INTERSECTORAL RESOURCE FLOWS BETWEEN AGRICULTURAL AND NON-AGRICULTURAL SECTORS: THE TURKISH CASE, 1963-1990

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
THE MIDDLE EAST TECHNICAL UNIVERSITY

BY

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF SCIENCE
IN
THE DEPARTMENT OF ECONOMICS

SEPTEMBER 2001

Approval of the Graduate School of Social Sciences

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ABSTRACT

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September 2001, 83 pages

The most effective way for developing countries to generate funds for their early stages of industrial development is using sources from their agricultural sector. This brings the subject of 'agricultural surplus' to the attention of development economists. Even though agricultural surplus holds an important place in the literature, it has no precise definition that everyone agrees upon. For our study, we used the definition suggested by Karshenas (1989). We calculated the agricultural surplus in three different ways. In order to carry out these calculations, we needed a detailed data base. To form a good data base, the best way was to use Social Accounting Matrices (SAM). We constructed SAMs that are necessary for our study for the sample years 1963, 1968, 1973, 1979, 1985 and 1990. Then we used these to calculate the agricultural surplus. Calculations were done in terms of current and fixed prices. 1981 was taken to be the base year for constant price calculations. 'The net financial contribution' and the 'real net product contribution' of

agriculture are calculated. The former as a proportion to GNP showed an increase up to 1979; later this increase started to slow down and after 1979 showed an important setback. For the latter, percentage GNP showed a decrease in 1990. Estimates of real net product contribution show that the contribution of agricultural sector up to 1980 was mostly through terms of trade (TT) effect. After 80's, TT effect lost its importance.

Keywords: Resource flows, social accounting matrix (SAM), agricultural surplus.

ÖZ

TARIM VE TARIM DIŞI SEKTÖRLER ARASI KAYNAK AKTARIMI: TÜRKİYE, 1963-1990

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Eylül 2001, 83 sayfa

Gelişmekte olan ülkelerin, özellikle gelişme dönemlerinin başlarında endüstrileri için gerekli yatırımı oluşturmaları için en etkin yöntem tarımdan tarım dışına kaynak aktarımıdır. Bu önerme, 'tarımsal artık' kavramını kalkınma iktisadının gündemine getirir. Literatürde önemli yer tutmasına karşın, 'tarımsal artık'ın üzerinde herkesin uzlaştığı bir tanımı yoktur. Biz, bu çalışmada Karshenas (1989)'ın önerdiği tanımları esas aldık. Elimizdeki verilerle tarımsal artığı üç ayrı şekilde hesaplama olanağı bulduk. Bu hesaplamaları yapabilmek için detaylı bir veri tabanı gerekir. Bunu oluşturmanın en iyi yolu ise Sosyal Hesaplar Matrisi (SHM) üzerinden çalışmaktır. Bugüne kadar Türkiye için oluşturulan SHM'ler amacımıza uygun şekilde düzenlenmediklerinden, gerekli matrisleri biz oluşturmak durumunda kaldık. Örnek olarak seçtiğimiz 1963, 1968, 1973, 1979, 1985 ve 1990 yılları için SHM'ler oluşturduk; daha sonra bunları tarımsal artık hesaplarında

kullandık. Hesaplarımızı hem cari, hem de sabit fiyatlara göre yaptık. Sabit fiyatlı hesaplarda 1981 yılı baz olarak alınmış, tarım sektörünün 'net finansal katkısı' ile 'reel net üretim katkısı'ayrı ayrı hesaplanmıştır. Bunlardan ilkinin GSYİH'ya oranı 1979'a kadar hızlı bir artış göstermiş, bu yıla gelindiğinde artış hızı duralamış, daha sonra ise önemli bir gerileme izlenmiştir. İkincisinin GSYİH'ya oranı ise 1990 yılına gelindiğinde, önemli bir düşüş göstermiştir. Reel net üretim katkısına baktığımızda, tarım sektörünün tarım dışına katkısının 1980'e kadar esas itibariyle iç ticaret hadleri yoluyla olduğu, bu yıldan sonra ise iç ticaret hadlerinin etkisinin azaldığı görülmüştür.

Anahtar kelimeler: Kaynak akımları, sosyal hesaplar matrisi (SHM), tarımsal artık.

To my belowed parents

ACKNOWLEDGEMENTS

I express my sincere appreciation to Prof. Dr. Oktar Türel for his guidance and patience throughout this work. I would also like to thank Dr. Adil Temel, Prof. Dr. Erinç Yeldan and Dr. Ahmet Haşim Köse for their help and guidance.

My gratitude is extended to the staff of the Department of Economics and to the staff in the Dean's Office for their support before and during this study.

My special thanks go to my father Prof. Dr. Ali Usanmaz for his encouragement and guidance throughout this work and to my dear mother Suzanne Maria Usanmaz for her patience and great moral support.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

FIGURE

CHAPTER 1

INTRODUCTION

Agriculture has a prominent role in the growth of developing economies. In fact, an improving agricultural sector, by the help of the trade relations with the other sectors, can play a complementary and stimulating role in the development of the non-agricultural sectors (Dura, 1991). As economy develops, the agricultural sector will lose its relative importance and becomes more dependent, financially and technologically, to other sectors. Agriculture will stimulate the industrialization by the increase in demand for manufactured goods. With the introduction of new seed-fertilizer technology and mechanization, agricultural production will be unified with the rest of the market economy.

Technological progress in agriculture is very important: It can, on one hand, increase the labour productivity in agriculture and, on the other hand, change the patterns of income distribution and poverty as it brings benefits to small peasant holdings as well as the large ones. Growth of labour productivity may lead to an increase in the demand for the products of labour intensive industries and this in turn can be a source of an additional labour income for the farm sector (Karshenas, 1989). Also, if increase in productivity result in a cost reduction in agricultural production, food prices will decrease and employment in the sector may increase. This will contribute to the eradication of poverty.

Besides the factors mentioned above, taxation, consumption/saving propensities, investment opportunities can also effect the contribution of the agricultural sector.

In Turkey, there are various studies concerning the role of agriculture in the development of the economy. Cillov (1970), Özgüven (1972), Demirgil (1980) and Dura (1987; 1991) are some examples of them. In these studies, the contribution of agriculture is examined either through some economic indicators, as the share of the sectors in GNP or growth rates by sectors, or with the help of econometric modelling.

In this study, we prefer to use a different approach that has been used widely in relatively recent literature. In this approach, the contribution of the agriculture is explained under a mechanism of a transfer of 'surplus' from the agricultural sector to the other sectors. In the early stages of the development, it is often assumed that a net 'surplus' transfer from the agricultural sector is essential to maintain sufficiently high rates of industrial investment. The important thing is to determine the components of this agricultural surplus, the mechanism of its extraction and its use for industrial development.

In the 18th century, agricultural surplus was basically extracted through the land rent paid by the tenants and farmers to landlords. Many of these landlords were living in the cities and they were spending the rent income there. The agricultural surplus was extracted through their consumption of services and manufactured goods and also through tax payments to the state.

During the 19th and 20th centuries, agricultural surplus was viewed as a main source of investment in other sectors. This occurred through direct investment of the land rent in industry by landlords and through taxation by the state. After World War II, in poor countries, the agricultural surplus was the only source of internal financing and capital formation for the industry (Morrisson and Thorbecke, 1990).

Capital resource flows from the agricultural sector to the other sectors can take different forms. For example, farmers can invest their capital in the urban areas. Another way of capital flow is through pricing. If the prices of the agricultural products are kept low from the other sectors' prices then there will be capital flow from the farm sector because of this difference. In fact, by this way, with the help of reduction in food cost, labor costs can be reduced and also there will be a cost reduction in the sectors that uses agricultural

inputs. In contrast, agricultural inputs can be subsidized, causing a capital inflow to agriculture. Therefore, price policy is an important factor. Further, the foreign exchange earnings from the export of the agricultural products can also be used to pay for imports needed in other sectors. This can be another contribution of the agricultural sector.

There are many examples of a positive relationship between the agricultural surplus and development. In the mid-1960's, achievements of the Green Revolution helped to support import-substituting industrialization in Africa (Ahluwalia, 1991). In Taiwan and South Korea, high productivity growth generated an agricultural surplus. This, on the one hand, helped to finance the other sectors through taxation and, on the other hand, helped to lower the price of food which in turn caused a fall in wages for industrial employment (Lee and Chen, 1979; Ban, 1979; Johnston and Kilby, 1975; Timmer, 1988). Considering the role of prices, we may mention several studies: benefits of technological change through a fall in prices has been analyzed by Pinstrup-Andersen *et al.* (1976) at a national level, and by Quizon and Binswanger (1986) in many markets, and by Adelman and Robinson (1978) in CGEs.

The role played by the agricultural surplus in industrialization has been studied by many authors. For example, Lewis (1954) focused on the labour market in a classical model of the dual economy. In this respect, he linked the cheap labour surplus in agriculture and the level of industrial wages. Low wages in industry stimulated high rates of investment and growth. Jorgenson (1961) assumed full employment and examined the ways of extracting labour from agriculture without causing a rise in prices of food. The way of doing this, as he put forward, is a change in technology that raises the productivity of labour in agriculture. Finally, Fei and Ranis (1964) and Lele and Mellor (1981) have developed dual economy models which combine the two approaches above. In the former study, there is a surplus of labour in agriculture but real wages are constant. In this case, by the help of technological change that reduces the price of food the nominal wages can be lowered. In the latter, the same sort of technological change can lower the nominal wages in a model where there is full employment in agricultural

sector together with labour surplus and constant real wages in urban informal sector.

De Janvry and Sadoulet (1989) have built a model in which the growth of agriculture can constrain the industrial growth. This is the case where the main source of foreign exchange is the agricultural exports, and industry uses intermediate and capital goods with an import component.

Although the agricultural surplus has an important role to play for industrial development, it has no clear definition. In fact, several definitions of it are offered in the literature. Also, there is a wide disagreement among authors about interpreting the optimum magnitude and direction of resource flow and the appropriate transfer mechanisms (Karshenas, 1994). This variety of interpretations arises from the differences in theoretical perspective and specific conditions of the countries concerned.

'In physical terms, the net quantity of resource transferred includes goods (consumer goods, intermediate inputs, and investment goods) and primary factors (labour and capital services)' (Winters *et al.*, 1998: 72). There are two mechanisms for extracting the agricultural surplus. One is to extract it directly through taxes, payments of rents to urban landlords, voluntary transfers from agriculture to non-agriculture and net transfer of the balance of current accounts of agriculture. This is referred to as 'visible' transfers by Winters *et al.*. The other mechanism, which is referred to as the 'invisible', is the one through the change in terms of trade for agriculture. This includes the government intervention using price controls, export taxes and import subsidies together with the indirect transfers through overvalued or appreciated real exchange rates (Kruger *et al.*, 1988). So, prices play an important role in extracting surplus from agriculture.

Economists in the 18'th century and the classical economists up to Fei and Ranis focused on the role of the surplus in financing investment and for contributions to development within a dynamic setting without decomposing it to different components. The new approach, initiated by Lee (1971), defines the surplus within an accounting framework. Here, the surplus has two components: physical and monetary flows. Some of these flows such as subsidized goods and services that are delivered to agriculture by the state operate outside the market. If a comprehensive intersectoral macroeconomic

framework is not adopted, then the impact of these kinds of measures can be omitted (Morrisson and Thorbecke, 1990). The best way to avoid such problems is to use a SAM framework. This will also allow us to make meaningful international comparisons.

Karshenas (1989) has worked with SAMs in order to examine the intersectoral resource flows between agricultural and non-agricultural sectors for Taiwan (Province of China), India, Japan, China and Iran. Morrisson and Thorbecke (1990) and Winters *et al.* (1998) have followed the same method. In the former study the SAMs are set at constant prices, so the price effect is not examined.

Although Turkey has a long tradition of planning, no official attempts have been made to compile a SAM for Turkey so far (De Santis and Özhan, 1995; Özhan 1989, perhaps being an exception). Günlük-Şenesen (1991) presented a SAM for Turkey for the year 1973. Her study is a straightforward enlargement of the 1973 I-O table. Özhan (1989) constructed a SAM for 1983 employing the framework used by the SPO and it has been proved to be very useful for analysing the income distribution effect of stabilization policies employed in Turkey during 1980's. There are other studies by Adelman *et al.* (1989), Yeldan (1989), and Harrison *et al.* (1993) to study particular aspects of Turkish economy. None of these SAMs have yet incorporated household survey information and hence have no income-distributional dimension (see De Santis and Özhan, 1995).

There are two studies concerning SAM for Turkey for the year 1990. One of which is a study by De Santis and Özhan (1995) which gives a highly disaggregated SAM containing 281 accounts. The other is a study by Köse and Yeldan (1996). This latter study aims to establish a macroeconomic base for a computable general equilibrium (CGE) model, which contains a 14-sector SAM together with a capital composition matrix.

In this study we will examine six sample years: 1963, 1968, 1973, 1979, 1985 and 1990. In Chapter 2 one can find explanations on the concept of the social accounting framework and its use as a data set for intersectoral flows. We have encountered many problems while constructing SAMs for Turkey. It was difficult to find the data we needed, especially for the years 1963 and 1968. In some cases, we had difficulties in decomposing some variables like

consumption and investment into agricultural and non-agricultural components. Savings were also not easy to determine. We did not have the precise information on the household behavior of consumption and saving: How much of their income do they spend and how much do they spend on agricultural and non-agricultural products were basically unknown for the 1960's; so we had to estimate it. One can find explanations for the estimates we made and the way we constructed the SAMs for Turkey in Chapter 3.

In Chapter 4 different notions of agricultural surplus together with the results of our calculations are given. In Chapter 5 one can find information about Turkish economy together with the treatment of the results that we obtained and an international comparison with five other countries. Concluding remarks are given in Chapter 6.

CHAPTER 2

INTERSECTORAL FLOWS AND SAM

'The disaggregated and consistent nature of the SAM ... makes it an ideal instrument for identifying and analysing the interrelationship between the agricultural and non-agricultural sectors.' (Morrisson and Thorbecke, 1990: 1082). As mentioned before, there are two main advantages of using SAM in intersectoral resource analysis. First, it prevents any flow being omitted. Second, it allows us to make meaningful and valid comparisons among countries.

SAM is an economy-wide presentation of the data in form of a matrix, which describes, on the one hand, data on production and income generation, and, on the other hand, the flows between the accounts of a nation at a specific point in time (De Santis and Özhan, 1994).

SAM, in general, comprises five different kinds of calculations: 1) National income and national product 2) Table of flow of funds 3) Balance of payments 4) National balance sheet 5) Input-Output Table. Briefly, national income and national products will show the circular relations between production and income in the current period; table of flow of funds will give the flow of whole money and credit in the economy and also the changes of the assets and liabilities of the various institutions; balance of payments show all the debit and credit relations and all kinds of exchanges in products and services with the other countries; a national balance sheet gives the net real and monetary properties of the economy and the distribution of them. Finally, the I-O Tables will show the intersectoral product and service flow. These different kinds of calculations are actually in a close relation and they form a

complete system. SAM is an advanced system that comprises all these information.

The first stage to compile a SAM is to construct a macro SAM using available published macroeconomic data. The main statistical source used for this purpose is the I-O tables. One can find general form of an I/O table with two sectors in Table 1. Although in I-O tables only the flow of factors of production among the productive sectors is taken into consideration, in SAM this is generalized to include the current flows among all economic institutions.

In Table 2 one can see an example of a SAM. Here there are two activities or sectors (agriculture, non-agriculture) and three institutions (farm households, government and others). The category 'others' also includes the rest of the world. This form of SAM is suggested by Karshenas (1989). According to him, this representation of the SAM is the one with minimum entries to adequately represent the intersectoral resource flows and any other extension will just increase the size of the table without adding more insight than could be obtained from the present table. So, we will explain the basic features of the SAM on this representation.

Here the columns represent expenditures and the rows represent receipts. So, the columns show the factors of production that a sector needs to supply its own products and the rows show sectors which use these products. In this respect, the first subscript used for the terms in the table represents the delivering sector and the second represents the absorbing sector. For example, C_{af} stands for the consumption by the farmers of the agricultural products. Sectors or activities produce goods and services by using intermediate products (A), and factor services (F) provided by institutions. Factor incomes received by institutions (Y) are spent on current consumption (C), invested in physical assets (I), or saved (S). The table also shows current transfers between institutions (T) and capital transfers (K). Accounting consistency requires that the sum of the values in each row should equal to the sum of the values in each column. So, we may say that the construction of SAM is based on two main features:

i) the payments for a transaction by one account represent the receipts for the same transaction by another account,

ii) total income is always equal to total expenditure.

One must note that the consumption, investment and current and capital transfers take place within and between institutions, while production takes place in sectors. This implies that an intersectoral resource flow only becomes a meaningful concept, once we redefine sectors and institutions in such a way that there is a correspondence between the sectors and institutions of interest. As Ishikawa (1967) pointed out, resource transfer is only meaningful in the context of institutions, and production sectors should be chosen so that they incorporate the activities of the respective institutions.

Moreover, one must make an appropriate decision about the institutions or sector boundaries. The choice obviously depends on the purpose of the study and also on the availability of data.

As mentioned in Chapter 1, there are several studies on SAMs for Turkey. However these were not able to address to our needs. In fact, studies up to De Santis and Özhan (1994) do not incorporate household survey information, thus have no income-distributional dimension. De Santis and Özhan constructed a highly disaggregated SAM with 281 sectors for 1990, which was designed to be used for a CGE modelling exercise. Two major factors of production, i.e. labor and capital, were disaggregated further into 8 different types of labour and 5 different types of capital. Households, besides being urban and rural, were disaggregated into 20 categories according to their income size. In fact, such a detailed breakdown was beyond our scope of analysis. In order to be consistent with the other SAMs that we constructed for the earlier years, we have established our own SAM for 1990 rather than using the estimates provided by the other authors.

In this study two sectors are defined: agriculture and non-agriculture sectors. Institutions are categorized as private (farm and non-farm households) and government. The form of SAM given in Table 2 is appropriate for such a level of aggregation. But, some of the entries concerning income or capital transfers across institutions shown in this table were not available or easily estimable; so the form given in the Table 3 has

been used instead. For the values that are not available, we needed to make some estimations, the details of which can be found in the next chapter together with the SAMs for Turkey.

Table 1: General Form of the I/O Tables

	Absorbing sector			TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE					TOTAL FINAL USE
					FINAL CONSUMPTION		INVESTMENT		EXPORTS	
	Delivering sector	1	2		PRIVATE	PUBLIC	PRIVATE	PUBLIC		
1	AGRICULTURE									
2	NON-AGRICULTURE									
3	TOTAL INPUTS									
4	TOTAL OUTPUTS WITH TAXES									
5	GDP									

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE					
2	NON-AGRICULTURE					
3	TOTAL INPUTS					

Table 2: General Form of Social Accounting Matrix (SAM)

		Commodities		Factors	Institutions (current)			Institutions (capital)			Rest of the world	Total supply
					Private			Private				
		Agr	Non-Agr		Farm hh	Other hh	Govern.	Farm hh	Other hh	Govern.		
Commodities	Agr	Aaa	Aan		Caf	Cao	Cag	Iaf	Iao	Iag	Exa	Qa
	Non-agri	Ana	Ann		Cnf	Cno	Cng	Inf	Ino	Ing	Exn	Qn
Factors		Fa-Tinda	Fn-Tindn									F-Tind
Institutions (current)	Farm hh			Yf		Tfo	Tfg				REMa	INCf
	Other priv hh			Yo	Tof		Tog				REMn	INCo
	Government	Tinda	Tindn	Yg	Tgf	Tgo					REMg	TA
Institutions (capital)	Farm hh				Sf				Kfa	Kfg		SFa
	Other priv hh					So		Kof		Kog		SFn
	Government						Sg	Kga	Kgn			SFg
Rest of the world		IMa	IMn		FYa	FYn	FYg					FXS
Total Expenditure		Da	Dn	Y	EXPa	EXPn	G	Dfa	DFn	DFg	FXR	

Table 3: Abbreviated Form of Social Accounting Matrix (SAM)

		Commodities		Factors	Institutions (current)			Institutions (capital)			Rest of the world	Total supply
					Private			Private				
		Agr	Non-Agr		Farm hh	Other hh	Govern.	Farm hh	Other hh	Govern.		
Commodities	Agr	Aaa	Aan		Caf	Cao	Cag	Iaf	Iao	Iag	Exa	Qa
	Non-agri	Ana	Ann		Cnf	Cno	Cng	Inf	Ino	Ing	Exn	Qn
Factors		Fa-Tinda	Fn-Tindn									F-Tind
Institutions (current)	Farm hh			Yf							REMa	INCf
	Other priv hh			Yo			Tog				REMn	INCo
	Government	Tinda	Tindn	Yg	Tgá	Tgo					REMg	TA
Institutions (capital)	Farm hh				Sf							Sa
	Other priv hh					So						Sn
	Government						Sg					Sg
Rest of the world		IMa	IMn		FYa	FYn	FYg					FXS
Total Expenditure		Da	Dn	Y	EXPa	EXPn	G	Ia	In	Ig	FXR	

Legend:

A	Intermediate demand of activities
C	Consumption
D	Total demand
DF	Demand for funds
EX	Exports
EXP	Expenditures
F	Factor income payments made by activities
FXR	Foreign excahange revenue
FXS	Foreign exchange spending
FY	Foreign interest payments
G	Government spending
I	Investment
IM	Imports
INC	Income
K	Capital transfers between institutions
Q	Total supply
REM	Remittences
S	Savings
SF	Supply of investable funds
T	Current transfers between institutions
TA	Tax revenue
Tind	Indirect taxes
Y	Distribution of total factor income among institutions

CHAPTER 3

CONSTRUCTING SAM

We have encountered many problems while constructing SAMs for Turkey. Because of the lack of data we had to make some estimations. One can find the treatment of data and construction of SAM in this Chapter.

3.1. Treatment of Current Price I/O Tables

Our starting point was the original I/O tables published by SPO and SIS. These were 64-sector I/O tables. Since we were interested in the resource transfer between agriculture and non-agriculture sectors, we had to aggregate these tables into two-sector ones. First we aggregated 64-sector I/O tables according with the disegregation of price indices given in Table XIII in Appendix. Then we considered the discrepancy between GDP values in the I/O tables and the official GDP values which were later revised upward by the SIS. So, the original, current-price data are calibrated accordingly; i.e. all the rows of the tables are scaled up with a suitable factor in order to obtain the conformity with the revised GDP values.

In the original I/O tables, the import taxes were explicitly given for the years 1985 and 1990. Values of import taxes were available for the other years but the problem was to extract these from the I/O data. At this point, we had to decide which entries contained the import taxes so that we could subtract it from them. First, we assumed that the import taxes paid by agricultural sector are zero, i.e. all of the import taxes were paid by the non-agricultural sector. Taxes were then subtracted from the non-agricultural part of the private

consumption, total outputs with taxes and total demand. Of course, the total final use, total supply and GDP values changed accordingly.

Another problem concerned the investment part. When we compare our calibrated values for investment with the estimates in Temel and Saygılı (1995), we saw that our values were overestimated. So, the total investment data for the private and the public sector are adjusted to the Temel and Saygılı's estimates and the distribution of these between the agricultural and non-agricultural sectors are made according with the proportions in the calibrated series. The changes made here are reflected in private consumption so that the total final use remained the same. Stock changes are also added to the private consumption for the sake of simplicity.

3.2. Constructing SAM

The first two rows of SAMs together with imports are obtained by using the values from the I/O tables. Here the problem was to decompose the consumption and investment data into agricultural and non-agricultural parts. So, we had to determine how much of their income do farmers (and other households) spend on agricultural goods and how much on non-agricultural ones.

Consumption: We simply estimated the agricultural part of the consumption as an 'educated guess'. Since the total propensities to consume are known, the non-agricultural part is found as a residual. In Table 4 and 5 one can find the average propensities to consume (APC) and the share of agricultural products in total consumption, respectively.

Table 4: Average Propensities to Consume

	1963	1968	1973	1979	1985	1990	1990 (a)
Farm hh	0.950	0.900	0.846	0.835	0.805	0.762	0.779
Others	0.902	0.862	0.929	0.921	0.887	0.798	0.789
Total	0.930	0.880	0.898	0.895	0.868	0.790	0.784

(a) : Çelebi (1998)

One can observe that the values which the last two columns in Table 4 (our estimates of APC and those provided by Çelebi (1998)) are fairly close to each other.

Given APC values, we found farm households' consumption C_f ($=C_{af} + C_{nf}$) by $C_f = Y_{da} \times APC_a$, where APC_a is the agricultural part of the average propensity to consume. Given total private consumption (from I/O tables), we can find the other households' consumption C_o ($= C_{ao} + C_{no}$). In order to decompose C_f and C_o into their parts given in the brackets above we have used the agricultural consumption coefficients (see Table 5).

Table 5: Agricultural Consumption Coefficients

	1963	1968	1973	1979	1985	1990
Farm hh	0.500	0.500	0.400	0.375	0.308	0.306
Others	0.364	0.299	0.259	0.229	0.186	0.187
Total	0.445	0.394	0.309	0.271	0.210	0.212

Savings: One of the main problems in establishing the SAM is the calculations of savings. The method of calculation is as follows:

First, we start with the identity

$$GDP_{net} + M - X = C + I + G$$

Here, GDP_{net} is the GDP value without import taxes. M and X are the imports and exports, respectively.

Since

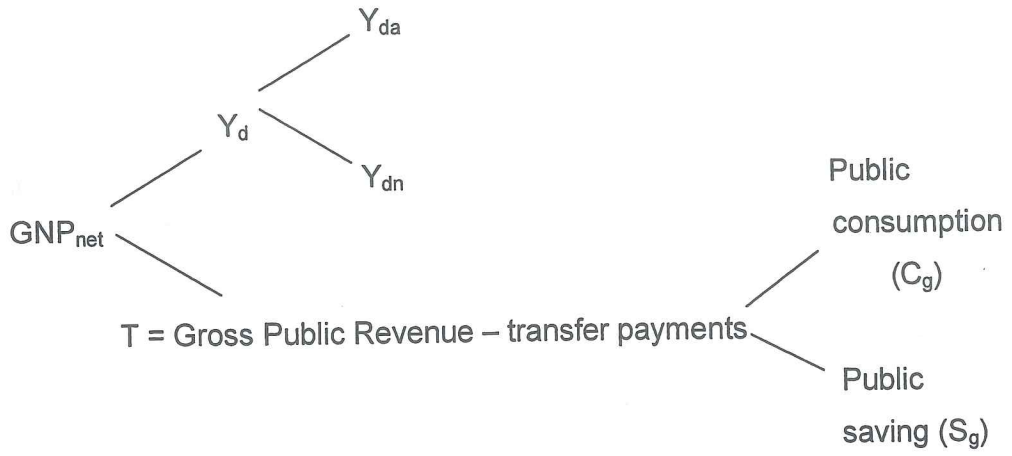
$$CAD = M - X - F - URT, \text{ and}$$

$$GDP + F = GNP, \text{ then}$$

$$GNP_{net} + CAD + URT = C + I + G$$

While CAD, F and URT are the current account deficits, the net factor incomes from abroad and unrequited transfers, respectively. GNP_{net} is

determined from this equation. Adding the import taxes to GNP_{net}, we get GNP itself.



In the diagram above, Y_d is the private disposable income. T is the net tax revenue which is calculated as gross public revenue minus transfer payments. This term decomposed into consumption and savings of the government. Here, T can be found from the data available. So, one can calculate Y_d. Government consumption is known so, savings can be found as the residual from T. Y_d is decomposed to agricultural and non-agricultural components. Agricultural part is calculated as

$$Y_{da} = VA_a - T_a$$

where VA_a is the agricultural value added and T_a is the tax payments by agricultural sector. Subtracting Y_{da} from Y_d, we find Y_{dn}. Part of Y_{da} (or Y_{dn}) is either spent or saved. We get:

$$Y_{da} = C_f + S_f \quad \text{and} \quad Y_{dn} = C_o + S_o$$

where C_f (C_o) and S_f (S_o) are the consumption and saving of the farm (other) household. We know the consumption values from the I/O tables so, savings can be obtained from the equations of Y_{da} and Y_{dn}.

Private Investments: In the I/O tables, we have investment from agricultural sector (I_{af} + I_{ao}) and from non-agricultural sector (I_{nf} + I_{no}). From the gross fixed capital investment tables provided in Temel and Saygılı (1995) we have I_{af} + I_{nf} and I_{ao} + I_{no} which are denoted as I_a and I_n in abbreviated SAMs. So we have:

	Farm hh	Other hh	Total Private
Agr	I_{af}	I_{ao}	I_a
Non-Agr	I_{nf}	I_{no}	I_n
Total	I_f	I_o	I

I_{nf} and I_{ao} are calculated according with the proportion of I_f and I_o in I respectively. The rest are calculated using row sums, namely, I_a and I_n .

Factor payments: Y_f is taken to be equal to $F_a - T_{inda}$, where F_a is the agricultural GNP. $F_n - T_{indn}$ is decomposed into Y_o and Y_g . Y_g is calculated as public factor income obtained from public sector balances minus REM_g. For the years 1985 and 1990 the interest income is also subtracted.

Entries under REM symbols together make up URT.

Transfers: Capital transfers across institutions (K_{ij}'s) are assumed to be zero. Among the current transfers (T_{ij}'s) T_{gf}, T_{go} and T_{og} are calculated. The first two are the agricultural and non-agricultural components of the sum of direct taxes, non-tax normal revenue and social funds (values taken from public sector balances). The last one is calculated as transfers minus foreign interest payments.

Income transfers to the agricultural and non-agricultural sectors (FY_a and FY_n, respectively) are also taken into consideration. Here, the former is taken to be zero, while the latter is calculated as a remainder of the row sum.

Income transfers to the government from the rest of the world (FY_g), is taken to be equal to the foreign interest payments with a minus sign.

Inflows of remittances, profits and interest revenue (REM): REM_a is assumed to be zero. REM_g is the official unrequited transfers plus agricultural public interest revenue (values taken from balance of payments accounts of SPO). REM_n is the interest income calculated as private unrequited transfers plus non-agricultural public interest revenue.

Rest of the world (ROW): Import and export values are taken from I/O tables. As mentioned above, FY_a is assumed to be zero. FY_g is taken to be the interest payments on the foreign dept. The difference between row total and column total of ROW is CAD. All values in the ROW column are known. So, the row total is found accordingly namely, by subtracting CAD from it. Then, FY_n is calculated as a residual in row of ROW.

Row and column sums: As mentioned before, the row and the column sums of ROW account differ by CAD. There is a difference between the row and the column of the 'other households' as well. This difference is equal to REM_n plus REM_g. Other sums fit into each other except for the years 1985 and 1990. For these years, we had problems with the sums of first two rows and columns. Most probably this was because of the import taxes. In order to equate the sums we have distributed the difference between them to the first two rows of the current and capital institutions. This means that we distributed it among six entries related to consumption and investment in proportion to size.

3.3. Price Effects

In order to take the price effects into consideration, we needed constant price I/O tables. In this study we have taken 1981 as the base year. The first thing to do was to aggregate the original 64-sector I/O tables to 34-sector tables, so that the new sector configuration corresponds to the available series of sectoral price indices. One can find the sectoral price indices used

in the Appendix. Each row of these tables is deflated with the suitable price index. We then summed these up to obtain the two-sector I/O tables. So, the deflator between the current and the constant price I/O entries is not the same throughout a single row of the two-sector I/O table.

By deflating the current price figures into 1981 priced ones, we finally arrived at GNP values at 1981 prices which were later calibrated in order to make these conform to the official GNP estimates. No additional revisions on import taxes were done. Import taxes are separately given only for 1985 and 1990. Only stock changes were added to the private consumption as before. The way we use and interpret the constant price I/O tables can be found in the next chapter.

Table 6: Input/Output Table for 1963 (Calibrated, at Current Prices)

TL MILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL CONSUMPTION PUBLIC	INVESTMENT PRIVATE	INVESTMENT PUBLIC	EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	26444	14134	40578	34919	321	825	0	4482	40547
2	NON-AGRICULTURE	2950	24276	27226	43493	7411	5804	4755	2105	63567
3	TOTAL INPUTS	29394	38410	67804	78412	7732	6629	4755	6587	104114
4	TOTAL OUTPUTS WITH TAXES	79498	83424	162922						
5	GDP	50104	45014	95118						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	81125	1627	0	79498	81125
2	NON-AGRICULTURE	90794	7370	2404	83424	90794
3	TOTAL INPUTS	171919	8997	2404	162922	171919

Table 7: Input/Output Table for 1968 (Calibrated, at Current Prices)

TL MILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	FINAL USE: EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	19379	18143	37522	48361	206	-467	0	4570	52670
2	NON-AGRICULTURE	4901	54773	59673	74336	13877	12878	11156	3735	115982
3	TOTAL INPUTS	24280	72916	97195	122697	14083	12411	11156	8305	168652
4	TOTAL OUTPUTS WITH TAXES	89779	166338	256117						
5	GDP	65499	93422	158921						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	90192	413	0	89779	90192
2	NON-AGRICULTURE	175655	9317	4594	166338	175655
3	TOTAL INPUTS	265847	9730	4594	256117	265847

Table 8: Input/Output Table for 1973 (Calibrated, at Current Prices)

TL MILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	FINAL USE: EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	28700	48394	77094	88823	254	-1751	33	3375	90735
2	NON-AGRICULTURE	13896	155415	169311	198186	33146	39758	25045	27900	324035
3	TOTAL INPUTS	42596	203809	246405	287009	33400	38007	25078	31275	414770
4	TOTAL OUTPUTS WITH TAXES	166164	452706	618870						
5	GDP	123568	248897	372465						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	167829	1665	0	166164	167829
2	NON-AGRICULTURE	493346	40640	11006	452706	493346
3	TOTAL INPUTS	661175	42304	11006	618870	661175

Table 9: Input/Output Table for 1979 (Calibrated, at Current Prices)

TL BILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL CONSUMPTION PUBLIC	INVESTMENT PRIVATE	INVESTMENT PUBLIC	EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	120.42	300.44	420.86	596.18	43831.00	-5.61	0.04	17.30	609.12
2	NON-AGRICULTURE	131.31	1358.13	1489.44	1607.52	238.00	236.56	228.13	101.25	2411.46
3	TOTAL INPUTS	251.74	1658.57	1910.31	2203.70	239.20	230.95	228.17	118.55	3020.58
4	TOTAL OUTPUTS WITH TAXES	1027.00	3668.96	4695.96						
5	GDP	775.27	2010.39	2785.66						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	1029.98	35827.00	0.00	1027.00	1029.98
2	NON-AGRICULTURE	3900.90	231.94	64.94	3668.96	3900.90
3	TOTAL INPUTS	4930.88	234.92	64.94	4695.96	4930.88

Table 10: Input/Output Table for 1985 (Calibrated, at Current Prices)

TL BILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL CONSUMPTION PUBLIC	INVESTMENT PRIVATE	INVESTMENT PUBLIC	EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	1277.4	3018.0	4295.4	5531.5	53.0	37014.0	0.1	312.7	5900.7
2	NON-AGRICULTURE	1745.1	22442.0	24187.1	21423.5	2253.2	3875.9	3236.0	6539.5	37328.1
3	TOTAL INPUTS	3022.5	25460.0	28482.4	26955.0	2306.2	3879.5	3236.0	6852.2	43228.9
4	TOTAL OUTPUTS WITH TAXES	9932.9	52660.6	62593.5						
5	GDP	6910.5	27200.6	34111.1						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	10196.1	239.0	36946.0	9932.9	10196.1
2	NON-AGRICULTURE	61515.2	7515.1	1339.5	52660.6	61515.2
3	TOTAL INPUTS	71711.3	7754.0	1363.7	62593.5	71711.3

Table 11: Input/Output Table for 1990 (Calibrated, at Current Prices)

TL BILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	FINAL USE: EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	15524	26140	41663	56231	535	2440	18	2614	61837
2	NON-AGRICULTURE	16083	235010	251093	217568	45819	59768	27666	49530	400351
3	TOTAL INPUTS	31606	261150	292756	273798	46354	62208	27684	52144	462188
4	TOTAL OUTPUTS WITH TAXES	100299	572121	672420						
5	GDP	68692	310971	379663						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	103501	2714	488	100299	103501
2	NON-AGRICULTURE	651444	66400	12923	572121	651444
3	TOTAL INPUTS	754944	69114	13411	672420	754944

Table 12: SAM for 1963 (at Current Prices, TL Million)

		Commodities		Factors	Institutions (current)			Institutions (capital)			Rest of the world	Total supply
					Private			Private				
		Agr	Non-Agr		Farm hh	Other hh	Govern.	Farm hh	Other hh	Govern.		
Commodities	Agr	26444	14134		23423	11496	321	102	723	0	4482	81125
	Non-agri	2950	24276		23423	20070	7411	720	5084	4755	2105	90794
Factors		50075	41309									91384
Institutions (current)	Farm hh			50075							0	50075
	Other priv hh			38848			1623				144	40615
	Government	29	3705	2461	764	4437					441	11837
Institutions (capital)	Farm hh				2466							2466
	Other priv hh					3430						3430
	Government						2203					2203
Rest of the world		1627	7370		0	596	279					9872
Total Expenditure		81125	90794	91384	50075	40029	11837	822	5807	4755	7172	

Table 13: SAM for 1968 (at Current Prices, TL Million)

		Commodities		Factors	Institutions (current)			Institutions (capital)			Rest of the world	Total supply
					Private			Private				
		Agr	Non-Agr		Farm hh	Other hh	Govern.	Farm hh	Other hh	Govern.		
Commodities	Agr	19379	18143		29022	19339	206	-59	-408	0	4570	90192
	Non-agri	4901	54773		29023	45312	13877	1627	11251	11156	3735	175655
Factors		65133	87839									152972
Institutions (current)	Farm hh			65133							0	~~152972~~
	Other priv hh			83161			1443				963	85567
	Government	366	5583	4678	639	8304					90	19660
Institutions (capital)	Farm hh				6449							6449
	Other priv hh					10328						10328
	Government						3720					3720
Rest of the world		413	9317		0	1230	414					11374
Total Expenditure		155325	263494	152972	65133	84513	19660	1568	10843	11156	9358	

Table 14: SAM for 1973 (at Current Prices, TL Million)

		Commodities		Factors	Institutions (current)			Institutions (capital)			Rest of the world	Total supply
					Private			Private				
		Agr	Non-Agr		Farm hh	Other hh	Govern.	Farm hh	Other hh	Govern.		
Commodities	Agr	28700	48394		41024	47799	254	-189	-1562	33	3375	167828
	Non-agri	13896	155415		61536	136650	33146	4284	35474	25045	27900	493346
Factors		122890	231175									354065
Institutions (current)	Farm hh			122890							0	122890
	Other priv hh			221427			4208				16562	242197
	Government	678	17722	9748	1700	29000					252	59100
Institutions (capital)	Farm hh				18630							18630
	Other priv hh					14017						14017
	Government						20400					20400
Rest of the world		1665	40640		0	-2084	1092					41313
Total Expenditure		167829	493346	354065	122890	225382	59100	4095	33912	25078	48089	

Table 15: SAM for 1979 (at Current Prices, TL Billion)

		Commodities		Factors	Institutions (current)			Institutions (capital)			Rest of the world	Total supply
					Private			Private				
		Agr	Non-Agr		Farm hh	Other hh	Govern.	Farm hh	Other hh	Govern.		
Commodities	Agr	120.42	300.44		237.07	359.11	43831.00	-0.35	-5.26	0.04	17.30	1029.99
	Non-agri	131.31	1358.13		395.12	1212.40	238.00	14.73	221.83	228.13	101.25	3900.90
Factors		771.77	1904.28									2676.06
Institutions (current)	Farm hh			771.77							0	771.77
	Other priv hh			1874.70			85.35				69.08	2029.13
	Government	~~17958.00~~ 3,149	106.11	29.58	14.60	281.20					0.42	415.40
Institutions (capital)	Farm hh				124.98							124.98
	Other priv hh					134.15						134.15
	Government						76.80					76.80
Rest of the world		~~2.98~~	231.94		0	-27.23	34.048					241.739
Total Expenditure		1029.98	3900.90	2656.05	771.77	1959.63	435.40	14.38	216.57	228.17	188.06	

Table 16: SAM for 1985 (at Current Prices, TL Billion)

		Commodities		Factors	Institutions (current)			Institutions (capital)			Rest of the world	Total supply
					Private			Private				
		Agr	Non-Agr		Farm hh	Other hh	Govern.	Farm hh	Other hh	Govern.		
Commodities	Agr	1277.4	3018.0		1713.2	3794.3	52.7	0.3	36925.0	0.1	312.7	10171.9
	Non-agri	1745.1	22442.0		3840.3	16651.1	2155.2	284.8	3422.5	3095.2	6539.5	60175.7
Factors		7061.5	25471.7									32533.2
Institutions (current)	Farm hh			7061.5							0	7061.5
	Other priv hh			23791.6			1729.3				1023.7	26544.6
	Government	-151.0	1728.9	1680.1	159.3	2256.7					169.5	5843.5
Institutions (capital)	Farm hh				1348.6							1348.6
	Other priv hh					1423.4						1423.4
	Government						1122.5					1122.5
Rest of the world		239.0	7515.1		0.0	1225.9	783.7					9763.7
Total Expenditure		10171.9	60175.7	32533.2	7061.5	25351.4	5843.5	285.1	3425.8	3095.2	8045.4	

Table 17: SAM for 1990 (at Current Prices, TL Billion)

		Commodities		Factors	Institutions (current)			Institutions (capital)			Rest of the world	Total supply
					Private			Private				
		Agr	Non-Agr		Farm hh	Other hh	Govern.	Farm hh	Other hh	Govern.		
Commodities	Agr	15524	26140		15941	39826	530	86	2334	18	2614	103013
	Non-agri	16083	235010		36124	173429	44132	2054	55513	26647	49530	638521
Factors		69319	288550									357869
Institutions (current)	Farm hh			69319							0	69319
	Other priv hh			280136			18836				10204	309176
	Government	-627	22421	8414	989	30826					3969	65992
Institutions (capital)	Farm hh				16265							16265
	Other priv hh					54050						54050
	Government						-4682					-4682
Rest of the world		2714	66400		0	-3128	7176					73162
Total Expenditure		103013	638521	357869	69319	295003	65992	2140	57847	26665	66317	

CHAPTER 4

CALCULATING AGRICULTURAL SURPLUS FOR TURKEY

4.1. Different Notions of Agricultural Surplus

With the help of the accounting identities implicit in the SAM in Table 2 one can define different notions of agricultural surplus and then analyze the mechanisms of surplus transfer. In this study, we prefer to use the conceptual framework and definitions suggested by Karshenas (1989). The first concept that Karshenas mentions is the 'net financial contribution' of the agricultural sector to accumulation in other sectors of the economy. He defines it to be the difference between commodity 'exports' (X_a) and 'imports' (M_a) of the agricultural (or the farm) sector to the rest of the economy. In this study we will prefer to use the terms 'sales' and 'purchases' for X_a and M_a, respectively, So, the net financial contribution of agriculture is $R = X_a - M_a$. When we look at Row 1 and Row 2 of Table 2 we may see that X_a and M_a can be decomposed as

$$X_a = A_{an} + C_{ag} + C_{ao} + I_{ag} + I_{ao} \quad \text{.....(1)}$$

$$M_a = A_{na} + C_{nf} + I_{nf} \quad \text{.....(2)}$$

From the accounting identity between Column 1 and Row 1 in Table 2 we have

$$A_{na} + F_a = A_{an} + C_{af} + C_{ag} + C_{ao} + I_{af} + I_{ag} + I_{ao}$$
$$= X_a + C_{af} + I_{af}$$

So,

$$X_a = A_{na} + F_a - C_{af} - I_{af} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

From (2) and (3) we get

$$R = X_a - M_a = (A_{an} + F_a - C_{af} - I_{af}) - (A_{an} + C_{nf} + I_{nf})$$

$$= F_a - (C_{af} + C_{nf}) - (I_{af} + I_{nf}) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

that is, value added in the farm sector minus the total consumption and total investment in the sector.

To derive the financial counterpart of this, we can use Column 4 and Row 4 to get

$$Y_f + T_{fg} + T_{fo} = C_{af} + C_{nf} + T_{gf} + T_{of} + S_f$$

and Column 7 and Row 7 to get

$$S_f + K_{fg} + K_{fo} = I_{af} + I_{nf} + K_{gf} + K_{of}$$

From the first, we get

$$(C_{af} + C_{nf}) = (Y_f - S_f) + (T_{fg} - T_{gf}) + (T_{fo} - T_{of}) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (5)$$

and from the second

$$(I_{af} + I_{nf}) = S_f + (K_{fg} - K_{gf}) + (K_{fo} - K_{of}) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (6)$$

Substituting these into equation (4) we have

$$X_a - M_a = (F_a - Y_f) - (K_{fg} - K_{gf}) - (K_{fo} - K_{of}) - (T_{fg} - T_{gf}) - (T_{fo} - T_{of}) \quad \ldots\ldots (7)$$

The right hand side of the equation gives the financial counterpart of the surplus transfer.

If we combine the three terms $(F_a - Y_f)$, $(K_{fo} - K_{of})$ and $(T_{fo} - T_{of})$ in (7) into the term KN, which represents net income plus net private capital transfer to non-agricultural sector, we get:

$$R = X_a - M_a = KN - (K_{fg} - K_{gf}) - (T_{fg} - T_{gf}) \quad \text{.....(8)}$$

Alternatively, combining the factor payments and current transfers in (7) into one term V, and the capital transfers into the term K, we get

$$R = X_a - M_a = V + K \quad \text{.....(9)}$$

This latter expression was first discussed by Ishikawa (1967) and used often in the literature which followed. Looking at the intersectoral resource flows from the financial side enables us to observe the mechanisms through which resource transfer from agriculture can take place. Also, it may be useful in empirical estimation when data on the real side is incomplete, or for checking the accuracy of the real side measures (Karshenas, 1989).

There are two other notions of agricultural surplus. One of them is the concept of 'net agricultural surplus' which is defined by Millar (1970). It is the value added in the farm sector minus the consumption of the farm households:

$$NS_a = F_a - (C_{af} + C_{nf}) = (X_a - M_a) + (I_{af} + I_{nf})$$

or

$$NS_a = F_a - C_a = I_a + X_a - M_a \quad \text{.....(10)}$$

where C_a and I_a are total consumption and investment of the farm sector respectively. NS_a refers to resources made available by the agricultural sector for investment within the sector itself and utilisation in other sectors, including exports. Also, it refers to maximum possible outflow of resources from the agriculture sector, which may become useful in estimating the

direction of resource flows when, due to data problems, the resource outflows can not be measured.

Another concept of agricultural surplus is the concept of savings surplus of the agricultural sector (Mundle and Ohkawa, 1979; Mody *et al.*1985). It is defined as the net financial contribution of agriculture defined as in (4) plus the inflow of the net factor income and current transfers into agriculture sector:

$$AS = X_a - M_a - V = (Y_f + (T_{fg} - T_{gf}) + (T_{fo} - T_{of})) - (C_{af} + C_{nf}) - (I_{af} + I_{nf}) \quad ...(11)$$

From (9) we get

$$AS = X_a - M_a - V = K = -(K_{fg} - K_{gf}) - (K_{fo} - K_{of})$$

So, AS is a measure of net capital transfer to the other sectors of the economy.

4.2. Terms of Trade Effects

One way of extracting income from the agriculture is to turn the internal terms of trade against agriculture. Internal terms of trade is the ratio of the agricultural price index to the non-agricultural one, which will henceforward be written as 'terms of trade' for short. It shows the purchasing power of the agricultural products in terms of the other products and services.

Turning the terms of trade against the agriculture means to keep the price of the agricultural products relatively low. This will provide cheap agricultural inputs to the industry. Also, it helps to keep the wages in the industry low. Entrepreneurs can, with the same amount of non-agricultural products, buy more agricultural products in terms of producer and consumer goods. By this way, a real income transfer from the agricultural sector to the 'modern' sector is realized. The profitability in the non-agricultural sectors increases, and when these profits can be channeled to investments, the savings will also increase (Dura, 1991). The important thing is to transfer this income to the productive sectors. The income gained by this way will be distributed among

producers and traders. The possibility of the trade sector to gain from this process may be harmful for the developing countries. If the trade sector is more powerful than the industry sector, the former will gain more but most probably this gain will not be channeled to productive investment.

What Turkey experienced during the 1950s was that, instead of the industry, in this period, the agricultural surplus seemed to be transferred to sectors like trade and banking. For the period of 1960-1975, studies on terms of trade produced ambiguous results, details of which may be found in Dura (1991). After 1975, terms of trade moved in favor of agriculture, afterwards it turned against it according to the SPO data.

The important thing is that while the terms of trade is moving against agriculture, the relative prices should not decrease too much; since this will lead to a decrease in the contribution of the agriculture to the output growth and hence to a fall in growth rate. In order to enable agriculture to maintain its positive contribution to the development, the sector must keep sufficient amount of resources that are necessary for its own development and the terms of trade must not always move secularly against agriculture (Kazgan, 1981).

From a developmental point of view, the contribution of agriculture to economic growth depends on the real value of the resources made available. So, we must consider the real value of transfers as well. Denoting real magnitudes by lower case letters and P_x and P_m as the prices of agricultural sector's sales and purchases respectively, the real net product contribution of the agriculture sector (r) will be

$$r = (X_a/P_x) - (M_a/P_m) = x_a - m_a \quad \text{.....(12)}$$

This is the real net product contribution of the agricultural sector from the viewpoint of the economy as a whole. When we look from the sectoral side though, we need to consider the intersectoral relative prices. Here we need to decide on a price index for deflating the net financial surplus. Let P be such a price index. So, the real value of financial surplus of the agricultural sector will be:

$$r' = (X_a/P) - (M_a/P) = R/P \quad \text{.....(13)}$$

The difference between r and r′ is the income terms of trade gains of the agricultural sector. Let us denote it by TT:

$$TT = r' - r = X_a/P - M_a/P - X_a/P_x + M_a/P_m$$

$$= X_a(1/P - 1/P_x) + M_a(1/P_m - 1/P) \quad \text{.....(14)}$$

$$= (X_a/P_x)(P_x/P - 1) + (M_a/P_m)(1 - P_m/P)$$

$$= x_a(P_x/P - 1) + m_a(1 - P_m/P)$$

The choice of an appropriate price index (P) is an unsolved problem (see, *inter alia*, Stuvel, 1956; UN, 1968; Kurabayashi, 1971; and Gutmann, 1981). There are many suggestions. For example, Ishikawa, in his study in 1967, suggested to use P_x for P in the case of a surplus of sales of agricultural sector and use P_m in the case of a surplus of purchase of agricultural sector.

In this study, we have calculated r by taking P as P_x first and then as the implicit GDP deflator (IMPGDPDEF). The reader can find P_x, P_m and price deflators in Table XIV in the Appendix. For calculating P_x and P_m, the factors between I-O series that are calibrated at current and constant prices are used. Among these factors, the ones that were obtained for total demand are taken as a reference for calculating the prices. So, the agricultural component of the total demand is taken to be P_x and the non-agricultural one to be P_m. The implicit deflators of agricultural and non-agricultural components of GDP, which are denoted by IMPAGRDEF and IMPNAGRDEF are also calculated. One can find them in Table VIII as well.

Using the data available, we could obtain R, NS_a and TT defined in the Equations 4 or 8, 10 and 14, respectively. The results are presented in Tables 18, 19 and 20 and Figures 1 to 6.

4.3. Treatment of the Results

In Equations 4 and 8, there are two different interpretations of net financial contribution of the agricultural sector (R). In the first one, its components are value added in the farm sector (F_a) and total consumption and investment of farmers (C_f and I_f, respectively). One can see from the results that while the value of F_a increases over time, its contribution in GDP decreases. The same thing is true for C_f as well: Its share decreases over the whole period, especially one can see a serious fall in the share of C_f. But this outcome is not surprising, since the real income of the farmers decreased sharply after the 1980s. The values of I_f are also increasing over time but its contribution fluctuates.

Looking at the other interpretations of R, one can see again three components: net income transfers and net capital transfers to non-negative sector (KN), net government investment in farm sector (K_{fg} - K_{gf}) and net inflow of government taxes/subsidies (T_{fg} - T_{gf}). As seen from the KN values, the private transfers to non-agricultural sector increased rapidly. KN values increased throughout the period. Its contribution to GDP was around 4.5 per cent after 1968, but it decreased rapidly in 1985. It constitutes the largest part of R. The net inflow of government taxes/subsidies takes negative values. This shows that, with the minus sign for this term in the Equation 10, its contribution is positive. Its contribution decreases over time and drops sharply in 1985 then increased a little in 1990. The contribution of net government investment in farm sector increases in 1968 and except 1985 it did not change its values much.

Examining the real net product contribution of the agricultural sector (r) one can observe that for both choices of P, namely of P_x and IMPGDPDEF r is first negative, then it turns to positive. The contribution of TT before the 1980s is high, then it decreased very sharply especially in 1985. So, before the 1980s the contribution of agriculture is mostly through TT but after the1980s it lost its significance. The values of TT are larger when we take P to be IMPGDPDEF but the trends of TT and r′ are similar for both choices of P.

Table 18a: Net Finance Contribution of Agricultural Sector and its Components

Years	Unit of account	Agricultural sales (Xa)	Agricultural purchases (Ma)	Net finance contr. of agr sector(R)	Value added in farm sector (Fa)	Total consumption (Caf+Cnf)	Total investment (Iaf+Inf)	Net government investment in farm sector (Kfg-Kgf)	Net inflow of government taxes/ subsidies (Tfg-Tgf)	Net income transfers and net private capital transfer to non-agg sector(KN)
1963	$x10^6$	31156	28720	2436	50104	46846	822	768	-793	2412
1968	$x10^6$	41850	35964	5886	65499	58045	1568	1974	-1005	6855
1973	$x10^6$	98293	81381	16912	123568	102560	4095	2328	-2378	16863
1979	$x10^8$	672.83	544.14	128.69	775.26	632.19	14.38	18.37	-18.09	128.97
1985	$x10^8$	7181.00	6109.14	1071.86	6910.47	5553.54	284.06	225.51	-8.30	1289.08
1990	$x10^8$	71461	56975	14486	68692	52065	2140	2659	-362	16784

Table 18b: Net Finance Contribution of Agricultural Sector and its Components (as % of GDP)

Years	Agricultural sales (Xa)	Agricultural purchases (Ma)	Net finance contr. of agr sector(R)	Value added in farm sector (Fa)	Total consumption (Caf+Cnf)	Total investment (Iaf+Inf)	Net government investment in farm sector (Kfg-Kgf)	Net inflow of government taxes/ subsidies (Tfg-Tgf)	Net income transfers and net private capital transfer to non-agg sector(KN)
1963	32.76	30.19	2.56	52.68	49.25	0.86	0.81	0.83	2.54
1968	26.33	22.63	3.70	41.22	36.52	0.99	1.24	0.63	4.31
1973	26.39	21.85	4.54	33.18	27.53	1.10	0.63	0.64	4.53
1979	24.15	19.53	4.62	27.83	22.70	0.52	0.66	0.65	4.63
1985	21.05	17.91	3.14	20.26	16.28	0.83	0.66	0.02	3.78
1990	18.82	15.01	3.82	18.09	13.71	0.56	0.70	0.10	4.42

Table 19a: Real Net Product Contribution and Real Value of the Financial Surplus of the Agricultural Sector, P=Px (at 1981 Prices, TL Billion)

Years	xa (Xa/Px)	ma (Ma/Pm)	Real net product contribution of agg. sector (r)	TT (=ma(1-Pm/Px))	Real value of the financial surplus of agg. sector (r'=R/P)
1963	928.76	1138.60	-209.84	282.49	72.62
1968	1057.97	1108.48	-50.51	199.31	148.80
1973	1338.95	1348.24	-9.29	239.72	230.38
1979	1714.57	1537.79	176.78	151.17	327.94
1985	1999.91	1623.02	376.89	-78.39	298.51
1990	2299.26	1933.11	366.15	99.94	466.09

Table 19b: Real Net Product Contribution and Real Value of the Financial Surplus of the Agricultural Sector, (as % of GDP)

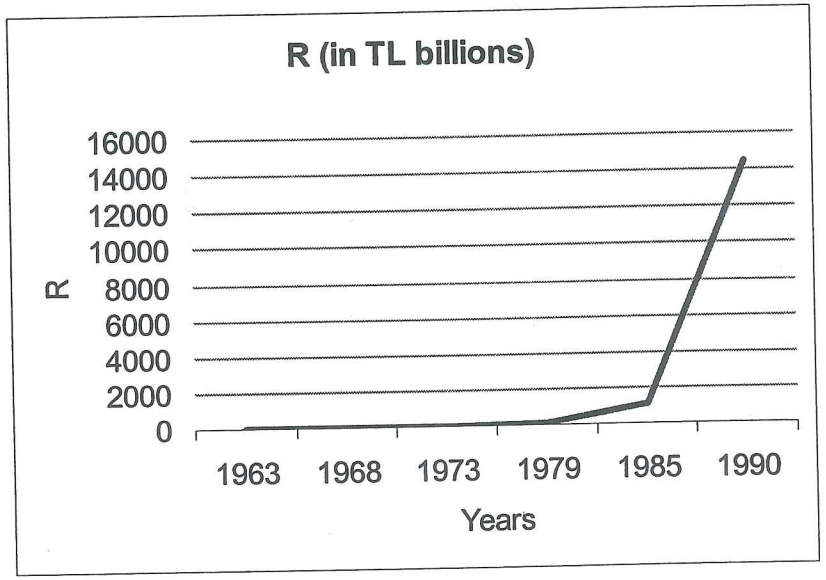
Years	xa	ma	r	TT (=ma(1-Pm/Px))	r'
1963	27.33	33.50	6.18	8.31	2.14
1968	23.34	24.46	1.12	4.40	3.28
1973	23.40	23.57	0.16	4.19	4.03
1979	22.98	20.61	2.37	2.03	4.40
1985	21.50	17.45	4.05	0.84	3.21
1990	19.23	16.17	3.06	0.84	3.90

Table 20a: Real Net Product Contribution and Real Value of the Financial Surplus of the Agricultural Sector, P=IMPGDPDEF (at 1981 Prices, TL Billion)

Years	xa	ma	r	TT	r'
1963	928.76	1138.6	-209.84	296.89	87.05
1968	1057.97	1108.48	-50.51	218.38	167.86
1973	1338.95	1348.24	-9.29	269.08	259.79
1979	1714.57	1537.79	176.78	167.87	344.64
1985	1999.91	1623.02	376.89	-84.59	292.31
1990	2299.26	1933.11	366.15	90.14	456.30

Table 20b: Real Net Product Contribution and Real Value of the Financial Surplus of the Agricultural Sector, (as % of GDP)

Years	xa	ma	r	TT	r'
1963	27.33	33.50	6.17	8.31	2.56
1968	23.34	24.46	1.12	4.40	3.70
1973	23.40	23.57	0.16	4.19	4.54
1979	22.98	20.61	2.37	2.03	4.62
1985	21.50	17.45	4.05	0.84	3.14
1990	19.23	16.17	3.06	0.84	3.82



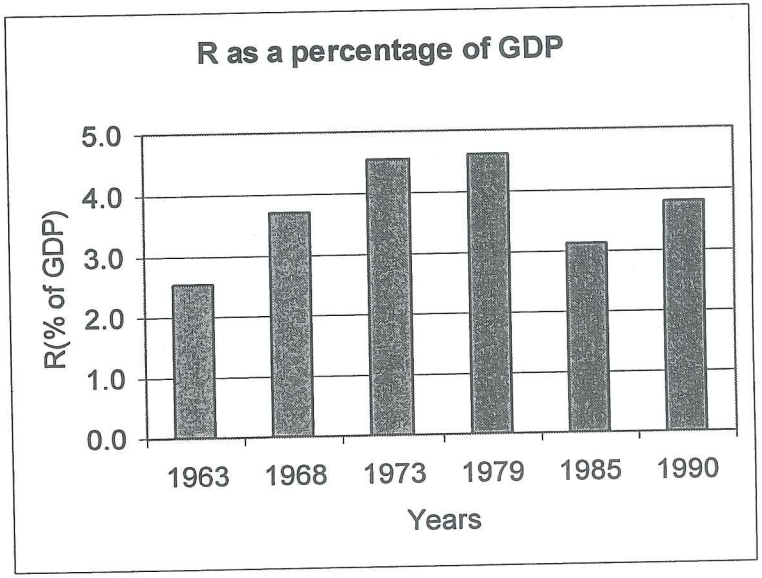
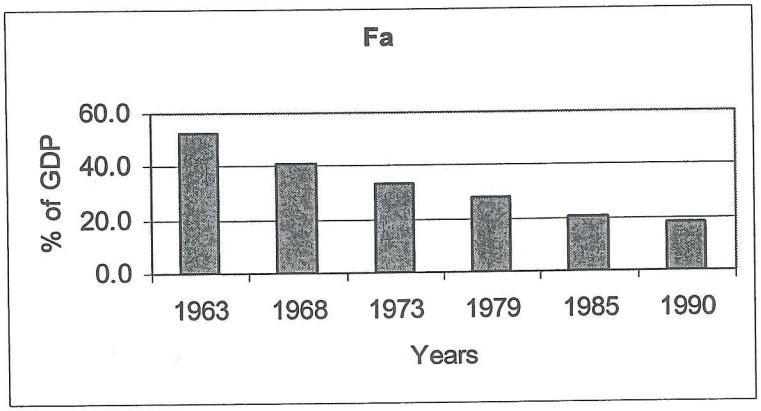
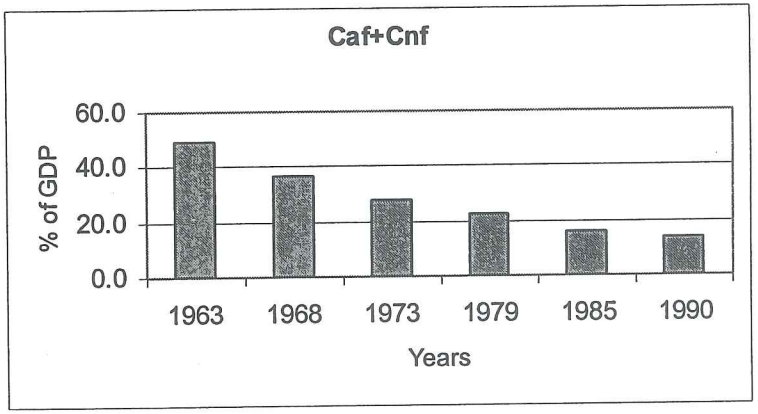


Figure 1: Net Finance Contribution of Agricultural Sector (R) and its Percentage in GDP.





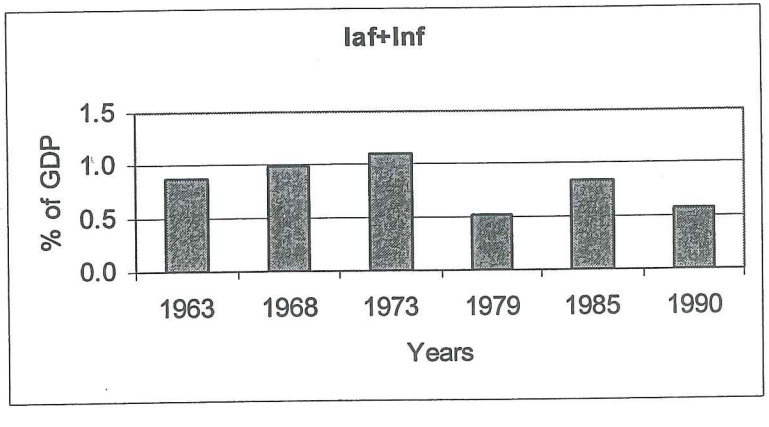
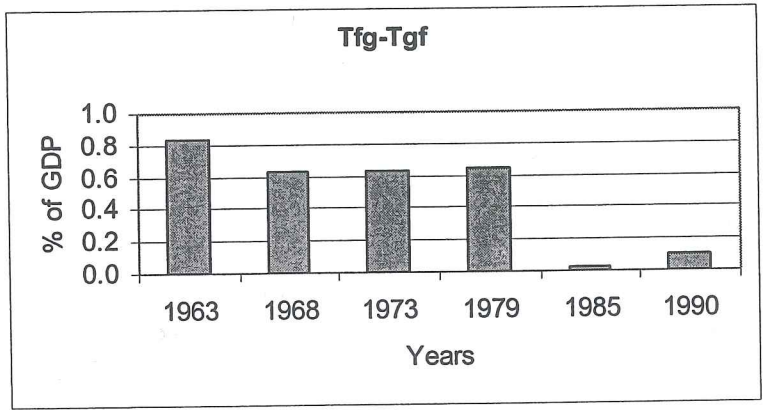
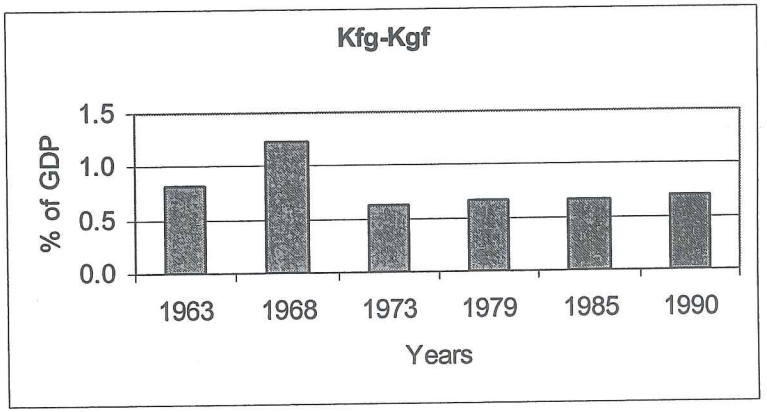


Figure 2: Determinants of R as Percentage of GDP, ($R = F_a - (C_{af} + C_{nf}) - (I_{af} + I_{nf})$).





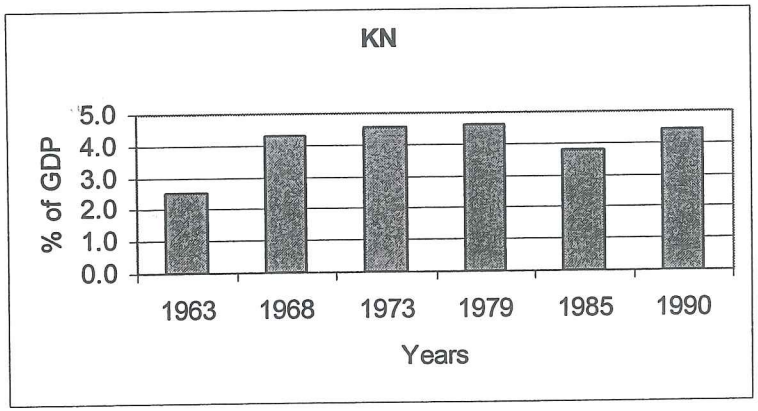
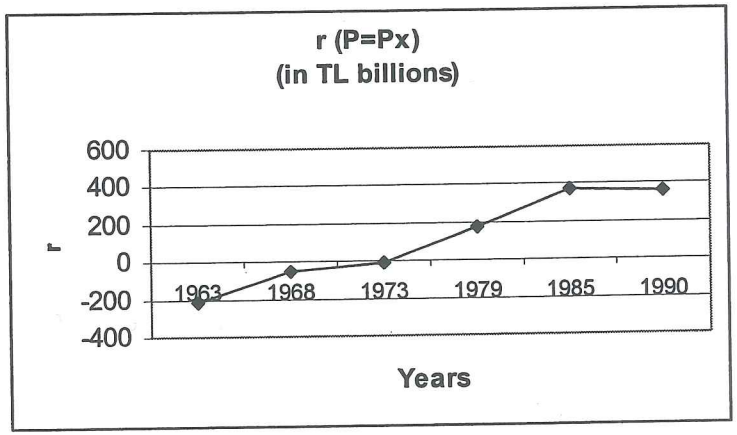
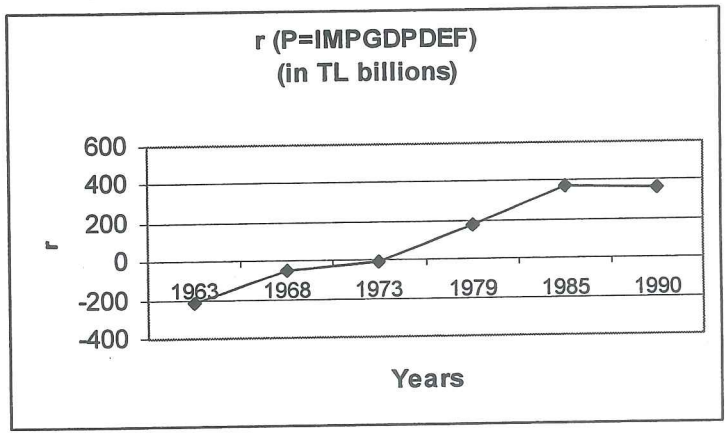
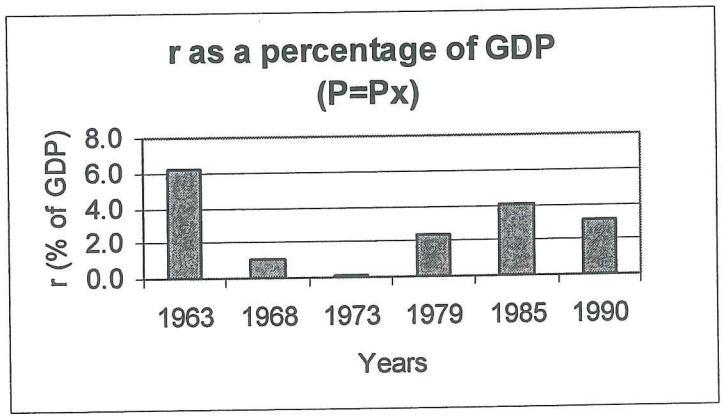


Figure 3: Determinants of R as Percentage of GDP, ($R = KN - (K_{fg} - K_{gf}) - (T_{fg} - T_{gf})$).







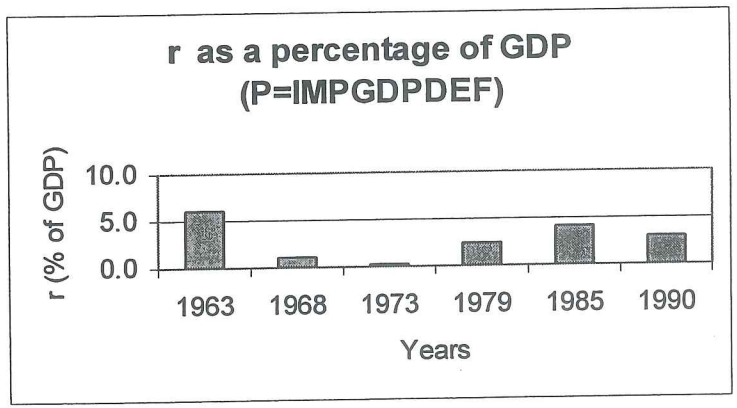


Figure 4: Real Net Product Contribution of Agricultural Sector (r) and its Percentage in GDP.

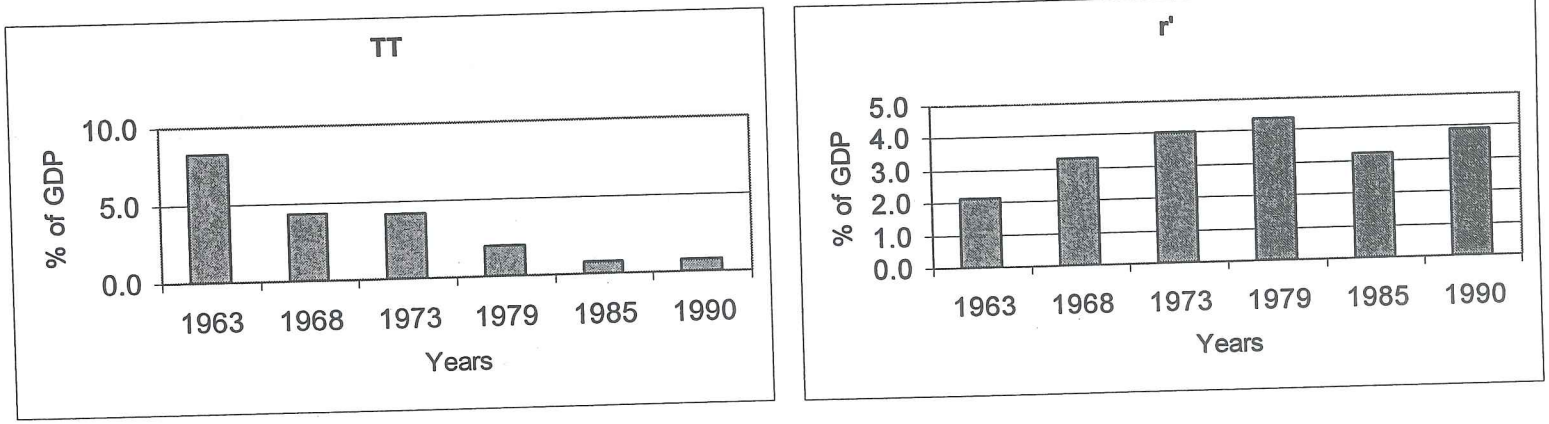


Figure 5: Determinants of r as Percentage of GDP, (P=Px).

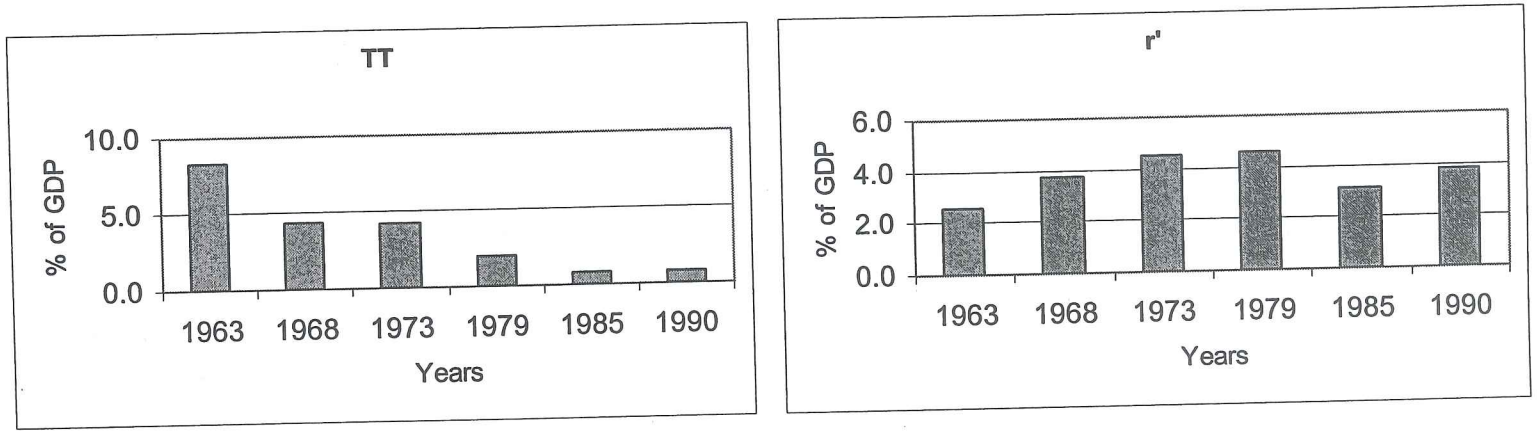


Figure 6: Determinants of r as Percentage of GDP, (P=IMPGDPDEF).

CHAPTER 5

INTERNATIONAL COMPARISONS

The method that we have been used, as mentioned before, was a method suggested by Karshenas (1989). In his study, he worked on five countries in certain time periods. These countries and respective time periods are India (1951-1971), Taiwan, China (1911-1960), Iran (1963-1977), Japan (1888-1937) and China (1951-1980). In this chapter we will examine his results together with our own. But first of all we will give an overview of the Turkish economy between the years 1960-1990.

5.1. General Observations on the Turkish Economy (1960-1990)

At the end of the 1950s, there was an economic crisis showing itself with a growing balance of payments difficulties and inflationary pressures. In those years, the way out of recurrent crises was seen to establish a planned economy, for the reasons that we are not going to elaborate here. Therefore, at the beginning of the 1960s Turkey has passed on to the stage of a 'planned' economy. Starting with 1963, five-year-plans were prepared and put into effect. The period that we are interested in contains five planning periods. Between the years 1960-1980, import substitution policies were implemented; thereafter there was a great change in policy perspective.

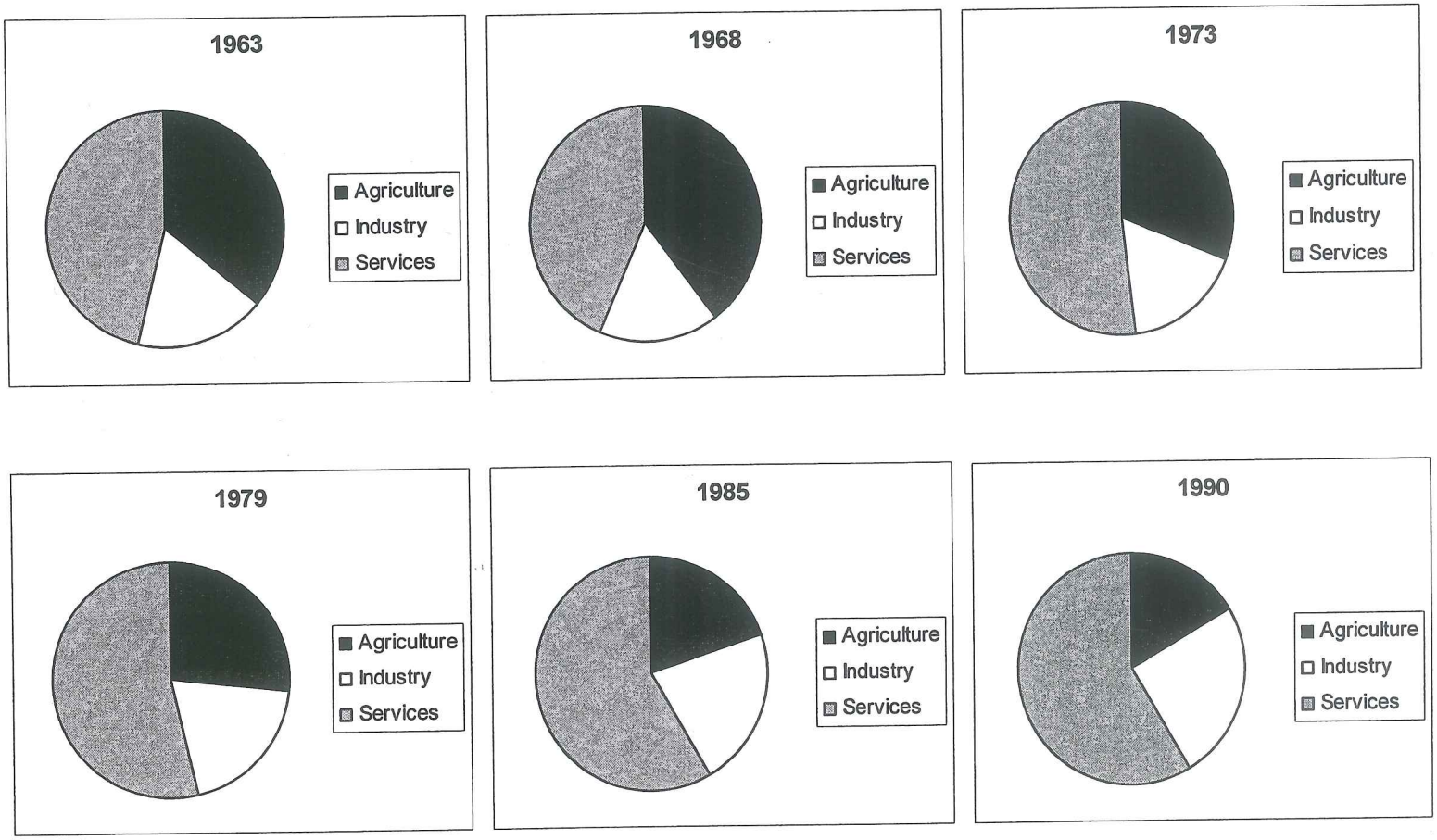


Figure 7: Sector Shares in GNP

After 1968, while the relative contribution of the agricultural sector declined, the contribution of the other two sectors increased (see Table 21 and Figure 7). From Table 22, one can observe the growth rates of the sectors at the first six five-year-plans. It is easy to follow the decrease in the growth rate of agricultural value added during this period. Besides, there is a dramatic decrease in the values of output in 1978 and an increase in 1984. The former is due to the economic crisis culminating in the late 1970s and the latter is caused by the economic recovery following the policy changes after 1980. Details will be mentioned in this section.

Table 21: Sector Shares in GNP (%, With Current Prices)

Sectors	1963	1968	1973	1979	1985	1990
Agriculture	36.1	39.8	30.7	26.7	19.7	16.8
Manufacturing	17.9	16.7	17.3	19.8	21.9	24.8
Services	46.0	43.6	52.0	53.5	58.4	58.4

Source: Statistical indicators (1923-1995), SIS

Table 22: Value Added Growth Rates by Sectors
(Annual Averages)

	PLAN I 1963-67		PLAN II 1968-72		PLAN III 1973-77		1978 PROGRAM	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Agriculture	4.2	3	4.1	1.8	3.7	1.2	4.1	2.8
Industry	12.3	10.9	12	9.1	11.2	8.8	8.8	3.4
Services	6.8	7.2	6.3	6.6	7.7	7.3	--	0.1

Table 22: Value Added Growth Rates by Sectors
(Annual Averages) continue

	PLAN IV 1979-83		1984 PROGRAM		PLAN V 1985-89		PLAN VI 1990-94	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Agriculture	5.3	0.3	3.5	0.5	3.6	0.8	4.1	1.6
Industry	9.9	2.4	6.6	9.9	7.5	6.5	8.1	3.8
Services	8.5	2.6	4.5	7.9	6.5	5	6.7	4.1

(a) Targeted
(b) Realized

Source: Economic and Social Indicators (1950-1998), SPO

Although there was a continuous increase in output during the 1963-70 period, the signals of an economic crisis started to appear afterwards. In the years 1978-79 a crisis broke out; the country faced an acute foreign exchange shortage and was virtually unable to repay her foreign debt. The intermediate goods could not be produced in desired quantities at that time, because of shortages of imported raw materials, thus aggravating the crisis. The industrial structure at that time was basically serving the needs of the internal markets due to import substitution policies and these policies ended up with an overvalued currency which discouraged exports. Although the workers' remittances provided a substantial part of the necessary foreign exchange during the beginning of the 1970s, with the onset of oil crises in the second half of the 1970s, they became inadequate. Industrial development and fast mechanization of economic activities, together with the emphasis put on the highway transportation increased the demand for oil substantially. Therefore, the spectacular increases in the oil prices first in 1973 and later in 1978-9 had a strong negative impact on the economy. The necessary measures to adjust to these shocks were not taken in time. The increase in military expenditures because of and after the Cyprus Peace Operation in 1974, deterioration of the foreign relations due to the embargo imposed by the USA, the slowdown in foreign capital inflows and the squeeze in credit

opportunities towards the end of the 1970s all fuelled the crisis. Economy could not overcome this situation until the decisions made in January 24, 1980 (Şahin, 2000).

The policy shift after the 1980 lessened the role of and the interventions by the state and led to greater reliance on market forces. The new policy agenda was put into effect mainly by privatization, tax reductions, free exchange relations and deregulation.

After 1980's, the passage to neo-liberal policies under the leadership of the USA in the world and accelerating tendencies of globalization had a strong impact on Turkey as well. The import substitution policies that met with an impasse at the end of 1970's were progressively replaced by export oriented policies after 1980. Oyan (1998) examines the period of 1980-1998 in three subperiods: 1980-88, 1989-93 and the period after 1994. According to him, while the first subperiod was characterized by freer international trade, the second and the third periods are the ones where free capital movements comes to the foreground. In period 1980-88, the economic policies produced a combination of low wage - undervalued TL, while in 1989-93 rising real wages were coupled with overvalued TL. After 1994, real wages fell and TL was again depreciated in real terms.

After the January 24 program, economic policies basically aimed at decreasing the domestic demand in order to divert the firms that formerly served for domestic markets to respond to foreign demands. Lowering real wages was instrumental in such a shift in market orientation. In this respect, the index of real wages in public sector came down from 100 in 1979 to 48 in 1988. There were parallel changes in the private sector wages as well. Real incomes of the people which make up about 85 per cent of the society, i.e. wage earners and farmers were lowered consciously. The prices of the products of state-owned economic enterprises (SOEs) were increased dramatically. The worsening of terms of trade against the agriculture was a complement to these policies. Real income of agricultural producers that constituted an important part of the domestic demand was decreased both in absolute as well as in relative terms.

Another measure which also contributed to reducing domestic demand was the liberalization of financial markets. In contrast to the low and even

negative real interest rate policies which were characteristic of financial repression before 1980, financial liberalization resulted in high real interest rates which had an adverse impact on investment. With the financial policies implemented during this period, the tax burden of high income groups was reduced with the prospect of increasing corporate savings and channeling it to investment. But, unfortunately, this policy did not work well in this period and the void left by the SOEs retreating from economic activity was not properly filled by private investors. The fiscal discipline was also seriously impaired in the 1980s by the establishment of extra budgetary funds reaching to almost 50 per cent of the central budget revenue in 1988. Thus, the rising deficits of the public sector in the 1990s led to greater reliance on debt finance which eventually turned out to be unsustainable. In fact, in 1998, according to the first six months' budget information, 84 per cent of the tax revenue was earmarked for interest payments.

The public investment was reduced, and the share of SOE's investment in public investment also decreased. Curbing SOE's investments for purposes of maintenance and modernization led to a worsening of their productive and financial performances.

The increasing distributive tensions in the 1980s finally led to the abandonment of low wage – undervalued TL combination for some time. From the late 1980s on, the increase in real wages was the main problem for the business which was offset by real appreciation of TL and/or a reduction in the tax burden. In search of an alternative, the government increasingly tempted to borrow from international markets by attracting short term capital inflows in the 1990s with the prospect of lucrative arbitrage opportunities. This process came to a halt by occasional financial breakdowns first in 1994 and later in 2000-2001. Because of financing foreign debt partly by internal borrowing, there was a net income transfer abroad.

Turkey's gradual liberalization of foreign trade since 1980 reduced the room for maneuver for policy interventions. With the adherence to the WTO Agreement and the entry to the Customs Union with EU in the 1990s, the possibilities of control over the foreign trade were further minimized.

After looking at the Turkish economy in general let us look at the place of agriculture in this economy.

While the share of the agriculture in the national income was about 30 per cent in 1960, this decreased to the range of 25-30 per cent in the 1970s and to 20-25 per cent in the 1980s. In the 1990s it first declined below 20 per cent and later stayed around 15 per cent (Kepenek and Yentürk, 1996). The contribution of the agricultural labor force to the total was about 77 per cent in 1962, it then declined to 67 per cent in 1972 and stayed around 60 per cent at the end of the 1970s. While this share decreased to 50 per cent during the 1980s, it declined further to about 40 per cent in the 1990s.

As discussed earlier, resource flow form the agricultural sector to the other sectors may be in the form of labor transfer or production inputs. Also, agricultural sector will function as an internal market for the other sectors, it provides for their basic needs.

We have observed the decrease in the agricultural labor force before. The outmigration from the farm sector started after Second World War, especially after 1950s. Because of the mechanization that started in the1950s and the ongoing lower relative productivities of agriculture, migration continued since then (Kepenek and Yentürk, 1996). The labor transfer from agriculture to other sectors was generally in the form of the migration of males who are in working age with strong physical ability and being able to adapt themselves to the work environment of other sectors more easily. With this labor transfer, the agricultural sector was not only denied from a dynamic and capable labor force, but also suffered a loss in capital as well (Şahin, 2000). Migration caused shortages of infrastructure services and led to deterioration in the quality of education, housing and health services in urban areas. Nevertheless, it contributed to the development of the domestic labor market and created a labor surplus in urban areas which kept urban wages within certain limits. Urban employment opportunities could not grow at the same pace with migration so the migrant agricultural labor could not be fully absorbed.

In the context of the contribution of the agricultural sector to the Turkish economy, we should also discuss the productivity developments in agriculture. One can find the figures for agricultural productivity growth in agriculture in Table 23 and comparisons of the growth rates with labor productivity in other major sectors in Table 24.

Table 23: Annual Growth Rate of productivity of Turkish Agriculture (Q_a / L_a) [a], (Given as Percentage)

Period	%
1965-75	1.9
1975-85	3
1980-85	2.2

[a] Qa and La stand for agricultural output in 1968 prices and agricultural labor, respectively.

Source: Dura (1991): 107.

Table 24: Growth Rates of Values Added per Labor in Major Sectors

Sectors	1962-77	1977-83	1984-89
Agriculture	3.9	2.9	3.6
Industry	5.9	1.1	3.3
Services	2.9	1.7	2.0
Total	5.8	2.6	4.4

Source: SPO (1985)

As can be seen from the Table 24, the growth of productivity in the agricultural sector is well below that in industry in the 1960s and the early 1970s. The labor productivity of the agriculture increased very rapidly during the 1975-85 period compared to the past ten years, which could be attributed to the slow down in output growth and continuing outmigration from rural areas leading to productivity improvements in agriculture. However, it declined substantially in the ten years following 1985.

An international comparison of labor productivities in agriculture is offered in Table 25 for the years 1960 and 1980 (Dura, 1991). Although labor productivity in Turkish agriculture approximately doubled from 1960 to 1980, Turkey's inferior position relative to productivity leaders and major developed

economies remain. This position has not also changed much since 1980 (Çakmak and Zaim, 1998).

Table 25: Agricultural Labor Productivity for Some Countries

Countries	1960	1980
USA	93,8	285,1
Australia	103,8	256,2
Denmark	46,4	131,2
England	47	116,3
Fed. Germany	37,1	113,7
France	32,4	101,8
Austria	30,5	90,8
Argentina	34,9	63,8
Italy	14,5	46
Spain	9,2	44,8
Japan	10,3	27,8
Greece	9,1	25,8
Colombia	8,3	17,2
Yugoslavia	6,6	14,3
TURKEY	6,1	12,7
Syria	7,2	10
Mexico	5,1	7,5
Egypt	4,4	4,6
Pakistan	3,1	4,2
India	2,2	3,1

Note: 1. Only includes male labor force.
2. Productivity is measured in terms of "wheat unit".
One wheat unit is equal to one metric ton of wheat.
Dura (1991): 109.

Source: Kawagde and Hayami (1983).

Since the early 1950s to our time, there was a flow of modern capital investment into the agricultural sector, which reflects the technological development in the sector. With mechanization the cultivated area expanded and efficiency in production has increased. This in turn increased the agricultural production. Thanks to generous subsidies given to agriculture, modern inputs such as tractors, fertilizers, insecticides, and irrigation increased; however these were not fully reflected in the increase in

agricultural production (for estimates of agricultural production function see, *inter alia,* Akder *et al.*, 1999; Çakmak and Zaim, 1998). Here, not only the quantity of these inputs but other factors are also important; for example, labor efficiency and especially the working organization and management system must be considered. As we mentioned before, the educated and better qualified labor force has been migrating to the urban areas since the early 1950s. Besides deterioration in labor skills, there were also instances of improper use of especially the fertilizers and combine harvesters, sometimes agricultural machines were not properly used or maintained (Kepenek and Yentürk, 1996).

Within the framework of input-efficiency relation, the size of the enterprises is also important. When we look at the general aspect of the agricultural sector during the 1963-80 period, we see that the number of the enterprises increased from 3.1 million to 3.7 million, the cultivated area form 16.7 million hectares to 22.6 hectares. But, the existing enterprises were usually small in size. In fact, according to the census of 1980, 62 per cent of the agricultural enterprises cultivated land smaller than 50 hectares.

When we compare the general agricultural census of 1980 and 1991 we see that the number of agricultural enterprises has increased from 3650910 to 4068432 corresponding to an increase of more than 417 thousand. In the developed countries the number of agricultural enterprises decrease and their size increase over time. Also, the minimum size of the enterprises that are suitable for the use of modern techniques increases more rapidly than the average size of the enterprises. It is just the opposite in Turkey. During the period 1980-91 the number of enterprises has increased and the average size of them decreased by 6 hectares. 68 per cent of the agricultural enterprises had land smaller than 50 hectares (Şahin, 2000). While the number of small enterprises increased their size got smaller. On the other hand, the number of big ones decreased while their size increased. This shows a land aggregation in favor of enterprises that are large and above average in size.

In Turkey, the cultivated land is partitioned to small pieces mostly through inheritance. This disables the rational use of land and also complicated the production planning and the use of agricultural tools. This, together with the

outdated methods of fallow and improper crop rotation, impeded the technological development. Because of the inequality in distribution of land among the enterprises, the number of landless peasants has increased over time. According to general agricultural census of 1991, the number of families that use only the rented land is around 48 thousand which is 1.18 per cent of total agricultural enterprises. If we add the families that cultivate the land of others as partners and the ones that partly using others' land besides their own, then we end up with 300 thousand families. These usually find job in summer as seasonal workers. Other times they are temporally unemployed or try to find jobs in cities (Şahin, 2000).

According to our calculations, net financial contribution of the agricultural sector (R) is positive for the years considered. On the other hand, real net product contribution of the agricultural sector (r) for both choices of P, namely of P_x and IMPGDPDEF is first negative, then it turns to positive. Before the 1980s the contribution of agriculture is mostly through TT but after the1980s it lost its significance.

5.2. The Case for Five Other Countries

Karshenas (1989) derived interesting results from the study of his sample of five developing countries. There are three countries (India, Iran and China) where 'net finance contribution' of agriculture to the economic growth appears to be negative. But, interestingly, these are the ones following import-substituting industrialization policies during the respective periods of analysis. So, these particular cases provide counterevidence to the argument that these kinds of policies will help to extract resources from agricultural sector for industrial development. In fact, Karshenas (1989) shows that this argument may not be valid for many other developing countries with similar initial conditions and development policies.

All the five economies considered had large agricultural labor reserves. The important thing was the productive utilization of the agricultural surplus labor. In this regard, for the developing countries, the inflow of the agricultural labor factor income from non-agricultural activities becomes important. In Japan, there was a substantial agricultural taxation and substantial capital outflow,

but, the inflows due to large factor income flows and terms of trade effects overshot the outflows from agricultural sector. Together with Japan, other two countries that showed fast rates of industrial growth, Iran and Taiwan (province of China) can be compared with India, where inflow of factor income was negligible. This comparison shows that "the rate of growth of non-agricultural sector is a major determinant of factor income flow in the market economies" (Karshenas, 1989: 67). When we compare India with China, we note that India experienced a great difficulty in absorbing the large agricultural surplus labor, while China was quite successful in that issue with the help of substantial inflows of wage income from non-agricultural activities to the farm sector. This was achieved through introduction of new organizational forms.

When we look at the terms of trade effect, we see that in Iran, China and India there was a continuous improvement in agricultural terms of trade in the respective periods. Farm sectors in these countries received relatively large income gains from this improvement. In Japan, although there were some fluctuations in terms of trade effect, they gained a large amount of income in agricultural sector (with 1888-92 prices). Only in Taiwan (province of China) were the terms of trade one of the major reasons for an outflow of resources from agriculture. So, one can see that, the countries that exhibited major surplus inflows to agriculture through terms of trade improvements are the ones that applied import substituting industrialization policies.

Besides these important factors, one should also consider the 'real' factors such as population growth, labor absorption in non-agricultural sectors and technological progress. In fact, these factors may have important consequences. In China, for example, although the institutional setup gave many options for government to extract resources from agricultural sector, there was a great population pressure on the land and a sluggish growth of productivity of labor in agriculture. Because of this, price subsidies on investment goods used in agriculture and the great use of internal resources of the agricultural sector in agricultural investment became ineffective and resource extraction was limited. But in countries where agricultural labor productivity grew relatively fast such as Japan and Taiwan (province of

China), resources could be transferred from agriculture through various policies.

When we compare these results with Turkey, first of all we see that although import substitution policies were implemented in Turkey before 1980, the 'net financial contribution' of the agriculture (R) was positive in the years of 'planned economy'. Therefore, Turkey sets a counterexample to those given in Karshenas (1989). But the observation that Karshenas made about the terms of trade effect in his sample of countries is supported for Turkish case. Here one can refer to our findings indicating that resource transfers from agricultural sector were realized mostly through terms of trade effects before 1980.

As in China, one can observe that in spite of the subsidies given to the agricultural sector and technological improvements, the expected increase in productivity was not achieved. This was because of the profile of the workforce in agriculture and the small size of the enterprises. If the inputs to the agricultural sector could have increased the productivity of the agricultural labor force, Turkey could have transferred resources from the agricultural sector by this way.

CHAPTER 6

CONCLUSIONS

In the early stages of development, the main source of industrial investment in the mostly agrarian economies is the agricultural surplus. Therefore, the concept of agricultural surplus was central to the theories of economic development. The important thing is to define the determinants of the agricultural surplus, try to understand the mechanisms of extraction of it and also the use of it for development in industry. In spite of the importance of this concept in development economics, agricultural surplus has no clear definition.

In this study we have reviewed different notions of agricultural surplus suggested by Karshenas (1989). Our problem was to collect the data necessary for the calculations of agricultural surplus in line with these definitions. The best way of doing this, as it is suggested in the literature, is to use a SAM framework. It enables us to present the data in a systematic fashion, provide checks for the inconsistencies in the data, overcome the problem of missing information and do international comparisons. The available studies on SAM for Turkey were not suitable for our purpose of study. So, we needed to construct the necessary SAMs for the sample years 1963, 1968, 1973, 1979, 1985 and 1990.

Constructing SAM for Turkey was not an easy task because of data problems. Some of the data were not available so, we needed to undertake some new estimation. Some had to be calibrated in order to suit to the latest official national accounts figures. We started with I/O tables. Current priced I/O tables are calibrated to get the GNP values of SPO. Import taxes were

separated only for the years 1985 and 1990. We extracted it from the tables of other years as well. Investments are made consistent with Temel and Saygılı (1995)'s figures. These calibrated final entries are used in the construction of SAMs. Since we do not have reliable data for household behavior, their consumption and savings propensities are estimated mostly by guesswork and reference to other studies. Transfers are calculated either by the available data or as a residual from the balance of accounts.

Extraction of agricultural surplus may be through taxation, voluntary transfers, rental payments to the landlords and net transfer of balance of account of agriculture or indirectly though internal terms of trade changes. In order to examine the later procedure, we needed to consider the price effects, that is, to distinguish the real part from the impact of relative price change. For this purpose, we have constructed the constant price I/O tables with 1981 as a base year. The original 64-sector I/O tables are aggregated first to 34-sector ones and multiplied row-wise with proper price deflators, then aggregated into two-sector ones. The constant price figures are also calibrated in order to conform to the official GNP estimates.

Agricultural surpluses, both in current and real terms, are calculated using the collected data. The relative contributions of the determinants of agricultural surplus according to its different definitions are examined. The results showed that the contribution of agriculture to other sectors was mostly through terms of trade changes before 1980s. After the 1980s, terms of trade effects lose their significance. Again up to the 1980s, the private transfers are important in the net financial contribution of agriculture.

There are also a number of case studies for other countries concerning the intersectoral flows. In this study we only referred to some of them, without fully citing their quantitative results. International comparisons between Turkey and other countries seem to be an area of research which requires further exploration. So the results of the study may be a primer for this purpose. It is also believed that the SAMs constructed here in this study will be useful for other research as well.

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APPENDIX A

ANNEX TABLES

Table I: Input/Output Table for 1963 (at Current Prices)*

TL. MILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	13164	7036	20200	17172	321	460	0	2231	20184
2	NON-AGRICULTURE	2419	19904	22323	34486	7411	5327	5142	1726	54092
3	TOTAL INPUTS	15583	26940	42523	51658	7732	5787	5142	3957	74276
4	TOTAL OUTPUTS WITH TAXES	39574	70372	109946						
5	GDP	23991	43432	67423						

		TOTAL DEMAND	IMPORTS (C.I.F.)	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	40384	810	39574	40384
2	NON-AGRICULTURE	76415	6043	70372	76415
3	TOTAL INPUTS	116799	6853	109946	116799

*: Original data published by SIS

Table II: Input/Output Table for 1968 (at Current Prices)*

TL MILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	FINAL USE: EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	9622	9008	18630	23672	206	4	0	2269	26151
2	NON-AGRICULTURE	4028	45020	49048	58002	13877	9163	11218	3070	95330
3	TOTAL INPUTS	13650	54028	67678	81674	14083	9167	11218	5339	121481
4	TOTAL OUTPUTS WITH TAXES	44576	136720	181296						
5	GDP	30926	82692	113618						

		TOTAL DEMAND	IMPORTS (C.I.F.)	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	44781	205	44576	44781
2	NON-AGRICULTURE	144378	7658	136720	144378
3	TOTAL INPUTS	189159	7863	181296	189159

*: Original data published by SIS

Table III: Input/Output Table for 1973 (at Current Prices)*

TL MILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	17825	30057	47882	55097	158	-1023	26	2096	56354
2	NON-AGRICULTURE	11337	126792	138129	151961	42450	30511	25652	22762	273336
3	TOTAL INPUTS	29162	156849	186011	207058	42608	29488	25678	24858	329690
4	TOTAL OUTPUTS WITH TAXES	103202	378310	481512						
5	GDP	74040	221461	295501						

		TOTAL DEMAND	IMPORTS (C.I.F.)	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	104236	1034	103202	104236
2	NON-AGRICULTURE	411465	33155	378310	411465
3	TOTAL INPUTS	515701	34189	481512	515701

*: Original data published by SIS

Table IV: Input/Output Table for 1979 (at Current Prices)*

TL BILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	FINAL USE: EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	90.5	225.9	316.4	447.3	0.9	-3.3	0.0	13.0	457.9
2	NON-AGRICULTURE	116.4	1204.0	1320.4	1343.0	327.3	166.7	268.7	89.8	2195.4
3	TOTAL INPUTS	206.9	1429.9	1636.8	1790.3	328.2	163.3	268.7	102.8	2653.3
4	TOTAL OUTPUTS WITH TAXES	772.0	3310.2	4082.2						
5	GDP	565.1	1880.3	2445.4						

		TOTAL DEMAND	IMPORTS (C.I.F.)	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	774.3	36924.0	772.0	774.3
2	NON-AGRICULTURE	3515.8	205.6	3310.2	3515.8
3	TOTAL INPUTS	4290.1	207.9	4082.2	4290.1

*: Original data published by SIS

Table V: Input/Output Table for 1985 (at Current Prices)*

TL BILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL CONSUMPTION PUBLIC	INVESTMENT PRIVATE	INVESTMENT PUBLIC	EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	954	2254	3208	4132	40	2	0	234	4407
2	NON-AGRICULTURE	1517	19508	21025	18066	2941	2521	3235	5685	32448
3	TOTAL INPUTS	2471	21762	24233	22198	2981	2523	3235	5918	36855
4	TOTAL OUTPUTS WITH TAXES	7418	45776	53194						
5	GDP	4947	24014	28961						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	7615	178	18	7418	7615
2	NON-AGRICULTURE	53473	6533	1164	45776	53473
3	TOTAL INPUTS	61087	6711	1182	53194	61087

*: Original data published by SIS

Table VI: Input/Output Table for 1990 (at Current Prices)*

TL BILLION

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL CONSUMPTION PUBLIC	INVESTMENT PRIVATE	INVESTMENT PUBLIC	EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	14926	25134	40061	53617	514	2796	18	2513	59459
2	NON-AGRICULTURE	16089	235098	251187	208588	42569	71249	28545	49549	400501
3	TOTAL INPUTS	31015	260232	291248	262206	43083	74045	28563	52062	459959
4	TOTAL OUTPUTS WITH TAXES	96440	572335	668776						
5	GDP	65425	312103	377528						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	99519	2610	469	96440	99519
2	NON-AGRICULTURE	651687	66425	12928	572335	651687
3	TOTAL INPUTS	751207	69034	13397	668776	751207

*: Original data published by SIS

Table VII: Input-Output Table for 1963 (Calibrated, at 1981 Prices)

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	FINAL USE: EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	744.25	430.21	1174.46	1099.58	22.53	0.00	0.00	121.80	1243.91
2	NON-AGRICULTURE	115.52	996.21	1111.73	1701.91	304.77	243.93	158.52	78.69	2487.82
3	TOTAL INPUTS	859.77	1426.42	2286.19	2801.49	327.30	243.93	158.52	200.49	3731.73
4	TOTAL OUTPUTS WITH TAXES	2370.62	3315.56	5686.18						
5	GDP	1510.85	1888.14	3398.99						

		TOTAL DEMAND	IMPORTS (C.I.F.)	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	2418.37	47.75	2370.62	2418.37
2	NON-AGRICULTURE	3599.55	283.98	3315.56	3599.55
3	TOTAL INPUTS	6017.92	331.74	5686.18	6017.92

Table VIII: Input-Output Table for 1968 (Calibrated, at 1981 Prices)

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	FINAL USE: EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	477.17	455.06	932.23	1225.15	45566.00	0.22	0.00	112.17	1347.78
2	NON-AGRICULTURE	159.50	1789.69	1949.18	2307.36	428.29	351.63	287.90	96.49	3471.66
3	TOTAL INPUTS	636.67	2244.74	2881.41	3532.51	438.53	351.85	287.90	208.66	4819.44
4	TOTAL OUTPUTS WITH TAXES	2268.80	5144.80	7413.60						
5	GDP	1632.13	2900.06	4532.19						

		TOTAL DEMAND	IMPORTS (C.I.F.)	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	2280.01	44501.00	2268.80	2280.01
2	NON-AGRICULTURE	5420.85	276.05	5144.80	5420.85
3	TOTAL INPUTS	7700.86	287.25	7413.60	7700.86

Table IX: Input-Output Table for 1973 (Calibrated, at 1981 Prices)

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	FINAL USE: EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	394.16	671.70	1065.85	1192.61	19054.00	-23.76	0.54	47.46	1220.36
2	NON-AGRICULTURE	241.44	2728.37	2969.82	3161.66	596.68	626.97	378.74	439.15	5203.20
3	TOTAL INPUTS	635.60	3400.07	4035.67	4354.26	600.21	603.21	379.27	486.60	6423.56
4	TOTAL OUTPUTS WITH TAXES	2262.49	7494.63	9757.12						
5	GDP	1626.89	4094.56	5721.45						

		TOTAL DEMAND	IMPORTS (C.I.F.)	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	2286.21	23.72	2262.49	2286.21
2	NON-AGRICULTURE	8173.02	678.62	7494.63	8173.26
3	TOTAL INPUTS	10459.23	702.34	9757.12	10459.47

Table X: Input-Output Table for 1979 (Calibrated, at 1981 Prices)

	Absorbing sector			TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE					TOTAL FINAL USE
					FINAL CONSUMPTION		INVESTMENT		EXPORTS	
	Delivering sector	1	2		PRIVATE	PUBLIC	PRIVATE	PUBLIC		
1	AGRICULTURE	336.56	772.27	1108.83	1481.74	35096.00	-16.26	0.11	47.35	1515.88
2	NON-AGRICULTURE	358.05	3926.62	4284.67	4414.20	646.48	714.31	704.49	260.35	6739.83
3	TOTAL INPUTS	694.61	4698.89	5393.50	5895.93	649.43	698.05	704.60	307.70	8255.71
4	TOTAL OUTPUTS WITH TAXES	2618.55	10235.31	12853.86						
5	GDP	1923.94	5536.42	7460.36						

		TOTAL DEMAND	IMPORTS (C.I.F.)	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	2624.72	42887.00	2618.55	2624.72
2	NON-AGRICULTURE	11024.50	789.18	10235.32	11024.50
3	TOTAL INPUTS	13649.21	795.35	12853.87	13649.21

Table XI: Input-Output Table for 1985 (Calibrated, at 1981 Prices)

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	361.7	845.2	1206.9	1530.7	37117.00	0.8	0.0	86.5	1632.7
2	NON-AGRICULTURE	453.6	5771.8	6225.3	5706.4	730.9	1114.7	806.8	1758.5	10117.3
3	TOTAL INPUTS	815.3	6616.9	7432.2	7237.0	745.7	1115.5	806.8	1845.0	11750.0
4	TOTAL OUTPUTS WITH TAXES	2766.1	13968.4	16734.5						
5	GDP	1950.8	7351.5	9302.3						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	2839.6	66.8	6.7	2766.1	2839.6
2	NON-AGRICULTURE	16342.6	1985.0	389.2	13968.4	16342.6
3	TOTAL INPUTS	19182.2	2051.8	395.9	16734.5	19182.2

Table XII: Input-Output Table for 1990 (Calibrated, at 1981 Prices)

	Absorbing sector / Delivering sector	1	2	TOTAL INTER-MEDIATE CON-SUMP-TION	FINAL USE: FINAL CONSUMPTION PRIVATE	FINAL USE: FINAL CONSUMPTION PUBLIC	FINAL USE: INVESTMENT PRIVATE	FINAL USE: INVESTMENT PUBLIC	FINAL USE: EXPORTS	TOTAL FINAL USE
1	AGRICULTURE	514	846	1360	1764	17	103	1	85	1970
2	NON-AGRICULTURE	529	8380	8909	7634	1038	2064	774	1684	13193
3	TOTAL INPUTS	1043	9227	10270	9398	1055	2167	774	1769	15163
4	TOTAL OUTPUTS WITH TAXES	3226	19003	22228						
5	GDP	2183	9776	11959						

		TOTAL DEMAND	IMPORTS (C.I.F.)	IMPORT TAXES	TOTAL OUTPUT WITH TAXES	TOTAL SUPPLY
1	AGRICULTURE	3330	88	16	3226	3330
2	NON-AGRICULTURE	22103	2609	491	19003	22103
3	TOTAL INPUTS	25433	2697	507	22228	25433

Table XIII: Price Indices 1963-1990 (1981=100)

Sectors	1963	1968	1973	1979	1985	1990
Agriculture	3.61	4.10	6.93	29.46	353.60	2666.40
Animals	2.60	3.67	7.48	44.66	366.60	2972.55
Forest products	2.70	3.56	5.63	45.30	363.00	2961.50
Fishery	2.25	3.34	5.10	33.19	495.90	4750.00
Coal minig	1.63	2.54	5.32	27.96	339.00	2690.90
Crude petroleum	1.63	2.54	5.32	27.96	527.50	2211.00
Metal mining	3.03	3.91	6.09	40.97	493.70	3557.60
Stone quarrying	3.03	3.91	6.09	40.97	512.70	3487.30
311-312	3.10	3.91	6.90	34.91	337.72	2576.11
313	3.23	4.08	4.93	28.22	322.44	2758.78
314	7.14	9.02	10.99	27.81	381.00	2353.30
321-322-324	3.37	3.83	6.44	32.79	330.96	3007.54
323	1.82	2.07	5.17	55.52	363.19	2759.66
33	2.33	3.00	6.21	42.86	362.98	2961.57
341	2.80	3.61	5.90	29.76	334.98	3342.53
342	2.80	2.87	5.90	29.76	557.39	2307.19
351-352	2.30	3.23	5.04	34.99	343.75	2445.24
353-354	1.30	1.60	2.78	23.02	401.50	2666.67
355-356	2.80	3.61	4.94	28.00	381.96	2152.07
36	2.50	3.16	5.37	31.53	394.52	3524.68
37	2.90	3.74	5.73	36.75	297.70	2107.99
381	2.42	3.77	5.59	37.83	328.53	2548.94
382	3.03	3.91	7.07	35.00	299.44	2464.58
383	3.10	3.99	5.66	28.08	236.68	1991.45
384	3.03	3.91	6.07	33.27	301.84	2626.63
Other manufacturing	2.91	3.44	5.76	36.49	362.40	3304.50
Electricity Gas and water	3.45	4.81	8.56	39.19	533.07	3460.80
Construction	2.15	3.39	5.46	42.54	369.39	3517.69
Wholesale and retail trade	2.55	3.02	5.71	33.36	377.25	2980.54
Transportation and communicati	2.93	3.33	5.80	32.13	388.67	3061.60
Financial institutions	2.88	3.81	7.82	32.92	378.50	5217.70
Business and personel services	2.96	3.67	6.98	35.80	327.63	1847.87
Government services	3.11	4.39	10.31	53.48	294.63	4934.76
Ownership of dwellings	1.45	2.11	5.07	31.38	401.65	1883.95

Table XIV: Prices and Implicit Deflators

Years	Px	Pm	IMPGDPDEF	IMPAGRDEF	IMPNAGRDEF
1963	0.03355	0.02522	0.02799	0.03316	0.02384
1968	0.03956	0.03244	0.03506	0.04013	0.32214
1973	0.07341	0.06036	0.06510	0.07595	0.06079
1979	0.39242	0.35384	0.37340	0.40296	0.36312
1985	3.59066	3.76407	3.66690	3.54240	3.70002
1990	31.08003	29.47331	31.74704	31.46900	31.81000