9 Investment Incentives and Conditions of Competition in Turkey
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Since the mid–1960s, the Turkish Government has promoted investments through various incentives. The purpose of this paper is to analyze the effects of investment incentives and the taxation system on conditions of competition and thus on competitiveness in Turkey. After assessing the industrial subsidies provided through the investment incentives and taxation system, the analysis concentrates on the study of market structure. Section 1 describes the investment incentive scheme, and Section 2 explores the corporate tax system in Turkey. In Section 3 the study assesses the investment incentive scheme using marginal effective tax rate (METR) analysis. The effect of the investment incentive scheme on market structure is studied in Section 4.

1. Investment Incentive System

Since the adoption of the first Five Year Development Plan in 1963, Turkey has encouraged economic activity through a complex system of incentives. In addition to assisting domestic production through import licensing, quantitative restrictions on imports, and overvalued exchange rates, Turkey has used direct production incentives. Consideration of these incentives reveals that the government, has granted a number of incentives in order to promote investment in activities and areas regarded as desirable. The incentives, regulated by laws and decrees, have been directed at reducing the cost of investment, reducing the need for external financing, and increasing profitability.

There are certain peculiarities to this incentive scheme. First, incentives are differentiated on a regional basis. For the purpose of incentives, Turkey has been divided into three regions: "developed regions" consisting of the provinces of Istanbul and Kocaeli and the municipal districts of Ankara, Izmir, Bursa, Adana, and Antalya; "regions with special priority in development" consisting of provinces like Çorum, Sivas, Tokat, Van, Ağrı and Kars, determined by a resolution of the Council of Ministers; and "normal regions" consisting of provinces except for the regions with special priority in development and developed regions. Second, incentives are differentiated by sectors. According to Decree 98/10755 concerning government subsidies, issued in the Official Gazette on March 25, 1998, sectors with special importance include education, health, international transportation, research and development, electricity, energy production, infrastructure investments, investments in

industrial zones, and investments to be made on build-operate-own and/or build-operate-transfer models. The third characteristic of the incentive system is that all incentives originate from the central government. The agency that administers the incentive scheme is the Undersecretariat for the Treasury. The incentive scheme is implemented on the basis of "investment incentive certificates" (IIC) granted by this agency. Only investments with IICs are eligible for incentives. The fourth specialty of the incentive scheme derives from certain conditions on lower limits, investment totals, and minimum levels of own sources and exports, which must be fulfilled in order to benefit from various incentives. The minimum equity rates for benefiting from investment incentives are set as 40 percent for investments realised in regions with special priority in development, 50 percent in normal regions, and 60 percent in developed regions, with 15 percent in investments of ship construction, yacht construction, and ship and plane imports. For investments to be supported by IIC, the minimum fixed investment amount should be 50 billion Turkish Lira in high priority regions and 100 billion Turkish Lira in other regions. Furthermore, Resolution No. 99/12474 of the Council of Ministers, published in the Official Gazette of March 5, 1999, defines Small and Medium Size Entities (SME) as industrial enterprises which employ a maximum of 150 workers, whose total value of physical assets excluding land and buildings is less than 100 billion Turkish Lira. SMEs are eligible for IIC. The various types of investment incentives provided during the of period of 1999–2000 can be summarized as follows:

1. Investment Allowance: The investment incentive allowance is a deduction from taxable income for corporate tax purposes. The allowance comprises a certain percentage of the cost of machinery, equipment, instruments, building, and other depreciable capital assets, which is deducted from the company's taxable income. According to the annexed third article of Chapter 8 of the Income Tax Code No. 193, investment allowances can apply to investments that are realized in sectors with special importance and/or in regions with priority in development and organized industrial regions at a rate of 100 percent. The Council of Ministers is able to increase the investment allowance rate to 200 percent in investments that exceed the Turkish Lira equivalent of $250 million.

2. Value Added Tax (VAT) Support for the Purchase of Machinery and Equipment: The delivery of machinery and equipment within the scope of investment IIC has been exempted from the VAT.

3. Exemption on Taxes, Fees and Duties: If an investment is guaranteed to generate a certain level of exports the loans made for this investment and related transactions receive exemptions from taxes, fees and stamp duties.

4 Customs Duty and Housing Estate Fund Exemptions: Imports of machinery and equipment within the scope of IIC are exempted from the Customs Tax

and Mass Housing Fund paid in accordance with the Decree on Import Regime. Raw materials, semi-processed materials, and management materials cannot benefit from customs duty and fund levy exemptions.

5. Energy Subsidy: Energy subsidies are given to new investments in certain sectors realized in regions having priority. Twenty five percent of the electricity consumption in over five years of operation may be subsidized from the sources of "Encouragement of Investments and Services Providing Foreign Exchange Earnings Fund."

6. Land Allocation: Land has been allocated by the government for tourism investments. upon request, land is to be allocated by the government for investments undertaken in regions enjoying priority in development.

7. Credit Allotment from the Fund: The credit allotted from the "Investment Encouragement Fund" will be supplied for supporting and guiding investments that aim at regional developments and investments of small and medium sized entities related to research and development, technopark, protection of environment, and technological investments with priority determined by the Science and Technology Supreme Council, within the framework of state aids to investment and related legislation.

The government, through the use of the above mentioned and similar incentive measures, has been able to reduce the effective cost of borrowing to investors, thereby reducing the cost of investment, and thus increasing the profitability of investments.

2. Tax System

The Corporation Tax Code applies to the profits earned by companies with share capital (joint stock companies, limited companies, limited partnerships), cooperatives, state-owned companies, economic enterprises owned by associations and foundations, and mutual funds and investment trusts. Profits of companies subject to corporations tax are calculated in accordance with the provisions of Articles 40 and 41 of Law No. 193, the Income Tax Law. This law specifies that all business-related expenses and income must be included when calculating taxable income, and the accrual method of accounting must be used. Only realized earnings constitute taxable income.

The main procedural law that is currently in effect is the Tax Procedures Code (Statute 213), which contains provisions regulating procedures concerning, among others, methods that apply during the valuation of assets, liabilities, and payables.

The Tax Procedures Code requires that fixed assets be valued at cost, while payables and receivables denominated in Turkish Lira should be valued at their carrying value. According to the Code, depreciation is allowed on both tangible and intangible assets. Three methods of depreciation are allowed: the

straight-line (SL) method, the declining-balance (DB) method (including the double declining method) and the extraordinary depreciation method. Under the SL method, depreciation on moveable fixed assets may be taken at any rate chosen by the tax payer, up to an annual maximum of 25 percent. If the DB-method is employed, the maximum allowable depreciation rate is increased to 50 percent. Once a rate is selected it cannot be changed in subsequent years. Under extraordinary conditions, the Ministry of Finance may determine a specific rate for the enterprise. The tax payer can switch from DB method to SL method during the life of an asset. The option is applied on an asset-by-asset basis. The depreciation rates for some fixed assets that have short useful economic lives are determined by the Ministry of Finance. Typical allowed rates of depreciation are 35-50 percent for furnitures and fixtures, 40 percent for assets related to certain food industries (biscuits, chocolate) and 50 percent for assets related to the liquid oil or gas industry. In order to protect the asset side of the balance sheet from inflationary erosion, the Turkish corporate income tax system introduced inflation adjustment of depreciation allowances at the end of March 1987. The revaluation rates are determined annually by the Ministry of Finance as the average increase in the WPI.

The inventory costing methods permissible are the first-in-first-out (FIFO) method, last-in-first-out (LIFO) method, or specific identification of historical cost of inventories priced at the lower of cost or market value. Capital gains earned from the sale or disposal of fixed assets subject to depreciation are taxed at the normal rate of corporation tax, but may be deferred for three years. Gains are not taxable to the extent that the proceeds are reinvested in new fixed assets.

Regarding the indexation of the liability side of the balance sheet, nominal interest payments are deductible from corporate taxable income. A small but incomplete step was taken in 1994. Under the new corporate income tax code, companies engaged in retail and wholesale business have to add 25 percent of a proxy for the inflation component in interest payments to their taxable income. The discrimination in favor of debt finance increases as inflation rate rises because no distinction is made between real interest rates and the inflationary erosion premium contained in nominal interest payments. Finally, losses incurred during the current year can be carried forward and deducted against income for a five-year period, but they are not indexed.

The Turkish corporate income tax code was first passed in 1949 and amended many times thereafter. Until 1985, companies were subject to a tax of 40 percent on their taxable income. The rate was increased to 46 percent in 1985. A 10 percent withholding tax was imposed on earnings exempt from corporation tax. In December 1993, legislation eliminated most of the tax exemptions, introduced partial inflation adjustment for interest payments and reduced

the corporate tax rate from 46 percent to 25 percent, but added a general income tax on the corporate after-tax income. The general income tax was 10 percent for companies listed on the stock exchange and 20 percent for unlisted companies. This implied a net reduction of six percentage points for unlisted companies from 46 percent to 40 percent. For listed companies, the reduction was larger, with combined rate of 32 percent. The legislation stipulated that corporate income tax should not be less than 20 percent of corporate profit. Furthermore, 70 percent of the assessed corporate tax was collected as advance tax payments in twelve installments.

The level of tax rates as of 2000 are determined through the provisions of Law No. 4369, enacted in July 1998. According to the Law, the corporation tax rate is 30 percent of taxable profit, on top of which there is a 10 percent fund, bringing the aggregate rate to 33 percent. In the case of the corporation distributing the dividends to shareholders, a withholding tax of 10 percent of the after-tax profit, on top of which there is a 10 percent fund, brings the total tax burden to 40.37 percent. Since the withholding tax amounts to zero percent in the case of publicly-owned companies their total tax burden is only 33 percent.

3. Effects of the System of Taxation and Investment Incentive Scheme

To assess the effects of the investment incentive scheme and the system of taxation in Turkey, we consider a hypothetical investment project. The analysis is based on the approaches of King and Fullerton (1984), the OECD (1991), and Dunn and Pellechio (1990). The project is assumed to incur all of its investment costs in the year before the project generates income, namely year zero. Thereafter, the project generates a stream of operating income from year one until the end of the operating period, namely period T. The levels of operating income are chosen so that the project generates a real before-tax rate of return of r percent on the equity invested in the project. Next, we determine the real after-tax rate of return r_{at} that will be attained under the prevailing system of taxation, which we call the base case. Finally, we consider the real rate of return $r_{at\&s}$ that will be attained under the prevailing tax system and the various investment incentives schemes. The marginal effective tax rate (METR) is then calculated as:

$$METR = (r_{at\&s} - r_{at}) * 100 / r_{at}$$

Let I_0 denote the amount of investment at time t=0. The project consists of investment in land, buildings, machinery, and equipment and vehicles. The shares of these assets in total investment are α_1 percent for land, α_2 percent for buildings, α_3 percent for machinery and equipment, and α_4 percent for vehi-

cles. The rate of economic depreciation is assumed to amount to g_1 percent for land, g_2 percent for buildings, g_3 percent for machinery and equipment, and g_4 percent for vehicles. Each year in order to preserve the productivity of investment, the company engages in replacement investment, which equals the rate of economic depreciation of the assets concerned. The real value of economic depreciation at time t (t = 1,..,T) equals $(g_1\alpha_1+..+g_4\alpha_4)I_0$. Denoting by π the annual rate of inflation, assumed to remain constant over time, the economic depreciation and hence replacement investment at time t measured at current prices is obtained as $I_t = (g_1\alpha_1+..+g_4\alpha_4) I_0 (1+\pi)^t$ for (t = 1,2,3...)

In the model the before-tax (BTCF) and after-tax (ATCF) cash flows at time t are written as:

$$BTCFt = -E_t + R_t - W_t - Mat_t - Int_t - Prin_t + NetSales\,of\,Assets_t$$

$$ATCF_t= BTCF_t + InvCred_t - ta\,(R_t - W_t - Mat_t + InvCred_t - Dep_t - IntDed_t -$$
$$Carryover_t + Capgain_t + NomInvGain)$$

where E_t denotes the amount of equity used to finance the investment in year t, including the part of replacement investment, R_t investment income, W_t wage cost, Mat_t expenditures on materials, Int_t interest paid on debt, $Prin_t$ payment on principal, NetSales of Assetst net revenue from sales of assets, ta statutory plus any surtax tax rate, $InvCred_t$ investment credit in year t, Dep_t depreciation allowance taken in year t, $IntDed_t$ interest deductions in year t, $Carryover_t$ carryover losses in year t, $Capgain_t$ capital gains in year t, and $NomInvGain_t$ nominal gains on goods held in inventory in year t.

In the case of all equity finance we have $I_0 = E_0$, $Prin_t = 0 = Int_t$ for all t = 1,2,... and equity issue used to finance the investment is zero for t = 1,..,T. We assume for the purpose of simplification that $W_t = Mat_t = 0$ for all t. Given the "real before tax rate of return" *(r)* and the initial level of investment I_0 the "real before-tax cash flow" is determined as rI_0 and the "nominal before-tax cash flow" as $rI_0(1+\pi)^t$ for (t = 1,2,3,...). Hence, in the first equation, the value of $BTCF_t$ is determined as "nominal before tax cash flow." To determine the net sale value of assets at the end of operating period T, we define the sale price of capital at time t as the sale price of capital at time t-1 plus the replacement investment at current cost at time t minus economic depreciation at current cost at time t. Since, by hypothesis, replacement investment equals economic depreciation for all t, the sale price of capital equals $I_0(1+\pi)^{t-1}$ for t = 1,2,... Since capital is sold at the end of operating period NetSalesofAssets$_t$ is positive for the operating period and zero otherwise. Since, the value of EconDep$_t$ is determined by the approach described above, R_t investment income in year t is determined as the value that balances the equation.

In the debt financed case, we assume that the company borrows initially to finance part of the investment and pays back the debt in equal installments

over the life time of the project. We consider the percentage of initial invest-
ment financed by debt as a given constant parameter. Given the initial value of
debt denoted by D, we assume that this debt is to be paid back in equal annu-
al installments of A over the life of the project. Let i be the nominal rate of
interest on debt given by i $=(1+r)(1+\pi)-1$ where r is the "real before tax rate of
return" on investment. Then the annuity is obtained as:

$$A = \frac{iD}{1-(\frac{1}{(1+i)^T})}.$$

Given the amount of debt in period t-1, D_{t-1} , we subtract the interest pay-
ments on this debt from the annuity A and obtain payment on principle as (A—
iD_{t-1}). Thus the evolution of debt over time is given by:

$$D_t = (1+ i) D_{t-1} - A.$$

As revealed by the equation determining the before-tax cash flow, the interest
payments on debt iD_{t-1} and principle payments on debt (A - iD_{t-1}) are subtract-
ed from the before tax-cash flow.

The after-tax cash flow equals the before-tax cash flow minus taxes paid
plus credits. The statutory tax rate plus any surtax rate are multiplied by tax-
able income to yield the regular tax liability. Taxable income in Turkey equals
investment income plus investment credits, minus depreciation allowances,
investment deductions, and interest deductions. A positive taxable income may
be reduced by losses being carried forward. Furthermore, when the asset is
sold, capital gains or losses are included in the taxable income.

Regarding depreciation, we note that the model in principle considers three
methods of depreciation: straight line depreciation (SL), declining balance
depreciation (DB), and double DB depreciation with switchover. In the case of
SL-depreciation, we denote by d_i the straight line depreciation rate of the asset
i. The straight line basis equals I_0 at time t=1, and $D_t=I_0+I_1+..+I_{t-1}$ for t=2,3,....
Then SL depreciation in real terms at time t equal d_iD_t. Under DB depreciation
we consider for each type of asset (buildings, machinery and equipment, vehi-
cles) the original and replacement investments at different time periods as dif-
ferent investments because of the inflation factor. Book value of the original
investment at time period t is calculated as book value of the investment at
time t-1 minus the DB depreciation. DB-depreciation at time t is determined
as DB depreciation rate multiplied by the book value in period t-1. Finally,
under double DB depreciation with switchover we consider for each asset the
difference between double DB depreciation and SL depreciation. During the
time period when this difference turns to a negative number we switch over to
SL depreciation.

The nominal after-tax rate of return is the internal rate of return for the after-tax cash flow. This rate is then adjusted for inflation to yield the real after-tax rate of return denoted by r_{at} . Using a similar procedure we obtain the real rate of return $r_{at\&s}$ that will be attained under the prevailing tax system and the various investment incentives.

4.1 Base Solution and Incentives for 1999

We consider a typical investment project. It is an investment in land, buildings, machinery and equipment, and vehicles, with shares of 10 percent in land, 25 percent in buildings, 65 percent in machinery and equipment and zero percent in vehicles. The Undersecretariat of the Treasury, which administers the investment incentive scheme, usually issues the "investment incentive certificates" (IIC) for a subset of these investment expenditures. Not all expenditures are considered eligible for IIC. Studies by the Treasury Undersecretariat reveal that, on average 20 units of investments amounting to 120 units are found to be non-eligible for IIC. The 100 units of investment expenditures eligible for IIC are assumed to have the shares specified above. Considering the non-eligible 20 units of expenditures as part of investment in land, we have the adjusted shares as $\alpha_1 = 25$, $\alpha_2 = 20.83$, $\alpha_3 = 54.17$ percent, and $\alpha_4 = 0$. The initial level of operating income is chosen so that the project generates a real before-tax rate of return of 20 percent. Following Dunn and Pellechio (1990), we assume that the economic depreciation rate of buildings, machinery and equipment, and vehicles equals 3.6, 12.5, and 30 percent respectively, and that the straight line depreciation rate equals the economic depreciation rate for the assets considered. The operating period of the project equals thirty years.

In Turkey, the corporation tax rate, according to Law No. 4369 enacted in July 1998, was 30 percent of taxable profit during 1999. On top of this corporation tax, there is a ten percent fund payment bringing the total aggregate tax rate to 33 percent. In case resident taxpayer corporations distribute dividends to shareholders, a withholding tax of eleven percent on after-tax profits, including fund levy, is applicable. The withholding in question is zero percent for publicly owned companies. In the event that such corporations do not distribute dividends and/or add them to the capital, there will be no question of a withholding liability. In this study, we consider the case of a private company that distributes total profits as dividends. Given the corporate tax rate of 30 percent and fund rate of 3 percent, the after-tax profits of 100 units of pre-tax profits amounts to 67. The withholding tax on distributed dividends amounts to 6.7 and the fund levy 0.67 percent. As a result, the total corporate tax burden equals 40.37 percent.

During periods of inflation, the indexation of depreciation allowances, interest deductions, interest earned, carryover of losses and unused tax credits, and capital gains turn out to be of prime importance for maintaining the real value

of various elements of the tax system. This model fully indexes the system by insulating the system completely from the effects of inflation. The inflation rate in the model is taken as the 1999 WPI inflation rate of 72.3 percent.

In the base case, we assume that there are no investment incentive allowances. The value added tax rate is 15 percent. Following Karakoyunlu (1987), we assume that the tax, duty and charge associated with financial transactions amounts to 4.4 percent of the loan extended. We assume that 70 percent of machinery and equipment is imported. Using the input-output table of 1990 prepared by the State Institute of Statistics and the nominal protection data of Togan (1997), the average customs tax on imports of investment goods is estimated as 1.06 percent.

Incorporation of the investment incentives into the model is achieved by considering four incentives: (a) investment allowance; (b) value added tax (VAT) support in purchase of machinery and equipment; (c) tax, duty and charge exemption; and (d) customs duty exemption. We abstract from consideration of energy subsidy, land allocation and credit allocation from the fund. The government has allocated relatively limited resources to fund credit and land allocation is important for specific projects such as tourism.

The investment incentive allowance comprises a certain percentage of the cost of machinery, equipment, instruments, building, and other depreciable capital assets, which is deducted from the company's taxable income. The investment allowance applies to investments that are realized in sectors that carry special importance, sectors with priority in development, and organized industrial regions at a rate of 100 percent, and at a rate of 200 percent on industrial investments that exceed the TL equivalent of US$ 250 million and meet at least two of the following requirements: (i) require high technology, (ii) have a high value added, (iii) increase tax earnings and employment, and (iv) enable the country to compete internationally. The VAT support exempts the delivery of machinery and equipment from the value added tax of 15 percent. In the case of projects without IIC, the importer has to pay the VAT. In that case, the importer can claim the VAT back but only gradually, in equal instalments over three years without any adjustment for foregone interest or even inflationary erosion. Given the VAT rate of 15 percent and annual payments of 5 units per annum the subsidy provided to IIC holder through VAT support can be calculated as:

$$15 - \frac{5}{(1+r)} - \frac{5}{(1+r)^2} - \frac{5}{(1+r)^3}$$

percent, where r denotes the rate of interest. The tax, duty, and charge exemption is an incentive for exporters. If an investor undertakes to generate a certain amount of foreign exchange through export, the loans extended for this

export will be exempt from taxes, duties and fees amounting to 4.4 percent of the loan extended. Finally, through the customs duty exemption, the import of the machinery and equipment listed in connection with an Investment Encouragement Certificate is exempted from customs tax and from the mass housing fund.

Table 9.1: Effect of Investment Incentives on the Rate of Return and METR, 1999

	Rate of Return		METR	
	Debt/Equity=0	Debt/Equity=1	Debt/Equity=0	Debt/Equity=1
Base Case	10.3	10.1	-	-
VAT Support	12.5	12.6	21.36	24.75
Investment Allowance				
100 percent	12.2	12.1	18.45	19.80
200 percent	12.6	12.1	22.33	19.80
Tax, Duty & Charge Exemption	10.3	10.4	0.00	2.97
Customs Duty Exemption	10.4	10.2	0.97	0.99
Total Effect of all Incentives	**15.1**	**15.8**	**46.60**	**56.44**

Source: Author's calculations.

Table 9.1 shows the effect of investment incentives on the rate of return and METR under all equity and half equity-half debt). The table reveals that the VAT support results in an increase of the rate of return from 10.3 to 12.5 under all equity and from 10.1 to 12.6 percent under half equity-half debt financing. An investment allowance of 100 percent increases the rate of return from 10.3 percent to 12.2 percent under all equity financing and from 10.1 to 12.1 percent under half equity-half debt financing. The 200 percent investment allowance increases the rate of return from 10.3 to 12.6 under all equity financing, and from 10.1 to 12.1 percent under half equity-half debt financing. The tax, duty, and charge exemption and customs duty exemption have minor effects. The combined effect of the investment incentives under 100 percent investment allowance increases the rate of return from 10.3 to 15.1 percent under all equity financing, and from 10.1 percent to 15.8 percent under half equity-half debt financing. These results, when expressed in terms of METR indicate, that under equity financing, METR increases by 0.97 percent under customs duty exemption, 18.45 percent under 100 percent investment allowance and 21.36 percent under VAT support. Similarly, under half equity-half debt financing, METR increases by 0.99 percent under customs duty exemption, 2.97 percent under tax, duty, and charge exemption, 19.8 percent under 100 percent investment allowance, and 24.75 percent under VAT sup-

port. The table reveals that the subsidy rate of investment incentives equals 4.8 percent under all equity finance, and 5.7 percent under half equity-half debt finance. Assuming that 50 percent of all investments in Turkey are equity financed and 50 percent half equity-half debt financed, the average subsidy rate is calculated as 5.25 percent.

Table 9.2: Sectoral Classification of Investment Incentive Certificates, 1999

	Number of Certificates	Fixed Investment (Billion TL)	Fixed Investment (Million $)	Employment (Person)
Agriculture				
Vegetables	21	5,290	12.67	536
Animal Husbandry	81	87,392	209.28	3,950
Aquacultural Products	7	1,907	4.57	208
Forestry				
Mining	93	55,121	132.00	2,758
Manufacturing				
Food & Beverages	267	176,703	423.16	12,289
Textiles & Clothing	242	211,450	506.37	22,983
Forestry Products	66	65,511	156.88	5,641
Paper	24	98,291	235.38	1,319
Leather & Leather Products	10	4,054	9.71	574
Rubber	108	61,328	146.86	2,766
Chemicals	73	179,421	429.67	3,312
Glassware	23	21,734	52.05	2,086
Iron & Steel	39	65,034	155.74	1,209
Non-ferrous Metals	26	23,513	56.31	895
Vehicles	129	144,523	346.10	5,500
Metallic Goods	183	182,772	437.69	9,123
Measuring Devices	21	29,279	70.12	1,089
Machinery	77	281,838	674.93	7,623
Electrical Machinery	34	36,927	88.43	2,170
Electronics	32	46,694	111.82	1,535
Cement	102	230,888	552.92	4,339
Clay & Cement Products	68	46,212	110.67	2,735
Construction	12	10,181	24.38	360
Ceramics	14	47,029	112.62	1,137
Other	51	62,393	149.42	2,139
Energy				
Energy	48	202,100	483.98	534
Services				
Transportation	301	1,065,941	2,552.66	22,931
Tourism	199	298,772	715.48	19,378
Trade	116	165,878	397.24	11,525
Education	48	75,950	181.88	5,586
Health	155	190,854	457.05	10,317
Other	297	489,002	1,171.04	24,133
Total	**2,967**	**4,663,982**	**11,169.05**	**192,680**

Source: Treasury Monthly Statistics, January 2000.

Table 9.3: Gross Fixed Investment of the Private Sector during 1987 and 1999

	1987 Current prices (billion TL)	1987 Current prices (Million $)	1999 Current prices (billion TL)	1999 Current prices (Million $)
Agriculture	619.0	723.4	493,727.0	1,182.4
Mining	142.5	166.6	192,978.0	462.1
Manufacturing	2,778.3	3,246.8	2,686,859.0	6,434.3
Food	238.8	279.1	197,323.2	472.5
Beverages and Tobacco	27.3	31.9	65,682.5	157.3
Textiles and Clothing	681.0	795.8	754,543.7	1,806.9
Leather and Leather Products	28.3	33.1	18,625.6	44.6
Forestry Products	28.2	33.0	33,629.5	80.5
Paper and Printing	139.9	163.5	93,219.5	223.2
Chemicals, Petro Chemicals and Fertilizers	231.7	270.8	218,651.9	523.6
Petroleum Products	16.6	19.4	33,444.7	80.1
Rubber and Plastics	87.0	101.7	168,975.5	404.7
Soil Products	473.0	552.8	304,983.0	730.4
Basic Metals	159.6	186.5	164,262.3	393.4
Metal Goods	140.5	164.2	92,311.2	221.1
Machinery, other than Electric	121.8	142.3	97,084.7	232.5
Electrical Machinery	149.8	175.1	111,666.8	267.4
Transport Equipment	236.9	276.9	296,530.8	710.1
Other Manufacturing	17.8	20.8	35,924.0	86.0
Energy	71.3	83.3	324,027.0	776.0
Services	7,399.8	8,647.8	9,635,589.0	23,074.8
Total	**11,010.9**	**12,867.9**	**13,333,180.0**	**31,929.6**

Source: "Annual Program," State Planning Organization, various issues.

Table 9.2 shows sectoral classification of investment incentives issued by the Treasury Undersecretariat during 1999. The table reveals that during 1999, the sectors that granted most of the investment incentives were the transportation sector with a share of 22.9 percent, other services with 10.5 percent, tourism with 6.4 percent, and machinery with six percent of total value of investment incentives. Table 9.3 shows the gross fixed investment expenditures of the private sector during 1999. From the table, it follows that during 1999 the services, textiles and clothing, agriculture, energy, and soil products sectors had the highest shares in total private sector fixed investment expenditures. From column eight of Table 9.7, showing the shares of IIC in gross fixed investment expenditures of the private sector, it follows that IIC has fallen short of the actual investment expenditures in some of the sectors. In these cases, we have multiplied the subsidy rate of 5.25 percent with the IIC value. Whenever the share was greater than unity we multiplied the subsidy rate of 5.25 percent with the fixed investment expenditure value of the private sector. The average subsidy rate for the

sector is then obtained by dividing the subsidy thus obtained by the value of investment expenditures in that sector. Weighing the sectoral subsidy rates by the shares of actual sectoral investment expenditures in total investment expenditures we obtained an average subsidy rate of 1.67 percent for the economy.

4.2 Base Solution and Incentives during the year 1987

The project considered is the same project analysed above. It is an investment in land, buildings, machinery and equipment and vehicles with shares $\alpha_1 = 25$, $\alpha_2 = 20.83$, $\alpha_3 = 54.17$, and $\alpha_4 =$ zero percent. We assume that the economic depreciation rate of buildings, machinery, and equipment and vehicles equals 3.6, 12.5 and 30 percent respectively, and that the straight line depreciation rates equal the economic depreciation rates for the assets considered. The project is assumed to generate a real before-tax rate of return of 20 percent and the operating period of the project is supposed to be thirty years.

During the year 1987, the corporate income tax rate was 46 percent. Since there were supplementary levies up to 7 percent in addition to of the basic tax, the overall tax rate amounted to 46 x 1.07 = 49.2 percent. During 1987, depreciation allowances were based on historical costs, adjusted to reflect the rate of inflation minus 10 percent. At that time, nominal interest payments were deductible from taxable income, with no adjustment for inflation. Deduction, for the cost of goods sold from inventories were based on historical costs, with no adjustment for inflation. Capital gains were taxed at the corporation income tax rate. In the model, the inflation rate is taken as the average 1986-1988 WPI inflation rate of 51.6 percent.

The investment incentives are incorporated into the model through nine incentives: (a) investment allowance; (b) postponement of the value added tax (VAT); (c) cross subsidisation scheme operated under the Export Encouragement Fund; (d) tax, duty and charge exemption; (e) customs duty exemption; (f) payments from the Resource Utilisation Support Fund; (g) low interest investment credits; (h) accelerated depreciation; and (i) the financing fund.

Table 9.4 shows the regional and sectoral differentiation of investment allowances. Investment incentives ranged from 30 percent to 100 percent depending on the region and sector. Regardless of location 100 percent initial allowance was granted for incentive industries. In 1987 these industries comprised energy, electronics, communications, medical equipment, most agricultural and related investments, tourism, and education. Projects on the negative list were not eligible for incentives, unless the investment took place in priority development regions. Items on the negative list included iron and steel works, tire manufacturing, fertilizer plants, certain chemical plants, the automobile industry, and some light industries and service facilities. Activities that were not incentive industries and that do not appear on the negative list were called normal industries.

Table 9.4: Investment Incentive Allowances, 1987

Type of Region	Negative List	Type of Industry Normal Industries	Incentive Industries
Developed	0	30	100
Normal	0	40	100
Second Priority Development	60	60	100
First Priority Development	100	100	100

Source: World Bank (1987) and Duran (1998).

The VAT accruing in the importation of investment goods was postponed until the date when an actual reduction of the tax was possible. This incentive was an exemption rather than postponement applicable for investments with IIC. There was no VAT postponement for investment goods acquired domestically. In the case of projects without IIC, the importer had to pay the VAT. In that case, the importer could claim the VAT back, but only in equal instalments over three years without any adjustment for foregone interest or even inflationary erosion. During 1987, the VAT rate was 12 percent and. annual payments amounted to four units.

Investment could take place in machinery and equipment that was either produced domestically or imported. Investment in domestic machinery and equipment received a 15 percent credit from the Export Encouragement Fund prior to October 1986. At that time, the subsidy rate was raised to 20 percent. On the other hand, a five percent tax in addition to import duty was levied on imported machinery and equipment.

Following Karakoyunlu (1987), we assume as before that the tax, duty, and charge associated with financial transactions amounts to 4.4 percent of the loan extended. We assume that 70 percent of machinery and equipment is imported and that the average customs tax on imports of investment goods during 1987 was 52 percent (Karakoyunlu, 1987). Under the tax, duty and charge exemption and customs duty exemption the firm with IIC does not pay either of these taxes.

The sixth investment incentive available during 1987 was in the form of a direct payment from the Resource Utilisation Support Fund (RUSF). Subsidy rate was 20 percent of realised investment in first priority development regions and 15 percent in second priority development regions, without regard to the size of investment. If investment was at least one billion Turkish Liras, the subsidy was seven percent in normal regions and four percent in developed regions[1].

In order to alleviate the effect of high interest on investment borrowing, investment credits were made available on concessional rates. The govern-

ment had devised a scheme under which the interest rate on loans of foreign origin, such as IFC loans, was fixed at about 32 percent while the average rate of inflation during 1986–88 was 51.6 percent. Actual costs of loans provided by the Turkish Industrial Development Bank amounted to 38 percent. In addition, the firms could benefit from the rediscount opportunities of the Central Bank. The interest rate was 40 percent. Taking the average credit cost of low interest credits as 38 percent the and interest rate on normal credits with no IIC as 85 percent (Karakoyunlu, 1987) the subsidy provided through bank credits is estimated as 47 percent.

With regard to depreciation allowances, we note that firms are allowed to depreciate assets faster than economic depreciation. This is equivalent to providing a subsidy to the firm. This case is analyzed by assuming the depreciation rate for buildings to equal five percent, and for machinery and equipment 25 percent.

The final investment incentive scheme refers to a financing fund. Under this scheme, corporations can set aside a percentage of taxable income for future investments. The amount set aside at the discretion of the firm is deducted from its taxable income and deposited in an interest bearing account with the Central Bank. It can be withdrawn at any time with authorisation from the Treasury Undersecretariat and used for investment. When the investment is completed, the amount becomes taxable. This incentive thus postpones the corporate tax payments.

In the base case we assume that no investment incentives are provided to the firm. The firm has to pay all its taxes, and no credits are granted at concessional rates. Depreciation allowances are based on historical costs, adjusted to reflect the rate of inflation minus 10 percent.

Table 9.5 shows the effect of investment incentives on the rate of return and METR under all equity and half equity-half debt financing structures. The table reveals that the customs duty exemption increases the rate of return from 3.9 percent to 7.4 percent under all equity financing, and from 3.4 to 6.9 percent under half equity-half debt financing. Low interest credit increases the rate of return from 3.9 percent to 4.1 percent under all equity financing, and from 3.4 to 4.8 percent under half equity-half debt financing. The RUSF subsidy increases the rate of return from 3.9 percent to 4.7 percent under all equity financing, and from 3.4 to 4.2 under half equity-half debt financing. Postponement of the VAT results in an increase of the rate of return from 3.9 to 4.6 percent under all equity and from 3.4 to 4.1 percent under half equity-half debt financing.

Accelerated depreciation increases the rate of return from 3.9 percent to 4.2 percent under all equity financing and from 3.4 percent to 3.6 percent under half-equity financing. An investment allowance of 30 percent increases

the rate of return from 3.9 percent to 4.2 percent under all equity financing and from 3.4 to 3.6 percent under half equity-half debt financing. The 100 percent investment allowance increases the rate of return to 4.9 percent under all equity financing, and to 4.2 percent under half equity-half debt financing. The tax, duty and charge exemption and cross subsidisation scheme have minor effects. The combined effect of the investment incentives under the 30 percent investment allowance increases the rate of return from 3.9 to 10.8 percent under all equity financing, and from 3.4 percent to 14.3 percent under half equity-half debt financing.

These results, when expressed in terms of METR, indicate that under equity financing, METR increases by zero percent under the cross-subsidisation scheme and the tax, duty, and charge exemption, 7.69 percent under 30 percent investment allowance and accelerated depreciation, 17.95 percent under postponement of the VAT, 20.51 percent under RUSF subsidy, 5.13 percent under low interest credit, and 89.74 percent under customs duty exemption. Similarly, under half equity-half debt financing, METR increases by zero percent under the cross-subsidisation scheme, 2.94 percent under tax, duty and charge exemption, 5.88 percent under 30 percent investment allowance and accelerated depreciation, 20.59 percent under postponement of the VAT, 23.53 percent under RUSF subsidy, 41.18 percent under low interest credit, and 102.94 percent under customs duty exemption.

Table 9.5: Effects of Investment Incentives on the Rate of Return and METR, 1987

	Rate of Return		METR	
	Debt/Equity=0	Debt/Equity=1	Debt/Equity=0	Debt/Equity=1
Base Case	3.9	3.4	-	-
Customs Duty Exemption	7.4	6.9	89.74	102.94
Low Interest Credit	4.1	4.8	5.13	41.18
Resource Utilization Support Fund	4.7	4.2	20.51	23.53
Postponement of the VAT	4.6	4.1	17.95	20.59
Accelerated Depreciation	4.2	3.6	7.69	5.88
Investment Allowance				
30 percent	4.2	3.6	7.69	5.88
100 percent	4.9	4.2	25.64	23.53
Tax, Duty, and Charge Exemption	3.9	3.5	0.00	2.94
Cross-Subsidization Scheme	3.9	3.4	0.00	0.00
Total Effect of All Incentives	**11.2**	**15.1**	**187.18**	**344.12**

Source: Author's calculations.

Table 9.6: Sectoral Classification of Investment Incentive Certificates, 1987

	Number of Certificates 1987	Fixed Investment 1987 (Million TL)	Fixed Investment 1987 (Million $)	Employment 1987 (Person)
Agriculture				
Vegetables	18	14,543	17.00	373
Animal Husbandry	167	191,016	223.23	3,750
Aquacultural Products	14	7,418	8.67	352
Forestry	3	3,699	4.32	6
Mining	160	270,763	316.43	10,440
Manufacturing				
Food & Beverages	218	226,867	265.13	8,763
Textiles & Clothing	370	1,051,560	1,228.90	22,214
Forestry Products	62	39,767	46.47	2,231
Paper	14	31,534	36.85	633
Leather & Leather Products	60	102,196	119.43	3,522
Rubber	41	98,297	114.87	1,622
Chemicals	55	278,514	325.48	2,842
Glassware	19	55,070	64.36	1,257
Iron & Steel	26	47,303	55.28	1,475
Non-ferrous Metals	16	27,408	32.03	829
Vehicles	65	733,631	857.36	2,538
Metallic Goods	68	131,130	153.24	5,164
Measuring Devices	18	25,172	29.42	1,138
Machinery	35	28,028	32.75	1,801
Electrical Machinery	20	13,177	15.40	648
Electronics	19	203,463	237.78	1,140
Cement	130	600,064	701.26	5,811
Clay & Cement Products	161	159,592	186.51	7,754
Construction	97	95,552	111.67	13,010
Ceramics	6	52,217	61.02	416
Others	53	64,557	75.44	1,583
Energy				
Energy	15	598,186	699.07	4,913
Services				
Transportation	285	1,705,998	1,993.71	20,534
Tourism	288	4,016,737	4,694.15	22,522
Trade	90	637,051	744.49	5,546
Education	25	31,176	36.43	1,652
Health	46	86,382	100.95	2,271
Others	164	260,056	303.91	3,249
Total	**2,828**	**11,888,124**	**13,893.03**	**161,999**

Source: Undersecretariat of Treasury (1999)

Table 9.7: Gross Fixed Investment and Investment Incentive Certificates by Sectors (Current Prices)

	Private Sector Gross Fixed Investment (1987, billion TL)	Investment Incentive Certificates (1987, billion TL)	Share of IIC in Private Gross Fixed Investment (%)	Maximum Value of Subsidy (1987, billion TL)	Subsidy Rate 1987	Private Sector Gross Fixed Investment (1999, billion TL)	Investment Incentive Certificates (1999, billion TL)	Share of IIC in Gross Fixed Investment (%)	Maximum Value of Subsidy (1999, billion TL)	Subsidy Rate 1999
Agriculture	619.0	216.7	35.0	19.3	3.12	493,727.0	94,589.0	19.2	4,965.9	1.01
Mining	142.5	270.8	189.9	12.7	8.90	192,978.0	55,121.0	28.6	2,893.9	1.50
Manufacturing	2,778.3	4,065.1	146.3	247.3	8.90	2,686,859.0	2,025,775.0	75.4	106,353.2	3.96
Manufacture of food, beverages, and tobacco	266.1	226.9	85.2	20.2	7.59	263,005.7	176,703.0	67.2	9,276.9	3.53
Textiles and Clothing	681.0	1,051.6	154.4	60.6	8.90	754,543.7	211,450.0	28.0	11,101.1	1.47
Leather and Leather Products	28.3	102.2	360.7	2.5	8.90	18,625.6	4,054.0	21.8	212.8	1.14
Manufacture of wood and wood products, including furniture	28.2	39.8	141.0	2.5	8.90	33,629.5	65,511.0	194.8	1,765.6	5.25
Manufacture of paper, paper products, printing, and publishing	139.9	31.5	22.5	2.8	2.01	93,219.5	98,291.0	105.4	4,894.0	5.25
Chemicals, Petro Chemicals, and Petroleum Products	248.3	278.5	112.2	22.1	8.90	252,096.6	179,421.0	71.2	9,419.6	3.74
Rubber and Plastics	87.0	98.3	112.9	7.7	8.90	168,975.5	61,328.0	36.3	3,219.7	1.91
Manufacture of non-metallic mineral products, excluding products of petroleum and coal	473.0	962.5	203.5	42.1	8.90	304,983.0	356,044.0	116.7	16,011.6	5.25
Basic metal industries	159.6	74.7	46.8	6.6	4.17	164,262.3	88,547.0	53.9	4,648.7	2.83
Fabricated Metal Products	140.5	131.1	93.3	11.7	8.31	92,311.2	182,772.0	198.0	4,846.3	5.25
Machinery excluding electrical	121.8	28.0	23.0	2.5	2.05	97,084.7	281,838.0	290.3	5,096.9	5.25
Electrical Machinery	149.8	216.6	144.6	13.3	8.90	111,666.8	83,621.0	74.9	4,390.1	3.93
Transport Equipment	236.9	733.6	309.6	21.1	8.90	296,530.8	144,523.0	48.7	7,587.5	2.56
Other Manufacturing	17.8	89.7	504.2	1.6	8.90	35,924.0	91,672.0	255.2	1,886.0	5.25
Energy	71.3	598.2	839.3	6.3	8.90	324,027.0	202,100.0	62.4	10,610.3	3.27
Services	7,399.8	6,737.4	91.0	599.6	8.10	9,635,589.0	2,286,397.0	23.7	120,035.8	1.25
Total	**11,010.9**	**11,888.1**	**108.0**	**1,102.6**	**7.77**	**13,333,180.0**	**4,663,982.0**	**35.0**	**329,216.0**	**1.67**

Source: "Annual Program," State Planning Organization, various issues.

Table 9.6 shows sectoral classification of investment incentives issued by the Treasury Undersecretariat during 1987. The table reveals that the sectors that were granted most of the investment incentives were the tourism sector, with a share of 33.8 percent, the transportation sector, with a share of 14.4 percent, the textiles and clothing sector, with a share of 8.8 percent, and vehicles, with a share of 6.2 percent. We assume that 50 percent of all investments are all equity debt financed and 50 percent half equity-half debt financed. The average subsidy rate is then calculated from Table 9.5 as 8.9 percent. Table 9.3 shows the gross fixed investment expenditures of the private sector during 1987. From the table it follows that during 1987 services, textiles and clothing, agriculture, soil products, and food sectors had the highest shares in total private sector fixed investment expenditures. From the third column of Table 9.7, showing the shares of IIC in gross fixed investment expenditures of the private sector, it follows that IIC has fallen short of the actual investment expenditures in some of the sectors. In those cases, we have multiplied the subsidy rate of 8.9 percent with the IIC value. Whenever the share was greater than unity, we multiplied the subsidy rate of 8.9 percent with the fixed investment expenditure value of the private sector. The average subsidy rate for the sector is then obtained by dividing the subsidy thus obtained by the value of investment expenditures in that sector. Weighting the sectoral subsidy rates by the shares of actual sectoral investment expenditures in total investment expenditures we obtained an average subsidy rate of 7.77 percent for the economy.

4. Profit Margins and Concentration Ratios

When discussing competitiveness in Chapter 1 the concept was narrowed to countries' ability to sell their products in world markets and competitiveness was expressed quantitatively by the real exchange rate, given by:

$$\frac{Ep^*}{p} = \frac{C^* E (1 + \lambda^*)}{C (1 + \lambda)}$$

where $C = (w / (y/L))$ denotes the unit labor cost in the home country expressed in domestic currency units, $C^* = (w^* / (y^*/L^*))$ the unit labor cost in the foreign country expressed in foreign currency units, λ the profit margin in the home country, λ^* the profit margin in the rest of the world and E the exchange rate.

Concentrating on the profit margin we use the relation:

$$\lambda = \frac{(Value\ Added - Labor\ Cost)}{Labor\ Cost}$$

for the determination of the profit margin. In the empirical determination of the profit margin in Turkey, we use the data obtained from the "Annual Manufacturing Industry Statistics" of the State Institute of Statistics for the period 1980–97. As the benchmark, country we consider Belgium, which is an open small economy. For Belgium, we use the OECD STAN Database.

Table 9.8: Average Profit Margins in Turkey and Belgium, 1992-94

			Turkey	Belgium
31		Food & Beverages & Tobacco		
	311.2	Food	323.69	173.36
	313	Beverage Industries	731.53	89.18
	314	Tobacco	313.74	76.98
32		Textiles, Apparel & Leather		
	321	Textiles	341.04	68.04
	322	Apparel, except Footwear	469.86	44.06
	323	Leather and Products of Leather, except Footwear	341.69	-29.25
	324	Footwear	217.33	-61.71
33		Wood Products		
	331	Wood and Wood Cork Products, except Furniture	203.26	-28.79
	332	Furniture and Fixture	404.47	202.88
34		Paper & Paper Products		
	341	Paper and Paper Products	234.17	35.45
	342	Printing and Publishing	620.60	31.21
35		Chemical Products		
	351	Industrial Chemicals	375.99	45.93
	352	Other Chemical Products	527.76	15.49
	3522	Manufacture of Drugs and Medicines	499.49	15.49
	352X	Chemical Products. Nec	558.24	15.49
	353	Petroleum Refineries	4,440.20	79.05
	354	Misc. Products of Petroleum and Coal	577.34	119.37
	355	Rubber Products	322.60	42.87
	356	Plastic Products	493.54	153.00
36		Non-Metallic Minerals		
	361	Pottery, China and Earthenwear	544.21	34.51
	362	Glass and Glass Products	310.10	67.49
	369	Other Non-Metallic Mineral Products	471.20	35.25
37		Basic Metals		
	371	Iron and Steel Basic Industry	245.21	26.15
	372	Non-Ferrous Metal Basic Industries	220.90	5.89
38		Fabricated Metal		
	381	Fabricated Metal Products	360.36	25.15
	382	Machinery except Electrical	352.96	101.78
	383	Electrical Machinery	395.27	22.52
	384	Transport Equipment	305.75	13.54
	385	Professional, Scientific Measuring, & Controlling Equipment	415.69	63.42
39		Other Manufacturing		
	39	Other Manufacturing Industries	327.46	157.42
3		Manufacturing Industry	416.51	57.33

Source: Author's Calculations.

Table 9.8 shows the profit margins for 3-digit ISIC sectors for Turkey and Belgium. The table reveals that the profit margins in Turkey are much higher than the profit margins in Belgium. Except for the sectors of footwear, wood and wood cork products, and leather and leather products, where the Belgium's compensation of employees exceeds the value added in the sector, the profit margins in all other sectors in Turkey exceed those in Belgium. The average profit margin in Turkey relative to that in Belgium, $[(1+\lambda)/(1+\lambda')]$, is highest in the sectors of petroleum refineries (ISIC 353), non-ferrous metal basic industries (ISIC 372), and other chemical products (ISIC 352). On the other, hand the lowest average profit margins in Turkey relative to those in Belgium, $[(1+\lambda)/(1+\lambda')]$, occur in the sectors of food (ISIC 311+312), furniture and fixtures (ISIC 332), and other manufacturing industries (ISIC 39). Figure 9.1 plots the average value of the profit margin for the manufacturing industry over the period 1980-1996. The result is striking, as the average profit margin in Turkey is much higher than the profit margin in Belgium over the period 1980-1996. The results indicate the lack of competition in the Turkish manufacturing sector.

To emphasize the argument about the lack of competition in the Turkish manufacturing sector, we consider in Table 9.9 the 4-firm concentration ratios in the manufacturing sector. The table reveals that the concentration ratios are relatively high and that the most concentrated sectors are petroleum refineries (ISIC 353), rubber products (ISIC 355), and tobacco (ISIC 314). On the other hand, the most competitive sectors are apparel (ISIC 322), textiles (ISIC 321), and fabricated metal products (ISIC 381).

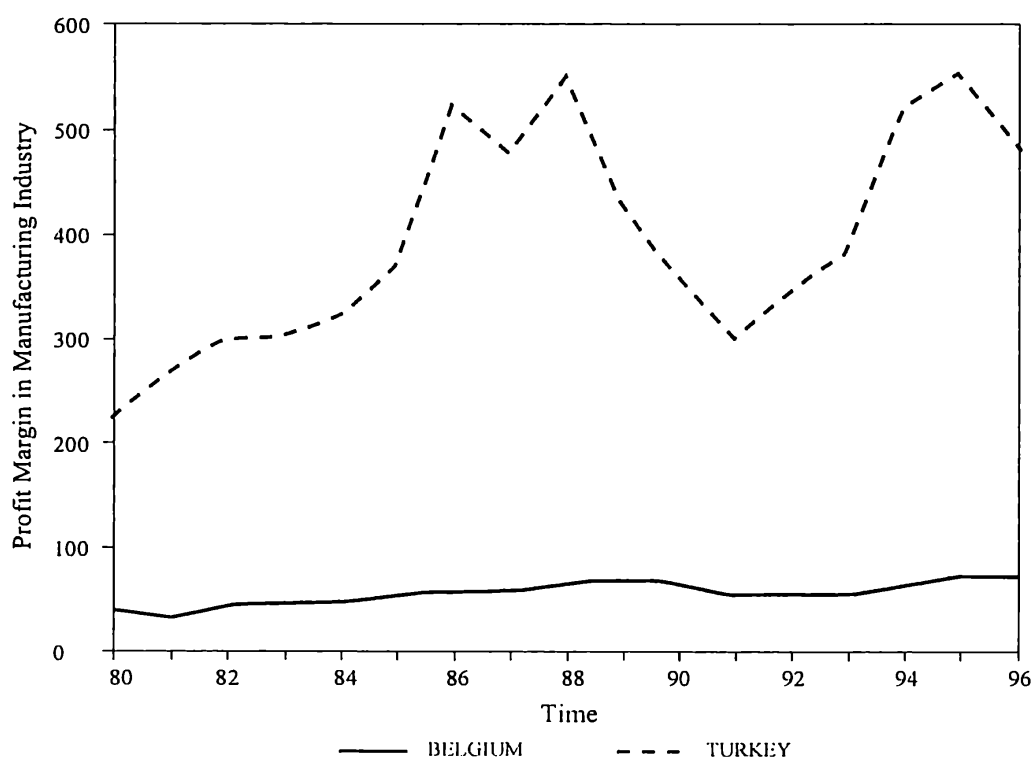## Figure 9.1: Profit Margin in Manufacturing Industry

Table 9.9: Concentration of Domestic Activity (4-firm concentration ratio)

		1990	1991	1992	1993	1994	1995	1996
31	Food Beverages ,& Tobacco							
	311.2 Food	31.52	30.96	30.66	31.53	34.83	31.40	31.52
	313 Beverage Industries	33.29	33.96	31.87	31.63	32.84	33.84	37.23
	314 Tobacco	57.97	63.46	65.51	52.71	63.36	69.22	60.94
32	Textiles, Apparel & Leather							
	321 Textiles	8.88	8.67	7.24	8.69	7.72	7.27	7.47
	322 Apparel, except Footwear	5.74	5.57	5.06	6.17	6.33	5.32	6.48
	323 Leather and Products of Leather, except Footwear	24.76	26.71	25.41	26.62	30.48	20.94	20.81
	324 Footwear	37.60	38.57	32.77	35.94	36.40	38.45	34.72
33	Wood Products							
	331 Wood and Wood Cork Products, except Furniture	18.96	19.97	22.63	22.75	26.84	32.65	32.33
	332 Furniture and Fixture	49.83	49.32	38.52	38.10	41.58	40.65	39.69
34	Paper, & Paper Products							
	341 Paper and Paper Products	25.21	26.89	24.83	22.84	21.68	24.47	21.61
	342 Printing and Publishing	41.85	53.07	55.02	68.19	63.17	59.44	57.36
35	Chemical Products							
	351 Industrial Chemicals	53.53	52.48	48.44	46.17	58.33	61.29	52.49
	352 Other Chemical Products	20.10	22.80	23.62	22.49	22.36	20.57	18.35
	353 Petroleum Refineries	97.43	97.93	98.58	98.62	98.86	98.11	98.00
	354 Misc. Products of Petroleum and Coal	84.32	77.32	58.97	68.44	64.12	62.69	63.36
	355 Rubber Products	68.55	74.12	70.94	70.36	73.34	75.68	75.49
	356 Plastic Products	22.15	20.19	19.62	20.45	19.26	21.75	18.97
36	Non-Metallic Minerals							
	361 Pottery, China, and Earthenwear	64.23	61.82	58.71	53.44	57.50	61.04	59.52
	362 Glass and Glass Products	49.61	46.82	55.56	57.93	56.86	57.54	56.16
	369 Other Non-Metallic Mineral Products	20.39	20.75	18.38	18.43	20.55	19.38	18.59
37	Basic Metals							
	371 Iron and Steel Basic Industry	38.77	36.36	35.08	31.35	31.72	28.35	34.35
	372 Non-Ferrous Metal Basic Industries	53.02	46.83	42.97	39.45	46.39	43.99	45.86
38	Fabricated Metal							
	381 Fabricated Metal Products	16.19	19.35	21.13	18.35	16.11	17.64	16.42
	382 Machinery except Electrical	43.22	47.24	46.21	44.99	43.46	43.23	39.92
	383 Electrical Machinery	31.48	33.50	27.19	30.28	26.71	21.32	25.06
	384 Transport Equipment	46.26	46.14	47.77	50.95	46.35	40.78	35.87
	385 Professional, Scientific Measuring, and Controlling Equipment	41.25	39.51	56.12	51.85	56.84	55.92	57.54
39	Other Manufacturing							
	39 Other manufacturing industries	32.43	27.40	30.10	29.53	32.86	28.06	26.63

Source: State Institute of Statistics, (2000).

5. Conclusion

Consideration of the investment incentive system and corporate tax structure reveals that Turkey has used the incentive system as one of the main tools of industrial policy. The purpose of the scheme was to increase investment and overcome barriers to entry into industry imposed by capital market imperfections. But investment incentives in Turkey have also been a barrier to competition. Through the incentive system, established firms obtained cost advantages which helped them to consolidate their market position. Competing with scarce fiscal resources, entrants have been at a disadvantage relative to well-informed incumbents. The credit incentives, that were supposed to promote entry have often turned into instruments that reinforce the position of large incumbents. Furthermore, with its large share in the banking system the government has also directly controlled the allocation of credit, and credit from public banks has often been extended on the basis of political considerations. It is also emphasized that established firms benefit from investment incentive schemes, such as investment allowances, while the new entrants do not, since the latter, in order to benefit from investment allowances have to first show positive profits in their income statements. Furthermore, the Undersecretariat for Treasury asks the firms applying for IIC to provide all financial information about the project. Firms in the informal sector prefer not to make use of any investment incentives rather than provide the required information to the Undersecretariat. Finally, it should be emphasised that SMEs in particular finance a large part of their investment expenditures from their own sources. Use of bank credit is rather limited for investment purposes.

The investment incentive scheme has been used at a time when there was no specific competition legislation or competition policy enforced in Turkey. To promote competition within the country Turkey eliminated quantitative restrictions in foreign trade and substantially decreased the levels of nominal and effective protection rates during the 1980s. With the formation of the customs union with the EU, all tariff and non-tariff barriers on imports of industrial commodities from EU members have been completely eliminated. On the export side, Turkey has used various export incentive measures during 1980s. Lately, the nominal and effective subsidy rates have been reduced substantially. The reduction of nominal and effective protection and subsidy rates, however, was not sufficient to ensure proper functioning of the markets. During the 1950s a similar consideration in Europe led to the adoption of competition policies, the objective of which was to ensure effective competition, to allocate resources efficiently, and to create the best possible climate for fostering innovation and technical progress. In June 1989, Turkey adopted the law "On the Prevention of Unfair Competition in Importation" containing both antidumping and antisubsidy provisions. Turkey adopted its competition policy during

December 1994 with the "Law on the Protection of Competition". The key provisions of competition law are based on EU competition law: agreements, decisions and concerted practices in constraint of competition, abuse of dominant position, and mergers and acquisitions. The statute contains not only rules concerning forbidden practices and provisions against the abuse of a dominant market position, but also the regulations of acquisitions and mergers. The Competition Authority, responsible for the implementation and enforcement of the prohibitions set out in the law, started operating in October 1997. Turkey's Competition Board has been granted substantial powers, including opening investigations and imposing penalties. So far, the Competition Board has granted block exemptions for certain categories of agreements and published communiques on mergers and acquisitions. Actions against restrictive business practices have just begun.

As a result of the policies pursued by Turkey, there was a lack of competition in the country, as revealed by the high profit margins and concentration ratios. Another factor affecting the conditions of competition in the country has been the public enterprise policy pursued by the government. This policy goes back to the 1930s. At that time the government had formulated an ideological position called 'etatism,' defined as intervention by the state directing industrial activity in the interest of national development. During the 1930s etatist policies were implemented within the frameworks of five-year plans, which assigned a leading role to the public sector in saving generation and in carrying out key entrepreneurial functions in industrial development. As a result of the etatist and import-substitution policies followed until the end of the 1970s, the share of state-owned enterprises in total value added amounted to about 11.5 percent of the economy in 1985, and 10.6 percent in 1990. In the manufacturing sector, the state-owned enterprises were heavily concentrated on basic metals, chemicals, petrochemicals, fertilizers, newsprint, paper, oil refineries, cement, and textile production. Table 9.10 shows the public sector's share in value added. The table reveals that by 1997, the public sector's share is highest in the sectors of petroleum refineries, tobacco, industrial chemicals, iron and steel basic industries, and non-ferrous metal basic industries. Since 1983 privatization has become a prominent part of the Turkish structural adjustment program. But because of various difficulties privatization could not gain momentum until recently. In sectors where state economic enterprises are operating, the concentration ratios turn out to be high, as those enterprises are themselves very large.

The above considerations reveal that, with termination of the generous investment incentive schemes, privatization, and effective implementation of competition policies, concentration ratios together with the profit margins will decline. As a result, the competitiveness of Turkish industries will increase.

Table 9.10: Share of Public Sector in Value Added

		1994	1995	1996	1997
31	Food Beverages & Tobacco				
311	Food Manufacturing	22.77	12.61	11.05	5.71
312	Manufacture of food products not elsewhere classified	11.88	14.17	12.42	15.69
313	Beverage Industries	34.61	29.63	12.91	25.19
314	Tobacco	43.82	57.04	43.91	47.49
32	Textiles, Apparel & Leather				
321	Textiles	.3.49	2.95	5.39	2.97
322	Apparel, except Footwear	2.35	2.11	0.15	0.71
323	Leather and Leather Products except Footwear	10.81	8.99	0.00	0.00
324	Footwear	14.46	9.86	0.00	14.41
33	Wood Products				
331	Wood and Wood Cork Products, except Furniture	19.66	9.10	9.49	6.59
332	Furniture and Fixture	0.09	0.01	0.02	0.07
34	Paper, Paper Products				
341	Paper and Paper Products	22.15	21.92	19.51	11.26
342	Printing and Publishing	5.96	7.36	5.01	8.11
35	Chemical Products				
351	Industrial Chemicals	46.83	54.10	45.97	44.04
352	Other Chemical Products	2.03	1.41	2.15	2.05
353	Petroleum Refineries	100.00	100.00	100.00	100.00
354	Misc. Products of Petroleum and Coal	1.83	7.30		2.45
355	Rubber Products	1.42	1.28	1.14	1.56
356	Plastic Products	3.40	1.66	6.89	0.00
36	Non-Metallic Minerals				
361	Pottery, China, and Earthenwear	5.54	5.54	3.32	4.15
362	Glass and Glass Products	0.00	0.00	0.00	0.00
369	Other Non-Metallic Mineral Products	6.65	5.06	4.24	1.86
37	Basic Metals				
371	Iron and Steel Basic Industry	37.29	26.77	62.63	39.45
372	Non-Ferrous Metal Basic Industries	49.14	37.46	29.22	37.14
38	Fabricated Metal				
381	Fabricated Metal Products	6.00	4.04	5.19	3.71
382	Machinery except Electrical	6.34	6.68	7.55	5.69
383	Electrical Machinery	2.70	2.61	2.49	1.88
384	Transport Equipment	6.11	4.64	3.57	4.91
385	Professional, Scientific Measuring and Controlling Equipment	7.00	4.31	4.32	2.94
3	Other Manufacturing				
39	Other manufacturing industries	8.01	5.20	6.07	5.22
Manufacturing Sector		24.23	23.10	22.63	22.79

Source: State Institute of Statistics, (2000).