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CHOICE OF INDUSTRY
AND
ITS SIGNIFICANCE IN THE INDUSTRIALIZATION PROCESS

by

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14

CONTENTS :

PART I :The Definition and Necessity of Industrialization

PART II :Two-Sector Growth Models

A-Hoffmann's Industrialization Model

B-Fel'dman's Model

C-Mahalanobis Model

D-Chenery's Industrial Growth Model

E-Leontief's Input-Output Model

PART III:Historical Development of Turkish Industry.

A-Overall View

B-First Liberal Period (1923-1933)

C-Period of Etatism (1933-1950)

D-Second Liberal Period (1950-1962)

1-General Situation

2-Development of Industrial Investments

3-Sectoral Distribution of Investments

PART IV :Turkish Industry in Planned Period

A-General Outlook

B-Data.



C-Manufacturing Industry Value Added From the View
Point of Subsectors

D-Distribution of the Labor Force Among Manufacturing
Industry Subsectors

E-Productivity

F-Distribution of Investments in Manufacturing
Industry Sectors

PART V: Conclusion

BIBLIOGRAPHY

P A R T I

THE DEFINITION AND NECESSITY OF INDUSTRIALIZATION

"The nations comprising the 2/3 of the world's population are getting only the 1/3 of the world's income. They struggle for escaping from the "vicious circle of poverty" and their evolution is, from primitive agricultural societies to developed, industrialized societies." (1)

Their aim is for escaping from the economic, cultural and social backwardness and they try to decrease the increasing inequality between theirs and some other wealthy countries. The countries realize that while they try to reach their aim, they will recognise a lot of problems and must try harder than the wealthy countries.

As known, the most important subject of providing high life standards is the participation of the machinery in the economy. Technology is not the interest point of just developing countries any more but a mutual interest of almost all countries and industrial activities. Technological development has an increasing importance for the process of industrialization and for the economic relations of the countries, especially after the

(1) Serin, Necdet: Türkiye'nin Sanayileşmesi, A.Ü. SBF Yayınları no: 167-149, Sevinç Matbaası, Ankara, 1963, p. 3.

industrial revolution.

Today the discussion of industry and agriculture as the vanguard and preceding act of progress is not important. The developing economic structure and the demand occurring as a result of this structure is for industrial products. (2)

Investments, one of the most discussed subjects in the economic theory, plays the "key" role in the analysis of economic development, growth and periodical cycles. If we assume the concept of economic development synonymous to the concept of industrialization, the importance of the industrial investments will occur automatically. Besides the amount of these investments, the sectoral and regional distribution of them are important for the process of structural development.

Here, we will refer to the criteria of industrialization. According to Sutcliffe: At least 25% of the GDP must be supplied from industry. (3) It is not sufficient to find out the share of industry in the national income as the only criteria of industrialization, since this number may increase for many reasons. For example, the total share of the industry in Kuwait was 64% in 1969. (4) In order to find out concrete and certain results we must also be careful about the share of manufacturing industry in the national income. As a second criteria of industrialization, Sutcliffe suggests that 60% of the industrial output must be supplied from manufacturing industry. (5)

(2) Korum, Uğur: Türk İmalat Sanayi ve İthal İkamesi, A.Ü SBF Yayınları no:408, A.Ü Basımevi, Ankara, 1977, p.19.

(3) Sutcliffe, R.B: Industrialization and Underdevelopment, Addison-Wesley Publishing Company, London, p.17.

(4) İlkin, Akın: Kalkınma ve Sanayi Ekonomisi, İ.Ü İktisat Fakültesi Yayınları no:384, Elio Matbaacılık, İstanbul, 1976, s.19.

(5) Sutcliffe, Op.cit. p.17.

If Kuwait is examined from this point of view, it is clear that the share of the manufacturing industry in this country is just 4 % .⁽⁶⁾ For this reason, especially for the oil producer countries high shares of mining and quarrying industry cause an increase in the share of total industry. Sutcliffe claims that this criteria is necessary but not sufficient for industrialization. If the mining and quarrying industry in a country is not developed and most of the outcome is supplied from the manufacturing industry, the insufficiency of this single criteria may be seen. For this reason, Sutcliffe assigns a third criteria and he claims that 10 % of the population must be employed by the industry. He uses the notation of "Industrialized Country" for a country that has fulfilled these three criteria.⁽⁷⁾

In our opinion, except the countries who have great oil reserves, industrialization depends on manufacturing industry.

In general classification, industry means a total which is made up of mining and quarrying, manufacturing and energy sectors. In a developing country, if planned economic growth path is followed, in which direction the industry should grow, which sector to be given priority and what to produce type of problems gain importance. First of all, an appropriate aim and policy must be chosen.

Except the countries that own great oil reserves, in all countries manufacturing industry constitutes the basis of the industry. In developed countries the development of manufacturing industry and the increasing level of high standards came

(6) Ilkin, Op.cit. p.20.

(7) Sutcliffe, Op.cit. p.17.

forward with the economic rise. In underdeveloped countries the productivity of the industry may also be higher than the traditional agricultural production. For this reason, industrialization occurs as a mean of the increase of industrial employment and of per capita national income. At the same time, in the countries where the ratio of population to natural resources, especially land, is high, industry means the single hope for an increase in productivity and for higher life standards. (8) For this reason new employment sources must be created. New industries will create new employment facilities and will eliminate disguised unemployment, both in industry and agriculture, it will increase the number of labor-intensive industries, thus will create full capacity. Secondly, the process of urbanization will gain speed with the development of industry and economy. "Economic importance of agriculture decreases first proportionally then as a result of the decrease in the amount of agricultural labor." (9)

Economic development is not only the decreasing economic importance of agriculture and increasing importance of industry but it is a basic change which occurs in every organization of the society. "Economic development means the change in production factors, the use of sources and equipment, consumption savings and investment customs, the human relations, the use of goods and services or the change in behaviors, aims and the manner of living." (10) Industrialization gets more importance as a factor

(8) Myrdal, G: An International Economy, Harper Brothers, Newyork, 1956, p.226 (cited by Serin, Necdet).

(9) Schultz, T, W: The Economic Test in Latin America, Newyork State School of Industrial and Labor Relations, Cornell Unv. Bulletin, August, 1956, p.15, (cited by Serin, Necdet).

(10) Hays, S, P: Personality and Cultural Problems of Point IV, Chicago, 1952, pp.206-207, (cited by Serin, Necdet).

motivating the economic development.

As can be understood from the information up to this point the first reason of industrialization is the use of the present resources most beneficially which will allow a gradual but continuous increase in the majority's income rather than a quick shift in the minority's income, meaning an increase in both total and per capita income.

The most important vicious circle of a developing country may be explained as, low income-low savings-low investment-low productivity and again low income. Progress may occur if this cycle is broken. For example, an increase in productivity causes an increased level of savings and investments. High investments level increases the productivity again and the process results in development.

The continuous increase of the per capita national income is important for both the industrialization and the demand for industrial output. On the other hand, creating a continuous rise of income without industrialization is very hard. Income is necessary for financing the industrial investments that are necessary for the development of the country. This means that industrialization is the motor of the economic development. The progress of the other sectors may only support industrialization. Industrialization gives speed to economic development and supplies self-sufficiency. (11)

The countries realizing the process of economic development must decide about the production structure, allocation

(11) Han, Ergül: Türkiye'de Sanayileşme Süreci ve Stratejisi, Eskişehir İkt. Tic. Bil. Akademisi Yayınları no:205, Akademi Basımevi, Eskişehir, 1978, p.25.

of resources etc. The preferences may resemble a certain rate of growth and taking the necessary steps and applying the necessary policies to reach it, or to put aside temporarily other alternatives.

Among these preferences called development strategies the most important subject for economists is the choice of industry. In the process of development and growth the vanguard sectors are important for productivity.

If we examine the evaluation of industry in today's developed countries, we realize that the methods used are not always the same but the industrial choices as the foundation of every case. As we mentioned, manufacturing industry has a great importance for the whole industry. Manufacturing industry is believed as the basic motivation for the progress and development process and its classification contains some subcategories. We define these subcategories as Consumer Goods Industry, Intermediate Goods Industry, Investment Goods Industry and we define the investment and production preferences of the "Choice of Industry". This study will examine the changes in the structure of the manufacturing industry and the effects of these changes on the country's economic rise.

Firstly we will examine the theoretical studies assumptions related with the subject.

P A R T II

TWO-SECTOR GROWTH MODELS

As known, one sector growth models are contended with global economic balances. However two sectors growth models must have taken into account the exchanges among sectors. For example, investment capacity does not depend on savings or capital only but it also depends on the production of the investment goods. In addition, the properties that the models stress on are changable. For example, in global models the most effective variable in finding out the rate of growth is investment capacity but in two sectors models the distribution of investment among sectors is more important.

All economic analysis based on two sectors models have a common property. The priority of investments are given to the investment goods industry. In other words, a strict relationship between the growth rate and the production goods investments are considered. However global models offer the underdeveloped countries a progress which depends on the consumer goods industries. According to global models the industrialization steps of the underdeveloped countries depend on the investments based on the following criterias:

a-Country's production factors ratio must be examined.

b-The sectors that produces consumer goods must be given priority.

c-Import substitution policy must be applied.

These criterias result, directly or indirectly, with the dynamism of consumer goods industries during the industrialization process of the underdeveloped countries. (12)

Now, we want to examine the applications of some two sectors models, in order to understand the industrialization process of the underdeveloped countries.

A-Hoffmann's Industrialization Model

Hoffmann classifies the factors that determine both the growth in various sectors and the development of the whole economy as follows, the relative amount of the production factors (natural resources, capital stock, employment), the distribution of the production sources, related with home and foreign markets, the level of technological development, the skill of entrepreneurs, the preferences of the consumers, the politic and social structure of the country type of non-economic factors. (13)

Whatever the value of the first three of these factors are the structure of the manufacturing industry is said to be in the following manner: During the process of industrialization the consumer goods industry such as; food, textile, furniture, manufacturing of leather goods develop preceedingly. Later on

(12) Özdemir, Hidir: İki Sektörlü Fel'dman-Mahalanobis Modelinde Yatırımların Sektörel Dağılımının Değerlendirilmesi, Fakülte Matbaası, İzmir, 1978, p.2.

(13) Hoffmann, W, G: The Growth of Industrial Economies, Manchester Univ. Press, Manchester, 1958, p.2.

metal works, transportation vehicles, the investment goods industry including the chemistry and engine industries develop. But the development of this sector is faster than the development of the consumer goods industry and this development can be followed during the whole industrialization process. As a result, if the value added of the consumer goods industry is compared with the value added of the investment goods industry the decreasing ratio of the first one is observed.

Hoffmann explains such a development of industry in stages. At the first stage the net output of the consumer goods industry is five times the net output of the investment goods industry. At the second stage investment goods industry gains an increasing importance. The output of the consumer goods industry is nearly two and a half times the output of the investment goods industry. At the third stage the net outputs of both sectors are equal. At the last period the fastly developing investment goods industry leaves the consumer goods industry behind. (14)

According to Hoffmann, the criteria of growth is not either the absolute level of output or output per capita or an increase in the capital stock. The relation between the rates of growth of the subsector of the manufacturing industry are taken as a criteria.

He has summarized the results which are obtained from his studies about various countries in the following table. The variation of the relation between the net outputs of the consumer and investment goods industries and the variation of

(14) Ibid, p. 67.

their relative shares in the total industry output are shown in the below table.

TABLE I

THE SHARES OF THE CONSUMER AND INVESTMENT
GOODS INDUSTRIES IN THE TOTAL INDUSTRIAL
OUTPUT

	<u>First Stage</u>	<u>Second Stage</u>	<u>Third Stage</u>
Consumer Goods Ind.	83 %	71 %	50 %
Investment Goods Ind.	17 %	29 %	50 %

Source: Hoffmann, W, G, "The Growth of Industrial Economies", p.97.

Hoffmann claims that these steps are valid for almost all free market economies. But he tells that there may occur important differences in the development of some industries included in these two sectors. He explains these differences by geopolitical distribution, international trade and some non-economic factors such as population growth, politic and social structure.

Any one of the industries may occur as the most developed one in a certain stage. This industry takes the leadership of net output and effects the economic development very much. New industries will take the leadership in every following stage and will take the place of the original prevailing industry. Usually food and textile industries prevail in the first two stages. Iron-steel machinery industries prevail in the third stage. In some cases textile industry goes on prevailing in the

third stage.⁽¹⁵⁾ Mainly, the preceeding development of consumer goods sectors is tied with some endogenous factors. For example, the development of investment goods sector requires a great amount of capital, qualified labor and a developed production technique. However industries such as food and textile develop without the occurrence of the necessary conditions for the development of investment goods industry. Such consumer goods industries need a little capital at the beginning and use the technical knowledge that is not suitable for investment goods industry but that is used in domestic industry.

At the beginning of the industrialization process in a closed economy, investment goods industry is not as important as the consumer goods industry.⁽¹⁶⁾ As we mentioned before, the output of consumer goods industry can be increased by an increase of employment or more productive use of existing employment.

The same situation is also valid for open economies. At the first stages of economic development the overseas demand rises. This encourages the rise of investment goods production. But the establishment of the industry producing such goods is impossible in the short-run. Moreover, the exportable products must be able to compete with the foreign goods both from quality and cost respects. This requires the existence of industrialization.⁽¹⁷⁾

As a result, Hoffmann characterizes his industrialization model with the constant increase of investment goods output relative to total industry production.

(15) Ibid, p. 127-131.

(16) Ibid, p. 31.

(17) Ibid.

B-Fel'dman's Model

G.A.Fel'dman had been an engineer economist at the beginning of the planned period of Soviet Union in 1920's and 1930's and he has publicated his first article "On the Theory of National Income Growth" which dwells on the choice of industry for the economic development.

Fel'dman, first, considered the distribution of the total output among sectors. The first category had consisted of the production goods sector. The second category had consisted of the consumption goods and raw materials. Like all other growth models Fel'dman's model depended upon some assumptions, too. One of these assumptions is the unmoveability of production goods between sectors. For example, a machine for producers goods is not used in consumer goods sector. In other words, capital movements are limited.⁽¹⁸⁾ Another assumption is the independence of the investment goods production. Investment goods production continue even if the consumption goods are not produced.⁽¹⁹⁾ But the opposite of this is not true. Other assumptions of the model are as follows, fixed coefficient technologies of the both sectors, exemption of the capital stock from amortization and existence of closed economy. This last assumption depends upon the politic and economic structure of Soviet Union in those years. The application of the model today, with the assumption of closed economy, gets some reactions.

Now, let's try to summarize the operation and results of

(18) Jones, Hywel. G: An Introduction to Modern Theories of Economic Growth, McGraw-Hill Comp., USA, 1976, p. 112.

(19) Ibid, p. 114.

Feldman model.

Depending on the assumption of fixed production technology coefficient, the production function is as follows:

$$Y_1 = \min \left[\frac{K_1}{v_1}, \frac{L_1}{u_1} \right]$$
$$Y_2 = \min \left[\frac{K_2}{v_2}, \frac{L_2}{u_2} \right]$$

Y_1 shows the producer goods output, Y_2 shows the consumer goods output. K_1 and K_2 show the distribution of capital and L_1 and L_2 show the sectoral distribution of employment. v_1, v_2, u_1, u_2 are fixed coefficients.

According to Fel'dman, employment can be in any composition and amount, as a result of this, the only limiting factor of the growth process is capital. (20) Thus the production functions are as follows:

$$Y_1 = \frac{K_1}{v_1} \quad \text{and} \quad Y_2 = \frac{K_2}{v_2}$$

It is assumed that investment is equal to the capital goods production and as a result amortization is unnecessary.

$$I = Y_1 = \frac{K_1}{v_1}$$

Investment ratio is determined by capital stock and capital coefficient. The change in total investment is as follows:

(20) Ibid, p. 113.

$$\dot{i} = \dot{Y}_1 = \frac{1}{v_1} \dot{K}_1$$

\dot{K}_1 (the ratio of change in the first sector's capital stock) is determined by the total output ratio of the investment goods sector assigned to the first sector.

As a result of the definition

$$\dot{K}_1 = I_1 = \mu I$$

If it is placed in the above equation:

$$\dot{i} = \frac{1}{v_1} \mu I$$

or

$$\frac{\dot{i}}{I} = \frac{\mu}{v_1} \quad \text{is obtained.}$$

In this way an increase in μ coefficient or a decrease in capital/output (v_1) ratio increases the growth rate (\dot{I}/I) of total investment. (21)

Similarly output of the consumer goods sector is determined by the capital stock and capital efficiency of the second sector. (22) In other words, consumption is assumed to be equal to the consumer goods production.

$$C = Y_2 = \frac{K_2}{v_2}$$

In this way, an equilibrium position is realized from the beginning.

The change in the output of consumer goods is followed:

$$\dot{C} = \dot{Y}_2 = \frac{1}{v_2} \dot{K}_2$$

(21) Ibid, p. 114.

(22) Domar, Evsey, D: Essays in the Theory of Economic Growth, Oxford Univ. Press, New York, 1957, p. 223.

by definition

$$\dot{K}_2 = I_2 = (1-M) I$$

if it is placed in the above equation:

$$\dot{C} = \frac{1}{v_2} (1-M) I \quad \text{is obtained.}$$

The growth rate of the consumer goods output is as follows:

$$\frac{\dot{C}}{C} = \frac{(1-M)}{v_2} \frac{I}{C}$$

Since total investment (I) grow in a ratio (M/v_1) the growth of the investment goods output (\dot{C}/C) depends on the growth rate of investment. (23)

The following suggestions are made for Fel'dman's growth model:

1-Usually growth rate of consumption and investment are not used in the model. However the growth rate of the total investment which is assigned to the first sector will raise the growth rate of consumption in the long-run.

2-In Fel'dman's model the growth rate of national income is not equal to the growth rate of the investment goods output. But, this rate will converge ^{to} the total investment growth rate in the long-run (M/v_1) . (24)

Fel'dman's various studies show, that part of the total investment which is assigned for the first sector is the key variable of the model. Increasing capital goods investments result with the increasing rate of growth.

(23) Jones, Op. cit. p. 115.

(24) Ibid, pp. 115-116.

TABLE II
 GROWTH RATES OF NATIONAL PRODUCT
 AND CONSUMER GOODS IN
 THE FEL'DMAN MODEL OF GROWTH

$Y_0 = 10 ; C_0 = 9 ; v_1 = v_2 = 3$									
A			B			C			
$\mu = 0.3$			$\mu = 0.6$			$\mu = 0.95$			
Growth Rate			Growth Rate			Growth Rate			
Year	Y	%	C	Y	%	C	Y	%	C
1	3.56		2.79	3.93		1.78	4.40		0.25
2	3.79		2.99	4.60		2.13	5.75		0.35
3	4.03		3.21	5.34		2.54	7.39		0.47
4	4.27		3.43	6.16		3.02	9.33		0.65
5	4.52		3.66	7.04		3.57	11.54		0.88
6	4.77		3.89	7.98		4.20	13.94		1.20
7	5.02		4.13	8.96		4.90	16.44		1.62
8	5.27		4.38	9.95		5.68	18.91		2.18
9	5.52		4.63	10.95		6.52	21.23		2.92
10	5.76		4.88	11.93		7.43	23.31		3.88
15	6.91		6.11	16.61		12.33	29.50		12.82
20	7.87		7.21	18.32		16.27	31.20		24.32
25	8.59		8.10	19.35		18.45	31.57		29.82
30	9.09		8.75	19.76		19.40	31.65		31.27
35	9.43		9.21	19.91		19.77	31.66		31.58
40	9.65		9.50	20.00		19.92	31.67		31.65
45	9.78		9.69	20.00		19.97	31.67		31.66
50	9.87		9.81	20.00		19.99	31.67		31.67
55	9.92		9.88	20.00		20.00	31.67		31.67
60	9.95		9.93	20.00		20.00	31.67		31.67
65	9.97		9.96	20.00		20.00	31.67		31.67
70	9.98		9.97	20.00		20.00	31.67		31.67

Resource: Jones, Hywel, G., "An Introduction to Modern Theories of Economic Growth", p.117.

We are going to explain that the change in coefficient μ result with the change in growth rate of national product and consumption. They are shown in table II.

The calculation of the values in the table depends on some assumptions. It is assumed that capital product ratio of both sectors are equal and constant ($v_1 = v_2 = 3$). It is also assumed that at the beginning of the planned period, national product is equal to 10, consumption goods output is equal to 9. The change in the rate of national product and consumption is shown by giving different values to μ .

We may find out the following results from the first column of Table II: If 30 % of the investment goods output is assigned to the investment goods sector again, the growth rate of the investment goods output ($\mu/v_1 = 0.3/3$) will be 10 % for every year. The growth rate of consumption and national product will reach to the same amount in the long-run. Probably 50 years later the growth rate of consumption and national product will be approximately 10%.

If $\mu = 0.6$ (Column B), the growth rate will be 20 % in the long-run. After approximately 45 years the growth rate of consumption and national product will reach to 20 %.

In the third column (C) a high value such as 0.95 is assigned for μ . This means that all investments are channelized to the investment goods industry. The growth rate of consumption at the beginning is lower than the other two situations (A and B). However it catches the growth rate of them in a short period. As a result, approximately 40 years later the growth rates of consumption, and investment are going to be equal.

C-Mahalanobis Model

Mahalanobis who has publicated his ideas about 30 years after Fel'dman, without referring him, produced a model equivalent to Fel'dman's. (25) If some concept and formulation differences are not considered, there are a great number of economists who evaluate Mahalanobis's ideas on the same level of Fel'dman.

In order to explain the relation between the sectoral distribution of investments and the growth rates of the economy. Mahalanobis used his two sector model in 1953. This model divides the total investment into two parts; the first part is suggested (λ_k) for increasing the investment goods production and the second part (λ_c) for increasing the consumer goods production. Here, λ_k and λ_c are accepted as a part of the total investment and the following equation is also accepted: (26)

$$\lambda_k + \lambda_c = 1$$

The basic assumptions of Mahalanobis are as follows:

- Sectoral distribution of the investment is controlled by the government.
 - The economy is closed.
 - Labor is elastic and a great amount of unemployment exists.
- The only limiting production factor is capital. Production goods are created only by the first sector. The use of capital is unlimited.

(25)Özdemir, Op.cit. p.3.

(26)Mahalanobis, F.C:The Approach of Operational Research to Planning in India, Asia Publishing House, India, 1963, p.35.

-Consumer goods are produced by the second sector. The marginal utility to consume is constant. (The utility of present and future productions are equal.) (27)

-A single technology is assumed for every sector. Technological developments are not considered in the model, efficiency of investment coefficient (the inverse of Capital-Output ratio) is constant for every sector. (28)

-The prices are constant.

-Efficiency of investments will occur after a certain period.

-The independence of production and consumption is assumed.

Mahalanobis explains that appropriate fractions of investments in industries manufacturing intermediate (producer) goods should be allocated to λ_k and λ_c in proportion to the value of such intermediate goods used in the capital goods or the consumer goods industries respectively.

These two parts (λ_k and λ_c) are determined according to the choice of the planners. Once λ_k is chosen then the supply of investment goods industry in the country becomes constant. A change may occur only by exportation or importation of investment goods. (29)

Mahalanobis assumed that, with the development of planning, supply of the investment goods will gain importance in India, such that; at the beginning of Indian economy the industry depends on investment goods importation. But as a result of the policies applied, economy will be independent of this

(27) Richard, S.E. and Kirit, S.P.: Planning for Growth, the M.I.T. Press, Massachusetts, 1968, p.6.

(28) Ozdemir, Op.cit. p.4.

(29) Mahalanobis, Op.cit. p.35.

importation.

We can summarize Mahalanobis's two sectors model in the following manner:

In the model, β is defined as the investment efficiency ratio of increment of income generated to total net investment in the economy as a whole. Since total investments are divided to consumer goods and investment goods sectors:

β_k = is a percentage change in the income/investment ratio of investment goods.

β_c = is a percentage change in the income/investment ratio of consumer goods. (30)

As a result

$$\beta = \lambda_k \beta_k + \lambda_c \beta_c$$

Change in investment is

$$K_{t+1} - K_t = \lambda_k \beta_k K_t \quad -1-$$

Change in consumption:

$$C_{t+1} - C_t = \lambda_c \beta_c K_t \quad -2-$$

From the equation -1-, we can find the following equation:

$$K_t = (1 + \lambda_k \beta_k)^t K_0 \quad -3-$$

From this equation:

$$K_t - K_0 = K_0 \left[(1 + \lambda_k \beta_k)^t - 1 \right] \quad -4-$$

$(C_t - C_0)$ can be found out from equation -2- in the following way:

(30) Ibid. p. 36.

$$\sum_{r=1}^t (C_r - C_{r-1}) = \sum_{r=1}^t \lambda_c \beta_c K_{r-1} \quad -5-$$

$$= \lambda_c \beta_c K_0 + \lambda_c \beta_c K_1 + \lambda_c \beta_c K_2 + \dots + \lambda_c \beta_c K_{t-1} \quad -6-$$

$$= \lambda_c \beta_c K_0 \left[1 + (1 + \lambda_k \beta_k) + (1 + \lambda_k \beta_k)^2 + \dots \dots + (1 + \lambda_k \beta_k)^{t-1} \right] \quad -7-$$

$$(C_t - C_0) = \frac{\lambda_c \beta_c}{\lambda_k \beta_k} K_0 \left[(1 + \lambda_k \beta_k)^t - 1 \right] \quad -8-$$

Thus:

$$Y_t - Y_0 = (C_t - C_0) + (K_t - K_0) \quad -9-$$

If equations -4- and -8- are placed in the above equation:

$$Y_t = Y_0 + \left[\frac{\lambda_c \beta_c + \lambda_k \beta_k}{\lambda_k \beta_k} \right] \left[K_0 (1 + \lambda_k \beta_k)^t - 1 \right] \quad -10-$$

is obtained. Since initial investment ratio is $\alpha_0 = K_0/Y_0$ (31) national income at time t can be calculated in terms of the initial national income (Y_0), initial investment ratio (α_0) and $\lambda_k, \lambda_c, \beta_k, \beta_c$ parameters.

$$Y_t = Y_0 \left[1 + \alpha_0 \frac{\lambda_k \beta_k + \lambda_c \beta_c}{\lambda_k \beta_k} \left[(1 + \lambda_k \beta_k)^t - 1 \right] \right] \quad -11-$$

(31) Bhagwati, Jagdish and Chakravarty, "Contributions to Indian Economic Analysis: A survey", AER, September 1969, pp.2-8.

As we have mentioned before, at this point, the sectoral investment allocation ratios (λ_k and λ_c) are left for the planners for enumeration. β_k and β_c ratios are determined according to the technological factors, production conditions, and investment models. (32)

Mahalanobis explained the effects of the change over time of the β_k , β_c and λ_k ratios on the national income with the help of Table III. In the table, value of the Y_0 was determined as 1000 and α_0 as 0.7 according to the present conditions of India, at that time.

As seen in the table, when we take $\beta_k = 0.20$ (33) and give different values to λ_k and β_c , we observe increases in national income over time. Nevertheless when we give a higher value to λ_k ($\lambda_k = 0.7$) then the rate of increase declines. This gradual increase lasts up to the critical period and after this period, growth gains speed in a long period such as 20 or 30 years.

(32) Mahalanobis, Op.cit. p.52.

(33) Mahalanobis has found that β_k is usually lower than β_c (that is marginal income increase per unit of investment is lower in the investment goods industries than that in the consumer goods industry).

THE CHANGES IN THE NATIONAL INCOME OF THE MAHALANOBIS MODEL OVERTIME

		$Y_0 = 1000$				$\alpha_0 = 0.7$				$\beta_k = 0.20$				$\beta_c = 0.25, 0.50, 0.75, 1.00$			
Year (t)	β_c	$\lambda_k = 0.1$				$\lambda_k = 0.3$				$\lambda_k = 0.5$				$\lambda_k = 0.7$			
		0.25	0.50	0.75	1.00	0.25	0.50	0.75	1.00	0.25	0.50	0.75	1.00	0.25	0.50	0.75	1.00
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
0		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1		1017	1033	1049	1064	1015	1029	1041	1053	1016	1024	1033	1042	1015	1020	1026	1031
2		1035	1066	1098	1130	1034	1059	1084	1110	1033	1051	1070	1088	1032	1043	1055	1066
3		1052	1101	1149	1197	1052	1091	1130	1169	1052	1081	1110	1139	1052	1070	1088	1106
4		1071	1136	1201	1265	1072	1126	1179	1233	1073	1114	1154	1195	1074	1100	1126	1152
5		1089	1171	1253	1335	1093	1162	1231	1300	1096	1150	1203	1256	1099	1134	1169	1204
6		1108	1208	1307	1406	1115	1200	1286	1371	1122	1189	1257	1324	1128	1173	1218	1263
7		1127	1245	1362	1479	1138	1241	1344	1447	1149	1232	1315	1398	1161	1218	1274	1330
8		1147	1282	1418	1553	1163	1284	1405	1527	1180	1280	1380	1480	1199	1269	1338	1408
9		1167	1321	1475	1628	1189	1330	1471	1611	1214	1333	1452	1570	1242	1327	1411	1495
10		1188	1360	1533	1705	1217	1378	1540	1701	1251	1390	1530	1669	1291	1393	1494	1596
20		1417	1799	2182	2565	1605	2056	2506	2957	1902	2403	2904	3406	2370	2848	3326	3804
30		1696	2335	2974	3613	2301	3269	4237	5206	3591	5030	6469	7909	6370	8243	10116	11989

		$\beta_k = 0.4$								
Year	β_c	$\lambda_k = 0.1$			$\lambda_k = 0.3$			$\lambda_k = 0.7$		
		0.25	0.75	1.25	0.25	0.75	1.25	0.25	0.75	1.25
		5		1100	1271	1442	1131	1287	1442	1216
10		1223	1601	1979	1362	1792	2222	1959	2364	2769
20		1552	2490	3428	2488	4253	6018	13281	18470	23660
30		2040	3807	5574	5983	11896	17809	146949	208619	270289
50		3832	8641	13450	50560	109361	168161	35205669	28956374	37557079

121

Resource: Mahalanobis, P. C., "The Approach of Operational Research to Planning in India", pp-53-56

When we take $\beta_c = 0.25$ and $\lambda_k = 0.1$ (second column), the income increase in 20 years is about 42%. Mahalanobis says that this situation can be considered as similar to the pre-planned situation of Indian economy. (34) On the other hand, if we reduce the value of λ_k to 0.3 and increase the value of β_c to 0.5 (seventh column), the increase in income will double in 20 years. When we increase β_c to 0.75 within the plan, income increase in 20 years becomes two and a half. According to Mahalanobis, these situations (seventh and eighth columns) also represent planned development.

In short, a desired growth rate in the economy can be achieved only by assigning more investment to investment goods sector in the long-run and by increasing the efficiency of investment in both sectors (investment and consumer goods sectors). This is also realized by a policy which is carried out within a framework of a selected plan.

D-Chenery's Industrial Growth Model

One of the most important studies to establish industrial growth models is the analysis of Chenery which has been done for a number of countries. For Chenery, "balanced growth" or "balanced development" are the same as the planned development. In his studies, he has not only examined the equilibrium between total supply and demand but has also included inter-industry input-output relations into the economic planning. In view of post-war years, in his researches for more than fifty countries, he has adopted multiple regression techniques into

(34) Ibid, p. 52.

cross-section data and has tried to find a normal growth function. It is also planned that these functions indicate the changes that are possible to emerge in the composition of national income. (35)

According to Chenery, industrialization is the basic hope of those poor countries which try to increase that level of income. (36) A successful growth for all countries, however, is characterized by an increase of the share of the manufacturing industry in total output. This structural change is, on the one hand, the cause of an increase in income, on the other is realized by its own effect. The changes in the economic structure in the process of industrialization can be classified in three main groups:

a-Increase of the relative importance of the manufacturing industry.

b-Changes in the composition of industrial inputs.

c-A change in the production technique. (37)

In spite of the fact that some of these factors show similarities between countries, other factors change, depending on the accepted development strategies and production resources.

Chenery had used three main variables in his study that he has made in 1960: per capita value added in i th industry

(35) Griffin, B. Keith and Enos: Planning Development, Addison-Wesley Publishing Company, London, 1970, p. 142.

(36) Chenery, Hollis, B: "The Role of Industrialization in Development Programmes", The Economies of Underdevelopment, edited by Agarwala and Singh, Oxford Univ Press, New York, 1973 pp. 450-471.

(37) Chenery, Hollis, B: Structural Change and Development Policy, Oxford Univ. Press, New York, 1979, ch. 3, p. 70.

(V_i), Per capita national income (Y) and population (N).

$$\log V_i = \log \beta_{i0} + \beta_{i1} \log Y + \beta_{i2} \log N$$

$$\beta_{i1} = \text{growth elasticity} = \frac{dV_i}{V_i} \cdot \frac{Y}{dY}$$

$$\beta_{i2} = \text{size elasticity} = \frac{dV_i}{V_i} \cdot \frac{N}{dN}$$

By these formulas, he has found the growth elasticity for manufacturing industry as 1.44, growth elasticity for whole industry as 1.36. (38)

Aparting from his findings, Chenery determines the development model as follows: When per capita income level increase from \$100 to \$1000, the share of industrial product in the national income rises from 17 % to 38 %. If we think of the share of only manufacturing industry, at the same level of income increase, it is observed that it rises from 12 % to 33 %. Besides, the shares of agriculture and mining also decrease from 45 % to 15 %. (39)

In this research, Chenery classifies industrial groups according to the demand for their products as follows:

- a-Investment goods and related products.
- b-Intermediate goods.
- c-Consumer goods.

In spite of the fact that this diversification is very close to Hoffmann's analysis, it completes a deficiency of Hoffmann.

(38)Chenery, Hollis, B.: "Patterns of Industrial Growth", AER, September 1960, p. 635.

(39)Ibid.

Chenery claims that Hoffmann includes intermediate goods sector very arbitrarily and he establishes a more detailed industry classification.

Chenery says that the diversification between growth elasticities of consumer goods and investment goods sectors is as large as the difference between agriculture and industry. After standardizing the population at 10 million, he achieves some results. Here there is a table below showing the results which are achieved by Chenery:

TABLE IV
PER CAPITA NATIONAL INCOME
AND
THE CHANGES IN THE COMPOSITION
MANUFACTURING INDUSTRY
%

Per Capita Income (\$)	The share of Inv. Goods Sec.	The Share of Inter. Goods Sec.	The Share of Con. Goods Sec.
100	12	20	68
600	35	23	43

As seen in the table, when the level of per capita income rises from \$100 to \$600, the composition of manufacturing industry output changes. When the share of investment goods sector (Machine, metal) increases from 12 % to 35 %, the share of intermediate goods sector (Chemical materials, hard rubber) also rises from 20 % to 23 %. In spite of this, the share of consumer goods falls from 68 % to 43 %.⁽⁴⁰⁾ In other words, on this income

(40) Ibid, p. 638.

series, when the share of investment goods sector in the total manufacturing industry increases by 192 %, the share of consumer goods sector falls about 37 %.

Chenery indicates the changes in the demand composition as a cause of industrial growth and gathers the sources of demand at those three points: (41)

- 1-Import substitution by domestic production,
- 2-Growth in the final use of industrial products,
- 3-Growth in intermediate demand.

Chenery, in his study, has found that the ratio of domestic products to import differs according to sectors. As income rises this ratio increases considerably in the investment and intermediate goods sector, however, there has been a smaller increase in the consumer goods sector. (42)

Chenery, as a defender of the view of planned and balanced development, says that the balanced development of manufacturing industry lies on the input-output relations between consumer goods, intermediate goods and investment goods sectors. If these relations are not taken into consideration in the industrial policy of developing economies, he claims, there will be great imbalances in the structure of manufacturing industry. (43) He claims, for example, that a policy which gives weight only to consumer goods sector causes negative influences from the point of view of value added, employment, technological improvements, foreign dependence and foreign trade and that it is necessary

(41) Sutcliffe, *Op. cit.* p. 638.

(42) Hagen, Everette, E.: The Economics of Development, Richard D. Irwin Inc, USA, 1972, p. 461.

(43) Chenery, Hollis, B. and Clark: Endüstrilerarası İktisat, Çev. Cemil Çınar, ODTÜ Matbaası, Ankara, 1965.

to develop intermediate goods, consumer goods and investment goods industries as they complete each other, to supply balanced development.

The consequences stressed by the two sector growth models which we have tried to examine are more or less the same. The rapid growth and development in the industry and in the whole economy is only possible:

- By the shift of investments into production goods sector,
- By increasing the efficiency of investments in production and consumer goods sector,
- By establishing relationships which complete each other among sectors.

We try to clarify the last point which we have touched here, that is the interaction between sectors in the economy and their being effected by the general conditions of the economy by giving an example which describes multi-sector models.

In our opinion, the best example to these models is Leontief's Input-Output Model.

E-Leontief's Input-Output Model

The aim of Input-Output Model which was developed by Leontief in Soviet Union in 1920's is to explain inter-industry flows by the production level in each sector. By observing inter-connectidness of industries, he claims in his Input-Output Analysis that all industries must develop in a harmonic order, in such a manner that production in every sector should be organized in the way that it should not prevent the produc-

tion of other sectors.

Now, we try to examine Leontief's assumptions related to input-output relations between sectors: (44)

i-Each commodity or commodity group is produced by a single industry or sector. The consequences of this assumption are as follows: a) In the production of each commodity group, there is only one technique, and b) Each sector produces only one commodity, there is no joint production.

ii-The input amount which one sector gets from another sector, to use in production is fixed and it is determined by the production level of the sector which gets the input. In other words, inputs to one sector is a function of the production level in only that sector and this function is accepted to be linear.

iii-The total effect of carrying on several types of production is the sum of the separate effects. This is known as the additivity assumption which rules out "external economies or diseconomies".

Depending on these assumptions, Leontief's Input-Output Model can be summarized as follows, in Leontief's system total production levels of sectors and final demands are shown as column vectors.

$$X = \begin{bmatrix} x_1 \\ x_2 \\ \vdots \\ x_n \end{bmatrix} \quad Y = \begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{bmatrix}$$

(44) Ibid, pp. 21-32.

In the model,

x_i = gross output in sector i,

x_{ij} = gross output in sector j,

y_i = total final demand in sector i.

Here, sector i is a sector supplying input and sector j is a sector demanding input. The input amount which sector j demands from sector i is shown by the value of x_{ij} . Therefore we can find total intermediate demand as $\sum_j x_{ij}$. From this, the following equation can be found:

$$\begin{aligned} \text{Total final demand}(y_i) + \text{Total intermediate demand}(\sum_j x_{ij}) \\ = \text{Gross Output}(x_i) \end{aligned}$$

In this equation if we take total final demand to the other side of the equation, then the equation takes the form of:

$$x_i - \sum_j x_{ij} = y_i \quad -1-$$

Now we will see how Input-Output Coefficients Table is obtained:

As the assumptions require, the production of each unit of j th commodity can be realized with a fixed amount of the i th input. This expression is denoted by the symbol a_{ij} as input coefficient. (45) And again according to the assumptions, there is a linear relationship between input amount which one sector demands from other sectors and the gross product of this sector. Thus this relationship can be written as

$$x_{ij} = a_{ij}x_j \quad -2-$$

(45)Chiang, A, c. : Fundamental Methods of Mathematical Economics, 2 nd edition, McGraw-Hill Company, Tokyo, 1974, p.124.

From this equation the following equation can be obtained:

$$a_{ij} = \frac{x_{ij}}{x_j} \quad -3-$$

When this equation is put into equation-1-, the equation

$$x_i - \sum_j a_{ij} x_j = y_i \quad \text{is obtained} \quad -4-$$

After this stage, now Input-Output Model can be written in matrix form.

$$X - AX = Y \quad -5-$$

$$\begin{bmatrix} x_1 \\ \vdots \\ x_n \end{bmatrix} - \begin{bmatrix} a_{ij} \end{bmatrix}_{n \times n} \begin{bmatrix} x_1 \\ \vdots \\ x_n \end{bmatrix} = \begin{bmatrix} y_1 \\ \vdots \\ y_n \end{bmatrix} \quad -6-$$

Here, multiplication of the input coefficients matrix (A) by sectoral production level gives demand vector (AX) of intermediate goods. Y is the final use vector. Since $IX = X$ (46) if we multiply matrix X by the identity matrix, to make the necessary outcomes, we shall find the solution of

$$IX - AX = Y \quad -7-$$

From this equation, we can find the following equation.

$$(I - A)X = Y \quad -8-$$

Here, vectors X and Y are variable vectors. Matrix (I-A) which is called as Leontief's matrix in common can also take the name of the "technology matrix". (47)

(46) $IX = X$ by definition.

(47) Chenery and Clark, Op.cit. p.46.

If we put production vector X in one side of the equation, we can find the following equation:

$$X = (I-A)^{-1}Y$$

-9-

This equation is the determining equation of Input-Output Analysis. Thus we arrive at the solution of total production for any period t.

Here, a point to be stressed is the change in input output coefficients over time. These changes are important from the point of view that they give some idea about total changes in the country's economy.

The main value of Leontief's Input-Output System which we have tried to explain above, is that it constitutes a base to the empirical studies in the fields of inter-industries relations. Nowadays, Input-Output Analysis, at a gradually increasing rate, is not only used for explaining economic concepts, but also for the preparation of economic development plans and programs. Different and unrelated good and service flows among sectors, the technological structure of the economy are now accepted as inevitable parts of economic study and researches.

As Chenery defends, the importance of Input-Output relations among sectors and the need for the development of sectors in a harmonic order is one of the most important consequences of Leontief's Model.

What is the adaptibility of these general consequences in two sector models which are examined before and finally in multi-sector models into the case of Turkey?

In later sections, we shall try to study what type of a structure is created by policies beginning with Republic, the contributions of industry in this structure to the Turkish economy and the causes of insufficiency which is seen in the industrialization efforts from time to time, in short "The Validity of Choice of Industry in Turkey".

P A R T I I I

HISTORICAL DEVELOPMENT OF TURKISH INDUSTRY

For Turkey, the industrialization effort is the most important among all the efforts which are attempted to get out among the "underdeveloped countries" and to take place among the "developed countries". Industrialization has constituted the foundation stone of the economic development policy of Turkey since the beginning of Republic and it has been accepted that real development comes through only by industrialization. From the foundation of Turkish Industry up to today, Turkey has experienced very different periods from the view point of different industrialization policies and of their consequences.

We, in this part of our study, try to analyze the historical development of industrialization in Turkey by taking into consideration particularly the manufacturing industry and its sub-sectors. Meanwhile, we shall also see briefly the historical development of industrial investments on behalf of the interdependence of industrial investments (the investments in a particular period being, to a certain extent, the continuation of post investments).

A-Overall View

It is known that Ottoman Empire had not developed in any type of industry that can be accepted as "heavy industry" and even had had very "light" type of "light industry", when she had begun to collapse.⁽⁴⁸⁾ In short, it can be said that there is very poor inheritance as industrial foundation from the Ottoman Empire and that there are very considerable improvements from the view point of industrialization in the period of the Republic. In this period industrialization policies and, depending on this, industrial investment exhibit different qualities from time to time. From this view point, we can classify last 58 years in four main periods: First Liberal Period, The Period of Etatism, Second Liberal Period and Planned Period.⁽⁴⁹⁾ In this part of the study, we shall see briefly the investment trends and the growth direction of manufacturing industry to figure out the development direction of investments in the Planned Period.

B-First Liberal Period (1923-1933)

This period is characterized by industrialization by means of domestic private enterprise in the protection and support of the state instead of the direct economic interference of the state. In this period, the economic policy was determined under

(48) Tayanc, Tunç: Sanayileşme Sürecinde 50 Yıl, Sümer Matbaası, İstanbul, 1973, pp. 33-34.

(49) Kepenck, Yakup: "Türk Sanayinde Yatırımlar Üzerine Bir De-neme", Türkiye'de Sanayileşme ve Sorunları Semineri, Sevinç Matbaası, Ankara, 1975, p. 20.

the light of the resolution which was accepted in the Congress of Economy in Izmir in 1923. By the "Law of Encouragement of Industry", which was accepted in 1927, it has been required that private sector should play an effective role. In the period, up to 1927, an increase about 60 % in the amount of workers and about 30 % in the number of industrial organizations could be seen. (50) On the other hand, 90 % Turkish import consisted of industrial products, within it, consumer goods had a weight of 70 % and intermediate and investment goods 30 %. In the same year, it can be said that 44 % of industrial production consisted of food and 24 % of textile and clothing goods. (51) In this period, which can be accepted as the just beginning of industrialization, it has been understood that main consumer goods were met by imports.

Relating to this period, briefly we can say the following: Private enterprise has developed especially in the consumer goods sector, according to the economic policy applied. It has been understood that private enterprise did not make any investment in key industries but invested in consumer goods sectors which yield profits in the short-run and for which domestic market is ready. Essentially insufficient infra-structure, scarce capital and technical know-how also give rise to this consequence. And when we add to these conditions, the situation arising from long lasting war and the lack of foreign aid, one can grasp

(50) Ibid, p.21.

(51) Eldem, Vedat: Mütareke ve Milli Mücadele Yıllarında Osmanlı İmp. Ekonomisi, Hacettepe Univ. ve Bogaziçi Univ. Türk İktisat Tarihi Semineri, Ankara, 1973, (teksir), p.44 (cited by Kepek, Yakup).

why Turkey has suffered a "vicious circle" which is seen in the first 10 years of Republic (low income and savings levels limit the possibilities of industrial investment from the view point of both resources and purchasing power) and as a consequence why industrial investments have remained at a very low level.

C-Period of Etatism (1933-1950)

The state has felt the need to make investments in the industry directly because of the Great Depression which has caused great decreases, especially, in the prices of agricultural products and thus, has also influenced our economy which is of an agricultural nature on a vast scale and insufficiency of industrialization in the First Liberal Period in which social and economic reforms are held. Besides, interventionist practices which have emerged by the Great Depression in other liberal countries, (the approach of industrialized countries to keep agricultural economies in the position of market and raw material producer) balance of payments difficulties, domestic and foreign factors such as views of industrialization via capitalism in ^{the} West and by planned development in ^{the} Soviet Union (52) contributes to the acceptance of industrialization policy by state in Turkey.

In the industrialization period by public investments which has begun under these circumstances, state produces basic

(52) SIS, Türkiye'de Toplumsal ve Ekonomik Gelişmenin 50 Yılı, SIS Printing, Ankara, 1973, p.152.

consumer goods within a plan using domestic inputs and adopts import substitution policy in the necessary fields. Within this framework, First Five Year Industry Plan which covers 1933-1938 has been exercised. This Plan was a program which gave certain investment obligations to public organizations and included some economic calculations relating to these investments.

Industry by which First Five Year Industry Plan planned to establish was of five types: (53)

- 1-Textile Industry (cotton, hemp, wool),
- 2-Mining and Quarrying Industry (iron, copper, sulphur, combinations of coke),
- 3-Cellulose Industry (cellulose, paper, cardboard),
- 4-Ceramic Industry (glass, bottle, cement),
- 5-Chemical Industry (artificial silk, attar of roses, match acid, super phosphate).

36 % of the investments which were to be realized by the Plan were allocated to textile industry, 23 % to iron and remaining to the other sectors. (54)

Estimations showed that approximately 44 million TL. investment was necessary for the so-called sectors and 10.5 million TL. of this (all to be used in textile industry) would be met by the credit of Soviet Union and remaining 6 million TL. could come from budget every year. During the application of projects finance estimations changed and reached 100 million TL. (55)

(53) Ekonomi Bakanlığı, Sınai Tesisat İşletme ve Vekalet Teşkilatına İlaveler Hakkında Raporlar, Devlet Matbaası, Ankara, 1935, pp. 143-145, (cited by, Kepenek, Yakup).

(54) Ibid.

(55) Günçe, E.: "Türkiye'de Planlamanın Tarihçesi", Mimarlık Dergisi, 72/11, p. 22, (cited by İlkin, Akın).

In industry branches which were planned during the application of First Five Year Industry Plan sixteen factories were constructed. The products of these industry branches were used to be imported but however of which raw materials were present in our country. Firstly, Sümerbank has been established to finance the predicted investments and later Etibank which was specialized in mining and electrical energy has begun to work.

In the period of 1928-1931, industrial production which was to be realized by the Plan constituted approximately 43 % of total imports per year. This ratio rose to 44 % in 1932. (56)

The evaluation of First Five Year Industry Planning period gives the results below:

a-First Five Year Industry Plan is an étatist practice which extends the share of public sector, in the industry. Nevertheless, it is not a policy directed towards abolishing private sector. On the contrary, étatism has tried to develop and complete private investments.

b-In the period of First Five Year Industry Plan, a considerable industrial development has been achieved.

c-Investments in manufacturing industry show industrialization policy which is directed towards import substitution and gives priority to consumer goods production which is sometimes called light industry.

After the success of first industry plan, the preparations of Second Five Year Industry Plan have begun. Second Industry Plan (1939-1943), on the contrary to the first, gave precedent (56) Raporlar, Op.cit. p.12, (cited by Kepenek, Yakup).

to investment and intermediate goods production and also took into consideration some infra-structural establishments such as mining, electrification and harbors. An investment of approximately 112 million TL. in the fields of mining, electrification, coal, fuel, ceramic, food, chemistry, machine and marine communication, all of which were covered in the investments content of the Second Industry Plan period, was predicted. (57) However, this plan could not be applied because of the Second World War and industrial branches which were established by the first plan were also channelized towards covering the requirements of the army and military security.

In short, in the Etatist Industrialization Period, industrial investments have been held with the absence of sufficient infra-structure, qualified labor force and technical staff, in a stable manner and with domestic finance. Besides, as a forcing of internal and external economic conditions, investments have been directed towards consumer goods and import substitution.

D-Second Liberal Period(1950-1962)

1-General Situation

The period after the Second World War (and especially 1950) in Turkish Economy is called Second Liberal Period from the view point of its general economic policy.

The internal development of the economy itself, foreign relations and political changes have led to the loss of the

(57)T.C.İktisat Vekaleti, Sanayi Tetkik Heyeti: İkinci Beş Yıllık Sanayi Planı, (proje halinde hazırlanmıştır.), Başvekalet Matbaası, Ankara, 1935, pp.16-19, (cited by Kepenek, Yakup).

importance of étatist industrialization efforts and the application of liberal economic approach.

The Turkish Economic Development Plan prepared in the post-war period(1947) has offered that the state should develop initiatives in the fields of infra-structures such as energy, transportation and communication. A principle, which reduced the share of the public investment in industry and thus reduced the étatism, was also adopted. Besides, the Plan has predicted that an important portion of total investments and of industrial investment expenditures which are planned for the period of 1948-1952 can be supplied by foreign aids. Later in a plan, which was held by International Construction and Development Bank, in 1950's the following was offered "the construction of the manipulation of agricultural products, light metal, construction stock, leather and wood products, light chemicals, ceramic industries and development of handicrafts, but non-construction of heavy industry (iron-steel and chemistry), cellulose and paper industries."⁽⁵⁸⁾ Therefore, the application, especially in the first five years of the period, which began in 1950 was practiced in the framework of these requests. Private sector has developed very fast with the medium and long-run credits given by the Turkish Industrial Development Bank which was established in 1950 and through various other incentives. On the other hand, by the adoption of increasing the importance of agriculture

(58) International Bank for Reconstruction and Development: The Economy of Turkey an Analysis and Recommendations for a Development Program, Washington, 1951, pp.27-100, (cited by Kepenek, Yakup).

and as a consequence of this by expanded sowing fields, agriculture supporting policy, the introduction of machinery in agriculture and with the help of suitable weather conditions, various developments took place. These developments in agriculture were followed by exports increase, and foreign aid helped increase the level of income. This situation also increased investments in general and especially industrial investments.

The economy which fed up by various ways up to 1954 began to suffer bottlenecks because of bad weather conditions and inefficient usage of available potential. The industrial goods import difficulties were seen especially in intermediate and investment goods, and as a consequence of inflation which arose from the import difficulties and other causes, Turkish Lira was devalued in 1958. Therefore, an "interventionist" policy, by which the state took some control and economic stability measures on a vast scale, took the place of the economic policy which could be accepted as "liberal" and was experienced after 1950. Limitation of profit rates, introduction of import quotas, application of Law of National Protection, preventing economic anarchy are the main preventions of the state. (59)

2-Development of Industrial Investments

Here we try to examine, with a table, the situation of industrial developments, which we have analyzed broadly for the 1950-1962 period, against GNP and Gross Fixed Capital Investments (GFCI).

(59) Han, Op.cit. p. 58.

TABLE V

GNP AND INVESTMENTS IN THE SECOND LIBERAL PERIOD
(Base year 1953)
million TL.

Year	GNP (1)	GFCI (2)	Total Industrial Inv. (3)	2/1 (4)	(%)	
					3/1 (5)	3/2 (6)
1950	11079.1	1323.8	93.8	11.9	0.88	7.1
1951	12514.0	1410.0	137.7	11.3	1.00	9.8
1952	14023.1	1786.6	123.3	12.7	0.97	6.9
1953	15607.4	2039.7	235.8	13.1	1.51	11.6
1954	15127.9	1958.1	230.4	12.9	1.52	11.8
1955	16338.3	2019.9	248.5	12.4	1.52	12.3
1956	16842.6	1860.9	285.5	9.4	1.69	15.3
1957	18192.5	1962.2	189.3	10.8	1.04	9.6
1958	19019.6	1959.0	170.6	10.3	0.89	8.7
1959	19869.0	2035.6	136.7	10.2	0.68	6.7
1960	20424.7	2260.3	161.5	11.1	0.79	7.1
1961	20796.6	2338.5	163.2	11.2	0.78	7.0
1962	22086.5	2497.5	417.9	11.3	1.89	16.7

Resource: Kepenek, "Türkiye'de Sanayileşme ve Sofunları Semineri", p.30.

As far as 1950 and 1962 period in which Planned Development Period began is concerned, GNP has increased approximately 5.5 % per year on the average (with the prices of 1953) rate of GNP increase which is above 10 % is important as far as the influences on total fixed capital investments are concerned.

As seen in the table, Gross Fixed Capital Investments (fourth column) amounted to more than 10 % of GNP (except 1956), and this ratio reached to the maximum with 13.1 in 1953.

As far as the share of Industrial Investments in GFCI is concerned (sixth column), one can see that industrial investments have developed at considerable rate between 1953 and 1956. In this period, the ratio of Total Industrial Investments over GFCI was above 10 % and reached to the minimum with 6.7 % in 1959. Industrial investments made up 68 % of GNP in the same year.

After 1956, both public and private sector industrial investments have decreased. One of the most important causes of these decreases is that, extreme price increases allocate investments into housing and service sectors which bring great profit. When profit rate in industry falls below housing and speculations and other short-term earnings, it causes diminishing industrial investments. Besides this, input supply difficulties which are the result of inflation will cause a decrease in industrial investments. (60)

Here, we look at the shares of Public and Private Investments in Industry.

(60) Kepenek, Op.cit. p. 32.

TABLE VI

INDUSTRIAL INVESTMENTS

(Base year 1953)
million TL.

<u>Year</u>	<u>Private</u>	<u>%</u>	<u>Public</u>	<u>%</u>
1950	40.7	43	53.1	57
1951	60.7	44	77.0	56
1952	65.5	53	57.8	47
1953	100.2	55	105.6	45
1954	88.6	38	141.8	62
1955	100.6	40	147.9	60
1956	111.0	39	174.4	61
1957	86.4	46	102.9	54
1958	73.2	43	97.4	57
1959	86.7	63	50.0	37
1960	83.4	52	78.1	48
1961	85.2	52	78.0	48
1962	91.1	22	326.8	78

Resource: Manisalı, Erol, "Gelişme Ekonomisi", p.227.

As can be seen in the table, public investments constituted more than half of the total industrial investments in 1950 and 1962 period. The share of public investments, especially, in between 1952 and 1957, in which growth rate and the rate of total industrial investments increases were very high. As a result of stability measures, which were adopted after 1958 devaluation, the share of public investments fell to 37 % in 1959, later it began to rise again.

It is useful for us to study the sectoral distribution of investments in this period to evaluate structure and variation of Turkish Industry in Planned Period.

3-Sectoral Distribution of Investments

In Turkey, Manufacturing Industry has the highest share in the industry sector. Internal structure of the Manufacturing Industry and changes in its structure also influence industrialization process and the direction of the change in the economic structure. Therefore, "developments in Manufacturing Industry as an independent and dynamic factor of industrial development" (61) and the structure of Manufacturing Industry should be examined according to the subsectors which produce consumer goods, intermediate goods and investment goods. Nevertheless, the study of the structure of Manufacturing Industry with all aspects is not our goal. We try to see only the allocation of Manufacturing Industry investments to subsectors in this part of our study.

We use the approach of the State Planning Organization (SPO) in the Third Five Year Develop. Plan as the criterion for determining subsectors. According to this approach we classify: (62)

(61) SPO: Third Five Year Develop. Plan, 1973-1977, Ankara, 1972, p. 13.
(62) SPO: Annual Prog. . 1971, Ankara, 1971, pp. 474-468, Table. 309, 301.
Obviously here there is a generalization of which content is not expressed wholly by this discrimination. But the corollary of discrimination is that this type of classification is not very objective from the view point of technological structures of sectors. For example, transportation vehicles as investment goods, as far as the production technology is available if they produce automobiles, give the vehicle sector the quality of an investment goods producing sector.

-Food, beverages, tobacco, textile, clothing, generally as consumer goods.

-Wood products, furniture, paper, printing, leather, rubber, chemical and petroleum products, cement, non-metal products, iron-steel and metallurgy, generally as intermediate goods.

-Metal products, machinery products, electrical machinery, electronic and transportation vehicles, generally as investment goods sectors. Investment goods subsector also covers durables.

We now look at the shares of industrial sector and manufacturing industry in GDP since 1923 before studying sectoral allocation of industrial investments.

As seen in the table, the shares of both industrial sector and manufacturing industry were more or less at the same ratio in GDP in 1923 and before 1948 after which rapid developments have begun. But an important point which can be observed in the ratios was a decrease in the share of agriculture in domestic products as a result of a sharp decrease in agricultural product prices after 1930 World Economic Depression contrary to an increase in the share of industry.

As seen in the table, the share of industry in GDP increased to 13.2 % in 1923, to 18.9 % in 1940, to 14.0 % in 1948 and to 17.9 % in 1962.

The share of manufacturing industry, however, increased to 17.1 % in 1940 while it was 12.3 % in 1923, then it decreased to 12.5 % in 1948 and again rose to 15.4 % in 1962.

TABLE VII

THE SHARES OF INDUSTRIAL SECTOR
AND MANUFACTURING SECTOR IN GDP
(%)

(Producers' prices)

<u>Year</u>	<u>Industry</u> †	<u>Manufacturing Ind.</u>
1923	13.2	12.3
1930	11.4	10.3
1935	18.1	16.4
1940	18.9	17.1
1945	16.3	14.1
1948	14.0	12.5
1949	14.9	13.1
1950	14.6	12.7
1951	13.5	11.7
1952	13.3	11.4
1953	13.5	11.7
1954	15.5	13.5
1955	16.0	13.9
1956	16.7	14.6
1957	16.0	14.0
1958	17.0	15.0
1959	18.2	15.5
1960	17.3	14.6
1961	18.0	15.3
1962	17.9	15.4

Resource: Serin, Necdet, "Türk Sanayinin Yapısal Görünümü",
"Türkiye'de Sanayileşme ve Sorunları Semineri",
pp.2,3.

† Mining and quarrying+ manufacturing industry+ electricity,
gas and water

The trends of industrial investments during the period can be seen in Table V. Industrial investments usually increase more rapidly than gross fixed capital investments. Fixed capital investments which increased in 1950-1953 period remained constant in 1954-1955 period and after a fall in 1956 again began to rise. In spite of this, industrial investments increased up to 1956 (except a decrease in 1952) and then decreased up to 1959. This situation is a consequence of extreme price increases which we stated before and import difficulties.

We now study the shares of public and private industry investments into consumer goods, intermediate goods and investment goods sectors between 1950 and 1962 at Table VIII.

One can see from the table that more than half of the industrial investments were made in consumer goods sectors in 1953-1957 period, investments to this group gradually increased especially in the period of 1953 and 1955 and then, began to decrease. On the other hand, investments to intermediate and investment goods sectors fluctuated from year to year but increased in general. Here we can say that intermediate and investment goods subsectors have developed in the same direction with gross fixed capital investments. This similarity is a result of demand which comes from especially housing and services sectors to intermediate and investment goods sectors. (63)

(63) Kepenek, Op.cit. p. 33.

TABLE VIII

THE SECTORAL SHARES OF
INDUSTRIAL INVESTMENTS IN 1950-1962 PERIOD

(Base Year 1953)
million TL.

Year	Consumer Goods			Intermediate Goods			Investment Goods		
	Publ.	Priv.	Total	Publ.	Priv.	Total	Publ.	Priv.	Total
1950	37.6	26.8	64.4	10.3	16.3	26.6	5.2	1.8	7.0
1951	47.7	40.8	88.5	24.1	15.0	29.1	5.2	3.7	8.9
1952	23.1	43.2	65.3	30.6	13.4	44.0	5.1	4.1	9.2
1953	74.1	73.2	147.3	18.5	53.9	72.4	13.1	2.6	15.7
1954	102.9	54.9	156.8	27.2	29.0	56.2	51.1	4.0	9.1
1955	122.9	70.9	193.8	11.4	26.1	37.5	13.4	3.5	16.9
1956	114.6	65.9	180.5	53.0	36.8	89.8	7.7	7.5	15.2
1957	70.1	54.9	125.5	28.4	20.8	49.2	4.1	9.8	13.9
1958	27.1	40.9	68.0	53.9	24.0	77.9	13.7	7.8	21.5
1959	21.8	33.4	55.2	13.4	34.0	47.4	14.8	17.9	32.7
1960	23.6	40.3	63.9	36.5	31.9	68.4	17.7	12.0	29.7
1961	27.8	34.0	61.8	38.1	36.2	74.3	12.1	11.9	24.0
1962	32.9	41.4	74.3	250.5	30.3	280.8	43.4	17.1	60.5

Resources: SIS, "Türkiye'de Toplumsal ve Ekonomik Gelişmenin 50 Yılı", pp.176-207.

Kepenek, Yakup, "Türkiye'de Sanayileşme ve Sorunları Semineri", p.56.

Investments and durable consumer goods and intermediate goods investments have increased faster than both total industry investments and Gross Fixed Capital Investments. This situation depended on some factors, especially, for the period after 1956. The main factor was that industrial investments have been made on durable consumer goods sectors, depending on propensities to consume (changes in the quality of consumption demand). Besides, profitability of production of machinery and equipment which could not be imported as a result of balance of payment difficulties has led the industrial investments to depend on consumption and to be towards import substitution. Another factor was that extreme price increases effected intermediate and investment goods sectors positively, but also, effected total industrial investments negatively. (64)

In this framework, the share of the consumer goods investments in total industrial investments was 65.5 % in 1950 and this ratio rose to 78 % in 1955. There were increases in consumer goods industry, especially in food sector, in between 1950 and 1955. The share of consumer goods investments, however, fell to 40 % in 1960.

The share of intermediate goods sectors in industrial investment, was 27 % in 1950, 16 % in 1955 and 43 % in 1960. Investments of this sector, increased by a considerable amount as a result of investments in the fields of construction goods, chemicals, and paper production in the first half of the period of 1950 and 1962, and the fields of rubber, petroleum products, chemical and metallurgy in the second half of the (64) Ibid, p. 35.

same period.

The share of investment goods industry in total production however, rose to about 19 % in 1960 although it was 5 % in 1950. In this industry, especially, investments in metal products subsector increased gradually, there were important improvements in electrical machinery investments in the second half of the period.

It was observed that public investments were made usually in paper, chemical and metallurgy fields. On the contrary, state made no investments in new sectors such as hard rubber, electrical machinery, and also the share of public investments in the textile, transportation vehicles and machine production fields fell gradually. This situation has shown that state made investments in intermediate goods subsectors and left consumer goods subsectors to private investments.

P A R T IV

TURKISH INDUSTRY IN PLANNED PERIOD

One of the most important characteristics of the period after 1960 from the view point of industrial developments was that industrial developments were also planned, within the planned economic development. The plans have shown macro economic equilibriums related to industry both in five year development plans and in yearly programs. After 1960, until today, three plans (five-year plan) have been applied (1963-1967, 1968-1972, 1973-1977). Fourth Five Year Plan (1979-1983) however, is in the stage of application. We, in this part of our study, first try to evaluate industrial developments with a general view and then study the positions of value added, employment and labor productivity which covers 1960-1978 period of Turkish Manufacturing Industry under the light of our empirical study.

A-General Outlook

After the establishment of State Planning Organization in 1960, first, a plan which was temporary and which also included 1962 was prepared and immediately put into exercise and then First Five Year Development Plan (FFYDP) for the period 1963-1967 was applied. In this plan, although the industrial sector was accepted as vanguard and leading sector, it was predicted that development must be held depending on the essence of balanced growth between agriculture and industry in the long-run. (65) Although the industrialization policy was not clear in FFYDP, yearly programs gave partial clearness to industrial policy and giving precedent to sectors producing investment goods was accepted as necessary.

Second Five Year Development Plan (1968-1972) included some differences on the subject of industrialization policy in comparison with First Plan and balance development was partially given up. According to this, structural change of the economy from the view point of self-sufficiency was only possible by rapid industrialization. With the aim of promotion of investments and accelerating industrial development, much more extensive measures were predicted for this sector. In this period especially the establishment of fundamental and strategic industries producing intermediate goods and non-encouragement of industry branches producing luxury consumption goods was intended.

(65) SPO: First Five Year Development Plan, 1963-1967, Ankara, 1963, p. 39.

In the Third Five Year Development Plan (1973-1977) the industrialization intention which occurred with SFYDP has become more apparent. According to TFYDP, "industrialization", regardless of its composition, is not only industrial output increase. According to the Plan, industrialization was expressed as a structural change in Turkish Industry, the goal of which was towards consumer goods industries, using relatively backward production technologies and usually consisting of small production units. This structural change can be achieved by giving weight to intermediate goods industries which have a strong forward and backward feedback effect and to investment goods industries which have an encouraging and motivating quality in producing technology and also which decrease dependence on foreign resources. In the plan, the increase of the share of production in these branches in total industrial production has been accepted as one of the indicators of development rate and the establishment and development of them in such a manner that the aim being able to give them some possibilities for foreign competition.

As a result of the industrialization policies in Planned Period, which we tried to describe above briefly, important developments in industry have occurred. These developments were realized in such a direction that preceedingly the shares of industrial sector and especially of manufacturing industry in GDP increased. The share of manufacturing industry which was 14.21 % in 1962 rose to 18.10 in 1967, to 20.30 % in 1972 and to 21.88 % in 1977.

The shares of manufacturing industry in GDP can be seen in the below table given the 1968 Producers' Prices.

TABLE IX

SHARE OF MANUFACTURING INDUSTRY
(%)

Year	1962	1967	1972	1977
The Share Of Man.Ind.	14.21	18.10	20.30	21.88

Resource: SIS, "Turkish National Income 1962-1977", p.9.

Besides, for the period of 1950 and 1962 gross product of manufacturing industry became 10.2 % in the period of 1963 and 1977 while its yearly average growth rate was 8.5 %. This development in manufacturing industry is provided by a decrease in the relative importance of agricultural sector.

Another development in Planned Period was that, relatively some changes in manufacturing industry subsectors (consumer-intermediate-investment goods) came into account. The structure of these changes will be examined below. Aside from these developments, variation in industrial production occurred, in other words, there was a flow towards import substitution industries.

We will now briefly explain our study in manufacturing industry subsectors for 1960-1978 period.

B-Data

State Institute of Statistics has been collecting yearly inquiries from 1964, with the aim of determining the structural position of manufacturing industry in our country and for observing changes in this sector. These inquiries have also been the main source of our study. But for after 1973, these inquiries have been covering preliminary results. Data for the years with no inquiry or data which does not take place in inquiries have been obtained from "Statistical Year Books", "Census of Industry and Business Establishments-Manufacturing Industry" and the publication namely "The Structure and The Level of Productivity of the Manufacturing Industry" publication of National Productivity Center.

Our study includes only 19 years period from 1960 to 1978 since there was not any adequate data for the years after 1978. And there is not any published data related to manufacturing industry subsectors (except value added data) for 1969.

Manufacturing Industry subsectors are determined as they have taken place in SPO TFYDP. According to this, tables of Value Added, Employees, Number of Firms for 20 subsectors of Manufacturing Industry are obtained in this study. Data in tables are in the form of current prices.

The main problem for the Turkish economists who try to analyze the past economic trend is the impossibility of finding an appropriate and continuous data. In our case, any result obtained by the comparison of 1960-1964 data with others seem

to be unexplainable. The firm numbers and employees data for years before 1964 is ill, or if data is correct, every one firm out of two was shut-down in 1962, which does not sound logical. In 1963 a decrease in the total number of employees is observed. This is not possible, too.

The findings of our study to examine the developments during the planned period in consumer goods, intermediate goods and investments goods sectors which are main branches of manufacturing industry and the consequences of these developments are as follows:

C-Manufacturing Industry Value Added from the View Point of Subsectors

Here, we look at the development of manufacturing industry value added before examining the allocation of value added sectors in planned period.

Manufacturing industry value added reached to the value of 21,359.7 million TL. in 1968 in which Second Five Year Development Plan was put into application although it was 10,660.8 million TL. in 1963 in which First Five Year Development Plan began. Therefore manufacturing industry value added increased annually at the rate of 14.9 % in the First Plan period. The value added which showed annually 21.6 % average increase also in Second Plan period reached to 56,824.9 million TL. in the beginning of 1973. And finally the value added reached to 237,930.5 million TL. in 1978, as a consequence of 33.2 % rate of growth which was achieved in 1973-1977 plan period.

TABLE X

VALUE-ADDED SHARES OF SUBSECTORS
(%)

<u>Year</u>	<u>Consumer Goods</u>	<u>Intermediate Goods</u>	<u>Investment Goods</u>
1960	58.24	27.74	14.02
1961	54.58	27.66	17.76
1962	51.17	30.39	18.44
1963	49.39	31.88	18.73
1964	48.61	32.16	19.24
1965	47.70	34.15	18.15
1966	46.16	35.66	18.18
1967	47.15	34.35	18.50
1968	45.18	35.93	18.90
1969	46.73	34.81	18.46
1970	46.55	35.02	18.43
1971	39.11	39.23	21.66
1972	38.83	39.13	22.04
1973	40.18	38.94	20.88
1974	41.03	38.23	20.74
1975	39.63	37.73	20.65
1976	36.85	42.93	20.22
1977	35.55	43.21	21.24
1978	34.95	41.42	23.63

Resources: Özötün, Erdoğan, "Türkiye'nin Gelir ve İstihdam Dağılımındaki Yapısal Değişim II", pp.14-31.
SIS, "Annual Survey of the Manufacturing Industry", 1977, 1978.

When we look at the proportional allocation of value added in the period of 1973 and 1977, we see that 34.60 % value added comes from the public sector, 64.61 % from the private sector and 0.79 % from the rural sector. (66)

The values in Table X are the shares of value added of subsectors in total manufacturing industry value added. As can be observed from the table, value added of consumer goods sector has a decreasing trend in planned period. The share of this sector was very high in total manufacturing industry value added at the beginning of 1960's. For example although consumer goods sector had a rate of 58.24 % in 1960, the share of intermediate goods sector was 27.74 % and the share of investments goods sector was 14.02 %. Nevertheless, beginning with the First Plan period, the share of consumer goods sector in total value added began to decrease, and the shares of intermediate and investment goods sector began to increase. The share of intermediate goods in value added took the relatively most important place firstly in 1971. During the period 1970-1974, the trend of the distribution of value added in the subsectors of the manufacturing industry has shown diversification compared with the last decade. In 1971, consumer goods sector value added declined by 7.44 % to 39.11% and even continued declining to 38.83 % in 1972. However, an increase started in 1973 to 40.18 % and 41.03 % in 1974. On the other hand, during the above mentioned period, intermediate goods sector, although increased up to 39.23 % in 1971, declined to

(66) Manisalı, Erol: Gelişme Ekonomisi, İ.Ü. İktisat Fakültesi Yayınları, Yayın no: 417, Güryay Matbaacılık, 1978, p. 265.

38.23 % in 1974 and 37.73 % in 1975. The share of the investment goods sector was 21.66 % in 1971, 22.04 % in 1972, 20.88 % in 1973 and 20.74 % in 1974. It is clearly observed that the redistribution pattern for 1960-1970 period is no longer applicable. Starting from 1975, although not as clear as the 1960-1970 period, a decrease is observed in the consumer goods sector, but a discontinuous type of increase is observed in both intermediate and investment goods sectors. The value added growth rates of subsectors are shown in Table XI.

When we examine the table, we can see that although consumer goods sector value added grows at a rate of annually 17.3 %, intermediate goods industry value added grows at the rate of 23 %, and investment goods industry grows at a rate of 24 %.

When we examine value added allocation of the subsectors of consumer, intermediate and investment goods industries, the following consequences can be seen (Table XII).

If we classify subsectors according to the volumes of their shares of total value added, Food and Textile Industries which are called as traditional sectors take the first two rows from 1960 to 1978. Nevertheless Basic Metal Industry took the second row and replaced the Food Industry in 1978. But, there were some decreases in the rate of value added of these two traditional sectors which had a share of 25.64 % in 1960, had a share of 10.42 % in 1978. Out of these two sectors, two more sectors which could be included into consumer goods industry came into first ten sectors up to 1978. They are Tobacco and Clothing Industries.

TABLE XI

GROWTH RATES OF
SUBSECTORS' VALUE-ADDED
(%)

Year	Consumer Goods	Intermediate Goods	Investment Goods
1961	4	11	41
1962	11	30	23
1963	13	23	19
1964	9	12	14
1965	12	21	8
1966	16	25	20
1967	19	12	18
1968	9	19	16
1969	19	11	12
1970	10	11	11
1971	8	44	52
1972	24	25	28
1973	33	29	22
1974	44	38	40
1975	18	20	33
1976	7	31	2
1977	28	33	39
1978	57	53	77
Yearly avr.	17	23	24

Resources: Özötün, Erdoğan, "Türkiye'nin Gelir ve İstihdam Dağılımındaki Yapısal Değişim II", pp.14-31. SIS, "Annual Survey of the Manufacturing Industry", 1977, 1978.

TABLE XIII

SHARES OF VALUE-ADDED OF CONSUMER
INTERMEDIATE AND INVESTMENT GOODS SUBSECTORS (%)

Year Sector	1960		1965		1970		1975		1978
o Food	25.64	o Food	17.48	o Food	15.35	o Textiles	12.23	o Textiles	15.66
o Textiles	19.20	o Textiles	15.90	o Textiles	14.29	o Food	11.60	+ Basic Metals	12.13
o Tobacco	6.60	± Metal Products	8.05	+ Petroleum Coal Product	9.79	+ Chemicals	8.38	o Food	10.42
± Metal Products	6.54	+ Petroleum Coal Product	7.16	o Tobacco	9.28	+ Petroleum Coal Product	7.86	+ Chemicals	9.45
+ Basic Metals	6.10	o Tobacco	6.68	± Metal Products	6.86	+ Basic Metals	7.66	+ Nonmetallic	6.88
+ Chemicals	5.86	+ Basic Metals	6.47	+ Basic Metals	5.50	o Tobacco	6.58	± Transportation Vehicles	6.04
o Clothing	4.49	+ Chemicals	5.72	+ Nonmetallic	5.07	± Transportation Vehicles	6.53	± Machinery	5.97
+ Nonmetallic	4.23	+ Nonmetallic	5.05	+ Chemicals	4.85	o Clothing	6.43	+ Petroleum Coal Product	5.69
± Transportation Vehicles	3.61	o Clothing	4.63	± Transportation Vehicles	4.83	± Metal Products	5.83	± Metal Products	4.77
+ Wood	2.82	± Transportation Vehicles	3.73	o Clothing	4.25	+ Nonmetallic	5.14	o and ± Tobacco & Electrical Mac.	4.72
Total	85.09	Total	80.87	Total	80.07	Total	78.24	Total	81.73
o Consumer	65.73	o Consumer	55.26	o Consumer	53.92	o Consumer	47.09	o Consumer	31.91
+ Intermediate	22.34	+ Intermediate	30.17	+ Intermediate	31.48	+ Intermediate	37.11	+ Intermediate	41.78
± Investment	11.93	± Investment	14.57	± Investment	14.60	± Investment	15.80	± Investment	26.31

Tobacco Industry, which was at the third row in 1960, falls to the tenth row in 1978. Clothing Industry, however, was no more among first ten sectors in 1978.

When we look at the positions of intermediate goods sub-sectors, we can see positive developments. For example, Basic Metals Industry which was at the fifth row, with the share of 6.10 % in 1960, rose to second row with the share of 12.13 % in 1978. On the other hand, Chemicals and Non-Metallic Mineral Products Industry, some positive developments were also observed. Both the shares of these two sectors, in total, increased during the period and they became fourth and fifth sectors in 1978 classification. Petroleum and Coal Products Sector however took the fourth place, suddenly in 1965, although it was not in 1960 classification and rose to the third row in 1970. Only after 1975 the share of this sector in total decreased.

In investment goods subsectors the situation is as follows: In the period up to 1978 Metal Products Industry and Transportation Vehicles Sector from investment goods industries came into classification. As can be seen in the table, there were some developments which can be accepted as important in the value added allocation of, especially, Transportation Vehicles Industry. Nevertheless Metal Products Industry, although had kept its place in the years of 1960 and 1965, showed some decreases in the periods after 1965. All sectors of investment goods industry in 1978 came into classification as a result of the given weight to investment goods industry in the plans. These sectors were Transportation Vehicles Sector, Machinery

Industry Sector, Metal Products Industry Sector and Electrical Machinery Industry.

To make a general evaluation, the positions of Manufacturing Industry subsectors, within first ten sectors, show such an appearance as follows. Within first ten sectors, which we classify according to the sizes of value added, the share of investment goods subsectors was 11.93 % and the share of the intermediate goods subsectors was 22.34 % while the share of consumer goods subsectors was 65.73 % in 1960. The period, up to 1978 developed in favor of intermediate and investment goods sectors as expected and again within first ten sectors, while the share of consumer goods sector fell to 31.91 %, the shares of intermediate and investment goods sectors rose respectively to 41.78 % and 26.31 %.

D-Distribution of the Labor Force Among Manufacturing Industry Subsectors

One of the criteria which can provide the necessary information to examine the development pattern and the structural changes of the Turkish Industry is the share of the employment of the manufacturing industry within the total employees. In this part, the subject, we will be interested in, is the distribution of labor within the manufacturing industry. We will start with the general evaluation of employment pattern in the manufacturing sector. According to the 1965 General Census data, the share of manufacturing industry for employment was 7.09 %.

out of the total active population in Turkey. This ratio increased up to 8.65 % in 1970 Census.

In table XIII, the ratios of employment distribution for manufacturing industry, industry and total workers can be seen.

As can be observed, the share of labor of manufacturing industry in total industry for the period 1968-1976 averages to 85 % (column 5). The share of manufacturing industrial wage earners also increased during the period. The share in 1965 was 18.14 %, which increased to 22.39 % in 1968 and continued increasing up to 27.36 % in 1976.

When we observe the data of total labor force of manufacturing industry, we see that a yearly average rate increase of 5.36 % of labor force, starting from 296,989 employees in 1960 increases to 800,364 in 1978. This data only covers the large firms. It is necessary to put down one fact here. Large firms are described as firms which hire more than 10 workers. This restriction, it is argued, is found to be too low for some economists. They also argue that those firms which hire less than 100 workers should be called small firms. (67) In our study, large firm data is used to provide continuity and consistency.

We will turn our attention to the subsectoral distribution of wage earners in the manufacturing industry. In Table XIV the distribution of Labor and firms to three main subsector is established.

(67) Korum, Op.cit. p. 59.

TABLE XIII
DISTRIBUTION OF EMPLOYMENT

Year	Employees in Man.Sec.	Total Employees	(1/2) %	Employees in Industry	(1/4) %	Act.Pop. in Man.Ind.	Total Act.Pop.	(6/7) %
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1965	499,696	2,753,841	18.14	n.a.		960,950	13,557,860	7.09
1968	701,789	3,133,718	22.39	849,667	82.60			
1969	755,033	3,271,231	23.08	909,266	83.04			
1970	818,360	3,421,933	23.92	977,151	83.75	1,262,982	14,598,518	8.65
1971	883,966	3,588,019	24.64	1,051,189	84.09			
1972	968,125	3,770,965	25.67	1,138,025	85.07			
1973	1,060,619	3,974,753	26.68	1,238,500	85.64			
1974	1,108,242	4,130,608	26.83	1,294,487	85.61			
1975	1,165,195	4,301,415	27.09	1,360,207	85.66	1,243,567	16,349,380	7.61
1976	1,226,859	4,434,393	27.36	1,442,284	85.06			

Resources: Ecevit, Leyla, Ozötün, "The Changing Structural Distribution of Income and Employment in Turkey and Kuznets Hypothesis", pp.49,50,63,64.

SIS, "Statistical Yearbook of Turkey, 1979".

TABLE XIV
 DISTRIBUTION OF LABOR FORCE
 AND FIRMS AMONG SUBSECTORS
 (%)

Year	Consumer		Intermediate		Investment	
	Goods		Goods		Goods	
	Labor	Firm	Labor	Firm	Labor	Firm
1960	63.16	53.68	24.97	36.93	11.87	9.39
1961	62.19	47.68	24.44	38.85	13.38	13.46
1962	60.55	45.57	25.15	41.74	14.30	12.70
1963	58.62	57.74	24.81	26.26	16.57	16.00
1964	59.61	54.88	24.24	28.21	16.25	16.92
1965	57.65	54.52	25.48	27.88	16.87	17.61
1966	55.75	53.75	26.11	27.64	18.15	18.61
1967	53.36	52.37	26.21	27.64	19.43	19.98
1968	53.19	50.83	26.74	28.02	20.07	21.15
1969	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1970	50.65	47.76	28.61	30.23	20.73	22.01
1971	49.37	46.70	29.72	30.52	20.91	22.77
1972	49.45	44.65	28.58	30.66	21.97	24.70
1973	46.55	44.48	28.93	29.27	24.51	26.24
1974	45.90	42.66	30.04	30.90	23.97	26.44
1975	44.59	42.47	31.21	30.50	24.19	27.02
1976	45.58	41.79	31.20	31.02	23.22	27.19
1977	45.33	40.54	32.13	31.77	22.54	27.68
1978	44.49	38.46	31.70	31.17	23.81	30.38

Resources : SIS, "Annual Survey of the Manufacturing Industry Results", 1964-1968, 1970, 1971, 1972, 1973.

SIS, "Annual Survey of the Manufacturing Industry (Preliminary Results)", 1974, 1975, 1976, 1977, 1978.

In the year 1960, while 63.16 % of total manufacturing industry labor force was employed in the consumer goods sector, 24.97 % was employed in intermediate goods sector and 11.87 % was employed in investment goods sector. In the same year, 53.68 % of the firms was in consumer goods sector while 36.93 % was in the intermediate goods sector and just 9.39 % was in the investment goods sector. During the post 1960 period, it is observed that the shares of consumer goods sector in both firm numbers and employees decrease while intermediate and investment goods sectors' share increase. However, the transfer of the shares of the consumer goods sector is mostly to the benefit of the investment goods sector rather than the intermediate goods sector. From Table XIV, we can read the fact that the decline of 18.67 % in the labor force share of the consumer goods sector is transferred to the intermediate goods sector by 6.73 % and to the investment goods sector by 11.94 %. As we have tried to explain in the "Data" part, there is a discontinuity for the past 1963 data for employees. Therefore, if we examine the data starting from 1964, we obtain similar results as obtained for the value added. The share of labor of consumer goods industry show a decline until the year 1972, increases slightly in 1972 and continues declining till 1976. On the other hand, the intermediate goods industry share of labor increase continually during the period 1964-1975, however in years 1976 and 1978 declines. The pattern in the investment goods industry is as follows: Except for the years 1974, 1976 and 1977 this sector manages

to obtain a higher rate of increase compared with intermediate goods industry.

The rates of growth of labor force for the 19 years period are 3.4 % for consumer goods sector, 6.7 % for intermediate goods sector and 9.3 % for investment goods sector, on the average. If we compare the growth rates of value added of each main subsector with the growth rate of employment the following figure is obtained.

	<u>Growth rate of value added</u>	<u>Growth rate of labor</u>
Consumer Goods Ind.	17.3	3.4
Intermediate Goods Ind.	23	6.7
Investment Goods Ind.	24	9.3

In table XV, the growth rates of employment of the subsectors for the period 1960-1978 is shown.

All the critics we have put against the consumer goods sector above left aside, being a labor-intensive sector, obtains the first two-three places in the subsector classification. As a matter of fact, in table XVI, although they lose their relative advantage, textile industry and food industry became the most intensive labor using sectors. If we examine Table XVI and Table XVII together, we see that the rate of entrance to the investments goods industry being enormous, does not bring the same rate job facility.

TABLE XV
GROWTH RATES OF LABOR FORCE
(%)

Year	Consumer Goods	Intermediate Goods	Investment Goods	Total
1961	5	4	20	7
1962	- 1	5	9	2
1963	- 11	- 9	7	- 8
1964	15	11	11	14
1965	3	12	11	6
1966	3	9	15	7
1967	5	8	15	8
1968	4	8	10	6
1969	n.a.	n.a.	n.a.	n.a.
1970	"	"	"	"
1971	0	7	4	3
1972	11	6	16	11
1973	5	12	24	11
1974	2	7	1	3
1975	3	10	7	6
1976	5	3	- 1	3
1977	4	8	1	4
1978	4	5	12	6

Resources: SIS, "Annual Survey of the Manufacturing Industry Results", 1964-1968, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978.
SIS, "Statistical Yearbook", 1963, 1968.

TABLE XVI

SHARES OF LABOR FORCE OF CONSUMER
INTERMEDIATE AND INVESTMENT GOODS SUBSECTORS (%)

Year sector	1960	1965	1970	1975	1978
o Textiles	33.10	27.91	25.63	21.59	20.93
o Food	16.59	16.04	15.09	13.91	14.25
o Tobacco	11.12	11.34	7.23	9.21	10.20
+ Nonmetallic	5.82	6.63	6.89	7.43	7.36
+ Chemicals	5.66	6.30	6.60	7.19	7.15
≡ Transportation vehicles	5.46	5.24	6.53	5.91	5.87
+ Basic Metals	4.93	5.17	6.13	5.77	5.82
≡ Metal Products	4.15	5.04	6.03	5.50	5.38
+ Rubber	2.02	2.34	4.05	4.94	4.61
+ Wood	1.96	2.16	2.41	3.68	3.88
Total	90.81	88.17	86.59	85.13	85.45
o Consumer	66.96	62.70	54.98	48.16	48.04
+ Intermediate	22.46	21.41	25.18	26.04	26.85
≡ Investment	10.58	15.89	19.84	25.80	25.11

For example, in 1960 Metal Products Sector obtains just 3.16 % of the firms while obtaining 4.15 % of the manufacturing industry labor. In 1965 its firm share increased to 6.38 % while labor share was 6.63 %; in 1970 the firm share being 7.49 %, labor share declined to 6.60 %; in 1975 firm share increased to 8.17 % while labor share redeclined to 4.94 %; finally in 1978 firm share of the Metal Products Sector increased to 8.36 % while labor share continued declining down to 4.61 %. The reason why we choose specifically the Metal Products Sector, lies in the fact that this sector is structurally established of large size firms. From the technological point of view, this sector had used 71 employees per firm in 1960, but was using just 59 employees per firm in 1978. This phenomenon suggests the choice of capital-intensive techniques during these years.

In 1960 consumer goods industry firm number was 2954 and decreased to 2865 in 1978. However, within the same period labor usage increased by approximately 100 % in this sector. Intermediate goods sector possessed 2032 firms in 1960 while this number increased by 290 firms to 2322 in 1978, labor usage for the same period increased by 240 %.

Finally, investment goods sector had 517 firms in 1960 and the enormous entrance to the sector increased this number to 2263 in 1978. Labor usage increased gigantically as well by 440 %.

All of these numerical and statistical analysis prevail that these sectors during the examined period of 19 years, changed their both technological structure ^{and} size composition.

TABLE XVII
SHARES OF NUMBER OF FIRMS IN CONSUMER
INTERMEDIATE AND INVESTMENT GOODS SUBSECTORS
(%)

Year Sector	1960		1965		1970		1975		1978
o Food	29.77	o Food	28.15	o Food	24.15	o Food	21.74	o Food	18.54
o Textiles	18.81	o Textiles	21.43	o Textiles	19.21	o Textiles	15.96	o Textiles	14.51
+ Chemicals	10.94	± Metal Products	6.38	± Metal Products	7.49	± Metal Products	8.17	± Metal Products	8.36
+ Nonmetallic	7.34	+ Chemicals	6.20	+ Nonmetallic	6.60	± Machinery	6.22	+ Nonmetallic	6.55
+ Wood	6.69	+ Nonmetallic	5.74	+ Chemicals	5.41	+ Nonmetallic	6.13	± Machinery	6.51
± Metal Products	3.16	± Machinery	3.95	± Machinery	4.46	± Other	5.32	+ Basic Metals	6.46
+ Printing	2.85	+ Printing	3.73	± Other	4.19	+ Chemicals	5.13	± Other	6.44
+ Rubber	2.71	± Other	3.05	+ Printing	3.92	+ Basic Metals	4.91	± Transportation vehicles	5.29
+ Leather	2.49	+ Wood	2.81	+ Basic Metals	3.32	± Transportation vehicles	4.21	+ Chemicals	4.99
o Tobacco	2.44	+ Rubber	2.74	+ Wood	3.15	+ Printing	3.45	± Electrical Machinery	3.77
Total	87.20	Total	84.18	Total	81.90	Total	81.24	Total	81.42
o Consumer	58.51	o Consumer	58.89	o Consumer	52.94	o Consumer	46.40	o Consumer	40.59
+ Intermediate	37.87	+ Intermediate	25.21	+ Intermediate	27.35	+ Intermediate	24.15	+ Intermediate	22.10
± Investment	3.62	± Investment	15.90	± Investment	19.71	± Investment	29.45	± Investment	37.31

E-Productivity .

One of the main reasons that determine the choice of industry is the labor productivity in that industry. Since the choice of industry is a factor that increase the rate of growth and development through the investment mechanism, the labor productivity factor becomes the determining factor. However this can not be seen in the Turkish Economy. In table XV, we see the rates of growth of labor force. In this table we will find out that in year 1963 the overall labor force declined by 8 %. This was not accompanied by a labor productivity increases as we would expect. However the best labor productivity increases were obtained for all three main subsectors in two years namely 1974 and 1978.

One of the best criteria for labor productivity is the value added per labor. In table XVIII labor productivity values are given for the three main subsectors. From this table we see that, between the years 1960 and 1978, the increase of 11 times of labor productivity in the consumer goods sector is accompanied by the 15 times increase in the intermediate goods sector, and by the 11 times increase in the investment goods sector.

In 1974, six subsectors emerge with decreasing labor force in absolute terms, while the rate of increase of job facilities is just 3 % which is one of the least (see Table XV). In 1978, the labor productivity increase can be accounted for the continued policy of less labor usage, between the years 1976 and 1978. (Table XVIII).

TABLE XVIII

VALUE-ADDED PER LABOR

(000 TL.)

Year	Consumer Goods	Intermediate Goods	Investment Goods
1960	21.34	25.71	27.32
1961	21.20	27.33	32.07
1962	23.68	33.86	36.14
1963	30.04	45.83	40.31
1964	28.41	46.26	41.22
1965	30.75	49.82	39.98
1966	34.58	57.04	41.83
1967	39.14	59.14	42.95
1968	41.07	64.98	45.54
1969	n.a.	n.a.	n.a.
1970	49.61	66.08	47.98
1971	53.51	89.16	69.99
1972	60.13	104.83	76.83
1973	76.92	119.93	75.92
1974	108.89	155.30	105.59
1976	126.29	214.96	136.02
1977	155.52	266.68	186.86
1978	233.57	388.39	294.99

Resources: SIS, "Annual Survey of the Manufacturing Industry Results", 1964-1968, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978.

SIS, "Statistical Yearbook", 1963, 1968.

Another indicator of labor productivity can be concluded through the examination of labor per firm data which is provided in the table XIX.

In Table XIX, we observe that the ^{per} firm labor usage has doubled for the consumer goods, tripled for the intermediate goods and increased only 0.25 times for the investment goods industries. One point must be clarified at this point this is the fact that the trend of investment goods is of a shape of parabola with a maximum. The other two sectors do not provide a smooth pattern. The ups and downs year after year should be accounted for the discontinuing investment allocations in these sectors.

However, the investment goods sector in 1960 was the biggest labor using sector with 68 labor per firm, while the others were 64 and 36, consumer and intermediate goods industry, respectively. The picture we attain, in 1978, show that consumer goods industry now use 124 labor per firm while intermediate goods industry use 109 and investment goods industry use only 84 labor per firm.

TABLE XIX
LABOR PER FIRM

(person)

Year	Consumer Goods	Intermediate Goods	Investment Goods
1960	64	36	68
1961	60	29	46
1962	107	49	91
1963	101	94	103
1964	118	93	104
1965	118	102	107
1966	123	112	102
1967	130	119	122
1968	135	123	122
1969	n.a.	n.a.	n.a.
1970	111	99	99
1971	112	103	97
1972	115	97	93
1973	112	106	100
1974	119	107	100
1975	116	113	99
1976	128	118	100
1977	141	127	102
1978	124	109	84

Resources: SIS, "Annual Survey of the Manufacturing Industry Results", 1964-1968, 1970, 1971, 1972, 1973.

SIS, "Annual Survey of the Manufacturing Industry (Preliminary Results)", 1974, 1975, 1976, 1977, 1978.

F-Distribution of Investments in Manufacturing Industry Sectors

We will, now, examine the trend of industrial investments in the Planned Period as we have done for the pre-planned period.

While, the GNP increased annually at 7 % growth rate during the 1963-1972 period, fixed capital investments in the first years did not increase and manufacturing industry investments declined. However, if only the manufacturing industry investments ratio to GNP is examined a relative growth in share, compared with total industrial investments, is observed. On the other hand, in total investments, the share of manufacturing industry investments increased from 23.6 % in 1963 to 29.7 % in 1972.

The situation for the FFYDP and SFYDP is as in table XX.

In the same period, if the increase of the ratio of total investments to GNP is considered, the relative size of the manufacturing industry investments is found to be even larger. In that case, the weight of the manufacturing industry in resource allocation is increased.

For the period 1972-1976, on the other hand, although manufacturing industry protected the high share in total investments, could not increase it. This ratio was 28 % in 1973, 30 % in 1974, 29.5 % in 1975 and 25.7 % in 1976. (68)

(68) Manisalı, Op.cit. p.232.

TABLE XX

GNP AND INVESTMENTS IN THE
PLANNED PERIOD

(Base Year 1965)
Million TL.

Year	GNP (1)	GFCI (2)	Total Ind. Inv. (3)	2/1 (4)	(%)	
					3/1 (5)	3/2 (6)
1963	66728	10727	2535.5	16.1	3.80	23.6
1964	69994	10709	2100.6	15.3	3.00	19.6
1965	73209	11510	1964.6	15.7	3.68	17.1
1966	80746	13901	2449.7	17.2	3.03	17.6
1967	85604	14781	3011.3	17.2	3.52	20.4
1968	91360	17140	3679.2	18.8	4.03	21.5
1969	79112	19035	4405.1	19.6	4.54	23.1
1970	102450	20153	4978.7	19.7	4.86	24.7
1971	111926	20836	5878.7	18.6	5.25	23.2
1972	133848	26171	7768.8	19.6	5.80	29.7

Resource: Kepenek, Yakup, "Türkiye'de Sanayileşme ve Sorunları
Semineri", p.43.

The distribution of manufacturing industry investments to consumer, intermediate and investment goods sectors, and the public and private sectors distribution is shown in Table XXI.

TABLE XXI

INVESTMENT SHARES OF SUBSECTORS
IN PLANNED PERIOD
(%)

Year	Consumer Goods			Intermediate Goods			Investment Goods		
	Publ.	Priv.	Total	Publ.	Priv.	Total	Publ.	Priv.	Total
1963	29.69	17.75	20.26	53.20	73.68	69.37	17.11	8.57	10.37
1964	33.59	25.69	28.22	53.41	61.68	59.03	13.00	12.63	12.75
1965	23.31	35.38	31.30	65.11	43.92	51.09	11.58	20.70	17.61
1966	26.47	37.23	33.36	71.70	43.31	53.53	1.83	19.46	13.11
1967	21.23	31.96	27.90	63.77	47.52	53.67	15.00	20.52	18.43
1968	19.05	26.35	23.41	74.94	54.92	62.96	6.01	18.73	13.63
1969	10.75	29.39	21.33	85.10	55.23	68.15	4.15	15.38	10.52
1970	10.05	18.23	14.76	86.00	59.43	70.78	3.95	22.34	14.46
1971	9.87	20.85	16.12	87.16	48.39	65.06	2.97	30.76	18.79
1972	8.33	40.14	25.24	87.99	40.32	62.65	3.68	19.54	12.11
1973	9.93	43.93	30.97	86.06	40.30	56.91	4.01	15.77	12.12
1974	19.15	38.79	32.00	75.59	44.25	55.09	5.26	16.96	12.91
1975	19.45	26.93	23.79	74.14	51.37	60.92	6.41	21.70	15.29

Resource: Korum, Uğur, "Türk İmalat Sanayii ve İthal İkamesi", p.78.

Again, as in the pre-planned period, public sector intensified the investments to intermediate goods sector. In the second plan period, this intensity even more increased. The public investments that are channelized to the investment goods sector declined in the second plan period, compared with the first plan period. In other words, investment goods sector is mostly left for the private sector.

Public investments for the consumer goods sector declined by 50 % in the SFYDP period, but increased again in 1974 and 1975. This can be accounted as a partial effort in increasing the exportables in this sector.

In short, the investment allocation pattern also suggest that the choice of industry in Turkey is used for the intermediate goods sector by both public and private sector decision-makers.

P A R T V

CONCLUSION

We have tried to evaluate a long period in this study, from the view point of choice of industry. We have tried to see the changes that Turkish industrialization effort has passed by. In retrospect, Turkish industrialization was, firstly and thus mainly, based on consumer goods sector. The choice which is prevailed by the allocation of invest ents followed a path that passes first from consumer goods sector and which is now at the intermediate goods sector. It has take Turkey nearly 50 years to increase the share of value-added of the intermediate goods sector above the consumer goods sector.

It is only at the start of the planned period that the investment goods sector increased its share considerably. During the first two plan periods, this sector's share fluctuated around 20 %. However, after the share of intermediate goods sector passed that of consumer goods sector, the share of investment goods sector increased to 23.63 % in two years from 20.22 %.

The theoretical studies which we have shortly examined in Part II of our study united in the conclusion that the

allocation of resources, and especially investment goods sector result in increasing the rate of growth of the economy. This conclusion is mostly conveyed by the two-sector models analysis. Multi-sector models mostly try to analyze subsectoral development which tracks the reasoning to the same conclusion. Multi-sector models also contain the inter-industry relations and feedbacks.

We are not able to find this theoretical basis in the Turkish industrialization effort. If we try to think in terms of just two sectors, and thus collect intermediate and investment goods sectors as one sector, then we are able to find a similar result as in theory.

But, our classification of three sectors in our study forces us to conclude that:

-Intermediate goods sector is the better developed sector, not just in terms of the increase in the share or absolute value-added, but also in employment, productivity and investments,

-The impact of the traditional sectors on the Turkish economy is still of some importance, but the gap between these sectors and the others are closing year after year.

-It is the public sector who decides for the choice of industry, although the private sector investments are larger than the public sector investments, and although the private sector allocates more than the public sector to the consumer and investment goods sectors.

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