment figure for 1960-79 is the annual average of these twenty years.

IV GROWTH OF INDUSTRIAL PRODUCTIVITY (3)

Growth rates of labour, capital and multifactor productivities in the manufacturing industry are computed and analysed in this section. It is also examined whether the post-1980 period is different than the pre-1980s in this sense. Productivity can be raised through not only new machinery but also through R&D, scale economies and educational, organisational and environmental improvements. In the case of Turkish growth, especially during the 1960s and the 1970s, it is often contended that growth is largely based on increased factor use and that the strategies followed have not encouraged the achievement of higher growth by way of higher productivity. More precisely, given that there has always been a surplus of labour, it is said that growth has primarily been thought of in terms of expanded investment and not in terms of a more efficient organisation of labour and capital. The argument goes on to say that the outcome has been a relatively inefficient industry where productivity growth lags behind the fast growing developed and developing countries.

Studies that analysed total factor productivity in the manufacturing industry for the pre-1980s, for example Krueger and Tuncer (1980 and 1982) and Nishimizu and Robinson (1984), agree with this view. Nishimizu and Robinson compare Japan, Korea, Turkey and Yugoslavia in terms of their total factor productivity growth rates in the manufacturing sector during the period 1963-1976 and find that the rate is lower in Turkey than in Korea and Japan but higher than in Yugoslavia. For the post-1980 period, there are no detailed studies, except one by Yildirim (1989) which extends only up to 1983. In a recent OECD study, Englander and Mittelstadt (1988) computed productivity growth rates for all the OECD countries including Turkey. The study is detailed for the large and more developed countries in that computations and evaluations are made at sectoral level. In the case of Turkey, however, the study covers the 1972-1985 period at the aggregate level and takes output as value added in the business sector which is GDP at factor cost excluding value added in the general government. Thus, Englander-Mittelstadt computations for Turkey are made inclusive of agriculture and therefore their results are not comparable with the results of the above mentioned studies and of this study.

(3) This section is largely taken from Uygur (1990).

A) Multifactor Productivity

Consider the following production function with the usual assumption of differentiability

$$Q(t) = A(t) f\{K(t), L(t)\}.$$

Here, Q is real output (value added), A is an index of disembodied or neutral technical progress, which is also called multifactor productivity, K is real capital input assumed to be proportional to the stock of capital, and L is labour input expressed as the number of workers or hours worked. One way to obtain an average rate of growth of multifactor productivity is to make an econometric estimate of the parameter of A . Another and recently more frequently used method is to calculate the A index itself as propounded in the works of, for instance, Denison (1974 and 1979) and Kendrick (1973). For the computation of the index, assume that the $f\{.\}$ function can be expressed as a measure of a composite index, say I , of K and L . Then, from the production function

$$Q(t) = A(t)I(t)$$

and the index of multifactor productivity can be written as

$$A(t) = Q(t)/I(t).$$

If the assumptions of perfect competition and constant returns to scale hold, the productivity index in logarithms is

$$\ln I(t) = s \ln K(t) + (1-s) \ln L(t)$$

where, s and $(1-s)$ are the output elasticities of K and L , respectively. If time derivative of the logarithm of the above production function is taken, making use also of the above assumptions, growth of output can be expressed as

$$q = a + sk + (1-s)l.$$

Here, q is the rate of growth of output, a is the growth of multifactor productivity and k and l are the growth rates of capital and labour respectively. Given s and the growth rates q , k and l , multifactor productivity growth can easily be obtained.

It is evident from the above formulation that multifactor productivity growth, also called the Solow residual, is the rate not accounted for by the growth of factor inputs. Thus, this growth rate also reflects the effects of such factors as scale economies, changes in factor utilization rates, improved resource allocation and improvements in the environment. In

the case of returns to scale, construction of large scale plants will be justified, but there are no clear estimates of this factor. In some recent works, for instance that of Romer (1987), it is argued that scale economies do exist.

To analyse the developments of productivity in the Turkish manufacturing industry and to evaluate comparatively the findings with those of the earlier studies, productivity growth rates are calculated for the period 1965-88. Calculations are carried out on the basis of a KLM (Capital, Labour, Material) production function, as is customarily done. In other words, the production function is now written as;

$$Q(t) = A(t) f\{K(t), L(t), M(t)\}.$$

where M represents real material inputs. The productivity index in logarithmic form is now

$$\ln I(t) = s_1 \ln K(t) + s_2 \ln L(t) + (1-s_1-s_2) M(t).$$

With m, k and l standing for the growth rates of material inputs, capital and labour respectively, the rate of multifactor productivity growth can now be computed by making use of

$$q = a + s_1 k + s_2 l + (1-s_1-s_2)m,$$

which follows directly from the time derivative of $\ln I$.

B) Factor and Multifactor Productivity in Manufacturing

The data used in calculations relate to nine two-digit (ISIC) private and public manufacturing industries and total manufacturing industry. They are obtained from the five-yearly industrial censuses and yearly industrial surveys of the State Institute of Statistics (SIS). While all of the public sector enterprises are covered, the data for private establishments relate to those which employ 10 or more persons. The period covered is 1963-88.(4) Before the results are presented and evaluated, it is appropriate to point to some characteristics of the manufacturing industry.

Inspecting the information contained below in Table IV.1, one observes the significant share of the public sector in the

(4) In 1969 there was no industrial survey. Available data for this year from other sources indicate no turning points or cyclical variations in the manufacturing industry. Thus, the 1969 values of the variables used in the computations are taken to be simple averages of their 1968 and 1970 values.

Turkish industry. Although its weight has been declining in individual industries, the public sector employs over a quarter of the workforce and generates more than one third of value added in the manufacturing industry. Note that the public enterprises make considerable contributions not only in the industries which require large scale plants, but also in industries such as "food, beverages and tobacco". The main reason for the latter is that the state is a monopolist in the production of items such as tobacco, cigarettes, most spirits

Table IV.1 Characteristics of the Manufacturing Industries (1)

SECTORS	SHARE OF PUBLIC SECTOR, (%)					
	NO. OF FIRMS		NO. OF EMPLOYEES		VALUE ADDED	
	1965	1988	1965	1988	1965	1988
31 FOOD BEV TOB	12.9	10.8	53.0	43.5	73.9	49.1
32 TEXTILES CLO	3.5	1.6	30.9	12.7	29.3	7.9
33 FOREST PROD	14.1	6.2	48.2	27.2	40.5	27.3
34 PAPER PRINT	7.3	5.3	59.7	39.1	53.5	34.3
35 CHEMICAL PET	6.4	3.3	26.5	24.4	41.6	56.8
36 SOIL PROD	10.2	5.4	23.1	16.9	34.7	14.1
37 BASIC METALS	16.9	3.3	79.0	54.9	80.0	50.1
38 MACHIN TRANS	12.1	2.0	49.2	17.9	38.0	6.9
3 TOTAL	9.2	4.5	42.9	25.9	53.3	34.3

SECTORS	AVERAGE NO. OF EMPLOYEES (2)					
	PUBLIC		PRIVATE		TOTAL	
	1965	1988	1965	1988	1965	1988
31 FOOD BEV TOB	418.5	383.3	54.7	60.4	100.0	94.3
32 TEXTILES CLO	1228.0	979.6	98.3	108.8	135.7	123.2
33 FOREST PROD	200.2	265.8	35.2	46.7	57.1	59.1
34 PAPER PRINT	737.5	726.5	39.5	63.7	89.7	98.4
35 CHEMICAL PET	390.2	823.9	73.3	86.3	92.4	110.0
36 SOIL PROD	280.2	395.0	106.3	111.1	122.8	125.7
37 BASIC METALS	1157.5	3159.6	62.4	87.8	246.3	187.3
38 MACHIN TRANS	497.4	865.1	70.5	80.9	120.9	96.0
39 OTHERS	0.0	445.0	42.4	48.2	42.4	51.9
3 TOTAL	526.0	628.7	71.1	84.4	113.0	108.7

Table IV.1 Continued

SECTORS	SHARE IN VALUE ADDED					
	PUBLIC		PRIVATE		TOTAL	
	1965	1988	1965	1988	1965	1988
31 FOOD BEV TOB	45.2	23.5	18.2	12.7	32.6	16.4
32 TEXTILES CLO	10.2	3.4	28.3	20.7	18.6	14.8
33 FOREST PROD	0.9	0.9	1.5	1.2	1.2	1.1
34 PAPER PRINT	3.0	3.6	3.0	3.6	3.0	3.6
35 CHEMICAL PET	10.2	46.9	16.4	18.6	13.1	28.3
36 SOIL PROD	3.5	3.1	7.6	9.9	5.5	7.6
37 BASIC METALS	17.3	15.1	4.9	7.9	11.5	10.4
38 MACHIN TRANS	9.7	3.6	18.1	25.1	13.6	17.7
39 OTHERS (3)	0.0	0.0	2.0	0.3	0.9	0.2
3 TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

SECTORS	SHARE IN EMPLOYMENT					
	PUBLIC		PRIVATE		TOTAL	
	1965	1988	1965	1988	1965	1988
31 FOOD BEV TOB	35.7	31.3	23.7	14.2	28.8	18.6
32 TEXTILES CLO	21.1	13.5	35.5	32.2	29.3	27.3
33 FOREST PROD	2.4	2.2	2.0	2.1	2.2	2.1
34 PAPER PRINT	5.2	5.5	2.6	3.0	3.7	3.7
35 CHEMICAL PET	4.7	9.1	9.8	9.9	7.6	9.7
36 SOIL PROD	3.4	5.3	8.5	9.0	6.3	8.1
37 BASIC METALS	9.6	18.1	1.9	5.2	5.2	8.5
38 MACHIN TRANS	18.0	14.9	14.0	23.8	15.7	21.5
39 OTHERS	0.0	0.2	2.0	0.7	1.1	0.5
3 TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Calculated from SIS, (Several Issues) Annual Manufacturing Industry Surveys and SIS, Industrial Censuses, 1970, 1975, 1980 and 1985.

- Notes: (1) TOTALS may differ from 100.0 due to rounding.
 (2) The rise in the number of relatively small private enterprises leads to a fall in the average number of employees in some industries and in total manufacturing.
 (3) There is only one public sector enterprise in the OTHERS industry in 1988 and none in 1965. The share of this industry in public value added is 0.03% in 1988 and this figure appears as 0.0 in the table.

and sugar. The data in the table indicate that the sizes of the private firms have increased in all the industries, but only marginally. The "textile" industry continues to have the largest share in total manufacturing employment.

Before looking into multifactor productivity growth, changes in the productivity of individual factors are computed. First, the growth of labour productivity, defined as the growth of real gross output per person employed or, equivalently, the difference between the rates of change of output and labour, is obtained. It would have been preferable to obtain labour productivity in terms of output per hour worked, but unfortunately even though the hours-worked data were available, they contained irregularities for which there were no meaningful explanations and, therefore, they were not used. To obtain real gross output, the current output figures were deflated by industry wholesale price indices. A single set of price indices that span the whole period under consideration, 1963-88, does not exist. Accordingly, two sets of indices were linked. The more recent set contains industry wholesale price indices of the SIS with base year 1981 and covers the period 1981-89. The other set contains unpublished industry wholesale price indices of the Ministry of Commerce with base year 1963 and covers the period 1963-83.

Compound growth rates of labour productivity, presented below in Table IV.2, indicate that in both the public and private sectors, but especially in the latter, productivity growth is fairly high in the 1965-76 period. The rates fall and generally become negative in the 1976-81 period to recover again in the post-1980 period. Productivity growth is, however, lower in the 1980s than in the 1960s and early 1970s, indicating the fact that investment growth is relatively lower, and in some cases even negative, in the 1980s. It seems that the general conditions and developments in the economy are reflected in the growth of labour productivity. In other words, change in labour productivity is procyclical in general.

Growth rates for capital productivity are obtained from the difference between the rates of change in gross output and the capital stock. The latter variable is obtained as follows. Investment deflators are available for both the private and public manufacturing industries. These are used to obtain real investment data for the public and private industries. Capital stock data for a benchmark year was needed and obtained from Ebiri et al. (1977) for the year 1965. The 1965 stock was then deflated by the manufacturing investment deflator. From 1966 onwards, a linear depreciation rate of 5% was assumed and deductions were made from the stock of capital of time $t-1$ at this rate, while at the same time, adding the real investment amounts. Table IV.3 contains the compound growth rates of capital productivity for the manufacturing industries.

Table IV.2 Growth of Labour Productivity in the Manufacturing Industries, % Rate Per Year (1)

PUBLIC SECTOR				
	1965-76	1976-81	1981-88	1965-88
31 FOOD BEV TOBA	4.0	-2.1	4.2	2.7
32 TEXTILES CLO	6.2	-3.7	1.3	2.6
33 FOREST PROD	1.0	4.6	2.4	2.2
34 PAPER PRINT	8.7	-3.7	5.7	5.1
35 CHEMICAL PETR	9.2	0.9	3.7	5.7
36 SOIL PROD	1.8	7.2	-1.0	2.1
37 BASIC METALS	-5.4	5.1	10.7	1.8
38 MACHIN TRANSP	9.2	-5.1	-2.1	2.7
3 TOTAL	5.7	2.9	3.7	4.5
PRIVATE SECTOR				
	1965-76	1976-81	1981-88	1965-88
31 FOOD BEV TOBA	5.4	1.2	4.0	4.0
32 TEXTILES CLO	6.3	-2.3	2.5	3.2
33 FOREST PROD	3.9	-5.6	5.1	2.2
34 PAPER PRINT	8.9	-0.5	2.5	4.9
35 CHEMICAL PETR	7.2	-5.9	9.5	5.0
36 SOIL PROD	6.8	3.5	2.8	4.9
37 BASIC METALS	4.4	-3.9	10.3	4.4
38 MACHIN TRANSP	9.1	-8.0	7.6	4.9
3 TOTAL	6.9	-4.3	5.9	4.2
TOTAL				
	1965-76	1976-81	1981-88	1965-88
31 FOOD BEV TOBA	4.6	-0.3	4.8	3.6
32 TEXTILES CLO	6.6	-2.3	2.6	3.5
33 FOREST PROD	3.3	-2.6	4.4	2.3
34 PAPER PRINT	9.0	-1.8	4.2	5.2
35 CHEMICAL PETR	7.8	-0.4	5.4	5.3
36 SOIL PROD	5.3	4.2	2.0	4.1
37 BASIC METALS	-0.4	0.4	11.8	3.5
38 MACHIN TRANSP	10.4	-7.2	7.0	5.5
3 TOTAL	6.4	-1.6	4.9	4.2

Sources: Computed from the sources given in Table IV.1.
 Notes: (1) Industry 39 is accounted for within the TOTAL.

Table IV.3 Growth of Capital Productivity in the Manufacturing Industries, % Rate Per Year (1)

PUBLIC SECTOR				
	1965-76	1976-81	1981-88	1965-88
31 FOOD BEV TOBA	4.3	-8.8	2.3	0.8
32 TEXTILES CLO	2.4	-9.6	-0.4	-1.1
33 FOREST PROD	-4.4	2.8	4.1	-0.3
34 PAPER PRINT	1.5	-0.4	6.0	2.5
35 CHEMICAL PETR	8.8	3.2	-0.3	4.8
36 SOIL PROD	1.5	8.5	-5.0	1.0
37 BASIC METALS	1.4	-1.9	9.2	3.1
38 MACHIN TRANSP	5.3	-11.7	-3.6	-1.1
3 TOTAL	4.3	-1.0	1.0	2.1
PRIVATE SECTOR				
	1965-76	1976-81	1981-88	1965-88
31 FOOD BEV TOBA	-0.5	-0.9	4.5	1.0
32 TEXTILES CLO	1.9	-5.0	1.0	0.1
33 FOREST PROD	2.8	-7.3	8.8	2.4
34 PAPER PRINT	-1.5	4.4	5.1	1.8
35 CHEMICAL PETR	5.4	-8.8	7.5	2.9
36 SOIL PROD	2.1	4.9	2.9	2.9
37 BASIC METALS	9.1	-22.1	13.0	3.5
38 MACHIN TRANSP	5.0	-8.5	7.2	2.8
3 TOTAL	2.1	-6.4	5.6	1.3
TOTAL				
	1965-76	1976-81	1981-88	1965-88
31 FOOD BEV TOBA	2.1	-4.8	2.6	1.2
32 TEXTILES CLO	2.0	-5.6	1.0	0.0
33 FOREST PROD	0.5	-4.4	7.7	1.6
34 PAPER PRINT	0.6	2.2	5.8	2.6
35 CHEMICAL PETR	7.2	-2.1	3.1	3.9
36 SOIL PROD	2.4	6.0	1.1	2.8
37 BASIC METALS	6.7	-9.4	12.1	4.8
38 MACHIN TRANSP	6.0	-9.1	6.4	2.8
3 TOTAL	3.5	-4.4	4.1	2.0

Sources: Computed from the sources given in Table IV.1.

Notes: (1) Industry 39 is accounted for within TOTAL.

For the private sector, a pattern similar to that of labour productivity is observed here too, in that, with minor deviations, there is positive growth during the 1965-76 period, negative growth in the 1976-81 period and a recovery with fairly high rates in the 1981-88 period. The post-1980 recovery is, however, quite limited in the public sector. Indeed, in half of the industries of this sector, there is negative growth in productivity. This seems to be the result of increased capital stocks of these industries in the mid-1980s with relatively lower utilization rates. The comparison of the private and public productivity growth rates reveals that, with the exception of the "chemicals and petroleum refining" industry, the smaller private enterprises raised the efficiency of the use of their capital stocks in the post-1980 period more than the public establishments. This can be explained, to a large extent, by increased capacity utilization in the private manufacturing industry during the 1980s.

For the calculation of multifactor productivity growth, two further information sets are required. The first is the growth of real material inputs. To obtain real input values, the current input values are deflated by the output price indices of the individual industries, since material input price indices do not exist. In other words, it is assumed that the output prices have followed the input prices and vice-versa. This can happen if there is a constant mark-up pricing, over the material prices, in the industries. This assumption may not hold in the short term, but in the long-run there will be a tendency towards it as excess demands are levelled out. A second requirement is that factor shares in output should be known. This is more easily obtained by first taking the ratios of material inputs to gross output and of wage payments to gross output. The share of capital is then found as a residual since the sum of these three shares is earlier on assumed to add up to unity. When compound growth rates of multifactor productivity are calculated between two years, say t and $t-1$, the average of the shares of these two years is used for weighting.

Multifactor productivity growth rates are tabulated in Table IV.4. As expected, the rates reveal a picture determined by the productivity developments of labour and capital inputs. The growth of productivity during the period 1965-76 is positive in all the industries of the private and the public sectors. It should be noted that the overall manufacturing total factor productivity growth rate computed for this period, 1.5%, falls between the rate of 1.33% obtained by Nishimizu and Robinson (1984) and the rate of 1.96% obtained by Krueger and Tuncer (1980) for the period 1963-76. The high productivity growth in the "chemicals and petroleum refining" makes the otherwise negative public sector rate positive for the period

Table IV.4 Growth of Multifactor Productivity in the
Manufacturing Industries, % Rate Per Year (1)

PUBLIC SECTOR				
	1965-76	1976-81	1981-88	1965-88
31 FOOD BEV TOBA	0.6	-1.3	2.8	0.7
32 TEXTILES CLO	2.0	-4.4	-0.5	-0.3
33 FOREST PROD	0.5	-0.2	1.4	0.4
34 PAPER PRINT	2.0	-3.6	3.5	1.1
35 CHEMICAL PETR	2.0	4.1	0.1	2.3
36 SOIL PROD	0.0	3.0	-2.1	0.0
37 BASIC METALS	0.2	-1.6	4.2	1.1
38 MACHIN TRANSP	3.6	-4.3	-1.8	0.0
3 TOTAL	1.2	0.9	1.0	1.1
PRIVATE SECTOR				
	1965-76	1976-81	1981-88	1965-88
31 FOOD BEV TOBA	0.7	0.4	1.7	0.9
32 TEXTILES CLO	1.8	-2.6	0.2	0.3
33 FOREST PROD	1.5	-4.7	2.4	0.5
34 PAPER PRINT	0.9	-0.1	1.9	0.8
35 CHEMICAL PETR	2.1	-4.6	2.5	0.7
36 SOIL PROD	1.9	0.9	1.9	1.6
37 BASIC METALS	2.3	-6.3	3.1	0.6
38 MACHIN TRANSP	2.4	-3.6	2.7	1.1
3 TOTAL	1.6	-2.8	2.0	0.7
TOTAL				
	1965-76	1976-81	1981-88	1965-88
31 FOOD BEV TOBA	0.5	-0.4	2.0	0.7
32 TEXTILES CLO	1.8	-2.9	0.2	0.2
33 FOREST PROD	1.2	-3.4	2.1	0.5
34 PAPER PRINT	1.7	-1.7	2.6	1.1
35 CHEMICAL PETR	2.1	0.3	1.1	1.5
36 SOIL PROD	1.5	1.5	1.0	1.3
37 BASIC METALS	1.6	-3.4	3.6	1.2
38 MACHIN TRANSP	3.0	-3.8	2.3	1.2
3 TOTAL	1.5	-1.4	1.5	0.8

Sources: Computed from the sources given in Table IV.1.
Notes: (1) Industry 39 is accounted for within TOTAL.

1976-81. Note that the weight of this industry in the public manufacturing industry is very high, about 40% during the late 1970s and the early 1980s.

When productivity growth in total manufacturing is examined, it is seen that the rates for the 1965-76 and 1981-88 periods are the same. If one leaves aside for the moment the troublesome period of 1976-81, when the import substitution strategy entered an impasse by the impact of inter alia the outside shocks, in that case there is not a difference between the productivity performances of the earlier "controlled import - substitution" and the "liberalized export-oriented" periods. The following explanation can be made on the basis of these results. Up to a point, import substitution development strategy pursued with controlled markets worked well and productivity was raised. This phase could indeed be considered necessary for the building of an industrial base for future exports. Such a strategy reached its limits after a while, however, and market liberalization and export orientation was forced upon. Liberalization and export orientation raised productivity since resources were used more intensively and more efficiently due to increased competition.

In spite of the improvement over the 1977-80 period, the growth of multifactor productivity in the 1980s should be considered low. Three explanations can be given. Firstly, the education and the general well being of the labour force was relatively neglected. This meant a relatively low rise in labour productivity, as it was already mentioned within the context of Table IV.2. Secondly, the rise in productive investment especially in industry was low. The increase in output growth was achieved largely by higher utilization of the capital stock created earlier. This had two implications. (i) Production technology had to stay relatively old. (ii) Scale economies, due from larger plants, could not be exploited. This second source of productivity growth is particularly relevant since it is shown by Kwon (1986) for Korea and by Chen and Tang (1990) for Taiwan that scale economies were the main determinant of the growth of total factor productivity.

A third explanation of the relatively low growth of total factor productivity in the Turkish manufacturing during the 1980s is that there was no improvement in the value added/gross output ratio. That is why total factor growth of Table IV.4 is lower than the labour and capital productivities. One observes from Tables IV.2, IV.3 and IV.4 that the "basic metals" and the "machinery and transport equipment" industries have the highest growth rates in terms of labour, capital and multifactor productivities in the post-1980 period. These industries have also recorded the highest export growth rates in the same period. However, it is difficult to make a generalization on this point when the other industries are taken into account. It needs to be noted that textiles still constitute the largest share of total exports.

V CONCLUDING REMARKS

The process of financial liberalization started over a decade ago simultaneously with a stabilization programme. Most economists agree that the simultaneous implementation of liberalization and stabilization programmes is the correct procedure in an economy where there are several disequilibria. Turkey at the beginning of 1980 was characterized with such disequilibria including deficits in the foreign and public sectors and high inflation. As far as sequencing of liberalization in different markets is concerned, the Turkish programme was again in conformity with the prescriptions of most economists, in that, the programme addressed first foreign trade, then domestic financial markets and finally foreign capital transactions. As regards the speed of implementation, gradualism was the characteristic of all the attempts in all the markets, in line with the majority of the views expressed in this regard. In addition, the Turkish liberalization programme was supported by the international organizations. Yet, the results achieved in the real economy were mixed.

Firstly, the private saving rate did not respond to the increases in the real deposit rates, at least in the first half of the 1980s. One of the basic reasons for this was that interest income was used for consumption purposes as well, with the implication that the income effect was in operation together with the substitution effect resulting from a change in interest rates. Secondly, private saving rate increased considerably in the second half of the 1980s, but the savings could not effectively be channelled towards productive investments. The increase in the private saving rate was largely associated with the private housing investments.

The reasons for the stagnation in private industrial investments were that (i) domestic demand was reduced sharply in accordance with the stabilization programme and the rise in exports could be met with increased utilization of the existing capital stock, (ii) uncertainties regarding the macro-economic policies could not be eliminated, (iii) private housing investments increased sharply, encouraged by preferential credits, and (iv) real interest rates increased considerably. In the mean time, investment in education and training declined in the 1980s compared to before and this played a major role in the relatively low rise in industrial productivity.

Productivity, especially capital productivity, improved in the 1980s. But total factor productivity did not rise by as much as it could do for two reasons. One is to do with the stagnation or even decline of investments in manufacturing and education. The other is that, because increased exports were met through higher capacity utilization, new and larger plants could not be established that would exploit economies of scale in addition to having a more developed technology. The relationship between export growth and productivity growth is shown to be largely due to scale economies.

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