

AN EVALUATION OF THE POST - 1980
EXPORT PERFORMANCE OF
THE TURKISH MANUFACTURING INDUSTRY

by

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FOREWORD

The stabilization measures of January 24 are usually taken to mark the onset of a bodily shift from the interventionist import substituting strategy of the past based on internal demand to a liberal export oriented strategy characterized by greater reliance on market forces and external demand in Turkish industrialization history. While the most favorably reviewed result of the stabilization policies implemented for five and a half years since 1980 is the success attained on the export front, considerable controversy reveals over the sources of the export expansion and its sustainability in the future.

The present study attempts to contribute to the debate by inquiring into the sources and the nature of export growth in the post 1980 period. The first part of the study reviews the contribution of trade to growth and development in a developing country and points to the importance of the transformation of the structure of production in accordance with the opportunities of trade. Part II briefly examines the evidence for export-led growth in the Turkish economy in 1980's on the basis of conventional indicators which characterize on export oriented growth strategy. It attempts to identify the leading export sectors under the new strategy and to assess the extent to which export growth is associated with a restructuring of the manufacturing sector in which

export growth is concentrated. The export orientation attained by various subsectors of the manufacturing industry is also investigated in this part. Part III concentrates on the sources of export expansion, specifically it examines the competitive sectors' post experience with import substitution and the extent to which the upsurge in exports originate in output expansion and the diversion of output from domestic to foreign demand by analyzing the stocks of pre-1980 period. Finally, the major source of export expansion, promotional measures and the responsiveness of the various subsectors of the manufacturing industry to these measures will be investigated.

A B S T R A C T

This study tries to evaluate the post-1980 export performance of the Turkish manufacturing industry. Our results suggest that while the Turkish economy has exhibited a rather remarkable export growth recently led by the growth of manufactured exports, the change from the inward looking policies of the past to the outward-looking policies after 1980s had no significant effect on the structure of manufacturing exports prevailing in the 1970s. It is observed that Turkish manufacturing sector has attained an overall outward orientation and this orientation is closely associated with the past experience with IS, accumulated stocks of pre-1980 period and the export promotional measures.

Ö Z E T

Bu çalışmada Türk imalat sanayiinin 1980 sonrası ihracat başarımı değerlendirilmeye çalışılmıştır. Bulgularımız Türkiye ekonomisinin, imalat sanayi ihracatı artışından kaynaklanan dikkat çekici bir ihracat artışı gösterdiğini, fakat geçmişin içe dönük politikalarından 1980'lerin dışa dönük politikalarına geçişin, 1970'lerden beri süregelen imalat sanayi ihracat yapısında belirli bir etki yaratmadığını göstermektedir. Türk imalat sanayinin bütünsel bir dışa yönelmeye eriştiği ve bu yönelmenin geçmiş ithal ikamesi tecrübesi, 1980 öncesi stok birikimi ve ihracatı teşvik tedbirleri ile yakından ilişkili olduğu gözlemlenmiştir.

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I. THE RELATIONSHIP BETWEEN TRADE AND GROWTH: A PREVIEW

Sustained economic growth requires a transformation of the structure of production that is compatible with both the evolution of domestic demand and the opportunities for international trade. The contribution of international trade to growth and development in a developing country may be summarized in the following arguments(1).

First, trade permits the economy to specialize, on the basis of its relatively abundant resources, while importing goods and services that would be very expensive or impossible to produce locally. Thus, organizing its productive resources along the principle of comparative advantage, the country can potentially obtain through trade more of each type of output than it could produce for itself. Second, it enables the country to benefit from the advantages of large scale production. By building its manufacturing industries partly around exports, it can surpass the limitations of its home-market. Third, it enlarges the opportunities for learning and productive division of labor(2). Fourth, it provides,

(1) D.B.Keesing, Trade Policy for Developing Countries, World Bank Staff Working Paper, No: 353, Washington: 1979, pp. 2-5.

(2) D.B.Keesing, "Outward Looking Policies and Economic Development," The Economic Journal, Vol.77, No.306, p. 306.

through imports, a supply of capital equipment, technical assistance, raw materials and other key inputs essential for industrial development together with new products, new technology, new standards and ideas and assistance in mastering them. Finally, trade is regarded as a source of stimulus and the pressures of international competition can be a major source of motivation for actually mastering the techniques and meeting the standards of foreign competitors. Competition in both exports and imports helps to drive the local firms to greater efforts and higher performance standards.

The above summarized benefits of outward-looking development over inward-looking development have been the basic considerations of the proponents of international trade in the task of documenting the successes and failures of trade policies of less developed countries. However, it is accepted by both sides of the debate that the process of import substitution, fostered deliberately or not, will occur whether policies are inward or outward-looking(3). There has also emerged a consensus in the literature on the nature of the bottlenecks encountered by import substituting countries in general(4). Moreover, most analysts also concede that

(3) Ibid., p.303.

(4) These bottlenecks are summarized in Taner Berksoy, Azge-
lişmiş Ülkelerde İhracata Yönelik Sanayileşme, İstanbul:
Belge Yayınları: 1982, p.217. One of such bottlenecks is
that an industrial structure producing the goods that
will substitute the restricted imports not the products
based on the economy's needs is established. Thus, the
structure is not formed by the economy's natural condi-
tions and the sectors do not have the backward and for-
ward linkages which would take place. Second, during the
first and the easy phase of import substitution process,
which is characterized by the restriction of imports of
consumption goods, the domestic producers produce with no
regard to cost considerations. Third, the easy phase of
IS results in a more import dependent and foreign exchange
spending structure through the imported inputs required
for the domestic production of these goods. Fourth, the

except for the nature of the government intervention in terms of protectionary or promotional measures, the two industrialization models are not alternatives, but sequential phases of development. The succession of trade policies in a LDC development model has been elaborated by Anne Krueger in her "phases" of policy approach(5). Of the five phases, Phases I

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- (.) conditions created under IS leads to a structure in which cost minimizing and competitive aspects such as efficiency, productivity, product differentiation and technological development can be neglected. Finally, Industries are set up in an environment not conducive to competition and not productive. Thus, the protective measures of the IS strategy creates a bias against exports through distortions in resource allocation.
- (5) Keesing in Trade Policy for Developing Countries, quotes Bruno's summary of Krueger's "phases" approach. The main points of this summary are: In Phase I, significant quantitative restrictions (QR) in a rather "crude" and "unsophisticated" manner is imposed on imports. In Phase II, QR still reign but the control mechanism becomes very complex and differentiated. Even there are export subsidies, the effective exchange rate on exports is always lower than on imports, which are highly protected. In Phase III, there are tidying up operations, rationalization of import tariffs and replacement of some tariff subsidies by parity changes. It may take the form of devaluation-cum-liberalization package accompanied by external grants to facilitate expansion of imports. Phase IV is the successful culmination of Phase III liberalization efforts and, in this phase, incentives are highly uniform, and the effective exchange rate on exports is equated to that on imports. In the final phase, Phase V, there is full convertibility on current account and quantitative restrictions are employed to regulate the balance of payments. The exchange rate is pegged, or else it is flexible. See M. Bruno, "Short-Term Policy Trade - offs Under Different Phases of Economic Development" paper presented to symposium on "Past and Present of the World Economic Order", Stockholm, August 25-27, 1978, pp.6-7. See also A.O. Krueger, Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences, NBER, New York: 1978, pp.22-28.

and II generally signify "inward-looking" or "import-substituting" industrialization, while Phases IV and V signify "outward-looking" or "export-oriented" industrialization.

The transformation of the structure of production in a way compatible with the opportunities for international trade involves a substantial rise in the share of industry and a shift away from dependence on primary exports toward manufactured goods as a source of earning foreign exchange. success in developing manufacturing exports is critical to this process, as Chenery's 1980 sources of growth study based on a spectrum of countries varying from inward to outward looking has demonstrated(6).

The hypothesis that "a rapid growth of exports accelerates the economy's growth" has been tested by a number of development economists and a high correlation between the growth rate of exports and GNP has been obtained(7). Despite the controversy over methodological issues in the literature and the versatility of the indicators used (growth of exports, incremental export-output ratios vs. growth of output, growth of per capita GNP, growth of output net of exports), various studies have pointed to a strong correlation between growth and export performance for developing countries which have established an industrial base. The cross-section study of a partly overlapping group of countries by Anne Krueger has shown that a ten percent in the growth of exports tends to

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- (6) H.B.Chenery, "Interactions Between Industrialization and Exports," American Economic Review, Vol.70, No.2, May 1980, p.281.
- (7) See, for example, M.Michaely, "Exports and Growth: An Empirical Investigation," Journal of Development Economics, Vol.4, No.1, March 1977, pp.49-54. B.Balassa, "Exports and Economic Growth: Further Evidence," Journal of Development Economics, Vol.5, No.2, June 1978, pp.181 - 189. A.O.Krueger, op.cit. P.S.Heller and R.C.Porter, "Exports and Growth: An Empirical Re-investigation," Journal of Development Economics, Vol.5, No.2, June 1978, pp.191-193.

raise the growth rate of GNP by one percentage point on average(8). Moreover, a study by Feder, indicates that the marginal factor productivities are higher in the export sector deriving from the inter-sectoral externalities existing in the exporting sector and growth can be generated by reallocation of existing resources away from the less efficient non-export sector to the higher productivity export sector(9).

Export-oriented policies are also argued to lead to a better growth performance than import substituting policies since these policies provide similar incentives to sales in domestic and foreign markets, allow a more efficient pattern of resource allocation on the basis of comparative advantage sectors, permit the exploitation of economies of scale and generate technological improvements in response to competition and contribute to increased employment.

Contemporary evidence on the successful growth performance of outward-looking policies and the adverse effects on growth of continued emphasis on import-substitution has lead the IS countries to pursue outward-looking strategies after 1960's. Manufactured exports with their built-in potential for the continuing expansion of the economy has been the major focus of policy makers. Manufactured exports of the developing countries increased at rates around 15 percent per annum from 1960 to 1976(10). Nevertheless, their share in the consumption of manufactures in developed countries is about 1 percent(11).

(8) A.O.Krueger, Ibid.

(9) G.Feder, "On Exports and Economic Growth," Journal of Development Economics, Vol.12, 1982, pp.59-83.

(10) D.B.Keesing, World Trade and Output of Manufactures: Structural Trends and Developing Countries' Exports, World Bank Staff Working Paper, No.316, Washington: January 1979, p.6.

(11) Ibid, p.42.

Despite the fact of the new protectionism of the industrial countries there still remains a wide market to be exploited(12). The rest of this study will take up Turkey's effort in the 1980's to transform the structure of its production and exports in the direction of an export-oriented industrialization model to take advantage of this market.

(12) D.B.Keesing, Trade Policy for Developing Countries, p.36.

II. POST-1980 EXPORT PERFORMANCE OF THE TURKISH MANUFACTURING INDUSTRY: STRUCTURE AND CHARACTERISTICS

2.1. THE TURKISH ECONOMY EVIDENCE FOR THE EXPORT-LED GROWTH IN THE 1980s: A SUMMARY OF INDICATORS

Unlike most developing countries, Turkey had been able to postpone the effects of the oil crisis until 1977 by large scale short-term borrowing in the mid-seventies. The postponed effects of the crisis possibly interacting with problems of a more structural nature emerging under prolonged IS strategies with little export emphasis brought the economy to a standstill in 1978, leading to a severe stabilization program with strong overtones of a shift of industrial strategy in January 1980. The measures adopted in the January 24 stabilization program as it has come to be called were generally in line with those adopted by other less developed countries seeking an alternative to their traditional IS policies(13). Along with tight money policies adopted with a view to control mounting inflation through restricting domestic demand, an exchange rate policy based on maintaining a realistic exchange rate and various promotional measures to encourage exports constituted the core of the program. The adoption of these latter measures appeared to aim at restruc-

(13) H.Seyidođlu, Türkiye'de Sanayileşme ve Dış Ticaret Politikası, Ankara: Turhan Kitabevi, 1982, p.161.

turing the economy in the direction of an export-led growth path while getting rid of the anti-export bias of the previous strategy.

The first five years since the adoption of the new approach to trade policy has proved to a success in terms of the basic indicators that lead to an export-led growth(14). Table 2.1.1 presents the data on Turkish GDP, exports, share of exports in GDP, the incremental export-GDP ratio, and real GNP growth over a span of fifteen years.

TABLE 2.1.1. Share of Exports in GDP and Growth Rate of GNP (%)

	(1) GDP (Million TL)	(2) Export Value (Million TL)	(3) Exports/GDP	(4) Increments of X/GDP	(5) Real GNP Growth
1970	145,490.8	6,408	4.4	0.5	5.7
1971	185,133.3	9,090	4.9	0.5	10.2
1972	232,144.8	11,876	5.1	0.2	7.4
1973	295,801.4	18,037	6.1	1.0	5.4
1974	409,746.2	21,197	5.2	-0.9	7.3
1975	519,173.3	20,075	3.9	-1.3	7.9
1976	663,936.9	30,775	4.6	1.3	7.7
1977	862,967.8	31,338	3.6	-1.0	3.9
1978	1,274,780.7	55,358	4.3	0.6	3.0
1979	2,155,893.9	75,743	3.5	-0.8	-0.4
1980	4,327,983.9	221,498	5.4	1.9	-1.1
1981	6,513,878.1	530,715	8.2	2.8	4.1
1982	8,174,533.1	937,311	10.8	2.6	4.6
1983	11,467,864.4	1,298,945	11.3	0.5	3.2
1984	17,689,964.3	2,595,655	14.7	3.5	5.7

SOURCE: SIS

(14) G.Kazgan, Ekonomide Dışa Açık Büyüme, İstanbul: Altın Kitaplar, 1985, p.92.

In Table 2.1.1, columns three and four traces the evolution of the percentage share of exports in GDP since 1970. This indicator reflecting the foreign demand component of output has shown a substantial rise, from an average 5.1 percent in the first half of the 1970's and 4.0 percent in the second half of the decade, to 14.7 percent in 1984. The change evidently represents a radical shift in past tendencies and its significance may be better appreciated when one considers the fact that the shares of the components of GDP other than the services sector amounts to about 50 percent (Appendix A).

Data in the last two columns of Table 2.1.1 are presented with a view to examine the relationship between the incremental changes of export-GDP ratio and real GNP growth rate. No direct relationship between the two variables can be observed in the first ten years of the fifteen years under consideration. After 1981, however, especially in the last two years, a parallel change between the increments of exports-GDP ratio and GNP growth can be distinguished.

Another significant aspect of the new export-led industrialization along the experience of the newly industrializing countries is the growth in the share of manufacturing exports in total exports. The striking change in the structure of Turkish exports may be observed in column three in Table 2.1.2 which shows a remarkable upward shift in the share of manufacturing exports from an average of 30 percent in the 1970s to 72 percent in 1984.

The boom in manufacturing exports in the 1980's may be given the following interpretation. First, for an industrializing less developed country exports of manufactures is expected to expand pari-passu with the process of indus-

trialization(15). However, when an export-oriented strategy is pursued aggressively, manufacturing exports can be the motor force of growth as the experiences of South Korea, Taiwan and a number of other newly industrializing countries suggest (See Appendix B).

TABLE 2.1.2. Share of Manufacturing Exports in Total Exports

	(1) Exports (Million \$)	(2) Manufacturing Exports (Million \$)	(3) Manufacturing Exports/ Total Exports (%)	(4) Increments of Manufacturing Exports/ Total Exports
1970	589	100	17.0	-
1971	640	136	21.3	4.3
1972	835	243	29.1	7.8
1973	1,317	443	33.6	4.5
1974	1,532	601	39.2	5.6
1975	1,401	503	35.9	-3.3
1976	1,960	596	30.4	-5.5
1977	1,753	586	33.4	3.0
1978	2,288	622	27.2	-6.2
1979	2,261	785	34.7	7.5
1980	2,910	1,097	36.0	1.3
1981	4,703	2,290	48.7	12.7
1982	5,746	3,430	59.7	11.0
1983	5,728	3,658	63.9	4.7
1984	7,134	5,145	72.1	8.2

SOURCE: SIS

The significant rise in the ratio of exports to GDP as

(15) H.Ersel, A.Temel, "Türkiye'nin Dışsatım Başarımının Değerlendirilmesi Üzerine Bir Deneme," Toplum ve Bilim, No. 27, Güz 1984, p.110. Ersel and Temel have estimated that this ratio has increased by 2.378 percentage points per year on average in period 1970-1984.

well as the rapid increase in the share of manufactured exports in total exports raise the question of whether Turkey has embarked on a path of export-led growth led by manufactured exports in the 1980's. While the above indicators appear to suggest that this may be the case, it is early to say anything conclusive as the answer critically depends on the sustainability of the recent export growth. A further inquiry into the nature and the sources of that expansion in the parts to follow is expected to cast some light on this wave.

2.2. IDENTIFICATION OF THE LEADING EXPORT SECTORS OF MANUFACTURING INDUSTRY

The commodity composition of Turkish manufacturing Exports and the share in total manufacturing exports from 1980 to 1984 and in selected years before 1980 are shown in Table 2.1(16). The six leading commodity groups are then listed in Table 2.2 and the analysis that follows is based on these rankings.

It can be observed in Table 2.2.1, that agriculture based processed products and textiles have always been the two leading sectors over the past 13 years. The share of

(16) It should be noted that the Turkish classification of manufacturing -or industrial- exports differs from the classification used by the United Nations and other international organizations which define industrial production in terms of SITC categories 5-8 including chemical products, manufactured goods classified chiefly by material, machinery and transport equipment and miscellaneous manufactured articles. This generally accepted classification excludes agricultural based processed products, some of the primary products of textile industry such as synthetic and artificial yarns and processed petroleum products. According to this classification, product groups with low value added in the process of manufacturing is not classified together with the product groups with a complex manufacturing process. Thus, about half of Turkish industrial exports are not generally accepted as manufactured exports. T. Berksoy, op.cit., pp.46-48.

TABLE 2.2.1- Exports of Manufacturing Industry (000 Dollars) and Their Share in Total(%)

	1 9 7 1	1 9 7 4	1 9 7 8	1 9 7 9	1 9 8 0
Agriculture Based P.P.	60,200(40.2)	146,100(24.3)	110,203(17.7)	151,080(19.3)	209,424(20.0)
Processed Petroleum Products	2,700 (1.8)	85,900(14.3)	7 (0.0)	- (0.0)	38,513 (3.7)
Manufactured Products	86,800(57.9)	369,300(61.7)	11,053(82.3)	633,618(80.7)	799,449(76.3)
1- Cement Industry	8,800 (5.9)	8,000 (1.3)	40,474 (6.5)	44,892 (5.7)	39,585 (3.8)
2- Chemicals	9,100 (6.1)	29,300 (4.3)	23,684 (3.8)	23,456 (3.0)	75,990 (7.3)
3- Rubber and Plastics	900 (0.6)	5,200 (0.9)	2,363 (0.4)	3,373 (0.4)	15,889 (1.5)
4- Leather	10,600 (7.1)	72,300 (12.0)	40,127 (6.5)	43,632 (5.6)	49,510 (4.7)
5- Forestry Products	800 (0.5)	2,100 (0.3)	580 (0.1)	1,635 (0.2)	4,344 (0.4)
6- Textile	38,600(25.8)	149,400(24.8)	309,112(49.8)	377,630(48.1)	424,320(40.5)
7- Glass and Ceramics	3,000 (2.0)	12,900 (2.1)	30,121 (4.8)	37,078 (4.7)	35,928 (3.4)
8- Iron and Steel	2,300 (1.5)	19,300 (3.2)	21,160 (3.4)	31,086 (4.0)	33,931 (2.2)
9- Non-Ferrous Metals	4,000 (2.7)	34,000 (5.7)	11,548 (1.9)	14,572 (1.9)	18,327 (1.7)
10- Metal Goods	800 (0.5)	4,000 (0.7)	5,631 (0.9)	5,660 (0.7)	8,087 (0.8)
11- Machinery	1,900 (1.3)	12,100 (2.0)	12,330 (2.0)	12,445 (1.6)	21,680 (2.1)
12- Electrical Appliances	600 (0.4)	1,000 (0.2)	3,689 (0.6)	4,506 (0.6)	11,451 (1.1)
13- Motor Vehicles	1,500 (1.0)	6,000 (1.0)	6,075 (1.0)	26,600 (3.4)	50,282 (4.8)
14- Other	3,900 (2.6)	13,700 (2.3)	4,159 (0.7)	7,048 (0.9)	10,125 (1.0)
T O T A L	149,700	601,300	621,263	784,693	1,047,386

	1 9 8 1	1 9 8 2	1 9 8 3	1 9 8 4
Agriculture Based P.P.	411,666(18.0)	568,225(16.6)	669,731(18.4)	808,151(15.7)
Processed Petroleum Products	106,973 (4.7)	343,910(10.0)	232,434 (6.4)	408,735 (7.9)
Manufactured Products	1,771,482(77.4)	2,517,303(73.4)	2,735,150(75.2)	3,927,685(76.3)
1- Cement Industry	198,469 (8.7)	206,620 (6.0)	60,621 (1.7)	56,034 (1.1)
2- Chemicals	93,787 (4.1)	147,931 (4.3)	120,324 (3.3)	172,577 (3.4)
3- Rubber and Plastics	71,792 (3.1)	60,437 (1.8)	76,872 (2.1)	97,445 (1.9)
4- Leather	82,055 (3.6)	111,374 (3.2)	192,095 (5.3)	400,647 (7.8)
5- Forestry Products	19,660 (0.9)	33,376 (1.0)	14,760 (0.4)	23,719 (0.5)
6- Textile	802,813(35.1)	1,056,302(30.8)	1,299,098(35.7)	875,381(36.5)
7- Glass and Ceramics	102,125 (4.5)	103,748 (3.0)	108,182 (3.0)	145,988 (2.8)
8- Iron and Steel	100,169 (4.4)	362,204(10.6)	407,185(11.2)	576,403(11.2)
9- Non-Ferrous Metals	29,838 (1.3)	44,601 (1.3)	78,872 (2.2)	85,518 (1.7)
10- Metal Goods	20,245 (0.9)	27,250 (0.8)	18,448 (0.5)	16,328 (0.3)
11- Machinery	64,767 (2.8)	115,723 (3.4)	102,751 (2.8)	118,183 (2.3)
12- Electrical Appliances	26,145 (1.1)	75,190 (2.2)	68,955 (1.9)	99,562 (1.9)
13- Motor Vehicles	117,516 (5.1)	110,230 (3.2)	126,344 (3.5)	34,960 (2.6)
14- Other	42,101 (1.8)	62,309 (1.8)	60,643 (1.7)	124,941 (2.4)
T O T A L	2,290,121	3,429,438	3,637,315	6,144,612

TABLE 2.2.2- Leading Sectors of Turkish Industrial Exports According to Their Shares in Total

1971		1974		1978	
Agriculture Based P.P.	(40.2)	Textile	(24.8)	Textile	(49.8)
Textile	(25.8)	Agriculture Based P.P.	(24.3)	Agriculture Based P.P.	(17.7)
Leather	(7.1)	Processed Petroleum Pr.	(14.3)	Cement	(6.5)
Chemicals	(6.1)	Leather	(12.0)	Leather	(6.5)
Cement Industry	(5.9)	Non-ferrous Metals	(5.7)	Glass and Ceramics	(4.8)
Non-ferrous Metals	(2.7)	Chemicals	(4.9)	Chemicals	(3.8)
1979		1980		1981	
Textile	(48.1)	Textile	(40.5)	Textile	(35.1)
Agriculture Based P.P.	(19.3)	Agriculture Based P.P.	(20.0)	Agriculture Based P.P.	(18.0)
Cement	(5.7)	Chemicals	(7.3)	Cement	(8.7)
Leather	(5.6)	Motor Vehicles	(4.8)	Motor Vehicles	(5.1)
Glass and Ceramics	(5.1)	Leather	(4.7)	Processed Petroleum Pr.	(4.7)
Iron and Steel	(4.0)	Cement	(3.8)	Glass and Ceramics	(4.5)
1982		1983		1984	
Textile	(30.8)	Textile	(35.7)	Textile	(36.5)
Agriculture Based P.P.	(16.6)	Agriculture Based P.P.	(18.4)	Agriculture Based P.P.	(15.7)
Iron and Steel	(10.6)	Iron and Steel	(11.2)	Iron and Steel	(11.2)
Processed Petroleum Pr.	(10.0)	Processed Petroleum Pr.	(6.4)	Processed Petroleum Pr.	(7.9)
Cement	(6.0)	Leather	(5.3)	Leather	(7.8)
Chemicals	(4.3)	Motor Vehicles	(3.5)	Chemicals	(3.4)

TABLE 2.2.3- Sectoral Annual Increases of Manufacturing Exports

<u>Group</u>	<u>1963/67</u>	<u>1967/72</u>	<u>1972/77</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
A. Agriculture Based Processed Products	2.9	12.9	7.9	-25.4	37.3	38.6	93.1	38.7	17.9	20.7
B. Processed Petroleum Products	56.5	133.3	-100.0	-	-	-	117.8	221.5	-32.4	75.9
C. Manufactured Products										
1- Cement Industry	-100.0	-	-9.6	330.9	2.3	-11.8	401.4	4.1	-70.7	-7.6
2- Chemicals	15.5	32.4	26.2	-29.1	0	218.7	23.4	37.7	-18.7	43.4
3- Rubbers and Plastics ¹	-	-	-	-	42.7	371.1	351.8	-15.8	27.2	26.8
4- Leather	28.0	162.8	19.3	-22.8	10.0	13.5	65.7	35.7	72.4	108.6
5- Forestry Products	-1.8	27.7	-9.4	10.7	50.0	165.7	353.6	69.7	-55.8	60.7
6- Textile	-	57.6	37.1	18.9	22.3	12.4	89.2	31.6	23.0	44.4
7- Glass and Ceramics	-9.3	65.8	49.4	9.7	23.3	-3.1	184.3	1.5	4.3	34.9
8- Iron and Steel	47.2	34.4	14.4	47.2	47.6	9.2	195.2	261.5	12.4	41.6
9- Non-Ferrous Metals	29.3	-18.7	27.7	-42.4	25.0	25.8	62.8	49.5	76.8	8.4
10- Metal Goods				17.7	1.8	42.1	149.4	35.1	-32.6	-11.4
11- Machinery	50.5	84.7	28.0	38.2	0.8	75.0	198.6	78.5	-1.1	15.0
12- Electrical Appliances	-	74.2	28.0	22.0	0	154.2	128.3	487.6	-8.3	44.4
13- Motor Vehicles	24.5	86.7	102.2	-33.9	350.0	89.0	133.7	-6.3	14.6	6.8
14- Other	19.8	40.4	5.3	9.5	100.0	43.7	315.8	48.3	-2.7	107.4
T O T A L	3.7	26.5	19.3	6.1	26.2	33.4	118.7	49.7	6.1	41.4

SOURCE: Tüsiad yearbooks and TABLE 2.2.1.

¹No data for years 63-68.

agricultural processed products, 40.2 percent in 1971, has declined to 24.3 percent in 1974 and to 15.7 percent in 1984, has nevertheless remained as the second most important sector. The relative share of the textile industry exhibited a great jump in 1978, rising from 24.3 percent in 1974 to 49.8 percent and provided about 35.0 percent of manufacturing exports in the last five years. The persistently high shares of these two sectors, which together amounted to 66.0 percent in 1971, 60.5 percent in 1980 and 52.2 percent in 1984 indicates that there has been little change in the commodity concentration of manufacturing exports at this level of aggregation over time.

On the basis of Table 2.2.2, leather, cement, chemical and glass and ceramics sectors persistently appear among the leading six during the 13 years under consideration. Iron and steel exports which did not appear in the first ranks except in 1979, has recorded a significant rise in its share rising to the third leading position in 1982 and has maintained this share since then. Processed petroleum products is another sector which has increased and maintained its relative importance in the 1980's.

These observations suggest that there has been little change in the composition of manufacturing exports except for the addition of an intermediate goods sector, iron and steel to the first six leading sectors persistently comprising 80 - 85 percent of total manufacturing exports. As it has been noted above, the concentration of Turkish manufacturing exports, particularly two non-durable consumer groups has persisted over the past 13 years.

An examination of the growth rates of exports of various subsectors of the manufacturing industry reported in Table 2.2.3, indicates sustained annual growth in agriculture based processed products, textiles, leather, glass and ceramics, iron and steel and non-ferrous metal products

leaving out the crisis years of 1978 and 1979. The sectors which may be said to have experienced sustained growth are basically the ones constituting the leading sectors of the economy. Textile and agriculture based processed products, which have largely accounted for the growth of industrial exports also account for a significant share of manufactured output.

2.3. A COMPARISON OF THE STRUCTURE OF THE PRODUCTION AND THE EXPORTS OF THE MANUFACTURING INDUSTRY AND THE EVIDENCE FOR A RESTRUCTURING AFTER 1980s

The correspondance between the shares of the leading sectors in manufacturing exports and manufacturing output can be followed from Tables 2.2.1 and 2.3.1. No significant restructuring in the manufacturing sector exports and output appears to have taken place over the past five years. Agricultural processed products and textile industries are the leading two sectors and comprise a considerable portion of manufacturing output. However this share in manufacturing output is not as high as their share in exports. This structure of production exhibits a lower degree of concentration in the 1980's with the share of agriculture based processed products declining from 31.3 in 1971 to 20.5 percent 1982 and the share of textile industry dropping from 16.6 percent in 1971 to 12.8 percent in 1982. Although the degree of concentration in production has decreased over the past 13 years, the sectors dominating industrial production are the some ones as it is in exports.

The relationship between the relative shares of sectors in manufacturing exports and in manufacturing production as measured by Spearman's rank correlation coefficient indicate a positive but low correlation in the pre-1980 period. The correlation coefficients obtained are 0.200, 0.424, 0.244 and 0.250 for the years 1971,

BLE 2.3.1- Shares of Sectors in Production of Manufacturing Industry (%) and Their Annual Percentage Increases

Group	1971	1974	1978	1979	1980	1981	1982
Agriculture Based P.P.	31.3	25.3	22.4	14.6 (-2.4)	19.9(210.4)	21.4 (76.7)	20.5(40.1)
Processed Petroleum Products	10.3	14.4	8.9	9.7 (63.5)	14.6(243.2)	15.8 (79.5)	18.7(71.6)
Manufactured Products							
1- Cement Industry	2.3	2.3	3.7	3.6 (44.0)	4.4(184.4)	3.0 (13.2)	2.9(38.8)
2- Chemicals	6.3	6.7	8.7	11.3 (94.3)	10.6(111.6)	9.8 (54.6)	9.5(40.4)
3- Rubber and Plastics	2.6	2.6	3.5	3.9 (71.4)	3.3 (94.3)	3.1 (55.9)	3.2(49.0)
4- Leather	0.8	0.7	0.7	0.8 (74.3)	0.7 (88.5)	0.9(113.7)	0.8(33.0)
5- Forestry Products	1.3	1.2	1.6	1.6 (40.0)	1.3 (86.6)	1.2 (50.2)	1.1(37.9)
6- Textile	16.6	15.7	15.0	16.6 (65.9)	12.5 (71.5)	13.3 (77.0)	12.8(38.1)
7- Paper	3.5	3.0	3.2	3.2 (52.6)	3.1(121.2)	3.2 (73.5)	3.0(35.3)
8- Glass and Ceramics	1.6	1.6	1.5	1.7 (78.4)	1.1 (38.9)	2.1(236.4)	2.0(32.4)
9- Iron and Steel	6.9	7.9	8.2	8.6 (56.8)	8.0(112.8)	6.8 (39.8)	7.3(55.1)
10- Non-Ferrous Metals	1.6	2.0	1.9	2.7(118.2)	2.7(131.9)	2.5 (50.9)	2.1(20.9)
11- Metal Goods	4.2	3.0	4.1	4.2 (52.0)	3.5 (89.2)	3.0 (43.1)	2.9(40.2)
12- Machinery	4.0	4.4	5.6	5.5 (47.1)	4.6 (92.0)	5.1 (83.3)	4.7 (31.8)
13- Electrical Appliances	2.3	3.2	4.4	4.7 (59.2)	3.8 (82.1)	3.3 (44.8)	3.4 (50.0)
14- Motor Vehicles	4.1	5.7	6.2	6.9 (70.2)	5.6 (82.3)	5.2 (53.8)	4.7 (31.3)
15- Other	0.3	0.3	0.4	0.4 (54.2)	0.3 (53.0)	0.4(123.2)	0.4(49.6)
T O T A L	100.0	100.0	100.0	100.0 (49.9)	100.0(127.3)	100.0 (66.4)	100.0(44.4)

SOURCE: Table 2 in Appendix C (see footnotes)

1974, 1978 and 1979 respectively. However, the coefficients obtained for post -1980 being remarkably higher, 0.624, 0.580 and 0.737 for 1980, 1981 and 1982 respectively, suggest that the structure of manufacturing exports have come to conform more closely to the structure of output in this period. When the leather industry is omitted from computation in the pre -1980 period and the processed petroleum products omitted in 1978 and 1979 the correlations of pre-1980 period improve slightly to 0.286, 0.516, 0.500 and 0.477 for 1971, 1974, 1978 and 1979.

When the annual percentage increases of manufacturing exports and manufacturing production is examined, a direct relationship cannot be observed(17). A successful export sector is seen to attain an output growth either lower or greater than the manufacturing sector average. For example, the exports of textile industry grew at an average of 39 percent per annum during 1979-1982, while its output grew at an average of 64.0 which is less than the manufacturing sector's annual average growth rate, 74 percent in the same period. Exports of forestry products grew at a rate of 150, percent, whereas its production grew by 55 percent from 1979 to 1982.

The lack of correlation between the growth rates of manufacturing output and growth rates of manufacturing output by sectors have been computed from 1979 to 1982 by Spearman's rank correlation coefficients. The coefficients were found to be -0.235, -0.188, -0.268 and 0.328 for years 1979, 1980, 1981 and 1982 respectively, illustrating both the poor and the negative, except 1982, correlation.

(17) Since the data of production is in current values, the success of growth rates is interpreted relative to total output growth rate, which is considered as the average.

2.4. SOME CHARACTERISTICS OF THE LEADING EXPORT SECTORS OF MANUFACTURING INDUSTRY

It has been seen above that the sectoral composition of manufacturing exports corresponds to the pattern of specialization in the manufacturing sector. We shall next briefly take up the question of whether the pattern of specialization observed corresponds to Turkey's comparative advantages, since such conformity is said to be a major factor in reaping the benefits from international trade.

A study by Refik Erzan demonstrates that Turkey comparative disadvantage in international trade is more pronounced in human capital industries -wage value added per worker- compared to physical capital intensive ones-nonwage value added per worker(18). It is shown that the composition of Turkish manufacturing exports generally follows her comparative advantages on the basis of 1976-77 data. The first two leading sectors, textile yarn and thread and clothing not of fur, which comprise 68.5 percent of Turkish manufacturing exports to developed countries and 27.2 percent of Turkish manufacturing exports to less developed countries, are the least capital intensive, most comparatively advantaged sectors. Inorganic acids and pig iron etc. which rank third and ninth in Turkish manufacturing exports to DC, and cement and building products and road motor vehicles which rank third and sixth in exports to LDC are capital intensive products with comparative disadvantages. However, the other leading export sectors are not capital intensive, and can therefore be regarded as sectors in which Turkey possesses comparative advantage. If Erzan's analysis based on 3 digit commodity

(18) R.Erzan, Turkey's Comparative Advantage, Production and Trade Patterns in Manufactures, Institute for International Economic Studies, Stockholm: 1983, p.180, 183.

In this study, the U.N. definition of industrial goods described in footnote (16) is used. Thus, some of the major Turkish manufacturing exports are not included.

groups of SITC 5-8 groups is applied to the first six leading sectors of the Turkish manufacturing exports, it is seen that textile and leather industries may be considered as comparatively advantageous sectors, chemicals is in the middle rank, iron and steel products are disadvantageous while agriculture based processed products and processed petroleum products do not appear in the the study since they are not regarded as industrial goods.

In the light of the above paragraph, it may be said that Turkish manufacturing exports are generally, but not strictly the sectors in which Turkey possesses comparative advantage. However, another characteristic of the leading sectors, their ability to affect and to be affected by demand conditions in the economy should also be inquired. These effects are conventionally explored by the concepts of direct and indirect backward and forward linkages(19). In a study based on the 1973 input-output table of the Turkish economy, U.Korum has estimated these coefficients and finds out the manufacturing sectors with the strongest forward linkages, i.e., the sectors were iron and steel, chemicals, petroleum products and non-ferrous metals and the sectors with the strongest backward linkages, that is the sectors with considerable capacity to effect the rest of the economy, were food, textile, wood-furniture, rubber and plastics artificial fertilizers, cement industry, iron and steel, metal products and electrical machinery(20). When the leading exporting

(19) R_i = direct and indirect forward linkage coefficient explaining the necessary increase in the total production of sector i, in case of a 1 unit of increase in the final demand of each sector.

R_j = direct and indirect backward linkage coefficient explaining the necessary increase in each sector in order to meet the direct and indirect needs of sector j, if the final demand for sector j increases by 1 unit.

(20) U.Korum, Türk İmalat Sanayi ve İthal İkaməsi: Bir Değerlendirmeye, SBF, Ankara: 1977, pp.75, 76.

sectors of the manufacturing industry are viewed in this respect, the progressive sectors of the recent years, iron and steel, chemicals and petroleum products are the ones with high forward linkage coefficients. Also, iron and steel, food, textile and cement industry products happen to be the sectors with high backward linkages and all these sectors comprise the major exporting sectors of the manufacturing industry.

To recapitulate, Turkish manufacturing exports in the 1980s still exhibit a relatively high degree of concentration at the sectoral level, generally reflecting the structure of manufacturing production. Moreover, it can be seen that the change from the inward-looking policies of 1970's to the outward-looking policies after 1980s had no significant effect on the structure prevailing in the 1970s. However, although the range of goods on which production and exports are concentrated do not reflect a one-to-one correspondance with comparative advantages, they comprise those sectors with the strongest backward and forward linkages, i.e., the key sectors of the economy.

2.5. THE OVERALL EXPORT ORIENTATION ATTAINED BY THE MANUFACTURING INDUSTRY IN 1980s

We may observe from Table 2.5.1 that the share of exports in the output of each sector in the manufacturing industry has shown a significant rise, particularly after 1980. This impressive performance loses some of its lust since the late seventies have been crisis years from the stand point of trade performance. However, the share of exports in total output has reached to a considerable amount in almost all sectors of manufacturing industry.

When the entire manufacturing industry is considered

TABLE 2.5.1- The Share of Exports in the Output of Manufacturing Industry(%)¹

<u>Group</u>	<u>1971</u>	<u>1974</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
A. Agriculture Based P.P.	3.49	3.99	1.97	3.54	3.87	6.24	8.97
B. Processed Petroleum Products	0.47	4.13	0.00	0.00	0.97	2.18	5.94
C. Manufactured Products							
1- Cement Industry	6.95	2.39	4.36	4.30	3.31	21.18	23.18
2- Chemicals	2.62	3.01	1.09	0.71	2.65	3.07	5.03
3- Rubber and Plastics	0.60	1.36	0.27	0.30	1.77	7.49	6.17
4- Leather	24.20	72.29	23.03	30.99	27.08	30.49	45.36
5- Forestry Products	1.11	1.19	0.14	0.36	1.24	5.44	9.77
6- Textile	4.21	6.65	8.22	7.78	12.45	19.29	26.83
7- Paper	-	-	0.04	0.35	0.23	1.32	1.83
8- Glass and Ceramics	3.34	5.76	8.29	7.33	12.52	15.22	17.06
9- Iron and Steel	0.60	1.68	1.04	1.24	1.55	4.76	16.19
10- Non-Ferrous Metals	4.63	11.92	2.42	1.85	2.46	11.26	6.89
11- Metal Goods	0.35	0.96	0.55	0.46	0.85	2.16	3.03
12- Machinery	0.86	1.90	0.88	0.77	1.72	4.05	8.02
13- Electrical Appliances	0.48	0.21	0.33	0.32	1.11	2.53	7.09
14- Motor Vehicles	0.65	0.73	0.40	1.31	3.31	7.29	7.60
15- Other	20.86	32.21	4.15	5.93	13.63	37.12	53.73
T O T A L	2.72	4.16	2.49	2.69	3.86	7.37	11.18

SOURCE: Tables 2 and 4 in Appendix C.

¹See Table 1 and footnotes of Tables 2 and 4 in Appendix C.

it is observed that the sector had exported 4.2 percent of its production in 1974. This figure had dropped a low of 2.6 percent in 1978 and 1979 and rose to 11.3 percent in 1982. A similar pattern reflected in the subsectors of the manufacturing industry: the relatively low shares of manufacturing exports in the first half of 1970s, reaching minimal values in 1981 and 1982.

A ranking of sectors in terms of percentage of output exported, i.e., in terms of export-orientation does not point to a significant difference between 1971 and 1982. In accordance with the conclusion reached in the second section, the most outward oriented sectors are roughly the same ones in 1982 as in 1971, but the extent of their outward-orientation has increased in the recent years. The most outward oriented sector is the leather industry which exported 24.20 percent of its output in 1971 and exported 45.36 percent in 1982. The second one, the cement industry exported 6.95 percent of its output in 1971, and, 23.18 percent in 1982.

The agriculture based processed products and textile industries had similar export percentages, 3.5 and 4.2, respectively in 1971 but while the textile industry increased its percentage of output exported to 26.83, that of agriculture based processed products sector remained at 8.97 percent. Apart from the textile industry other significant developments in this respect are in the glass and ceramics sector, which increased the share of its exports from 3.34 percent in 1971 to 17.06 percent in 1982 and iron and steel, an intermediate goods sector, increasing its 1971 share of 0.60 percent to 16.19 percent in 1982. Moreover, a number of investment goods sectors such as machinery, electrical appliances and motor vehicles achieved considerable outward orientation in the 1980s. Nonferrous metals industry, exporting 11.92 percent of its output in 1974, experienced a decline

to 6.9 percent in 1982, while chemical industry could not keep up with other sectors, increasing its percentage of output exported in 1971 from 2.62 to 5.03 in 1982. The most significant developments in outward orientation occurred in textiles, glass and ceramics, and iron and steel industries over the past ten years.

III. SOURCES OF THE EXPORT EXPANSION

3.1. AN EVALUATION OF PAST EXPERIENCES WITH IS

It is commonly believed that import substitution strategy which starts from the "easy" stage will sooner or later slow down if the saturated domestic demand cannot be replaced partly by foreign demand. This section will dwell upon the previous experiences of today's outward-oriented sectors with import substitution.

In the first and second parts, the major exporting sectors of manufacturing industry both in terms of the share of their exports in total exports and in production were shown to be agriculture based processed products, textiles leather, glass and ceramics cement and chemical industries together with two progressive sectors, iron and steel and motor vehicles industries.

The influence of previous success in the post import substitution experience of the sectors of the manufacturing industry on their export orientation is examined by using two studies utilizing different procedures of measuring import substitution. Korum's study covering 1963-68 and 1968-73 sub-periods computes the contribution of import substitution, intermediate demand, final demand and export growth to the growth of each sector(21). In the 1963-1968 period, when a

(21) U.Korum, Ibid., pp.105-109.

considerable import substitution was achieved, the highest contribution of import substitution in agricultural products, textiles, rubber and plastics, petroleum products, iron and steel, metal goods, machinery, electrical appliances and motor vehicles sectors. While highest contribution of import substitution in 1968-73 period occurred in paper and printing and cement industries.

The other study by Halil Seyidoğlu, which measures indirect import substitution with a different methodology, covers the periods 1963-67, 1968-73, 1974-78 and 1979-80 and his results closely conform to Korum's findings(22). In 1963-67, the best performance with respect to import substitution has been attained in agricultural products, textiles, rubber and plastics, iron and steel, metal goods, machinery, electrical appliances and motor vehicles sectors. The outstanding sectors in 1968-73 are paper, leather, rubber and plastics chemicals and petroleum products. In the 1974-78 period, which is not covered in Korum's study, the major import substituting sectors were paper, chemicals, glass and ceramics, iron and steel, non-ferrous metals, metal goods, machinery, electrical appliances and motor vehicles. In the most recent period, the 1979-80 period, import substituting sectors are textiles, rubber and plastics, petroleum products, iron and steel, non-ferrous metals and motor vehicles.

The outstanding sectors of import substitution indicated by Korum's and Seyidoğlu's studies are the ones which can now successfully compete in foreign markets. It is seen that the leading export-oriented sectors had in one period or another a successful import-substitution experience and those sectors which have achieved considerable export orientation recently, the iron and steel and motor vehicles industries, are the

(22) H.Seyidoğlu, op.cit., pp.193-195.

ones with the longest and permanent experience with import substitution.

3.2. THE INFLUENCE OF ACCUMULATED STOCKS OF PRE-1980 PERIOD

The contribution of trade to growth and development in a developing country and the importance of the transformation of the structure of production in accordance with the opportunities of trade has been reviewed in Part I. Part II briefly examined the evidence for export led growth in the Turkish economy in the 1980s. An attempt was made to identify the leading export sectors and some of their characteristics and to investigate the extent of the association between the structure of manufacturing industry and manufactured exports.

The findings of the first two parts of the study suggest that the Turkish economy has exhibited a rather remarkable export growth recently and such growth was led by growth in manufactured exports. On the other hand, the position of the leading sectors in manufactured exports have undergone little change since 1970s. It was also observed that the structure of such exports showed little correlation with the structure of output of manufacturing industry in the 1970s while a greater conformity was achieved in the 1980s.

The next step in the analysis involves an examination of the sources of recent export expansion. Since the structure of manufacturing exports largely dates from the 1970s, import substitution experiences of the prosperous sectors is briefly considered in the first section. Leaving aside the encouragement from promotional measures to be taken up in the following section, we shall examine the effects of policies restricting domestic demand after 1980, reflected in the accumulation of stocks in this period, and the diversion of

output from domestic to foreign demand in this section.

According to SPO, progress in Turkish exports can be explained by the growth in production, restricted domestic demand and the accumulated stocks of the pre-1980 period(23). Table 3.2.1 brings together the data on the relevant variables to examine the support data leads to the above view and the empirical problems involved are explained below(24).

The accumulation of stocks probably induced by a decline in domestic demand must have given impetus to the search for new markets(25). A number of leading export sectors of the manufacturing industry provide illustrative cases. The share of domestic demand and stocks in total production of agriculture based processed products were 69.6 percent and

(23) DPT, Yatırımların ve İhracatın Teşviki, V. BYKP Özel İktisat Komisyonu Raporu, Ankara:1982, p.101.

(24) The primary difficulty arises from the fact that different sources had to be used preparing Table 3.2.1. The classification of sectors has followed the SPO classification on manufacturing. However, since the SPO production data doesn't report stocks, SIS data on a different classification of sectors has been used for production and stocks. The key to this conversion is given in Appendix III, Table 1 and in the footnotes of Table 2.

The second problem relates to the conversion of \$ values of SPO data to TL values. Conversion to TL has been made on the basis of annual average exchange rates reported by IMF and SPO.

Third, SIS data-surveys of manufacturing industry, covers all public sector, but private sector with establishments where 10 or more people are engaged, whereas export data involves the whole.

Fourth, since it is aimed to reflect the structure of demand the nominal values are not deflated, so they do not reflect real growth rates. Moreover, stocks of the first day of the year and the last day of the year are assumed to be on the same nominal basis.

(25) See Table 5 in Appendix C.

TABLE 3.2.1- The Shares of Domestic Consumption, Stocks and Exports in Production and Stocks from the Year Before¹

Group	1978			1979			1980			1981			1982		
	DC	S _{t+1}	X	DC	S _{t+1}	X	DC	S _{t+1}	X	DC	S _{t+1}	X	DC	S _{t+1}	X
Agriculture Based P.P.	82.0	16.3	1.7	69.6	27.4	3.0	80.5	16.0	3.5	74.7	19.7	5.6	74.3	17.9	7.8
Processed Petroleum Products	95.9	4.1	0	95.7	4.3	0	93.3	5.7	1.0	92.5	5.3	2.2	90.4	3.8	5.8
Manufactured Products															
1- Cement Industry	90.0	5.8	4.2	86.8	9.1	4.1	91.6	5.2	3.2	74.2	5.5	20.3	71.0	6.7	22.3
2- Chemicals	91.0	8.0	1.0	91.9	7.4	0.7	90.8	6.7	2.5	87.4	9.7	2.9	89.0	6.3	4.7
3- Rubber and Plastics	95.0	4.7	0.3	94.9	4.8	0.3	92.4	5.8	1.8	86.1	6.7	7.2	88.1	6.0	5.9
4- Leather	68.6	10.2	21.2	71.6	11.1	17.3	60.2	14.3	25.5	61.6	9.9	28.5	46.2	11.8	42.0
5- Forestry Products	86.0	13.8	0.2	82.3	17.4	0.3	80.0	18.9	1.1	75.6	19.6	4.8	73.8	17.8	8.4
6- Textile	77.4	15.2	7.4	79.5	13.5	7.0	73.3	15.2	11.5	68.6	13.8	17.6	64.6	11.2	24.2
7- Paper	93.8	6.2	0	95.9	3.9	0.2	93.6	6.2	0.2	93.5	5.2	1.3	93.2	5.0	1.8
8- Glass and Ceramics	82.8	9.5	7.7	84.7	8.4	6.9	71.0	17.2	11.8	73.4	12.2	14.4	74.6	9.9	15.6
9- Iron and Steel	89.1	9.9	1.0	88.0	10.9	1.1	85.9	12.6	1.5	80.7	15.0	4.3	76.0	9.7	14.3
10- Non-Ferrous Metals	82.8	15.1	2.1	81.3	17.0	1.7	78.4	19.3	2.3	81.7	15.2	3.0	82.0	12.0	6.0
11- Metal-Goods	90.1	9.4	0.5	88.5	11.0	0.5	88.5	10.7	0.8	85.3	11.7	2.0	86.9	10.3	2.8
12- Machinery	89.0	10.2	0.8	85.8	13.5	0.7	85.8	12.6	1.6	84.7	11.5	3.8	79.7	12.9	7.4
13- Electrical Appliances	94.3	5.4	0.3	92.1	7.6	0.3	89.8	9.1	1.1	87.5	10.2	2.3	85.0	8.4	6.6
14- Motor Vehicles	90.2	9.5	0.3	88.7	10.1	1.2	86.7	10.2	3.1	83.0	10.2	6.8	82.2	10.8	7.0
15- Other	90.1	6.0	3.9	87.7	6.6	5.7	73.0	14.0	13.0	59.3	5.9	34.8	40.3	8.1	51.6
T O T A L	86.6	11.0	2.4	84.9	12.7	2.4	85.0	11.4	3.6	80.8	12.3	6.9	79.4	10.3	10.2

SOURCE: Tables 2, 3, 4 and 5 in Appendix C.

See Table 1 and footnotes of Table 2 in Appendix C.

27.4 percent respectively in 1979 and this sector could export 3 percent of its production. In 1982 these shares became 74.3 percent, 17.9 percent and 7.0 percent respectively. Textiles industry also suffered from relatively high stocks in 1978 and this sector managed to decrease its stocks from 15 percent of its production to 11 percent in 1982 by increasing its exports from 7 percent to 24 percent of its output. Similar patterns are observed in cement, chemical, leather, glass and ceramics, iron and steel, non-ferrous metals and other manufacturing industry sectors and the majority of these sectors have exported more than 15 percent of their output in 1984.

The above pattern suggest that the stocks which had accumulated pari-passu with declining domestic demand may have constituted an important factor in the recent export expansion. Although the most-progressive sectors in terms of export orientation are not necessarily the sectors with the highest growth rates, they are the ones which have accumulated highest stocks from 1978 to 1980.

3.3. PROMOTIONARY MEASURES

In Part III, we have concentrated on the sources of export expansion and, in the first section, demonstrated that import substitution can also be accepted as a source of export expansion, since today's competitive sectors are the ones which have experienced successful IS in the past. In the second section, we have shown the significance of the stocks accumulated in the pre-1980 period. In this section, the promotional measures and the responsiveness of the various subsectors of manufacturing industry to these measures will be examined.

It is shown that along with the exchange rate policy, export subsidies is a major expedient at the disposal of a government attempting to change the economy from an inward-looking industrialization model to an outward-looking one(26). These promotional measures, if they are not based on solid foundations, can distort the pattern of domestic and foreign competition and such distortion raise doubts about the viability of export progress(27). Moreover, it is argued that these incentives may cause the the output of the sectors which would otherwise be noncompetitive to be exported under imperfectly competitive conditions(28).

For Turkey, tax-rebates and cheap export credits have always been the major promotional measures for the expansion of exports after the 1960s(29). However these measures were highly effective in maintaining their catalytic role after 1980 and the anticipated growth of manufactured exports could be realized in the last five years.

Manufacturing products are grouped in 9 categories in the list of tax-rebates established under the new regime. In this list which is revised in certain intervals, the products are ranked according to the extent to which they are processed(30). However, in this grouping industrial goods do

(26) Since this study concentrates on sectoral developments, exchange rate policy which, in itself is a very important subject, will not be discussed. See T.Çiller, Dünya'da ve Türkiye'de Kur Politikaları ve Sorunları, ISO Araştırma Dairesi, İstanbul: 1983, p.77, 89.

(27) H.Ersel and A.Temel, in an econometric analysis concentrating on Turkish manufacturing exports after 1980, found not that the price elasticity is less than one, that exports cannot respond immediately to price and promotional measures and that exports are more responsive to promotional measures than to prices. See H.Ersel, A.Temel, Op.cit., p.118-123.

(28) R.Erzan, Op.cit., pp.118-123.

(29) R.Karlık, İhracatta Vergi İadesi, İTO, İstanbul: 1984, p. 28.

(30) MPM, Türkiye'nin Sanayi Ürünleri Dışsatımındaki Artışın Çözülmesi, Boyutları, Dayanakları, Geleceği, Ankara: 1983, p.65.

not receive differential treatment and hence the list is not selective. In addition, the rate of the tax-rebate is increased by a certain amount when a stipulated ceiling is surpassed.

Karluk's computations of the share of the rebate received by eight sectors in total tax rebates paid to manufacturing export sectors through 1964-1979 is shown in Table 3.3.1. The sector which has obtained the highest share of total tax-rebates in this period is the textile sector with a 38.4 percent average share and this sector has successfully grown to be the leading exporting sector in the second half of 1970s. The third one, the food industry, which obtained 12.2 percent of total tax-rebates has successfully developed to be one of the primary exporting sectors of manufacturing industry. On the other hand, non-ferrous metals which has ranked the second with the share of 15.0 percent in total tax rebates could not grow into an outward-oriented sector.

The rate of the tax rebate, the TL value of the rebate paid over the value of the realized exports is another aspect to be considered in the discussion of the responsiveness of the manufacturing sectors to tax-rebates. These ratios are given in Table 3.3.2 for the 1964-1979 period for only eight sectors. On the average the highest rate of rebate is observed in the cement industry, a rate of 20.7 percent. This sector is followed by textiles, metal goods and chemical industries with percentage averages of 26.2, 23.2 and 21.5, respectively. According to our findings in Parts II and III, cement, textiles and chemical industries are sectors with considerable outward orientation.

Karluk estimated that during 1964-1977, the manufacturing sectors with the highest elasticities with respect to tax-rebates are textiles, rubber and plastics, cement and

TABLE 3.3.1- The Share of the Tax-Rebate Received in Total Tax-Rebates in Basic Sectors of Manufacturing Industry (1964-1979)

<u>Year</u>	<u>Food Industry</u>	<u>Textile Industry</u>	<u>Leather Industry</u>	<u>Chemicals Industry</u>	<u>Non-ferrous Metals Industry</u>	<u>Metal Goods Industry</u>	<u>Cement Industry</u>	<u>Agriculture Based P.P. Industry</u>
1964	15.6	45.7	9.3	0.2	17.0	-	-	-
1965	21.1	36.5	1.4	1.0	28.8	-	-	-
1966	12.0	16.8	0.2	0.9	49.7	0.4	-	-
1967	18.0	17.6	0.1	1.6	47.0	0.2	-	-
1968	6.5	33.7	1.0	18.3	24.9	0.1	0.1	-
1969	13.7	16.9	0.7	20.3	11.1	1.1	-	27.3
1970	8.9	19.5	3.4	15.7	10.0	1.5	3.2	24.2
1971	11.9	25.1	9.7	11.1	9.0	1.1	11.7	7.0
1972	9.8	25.2	11.6	15.0	8.0	1.9	10.9	4.0
1973	9.4	27.3	11.3	5.8	6.1	2.7	6.3	15.2
1974	7.8	85.6	9.6	5.0	6.7	3.7	2.8	4.3
1975	13.9	35.9	11.3	5.3	5.9	4.8	1.9	1.2
1976	9.24	62.91	5.07	3.59	3.70	2.45	2.90	3.37
1977	12.18	53.48	4.79	2.62	5.54	1.16	3.54	5.10
1978	11.77	61.82	4.34	3.03	3.18	0.7	6.81	5.91
1979	8.96	51.94	3.29	2.76	3.72	0.5	6.64	4.15

SOURCE: R.Karluk, İhracatta Vergi İadesi, İTO, İstanbul: 1984, p.77.

TABLE 3.3.2- The Rates of Tax-Rebates¹ by Basic Sectors of Manufacturing Industry (1964-1979)

<u>Year</u>	<u>Food Industry</u>	<u>Textile Industry</u>	<u>Leather Industry</u>	<u>Chemicals Industry</u>	<u>Non-Ferrous Metals Industry</u>	<u>Metal Goods Industry</u>	<u>Cement Industry</u>	<u>Agriculture Based P.P. Industry</u>
1964	5.56	24.45	9.99	9.80	9.97	-	-	-
1965	4.09	33.85	5.38	10.01	11.17	10.17	-	-
1966	7.64	46.51	7.64	8.90	13.13	10.70	-	-
1967	4.72	29.50	5.00	14.50	11.40	13.84	-	-
1968	13.06	43.46	42.64	23.42	15.09	19.90	45.71	-
1969	6.73	33.84	16.68	24.59	20.20	34.21	45.56	10.17
1970	11.45	26.97	25.48	30.51	17.53	49.03	25.92	10.79
1971	21.37	21.46	26.44	31.76	20.75	22.49	34.30	10.00
1972	13.63	22.81	25.57	35.24	23.85	29.41	39.56	6.41
1973	18.86	19.43	22.07	30.47	24.05	22.73	31.85	5.51
1974	13.75	14.45	13.26	19.99	22.36	22.65	29.19	5.95
1975	11.71	21.87	15.53	20.14	22.38	29.07	9.84	8.91
1976	12.38	24.89	17.56	28.72	22.80	29.24	23.66	10.80
1977	11.71	25.68	17.41	24.29	26.86	26.01	24.76	13.47
1978	12.58	17.64	13.37	20.04	14.98	16.84	19.46	6.63
1979	9.17	14.09	10.24	12.23	11.88	11.86	15.92	8.17

SOURCE: R.Karluk, İhracatta Vergi İadesi, İTO, İstanbul: 1984, p.78.

¹Tax rebates received by the sector over the TL value of realized exports.

machinery all possessing elasticities greater than one. The sector with the least responsiveness to tax-rebates is the non-ferrous metals sector, which as we have pointed out above, has continued to perform poorly after 1980. On the other hand, a elasticity coefficient of 0.89 for the entire manufacturing industry and elasticities less than one for 13 out of 17 sectors has led Karluk to conclude that the Turkish manufactured exports were not responsive to tax rebates, or that, tax rebates alone were not sufficient to promote exports in the period under consideration. Production should also be promoted in order to expand exports(31).

Our comparison between the magnitude of tax-rebates received and the outward-orientation of the Turkish manufacturing industry will make use of a special study by SPO for the recent years, 1980-1983(32). Similar to Karluk's approach analysis of the data presented in this study, is based on the shares of sectors in total tax rebates and the rate of the rebate, the ratio of the tax rebate received by the sector to the realized exports of the sector, but the coverage will be extended to all sectors of the manufacturing industry.

Table 3.3.3 shows that the sector which has the biggest share of tax rebates is the textiles industry receiving 41.3 percent of the total tax rebates in period 1980-1983. As Karluk's results indicate that this sector has also ranked the first in the period 1964-1979 with approximately the same share. It has been the leading sector of manufacturing exports since the 1970s and has come to export about 20 percent of its output in the recent years. The sectors which ranked the second and the third by this shares in total

(31) R.Karluk, op.cit., pp.90-91.

(32) Z.Yükseler, M.S.Ensari, İhracatta Gerçekçi Kurlar (1980-1983), DPT İktisadi Planlama Başkanlığı Yıllık Programlar ve Finans Dairesi, Ankara 1984.

TABLE 3.3.3- Sectoral Shares of Tax Rebates Received in Total Tax Rebates and the Rates of Tax-Rebates in Manufacturing Industry (1980-1983) (%)

Group	1980		1981		1982		1983	
	Tax Rebates/ Total	Tax Realized Exports	Tax Rebates/ Total	Tax Realized Exports	Tax Rebates/ Total	Tax Realized Exports	Tax Rebates/ Total	Tax Realized Exports
	Rebates	Exports	Rebates	Exports	Rebates	Exports	Rebates	Exports
A. Agriculture Based P.P.	10.7	3.6	10.1	6.1	10.7	11.5	10.1	11.7
B. Manufactured Products								
1- Cement Industry	0.3	4.3	16.0	18.0	10.4	25.1	2.7	21.9
2- Chemicals	3.4	2.9	4.3	10.2	3.6	13.0	4.0	7.6
3- Rubber and Plastics	1.2	4.7	2.0	6.2	1.8	16.1	1.4	12.5
4- Leather	3.0	3.8	14.6	12.3	3.7	17.5	6.9	22.8
5- Forestry Products	0.4	2.2	0.0	6.1	3.4	14.0	1.0	10.8
6- Textile	54.9	7.9	34.7	9.2	34.9	16.9	40.6	19.7
7- Paper	0.2	11.8	0.0	2.7	0.6	17.4	0.5	14.6
8- Glass and Ceramics	3.0	5.3	4.0	8.8	3.8	19.9	2.3	15.2
9- Iron and Steel	0.01	0.2	1.6	3.6	8.7	13.0	11.4	18.6
10- Non-Ferrous Metals	6.0	20.7	2.3	17.2	0.8	9.1	2.4	20.5
11- Metal-Goods	0.1	6.3	2.9	31.7	4.6	90.4	3.3	84.1
12- Machinery	1.7	5.0	3.4	11.5	4.0	15.3	5.0	34.5
13- Electrical Appliances	0.9	5.1	0.9	7.8	2.4	17.4	2.2	20.7
14- Motor Vehicles	10.3	13.0	10.9	20.9	5.1	32.3	3.3	17.5
15- Other	0.6	0.8	0.4	0.8	1.9	2.8	2.9	155.6
T O T A L	100.0	6.0	100.0	9.7	100.0	15.6	100.0	18.1

SOURCE: Z.Yükseler, M.S.Ensari, İhracatta Gerçekçi Kurlar, DPT, Ankara: 1984.

tax rebates are the agriculture based processed products and the motor vehicles industries with average shares of 10.4 percent and 7.4 percent respectively. Agriculture based processed products is one of the traditionally subsidized export sectors of the manufacturing industry. Motor vehicles, however, is a sector which has grown into an important exporter of manufactures after 1980. Table 3.3.3 also indicates a positive relationship between the increase in the subsidization and the export progress of sectors, especially in the newly developing iron and steel sector. Non-ferrous metals industry, with its poor export development, has lost its previous importance in 1964-1979 period during 1980-1983 period.

When the rate of the rebate, i.e., the amount of the rebate divided by realized exports of the sector is examined for the entire manufacturing industry, the increasing effect of subsidization can be noted by the rise in the ratio from 6.0 percent in 1980 to 18.1 in 1983. When the sectors are considered individually, the highest rate over the period is observed in the metal goods industry receiving an amount which is about 90 percent of its exports. We had previously noted in Part II that this sector is not a successive exporter. Along with the definitive increase in the rates of subsidization of each sector through 1980 to 1983, the highest increases are recorded in cement, leather, glass and ceramics, iron and steel, metal goods, machinery, electrical appliances and motor vehicles. While all these sectors except the metal goods industry have increased the share of exports in their total production, some of them have grown into the leading exporting sectors of the manufacturing industry. The most striking development in this respect is observed in the iron and steel industry, in which the ratio of rebate to realized exports has risen from 0.2 percent in 1980 to 18.6 percent in 1983 and we had noted that this sector has risen

to be the third position among the leading sectors of manufacturing exports. Another point to be noted in this context is that the sector with the highest subsidization rate in 1980, non-ferrous metals, 20.7 percent, has lost to relative importance due to the deterioration of its export capacity in the early 1980s.

Export credits has been the other important device in export promotion policies after 1980. These credits are short-term credits and are extended by the Central Bank, Deposit Banks and a fund established to promote exports through subsidized interest rates and tax exemptions(33). The SPO study gives sectoral data on export credits and Table 3.3.4 based on their data shows the share of each sector in total export credits given together with the ratio of the export credit used by the sector to its realized exports(34).

The sector which received the highest share in total export credits over 1980-1983 is the textile sector obtaining 34 percent of the total export credits used by the manufacturing industry. The second one is the agricultural processed products sector, obtaining 13.8 percent of export credits on the average during 1980-1983 and these sectors are the leading subsectors of the manufacturing industry. However, a decrease in the share of the textile industry, from 43.5 percent in 1980 to 32.3 percent in 1983, and a striking increase in the share of the iron and steel industry from 2.3 percent in 1980 to 18.6 percent in 1983 reflects a smooth reallocation of subsidies away from the traditionally exporting sectors of the manufacturing industry towards the newly developing ones.

According to the computations shown in Table 3.3 ratio

(33) MPM, op.cit., pp.57, 70.

(34) Z.Yükseler, M.S.Ensari, op.cit.

TABLE 3.3.4- The Sectoral Shares in Total Export Credits and The Ratio of the Amount of the Export Credit Used to the Realized Exports of Each Sector in Manufacturing Industry

Group	1980		1981		1982		1983	
	Tax Rebates/ Total	Tax Rebates/ Realized Exports	Tax Rebates/ Total	Tax Rebates/ Realized Exports	Tax Rebates/ Total	Tax Rebates/ Realized Exports	Tax Rebates/ Total	Tax Rebates/ Realized Exports
A. Agriculture Based P.P.	12.5	52.1	13.2	34.4	17.0	35.3	12.7	27.2
B. Manufactured Products								
1- Cement Industry	3.8	74.1	3.2	15.5	1.2	5.8	1.9	28.6
2- Chemicals	2.9	29.5	4.2	42.7	5.9	41.8	4.7	16.4
3- Rubber and Plastics	2.3	110.8	2.7	35.8	1.1	18.3	1.7	26.7
4- Leather	2.2	33.5	1.6	18.8	3.3	30.8	2.6	16.1
5- Forestry Products	1.7	92.2	1.9	47.5	2.5	25.2	1.4	27.4
6- Textile	43.5	75.6	40.6	46.5	20.9	27.2	32.3	29.1
7- Paper	0.1	127.6	0.3	50.2	0.8	63.3	1.0	53.6
8- Glass and Ceramics	2.8	59.1	3.4	50.7	4.2	41.8	3.3	40.2
9- Iron and Steel	2.9	65.4	3.8	36.4	4.8	42.6	18.6	56.0
10- Non-Ferrous Metals	2.8	116.7	2.8	90.3	3.2	74.2	3.8	59.8
11- Metal-Goods	2.8	261.8	2.0	94.6	2.8	105.6	3.9	184.6
12- Machinery	5.2	181.5	3.8	55.5	5.0	37.5	3.5	44.5
13- Electrical Appliances	5.6	369.9	3.2	118.3	3.8	54.5	4.7	84.0
14- Motor Vehicles	6.5	97.9	8.8	76.9	3.8	46.0	1.5	14.8
15- Other	1.9	30.4	0.7	5.6	0.9	2.8	1.9	118.1
T O T A L		72.4		41.7		30.1		33.5

SOURCE: Z.Yükseler, M.S.Ensari, İhracatta Gerçekçi Kurlar, DPT, Ankara, 1984.

of the amount of the export credit used over the value of the exports by each sector can vary in a very wide range. This ratio reaches very large numbers, such as 370 percent of electrical appliances sector in 1980, since the credit is given on the basis of the contractual exports and not on the basis of realized exports. When this rate is examined for the total manufacturing industry, it will be seen that this promotional measure exhibits a falling trend from 72.4 percent of 1980 to 33.5 percent of 1983. In 1980-1983, the largest export credit using sectors are paper, glass and ceramics, iron and steel, non-ferrous metals, metal goods, machinery and electrical appliances. However, in the light of the above considerations, such rates of subsidization are not the intended, but the actual rates in terms of realized exports and the difference between the contracted and realized exports manifests significant distortions. Since the highest discrepancy has occurred in the investment goods sectors, the highest outcome is realized in these sectors, though this outcome was an unintended one.

It is discussed that the export promotion measures reviewed above, i.e., tax rebates and export credits, had a great influence on the growth of exports, especially after 1980. An increase in tax rebates and a decrease in export credits is observed over the four years under consideration. Although export credits has been losing its influence, the sectoral indicators of tax rebates show that the most outward oriented sectors are the most promoted ones. Moreover, it is seen that the highly successful export sectors of the recent years are the ones which have benefited much from promotional measures.

IV. CONCLUSION

Current empirical research on the relationship between growth and exports points to a positive contribution of trade to growth and development in a developing country. The transformation of the structure of production in a way compatible with the opportunities for international trade involves a substantial rise in the share of industry and success in developing manufacturing exports is critical to this process since they possess a built-in potential for the continuing expansion of the economy. The Turkish economy has attempted to transform the structure of its production and exports in the direction of an export oriented industrialization model to take advantage of the benefits of this model after 1980. This study examines some of the consequences of the attempt.

Our results suggest that while the Turkish economy has exhibited a rather remarkable export growth recently led by the growth in manufactured exports, the position of the leading sectors in manufactured exports has undergone little change since the 1970s. It was also observed that while the structure of such exports showed little correlation with the structure of output of manufacturing industry in the 1970s, a greater conformity was achieved in the 1980s. However, the change from the inward-looking policies of the past to the outward-looking policies after 1980s had no significant effect on the

structure of exports prevailing in the 1970s, yet the goods concentrated reflected a certain correspondance with comparative advantages and they comprise these sectors with the strongest backward and forward linkages, the key sectors of the economy.

The ranking of sectors in terms of the percentage of output exported, i.e., in terms of export orientation in 1971 and 1982 did not point to a significant difference and the most outward oriented sectors are roughly the same ones in 1982 as in 1971. However, the share of exports in their output has increased significantly in the recent years leading us to conclude, in accordance with the above stated findings, that the Turkish manufacturing sector has attained a greater overall outward orientation with much the same structure prevailing in the 1970s.

As for the sources of the expansion in exports, we have seen that the sectors which can now successfully compete in foreign markets had successful experience with import substitution in the past. Second, our results of examining the export, stock and domestic consumption shares of the sectors of manufacturing industry suggested that the stocks which had accumulated pari-passu with the declining demand of 1980s has constituted the major factor in the recent export expansion, since the most progressive sectors are not necessarily the sectors with the highest growth rates, they are the ones which have accumulated highest stocks from 1978 to 1980. Third, a close association is observed between the sectors which benefited from promotional measures and the sectors which have been able to raise the share of exports in their output. This association raises doubts about the sustainability of the export orientation when these measures are eliminated.

APPENDIX A

Composition of GDP (At Current Prices, in Billions of TL)
(Gross Value Added.)

	<u>Agriculture</u>	<u>Industry</u>	<u>Services</u>
1973	27.6	20.1	52.3
1974	28.5	20.7	50.8
1975	29.1	20.0	50.9
1976	29.6	19.2	51.2
1977	27.6	19.9	52.5
1978	25.3	23.0	51.7
1979	23.1	23.8	53.1
1980	22.7	25.2	52.1
1981	21.9	26.0	52.1
1982	20.7	27.0	52.3
1983	19.1	28.7	52.2
1984	19.4	29.3	51.3

SOURCE: SIS

APPENDIX B

Annual Percentage Increase of Exports by Sectors (Value in \$)

	<u>1980-1981</u>	<u>1981-1982</u>	<u>1982-1983</u>	<u>1983-1984*</u>
TOTAL	61.6	22.2	-0.3	25.8
- Agriculture	32.8	-3.6	-12.1	-5.4
- Mining and Quarrying	1.0	-9.3	8.0	20.9
- Manufacturing Industry	118.7	49.7	6.7	44.5
- Agriculture Based Processed Products	97.1	37.9	18.0	15.2
- Processed Petroleum Products	174.4	321.4	-32.6	66.1
- Manufactured Products	262.5	41.2	-26.0	19.0

*For 11 months.

SOURCE: Evaluated from SIS data.

APPENDIX C

TABLE 1- Key to the Evaluation of SIS Classification¹ of Manufacturing Industry Sectors to SPO Classification

<u>SPO</u> Group Name	<u>SIS</u>	
	<u>ISIC (Rev.1)</u>	<u>ISIC (Rev.2)</u>
A. Agriculture Based P.P.	20,21,22	31
B. Processed Petroleum Products	32	353,354
C. Manufactured Products	-	-
1- Cement Industry	334,335	3692
2- Chemicals	31	351,352
3- Rubber and Plastics	30,3908	355,356
4- Leather	29,241,2431,2432	323,324
5- Forestry Products	25,26	33
6- Textile	23,2433-2439,244	321,322
7- Paper	27,28	34
8- Glass and Ceramics	331,332,333	361,362,3691
9- Iron and Steel	341	371
10- Non-ferrous Metals	342,343	372
11- Metal Goods	35,2602	381
12- Machinery	36	382
13- Electrical Appliances	37	383
14- Motor Vehicles	38	384
15- Other	39(except 3908)	385,39
TOTAL (Industrial Products)	(2,3)	(3)

¹SIS uses ISIC, Rev.1 classification until 1972 and ISIC, Rev.2 Classification after 1973.

TABLE 2- Production (Output) of Manufacturing Industry¹ (Million TL)

Group ²	ISIC Code	1971	1974	1978	1979	1980	1981	1982
A. Agriculture Based P.P. ³	31	25,725	50,977	135,832	132,583	411,591	727,269	1,019,249
B. Processed-Petroleum Products	353,354	8,438	29,011	53,928	88,139	302,248	542,144	930,220
C. Manufactured Products								
1- Cement Industry	3692(3691)	1,885	4,635	22,525 ⁴	32,411 ⁴	91,084 ⁴	103,303	143,457
2- Chemicals	351,352	5,193	13,543	52,953	102,680	218,213	336,601	473,115
3- Rubber and Plastics	355,356	2,156	5,303	21,193	35,506	68,395	105,725	157,673
4- Leather	323,324	693	1,393	4,230	7,375	13,902	29,668	39,518
5- Forestry Products	33	1,081	2,447	9,835	14,200	26,531	39,812	54,973
6- Textile	321,322	13,677	31,316	91,266	150,919	259,051	458,790	633,578
7- Paper	34	2,879	6,037	19,280	28,768	63,753	110,521	149,579
8- Glass and Ceramics	361,362,3691	1,346	3,127	8,814 ⁵	15,711 ⁵	21,815 ⁵	73,959	97,818
9- Iron and Steel	371	5,640	15,974	49,639	77,837	165,995	232,226	360,068
10- Non-Ferrous Metals	372	1,296	3,976	11,558	24,497	56,586	86,272	104,221
11- Metal Goods	381	3,451	5,815	24,712	38,328	72,547	103,184	144,668
12- Machinery	382	3,269	8,898	33,949	50,341	95,932	176,446	232,088
13- Electrical Appliances	383	1,881	6,549	26,966	43,187	78,488	113,743	170,646
14- Motor Vehicles	384	3,373	11,517	37,425	63,234	115,607	177,824	233,543
15- Other	385,39	278	593	2,435	3,691	5,649	12,502	18,663
T O T A L		82,262	201,111	606,599	909,357	2,067,387	3,439,989	4,963,077

SOURCE: SIS, Surveys of Manufacturing Industry.

¹Public Sector (all establishments) + Private Sector (establishments where 10 or more people are engaged)

²Classification is according to SPO

³Food, Beverage, Tobacco

⁴With 3691-Structural Clay and Cement Products

⁵Without 3691

TABLE 3- Manufacturing Industry-Stocks of Finished Goods and Goods in Process (Jan.1st)(Million TL)

Group	1971	1972 ¹	1974	1975	1978	1979	1980	1981	1982	1983 ¹
A. Agriculture Based P.P.	3,970	4,620	5,631	6,981	22,373	25,870	43,479	72,991	159,880	211,636
B. Processed Petroleum Products	120	216	345	865	1,013	2,267	3,920	17,434	29,920	36,840
C. Manufactured Products										
1- Cement Industry	113	111	186	407	973	1,373	3,043	4,916	5,982	10,087
2- Chemicals	359	560	875	1,591	3,286	4,480	7,951	15,050	33,998	32,025
3- Rubber and Plastics	137	158	277	344	876	1,044	1,739	4,092	7,384	9,915
4- Leather	85	97	111	139	350	465	869	2,113	3,155	5,033
5- Forestry Products	159	170	379	511	869	1,481	2,727	5,532	8,892	11,354
6- Textile	1,329	1,627	3,504	7,552	10,243	15,461	22,383	42,773	69,119	78,415
7- Paper	120	149	313	454	427	1,219	1,158	3,999	6,005	7,822
8- Glass and Ceramics	211	203	274	467	642	899	1,396	4,006	9,463	10,601
9- Iron and Steel	715	1,154	1,513	2,551	5,208	5,441	9,043	22,120	38,559	39,466
10- Non-Ferrous Metals	126	162	466	758	2,029	2,051	4,307	11,806	14,960	14,288
11- Metal Goods	384	513	404	738	1,540	2,464	4,502	8,242	13,091	16,265
12- Machinery	295	428	852	1,146	2,391	3,690	7,278	13,052	21,794	32,866
13- Electrical Appliances	145	187	322	532	1,222	1,526	3,382	7,485	12,326	15,270
14- Motor Vehicles	296	437	781	1,084	4,552	3,985	6,780	12,437	19,964	27,213
15- Other	13	30	57	80	155	156	253	825	781	1,584
T O T A L	8,577	10,852	16,290	25,462	58,149	73,872	124,410	248,873	454,673	560,680

SOURCE: SIS, Surveys of Manufacturing Industry.

¹As of Dec.31st of the previous year.

TABLE 4- Exports of Manufacturing Industry (Million TL)¹

Group	1971	1974	1978	1979	1980	1981	1982	1983
Agriculture Based Processed Products	898	2,035	2,676	4,696	15,923	45,382	91,450	150,040
Processed Petroleum Products	40	1,197	0	0	2,928	11,793	55,349	52,072
Manufactured Products								
1- Cement Industry	131	111	983	1,395	3,010	21,879	33,253	13,581
2- Chemicals	136	408	575	732	5,778	10,339	23,808	26,956
3- Rubber and Plastics	13	72	57	105	1,208	7,914	9,727	17,222
4- Leather	158	1,007	974	1,356	3,764	9,046	17,925	43,035
5- Forestry Products	12	29	14	51	330	2,167	5,372	3,307
6- Textile	576	2,081	7,505	11,737	32,261	88,502	170,001	291,037
7- Paper	-	-	8	80	149	1,459	2,737	-
8- Glass and Ceramics	45	180	731	1,152	2,732	11,258	16,687	24,236
9- Iron and Steel	34	269	514	966	2,580	11,043	58,293	91,222
10- Non-Ferrous Metals	60	474	280	453	1,393	2,959	7,178	17,670
11- Metal Goods	12	56	137	176	615	2,232	4,386	4,133
12- Machinery	28	169	299	387	1,648	7,140	18,624	23,019
13- Electrical Appliances	9	14	90	140	871	2,882	12,102	15,448
14- Motor Vehicles	22	84	148	827	3,823	12,955	17,740	28,305
15- Other	58	191	101	219	770	4,641	10,028	13,586
TOTAL	2,234	8,376	15,092	24,472	79,783	253,591	554,670	814,869

SOURCE: - The exchange rates for years 1971, 1974, 1978, 1979 and 1983 are taken from "IMF-International Financial Statistics" (yearly averages) and the rates for years 1980, 1981 and 1982 are from "SPO-Real Exchange Rates for Turkish Exports".

- The dollar values of exports are from "SPO and TUSİAD Yearbooks". The values for paper are from "SIS-Yearbooks" for 1978 and 1979 and from "SPO-Real Exchange Rates for Turkish Exports" for 1980, 1981 and 1982.

In order to convert the dollar values to TL values, \$1=14.92 TL for 1971, \$1=13.93 TL for 1974, \$1=24.28 TL for 1978, \$1=31.08 TL for 1979, \$1=76.03 TL for 1980, \$1=110.24 for 1981, \$1=160.94 for 1982 and \$1=224.03 for 1983 is used.

TABLE 5- Domestic Consumption¹ of Manufacturing Industry (Million TL)

Group	1971	1974	1978	1979	1980	1981	1982
A. Agriculture Based P.P.	24,177	47,592	129,719	110,278	366,156	604,998	876,043
B. Processed Petroleum Products	8,302	27,294	52,674	86,486	285,806	518,166	867,951
C. Manufactured Products							
1- Cement Industry	1,756	4,303	21,140	29,346	86,201	80,358	106,099
2- Chemicals	4,856	12,419	51,184	98,477	205,336	307,314	451,280
3- Rubber and Plastics	2,122	5,164	20,968	34,706	64,834	94,519	145,415
4- Leather	523	358	3,141	5,615	8,894	19,580	19,715
5- Forestry Products	1,058	2,286	9,209	12,903	23,396	34,285	47,139
6- Textile	12,803	25,187	78,543	132,260	206,400	343,942	454,281
7- Paper	2,850	5,896	18,480	28,749	60,763	107,056	145,825
8- Glass and Ceramics	1,467	2,754	7,826	14,062	16,473	57,244	79,983
9- Iron and Steel	4,667	14,667	48,892	73,269	150,338	206,744	308,868
10- Non-Ferrous Metals	1,200	3,210	11,256	21,588	47,894	80,159	97,715
11- Metal Goods	3,310	5,425	23,651	36,114	68,192	95,103	137,107
12- Machinery	3,108	8,435	32,351	46,366	88,510	160,564	202,392
13- Electrical Appliances	1,830	6,325	26,572	41,191	73,514	106,020	155,600
14- Motor Vehicles	3,210	11,130	37,844	59,612	106,127	157,942	207,954
15- Other	203	379	2,333	3,375	4,307	7,905	7,832
T O T A L	77,753	183,563	575,784	834,347	1,863,135	2,980,597	4,302,401

SOURCE: Tables 2, 3, 4.

Domestic consumption of year t is calculated as: $C_t = S_t + P_t - (S_{t+1} + X_t)$

Where S_t is the stocks in the beginning of the year, P_t is production, and X_t is exports.

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