MACROECONOMIC IMPACT OF WORKERS' REMITTANCES ON OUTPUT GROWTH: EVIDENCE FROM TURKEY

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

BY

PINAR YAŞAR

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

JUNE 2005

Approval of the Graduate School of Social Sciences

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ABSTRACT

MACROECONOMIC IMPACT OF WORKERS' REMITTANCES ON OUTPUT GROWTH: EVIDENCE FROM TURKEY

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June 2005, 75 pages

In this study, a demand oriented simultaneous equation macroeconometric model with a dynamic perspective is constructed in order to investigate the impact of workers' remittances on output growth via their effects on key macro variables such as private consumption, investment and imports for Turkey. The study covers the period of 1964-2003 on an annual basis. Results of the analysis suggest that workers' remittances affect output growth in a positive manner through the multiplier process. It is found that the highest induced growth rate by remittances to output growth belongs to the early 1970s especially the year of 1973, which corresponds to the date of first oil shock and also the end of labour migration to Europe. Thus, it is concluded that although workers' remittances have been mostly used for consumption and imports as mentioned in most of the studies both for Turkey and other countries, remittances contributed to economic growth of Turkey positively through the multiplier process especially in the early 1970s.

Key Words: Workers' Remittances, Migration, Dynamic Model, Output Growth, Turkey

ÖZ

İŞÇİ DÖVİZLERİNİN BÜYÜMEYE MAKROEKONOMİK ETKİSİ:

TÜRKİYE ÖRNEĞİ

YAŞAR, Pınar
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Tez Yöneticisi: Prof.Dr. Aysıt Tansel
Haziran 2005, 75 sayfa

Bu çalışmada, Türkiye için işçi dövizlerinin özel tüketime, yatırıma ve ithalata etkileri yoluyla büyümeye etkisini incelemeyi amaçlayan talep yönlü dinamik yapıda makroekonometrik eşanlı denklem modeli kurulmuştur. Çalışma 1964-2003 dönemini kapsamış ve yıllık veri kullanılmıştır. Analiz sonuçları, işçi dövizlerinin çarpan etkisiyle büyümeyi pozitif etkilediğini göstermektedir. 1970'lerin başı, özellikle ilk petrol şoku tarihine ve Avrupa'ya işçi göçünün son bulduğu tarihe denk gelen 1973 yılı, işçi dövizlerinin büyümeye en yüksek katkı yaptığı dönem olarak bulunmuştur. Türkiye ve diğer ülkeler için yapılan çalışmalarda belirtildiği gibi işçi dövizleri çoğunlukla tüketim ve ithalat için kullanılsa da, çarpan etkisiyle özellikle 1970'lerin başında Türkiye'nin büyümesine pozitif katkı yapmıştır.

Anahtar Kelimeler: İşçi Dövizleri, Göç, Dinamik Model, Büyüme, Türkiye.

To My Parents

ACKNOWLEDGEMENTS

I would like to express my sincere thanks to my supervisor Prof. Dr. Aysıt Tansel for her supervision and support throughout the preparation of this thesis. I would also like to thank to the members of my examining committee, Prof. Dr. Fikret Şenses and Dr. Nergiz Dinçer for their valuable suggestions and comments.

I wish to express my appreciation for the support that I received from the Economic Modelling Department of the State Planning Organization. Especially I would like to thank to my head of department Hasan Yurtoğlu and my colleagues M.Özgür Pekbaş, Raif Can, Eser Pirgan Matur, Mehmet Hondur, Mine Ergün Bakdur and Cengiz Cihan for their valuable help.

I should also mention my family's understanding and support during the preparation of my thesis. It would have been very difficult to complete this thesis without them.

Last, but not least, my thanks go to my friends Semin, Esin, Seda, Aysel, Buğra and Yusuf for their support, encouragement and understanding.

TABLE OF CONTENTS

PLAGIARISM.....iii

ABSTRACT.....iv

ÖZ..... v

DEDICATION.....vi

ACKNOWLEDGEMENTS.....vii

TABLE OF CONTENTS.....viii

LIST OF TABLES.....xi

LIST OF FIGURES.....xii

CHAPTER

1. INTRODUCTION..... 1

2. HISTORICAL ACCOUNT OF MIGRATION AND WORKERS' REMITTANCES..... 4

    2.1. International Migration and Workers' Remittances……..4

    2.2. Turkish Migration and Workers' Remittances……..8

        2.2.1. Turkish Migration……8

        2.2.2. Workers' Remittances……12

    2.3. Economic Developments in Turkey Since 1960s…… 14

    2.4. Policies and Measures of the Turkish Governments to Attract Remittances……..18

        2.4.1. Village Development Cooperatives……19

2.4.2. Turkish Workers Company……....21

3. LITERATURE REVIEW.....23

3.1. Studies on Workers' Remittances…….……23

3.2. Studies on Workers' Remittances for Turkey…….……..31

4. EMPIRICAL ANALYSIS.....36

4.1. Data…….……..36

4.2. Model Specification…….…….....38

4.3. Empirical Results…….….41

4.3.1. Estimation Results…….…41

4.3.2. Impact Multipliers…….43

4.3.3. Dynamic Multipliers…….45

4.3.4. Estimated Macroeconomic Effects of Remittances on Output Growth:…….…… 49

5. CONCLUSION 53

REFERENCES……..56

APPENDICES…….. 62

A. DYNAMIC MULTIPLIERS..... 62

B. TABLES...……...64

TABLE B.1. Recruitment and Social Security Agreements of Turkey, 1961-2000 ……..……..... 64

TABLE B.2. Turkish Workers Sent Abroad Through Turkish Employment Service (1961- 2003) 65

TABLE B.3. Numbers of Turkish Citizens, Turkish Workers and the Unemployment Rates Abroad (2003).....67

TABLE B.4. Remitances, Selected Indicators and Relative Share of Remittances in Selected Indicators (1964- 2003)..... 68

TABLE B.5. Percentage of returned Turkish migrant workers who put savings into a work venture, 1971…….....70

TABLE B.6. The Ways of Spending Remittances by Region and Household Migration Status in Turkey, TIMS-96.....71

TABLE B.7. Data Used In the Model.....73

TABLE B.8. Long-term Effects of Current Changes in Remittances on Output.....75

LIST OF TABLES

TABLES

3.1. Benefits and Costs of Remittances from International Worker Migration…….24

3.2. Uses of workers' remittances……..32

3.3. Percentage of returned Turkish migrant workers who reported buying certain goods with their savings, S.P.O. survey, 1971…….....33

4.1. Estimated Short-run and Long-run MPC and MPI for Turkey……...42

4.2. Time Distribution of the Effects of a Unit Change in Remittances on Certain Macroeconomic Variables. (Impact and Dynamic Multipliers)……..... 48

LIST OF FIGURES

FIGURES

2.1. Top 15 Developing Country Recipients of Workers' Remittances (2002)….....6

2.2. The Top Sources of Remittance Payments Countries (2002)…….....7

2.3. Turkish Workers Sent Abroad Through TES (1961-2003)…….....9

2.4. Turkish Workers Sent to Iraq, Libya and Saudi Arabia through TES (1961-2003) 11

2.5. Turkish Workers' Remittances As a Percentage of GDP (1964-2003)…….....13

2.6. Turkish Workers' Remittances (1964-2003), Millions of dollars……..14

2.7. Unemployment Rate (1960-2003), Per cent…….....16

2.8. The Ratio of Workers' Remittances to Imports, Exports and GDP (1964-2003)…….....17

4.1. Rates of Output Growth Induced by Remittances and Overall Rates of Output Growth, 1968-2003……..... 50

CHAPTER 1

INTRODUCTION

Migration flows have become one of the most important features of Western European countries after the Second World War. While Western European countries undertook several measures such as bilateral agreements to attract foreign workers in order to meet the deficiency in the supply of labour, developing countries encouraged the emigration of workers to overcome their economic difficulties. These migration flows have benefited both the emigrating and immigrating countries. The best known and debatable issue, considering these migration flows from the side of emigrating countries is workers' remittances. Workers' remittances are defined as the money transfers sent by the migrants residing abroad for more than a year to their home countries. Workers' remittances have constituted an important source of external finance for many developing countries. Flow of workers' remittances to developing countries have increased steadily over the past 30 years and currently amount to approximately 100 billion dollars a year (IMF, 2005). Ratha (2003:157) draws attention to the fact that workers' remittances flows constitute the second largest flow of external finance after foreign direct investment and proved to be one of the least volatile sources of foreign exchange earnings for developing countries.

Turkey joined the labour exporting countries at a later stage in the early 1960s by sending workers to Western European countries. According to the data of Turkish Employment Service, between 1961 and 1975, officially 804,917 Turkish workers were sent to Western Europe. Later, many Turks migrated to Saudi Arabia and other Arab oil-exporting countries of the Persian Gulf after the mid-1970s. In the course of time, Turkey has become one of the most important labor exporting countries and Turkish migrants have generated a substantial amount of remittances.

For instance, worker remittances, which were around 100 million dollars per annum on average in the period of 1965-1969, increased to over 1 billion dollars in the early 1970s and constituted an important contributor in closing the trade deficits (Boratav, 2003:122).

Although in recent years workers' remittances have lost their previous importance, it should be kept in mind that the flow of remittances has played a central role in the economies of many labour-sending countries such as Turkey. Since, Turkey has been receiving a considerable amount of remittances since 1960s, the effect of worker remittances on Turkish economy on a macro base is vital and needs to be investigated.

The issue of workers' remittances, especially in the second half of the last century, has created hot debates about the contribution of workers' remittances on economic development of remittance receiving countries. The relevant literature about this issue includes significant number of studies. However, a large part of these studies is qualitative, summarize the general situation and try to analyze the impact of remittances based on surveys and survey data. On the other hand, unfortunately, few studies have tried to analyze the macroeconomic impact of remittances on the emigrating countries by building an econometric model.

For the case of Turkey, considering the uses of workers' remittances in domestic economy, several surveys are available. Although the surveys at a micro level can be beneficial in determining the uses of remittances and forming a general idea, they are not adequate in assessing the whole picture. As an econometric study, Glytsos (2002)'s study can be viewed as a good example. Glytsos (2002) estimates a dynamic, simultaneous Keynesian type model for investigating the impact of remittances on consumption, investment, imports and output for eight countries; Algeria, Egypt, Greece, Jordan, Morocco, Portugal, Syria and Tunisia for the period of 1969-1993. Although Turkey can be considered as one of the most important labour exporting countries, Turkey is not included in the study of Glytsos (2002).

To the best of our knowledge, no econometric work investigating the macroeconomic effects of workers' remittances has been conducted for Turkey.

As a first attempt, this thesis aims to build a macroeconometric simultaneous equation model similar to Glytsos (2002)'s study for investigating the impact of remittances on output growth through consumption, investment and imports for Turkey covering the period of 1964-2003 using annual data. Impact and dynamic multipliers of exogenous shock of remittances are estimated and these multipliers are used to determine the impact of remittances on output growth.

The rest of the thesis is organized in four main parts. First, historical account of migration and workers' remittances in the world and in Turkey is presented in Chapter 2. Moreover, economic developments in Turkey since 1960s in the context of remittances and the policies and measures adopted to attract remittances to Turkey are discussed. In Chapter 3, the literature considering the macroeconomic effects of workers' remittances is presented. Thirdly, in Chapter 4 the macroeconometric model, data and estimation results are provided. Finally in Chapter 5, the concluding remarks based on the empirical results are presented. Related tables are shown in the Appendix B.

CHAPTER 2

HISTORICAL ACCOUNT OF MIGRATION AND WORKERS' REMITTANCES

In this chapter, firstly international migration and workers' remittances are briefly presented. Secondly, Turkish experience with emigration since 1960s and the development and significance of workers' remittances in the Turkish economy is provided. Thirdly, economic developments in Turkey since 1960s and their link with workers' remittances are discussed. Finally, policies and measures adopted by the Turkish governments to attract workers' remittances are presented.

2.1. International Migration and Workers' Remittances

After the Second World War, migration flows have become one of the most important features of Western European countries. During the Second World War, about 3 million people died and most of the cities were destroyed in Europe (Göksu, 2000:24). Especially, in the Federal Republic of Germany and France the ratio of active population to total population declined considerably. Thus, European countries found themselves in a different economic and demographic situation after the war. Manpower was needed to meet the deficient supply of labour in all sectors and for the reconstruction of post-war Europe. Besides, toward the end of the 1940s, with Marshall Plan for reconstruction of Western Europe, European economies started to recover and emergence of labour shortages became obvious. Under these circumstances, Western European countries undertook several measures such as bilateral agreements to attract foreign workers. For instance, France established the National Migration Office in 1945 and in the context of the agreements made in 1946, 1947 and 1951, Italian workers started to migrate to France (Gökdere, 1978: 15).

Moreover, several international organizations adopted the economic prescription for free labour migration for liberalizing the movement of people across borders after the Second World War parallel to the trade liberalization and it was reflected in the International Labour Organization (ILO) Migration for Employment Recommendation (Revised), 1949 (No.86):

> It should be the general policy of Members to develop and utilize all possibilities of employment and for this purpose to facilitate the international distribution of manpower and in particular the movement of manpower from countries which have a surplus of manpower to those countries that have a deficiency (Martin, 1991:12).

While the Western European countries chose to deal with their labour shortages with immigration, labour-exporting countries chose to cooperate with them in order to reduce unemployment and increase their foreign exchange earnings[1]. Significant number of workers from less-developed southern European countries where wages were much lower and jobs much scarcer migrated to post-war Western European countries to meet the deficient supply of labour. The first migrant labours in advanced Europe's labour market were Italians, Portuguese and Spaniards, followed by Greeks, North Africans, Yugoslavs and at a later stage Turks. The process of mass migration continued till the introduction of recruitment bans by the European countries on the entry of non-European Economic Community (EEC) workers after 1973. Parallel to the change in the world economic conditions as a result of oil shocks, labour-exporting countries turned towards new markets such as oil-rich Arab countries.

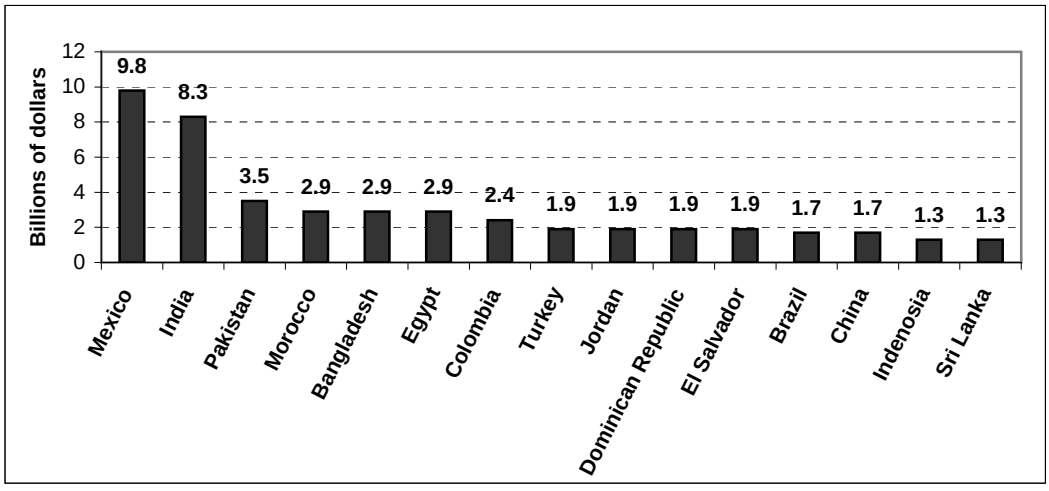
During the 1970s, Japan became a part of the international migration process with migrants coming mainly from other Asian countries and also from South America (Massey, 2003). In addition to Japan, in the 1980s, international immigration came into the agenda of the newly industrialized countries such as Korea, Taiwan, Hong Kong, Singapore, Malaysia, and Thailand.

[1] It is important to emphasize that the new feature of these migratory movements from the Mediterranean countries to Western Europe has been the policy pursued by most of the host countries rather than the motivation of the migrant workers (Paine, 1974:5).

According to the ILO estimates, there are about between 36 and 42 million migrant workers all around the world in year 1999 (ILO, 2000) and they remit some part of their earnings to their home countries. Thus, as a vital aspect of international labour migration, workers' remittances have become a very important source of external finance for many developing countries.

Workers' remittance flows constitute the second largest flow of external finance for these countries after foreign direct investment. Also, workers' remittances have proved to be one of the least volatile sources of foreign exchange earnings for them. For instance, during the Asian financial crisis while the private capital flows declined in the period of 1998-2001, workers' remittances to developing countries continued to increase steadily (Ratha, 2003:160).

The data on remittances for different countries is presented in the Balance of Payments Yearbooks published by the IMF. However, these figures underestimate the actual flow of remittances, since a large part of remittance flows occur through informal channels[2].

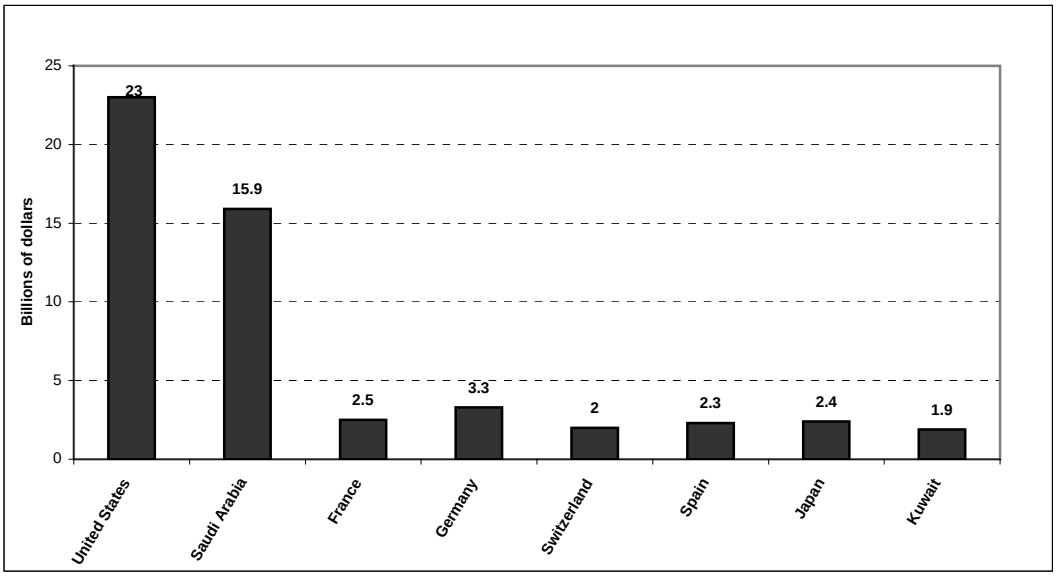


Source: IMF, Balance of Payments Yearbook, 2003.

Figure 2.1. Top 15 Developing Country Recipients of Workers' Remittances (2002)

[2] According to the estimations of the IMF study (El-Qorchi, Maimbo and Wilson, 2003:36) the informal transfers of remittances could amount to 10 billion dollars per annum.

According to the World Development Indicators 2004, total remittance receipts in the world increased from 600 million dollars in 1970 to 24 billion dollars in 1980 and to 51 billion dollars in 1995. A large portion of remittance inflows belongs to the developing countries. According to the balance of payments statistics, in 2002, remittance receipts of developing countries amounted to 66 billion dollars where the total remittances received was 76 billion dollars. The world's top developing country recipients of workers' remittances in 2002 were Mexico, India, Morocco, Pakistan, Bangladesh, Egypt, Turkey and Jordan. Top 15 developing country recipients of workers' remittances are shown in Figure 2.1. India has received the maximum net remittances for all years during the 1994-2000 period, with increases from 5 billion dollars in 1994 to 9 billion dollars in 2000 (Ramamurthy, 2003). The world's top sources of workers' remittances to developing countries in 2002 were the United States, Saudi Arabia, Germany, Switzerland, and France (See Figure 2.2).



Source: IMF, Balance of Payments Yearbook, 2003.

Figure 2.2. The Top Sources of Remittance Payments Countries (2002)

2.2. Turkish Migration and Workers' Remittances

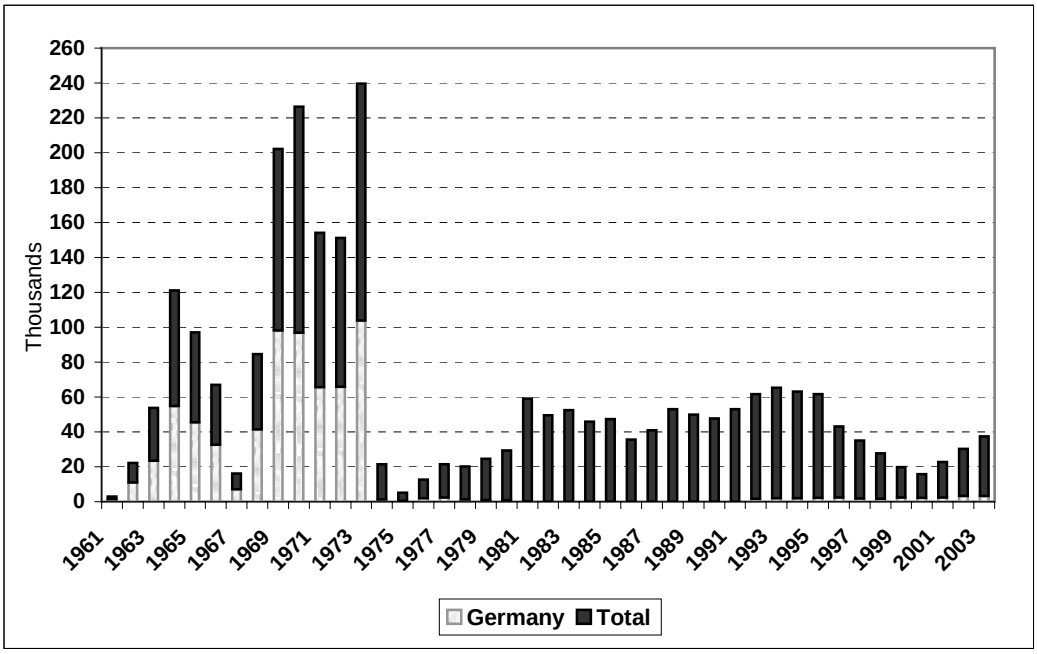
2.2.1. Turkish Migration

After the Second World War, Western European countries favored the immigration of foreign workers from the developing countries having a labour surplus. A large number of workers from less-developed Southern European countries migrated to Western European countries to meet the deficient supply of labour. However, Turkish emigrants were the late comers to the European labour market. The movement of Turkish citizens to Western European countries has started in the early 1960s. When the Turkish workers entered the European labour market, there were already 7 million foreign workers in Europe (Koç and Onan, 2001:11). Although Turkey joined the labour exporting countries at a later stage, Turkey has been one of the most important labor exporting countries.

Turkish governments encouraged labour emigration through several measures such as bilateral agreements in order to alleviate unemployment and foreign exchange shortage[3]. On 30 October 1961, Turkey signed its first labor recruitment agreement with the Federal Republic of Germany. This agreement was followed by a series of treaties with the Netherlands, Belgium and Austria in 1964, with France in 1965, with Sweden and Australia in 1967. Turkey signed social security agreements with the United Kingdom, Federal Republic of Germany, Netherlands, Belgium, Austria, Switzerland, France, Libya, Denmark, Sweden, Norway, and the Turkish Republic of Northern Cyprus with the aim of protecting and improving social security rights of workers (See Table B.1). Following these agreements, large-scale migration of Turks to foreign countries started in the 1960s. Working-age Turks, primarily single males, began migrating to Western Europe as "guest workers". The largest share of Turks was placed in the Federal Republic of Germany. The number of Turkish workers in Federal Germany rapidly increased from 7,000 in October 1961 to 18,500 in July 1962 (Abadan-Unat, 1976:5). Emigration of Turkish workers to the Federal Republic of Germany and total number of workers sent through the Turkish Employment

[3] However on the other hand, İçduygu (1998) emphasized that in the later periods, labour emigration independent from the bilateral agreements formed its own dynamics and mechanisms.

Service (TES) is presented in Figure 2.3. According to the Turkish Employment Service, between 1961 and 1975, officially 804,917 Turkish workers were sent to Western Europe. In addition to these, according to Gitmez (1991) during this period between 120,000 and 150,000 people emigrated illegally, mainly as tourists.



Source: Turkish Employment Organization, Ministry of Labour and Social Security, Statistical Yearbook 2003.

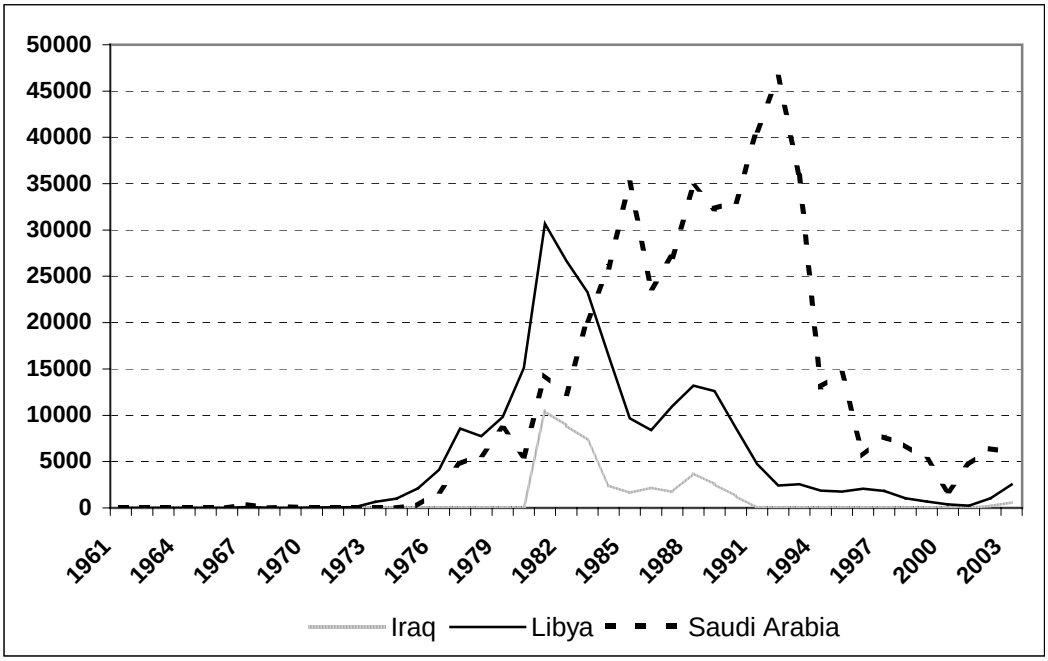
Figure 2.3. Turkish Workers Sent Abroad Through TES (1961-2003)

The process of mass emigration was briefly interrupted in 1966-67 by the economic recession in the Federal Republic of Germany leading to a reduction of 24 per cent of Turkish emigrants to this country (Martin, 1991:24). Labour flows soon regained their previous trend. By the early 1970s, approximately 40 per cent of total migrants to Western Europe were from Turkey. However, the oil shock in 1973 represented a drastic setback for this process. Recruitment of large-scale non-EEC workers into the European labour market was stopped. Therefore, mid 1970s represented the end of large scale Turkish labour emigration to Europe.

Beginning in March 1974, the Law of Family Reunification, which set up the framework of allowing Turkish workers to reunite with their family members in Europe most notably in Germany, firstly came into effect in the Federal Republic of Germany (Koray, 1999). Thus, despite the recruitment stop, more of the migrants began to unite with their families in an effort to extend their stay. Therefore, although many workers returned from Western Europe since 1973 recession, due to the family reunification and births abroad, Turkish population in Europe has increased. At the end of 1980, around 2 million Turkish population was in Western Europe; only 40 per cent of these were economically active and the rest being spouses and children (Gitmez, 1991).

In the mid-1970s, after labour recruitment stopped in Western Europe, Turkish workers began to migrate to North Africa, Middle East and the Gulf region. Although a small number of workers went to Arab countries before 1973, the first oil exporting country that recruited Turkish construction workers was Libya in 1973 and then Saudi Arabia in 1975. In 1980s, the number of Turkish workers in Arab countries was around 120,000-130,000, 50 per cent of whom were in Libya, 37 per cent in Saudi Arabia and 10 per cent in Iraq (Abadan-Unat, 2002:88). The trend of labour emigration from Turkey to Saudi Arabia, Libya and Iraq for the period of 1961-2003 is shown in Figure 2.4.

According to Gitmez (1991), Turkish labour migration to Arab countries differed from migration to European countries in one important aspect. Workers migrating to Arab countries were recruited mainly by the Turkish construction firms and strictly on short temporary contracts. As mentioned by Koç and Onan (2001), in 1990s, unfavorable conditions generated by the Gulf War, completion of large-scale infrastructure projects and the sharp decline in oil prices caused the number of Turkish workers in Arab countries to decline.



Source: Turkish Employment Organization, Ministry of Labour and Social Security, Statistical Yearbook 2003.

Figure 2.4. Turkish Workers Sent to Iraq, Libya and Saudi Arabia through TES (1961-2003)

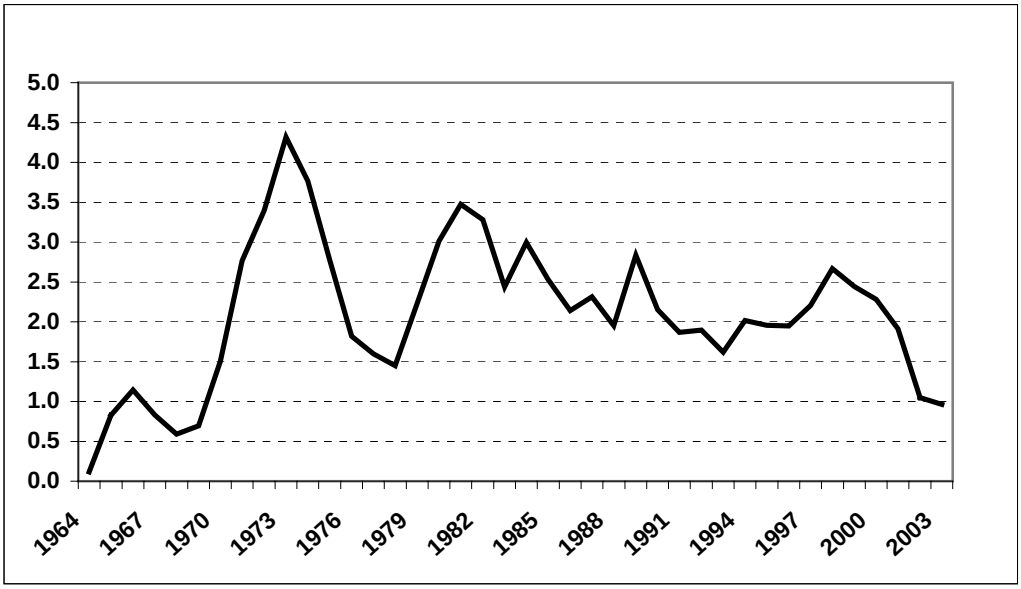
After the collapse of the Soviet Union in 1991, Turkish migration was directed towards Russia and the Commonwealth of Independent States. Again the type of emigration to these countries was job specific, involving mostly construction and project-related migration.

To sum up, over the past 40 years, Turkish workers migrated to about 30 different countries. As shown in Table B.3, around 3.5 million Turkish citizens reside in foreign countries 3 millions of whom were in Western Europe and 2 millions were in Germany in 2003.

2.2.2. Workers' Remittances

Remittances can be defined as the monies sent by the migrants to the country of origin. Remittances include three types of flows; compensation of employees, migrants' transfers and workers' remittances. Compensation of employees is defined as the gross earnings of workers residing abroad for less than a year, including the value of in-kind benefits. Migrants' transfers are the net wealth of migrants who move from one country of employment to another (Straubhaar and Vadean, 2005). This study will focus on the workers' remittances, which are the money transfers sent from the migrants residing abroad more than a year.

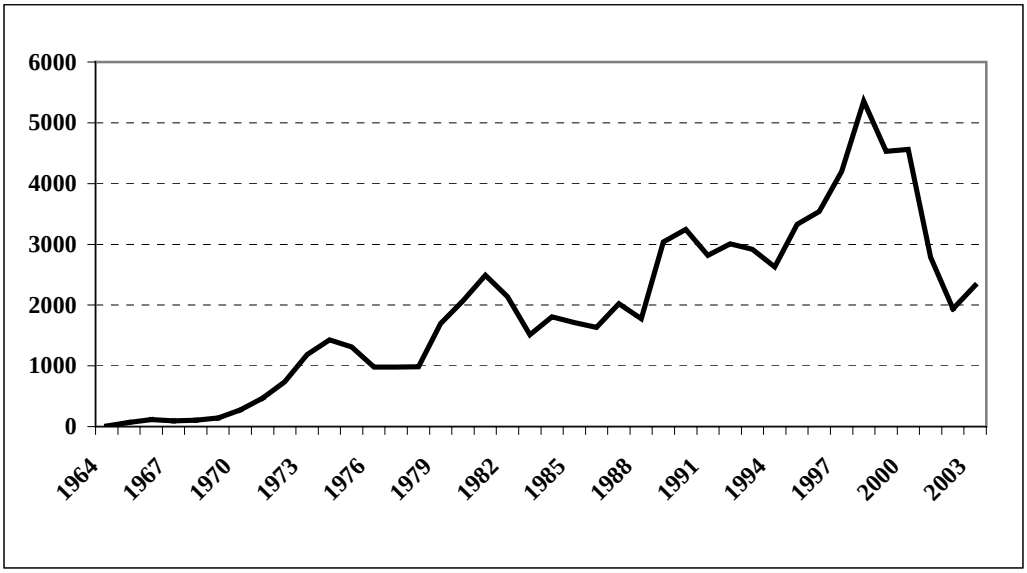
Since the beginning of emigration of Turkish workers to Europe in 1960s, Turkey has been one of the most important labor exporting countries and Turkish migrants have generated a substantial amount of remittances. Turkish government also encouraged the emigration of Turkish workers by special treatments and incentives such as special exchange rates, import privileges to Turks abroad in order to decrease the unemployment rate and benefit from its favorable effects on the balance of payments through remittances. Starting from 1964, workers' remittances increased continuously and contributed to offset the trade deficits. To evaluate the importance of workers' remittances, making a comparison of flow of remittances with exports, imports and their share in GDP can be appropriate. For the years 1972 and 1973, for example total remittances received were equivalent to 84 per cent and 90 per cent of merchandise exports of Turkey respectively. Also, the ratio of workers' remittances to imports was about 50 per cent and remittances constituted an important item in financing the import bill in the early 1970s. Thus, workers' remittances played an important role in postponing the balance of payments crisis of 1973. In 1973, the share of workers' remittances in GDP reached its highest level and realized as 4.3 per cent (See Figure 2.5).



Source: State Institute of Statistics, Statistical Yearbook of Turkey, 2002 and SPO, Economic and Social Indicators (1950-2003)

Figure 2.5. Turkish Workers' Remittances As a Percentage of GDP (1964-2003)

Following the devaluation in 1970, workers' remittances increased significantly. However, following the labour recruitment ban in Western Europe, the amount of remittances declined dramatically starting from the mid 1970s. The workers' remittances for the period of 1961-2003 are presented in Figure 2.6. As seen in Figure 2.6, in spite of an increase in workers' remittances for a short period just after the 1970 devaluation, the flow of remittances to Turkey has declined considerably as a result of the recruitment ban of Western Europe and macroeconomic instability at the end of 1970s. At the time of macroeconomic instabilities especially in 2000 and 2001 financial crises in Turkey, the flow of remittances has been affected negatively. As a matter of fact, Suğanlı (2003:96) emphasized that when the financial markets are stable for the savings of the Turkish migrants, the transfer of money to Turkey increase, whereas, in crisis periods, the transfers decrease.



Source: State Planning Organization, Economic and Social Indicators (1950-2003)

Figure 2.6. Turkish Workers' Remittances (1964-2003), Millions of dollars

2.3. Economic Developments in Turkey Since 1960s

The Turkish economy has undergone profound changes since its establishment. Remarkable changes and improvements took place. The year of 1960 can be considered as an important date and a critical turning point in terms of economic policy in Turkish economic history.

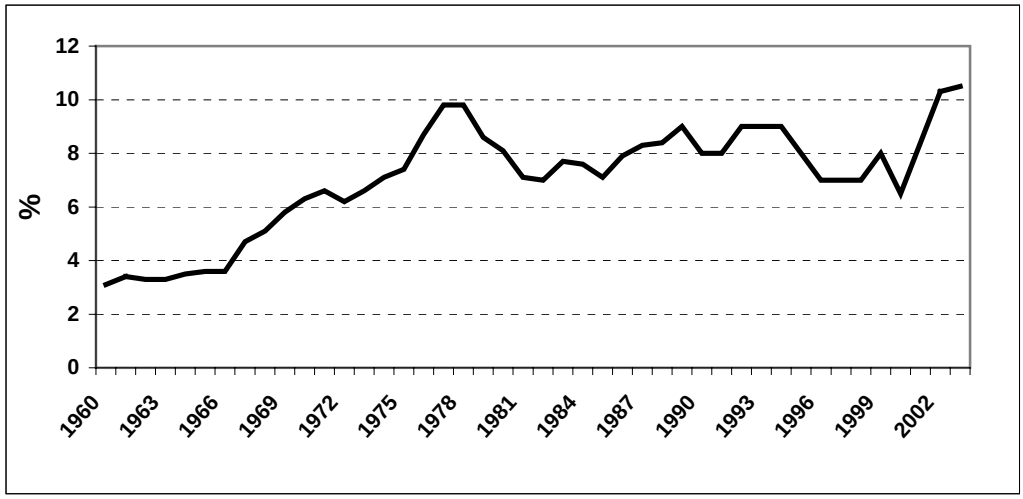
Through the end of 1950s, economic problems were getting more and more serious. As a result of pressure from the IMF for the stabilization program and the considerable decline in imports in terms of US Dollars in 1953-1958 period, Turkish lira was devalued in 1958. Foreign exchange shortage and high rates of inflation were the main economic problems that had to be overcome. In addition to these economic problems, as a result of serious political problems, Democrat Party government was abolished with military intervention in 1960. After military intervention, Turkey entered a new period. In the new period, economic policies were decided to be based on central planning. With the establishment of the State Planning Organization (SPO), five-year development plans, which included all aspects of economic and social developments, were prepared. The main objectives of

these plans were giving priority to rapid industrialization and targeting a specific average growth rate. The First Five-Year Development Plan started to be implemented in 1963. In this plan, it was clear that Turkey would pursue import-substituting industrialization strategy and the main motive for economic development was perceived as rapid industrialization. Based on the growth rate of industrial production and overall output, the performance of the1960s and the1970s was impressive.

In the First Five-Year Development Plan, one of the important points that was emphasized was labour migration. A statement "exporting the surplus of labour" was included in First Five-Year Development Plan (SPO, 1962:456) and labour emigration was perceived as a cure to the problems of balance of payments deficits and unemployment. By labour emigration, both unemployment rate could be alleviated and additional foreign exchange could be obtained and by this way balance of payments deficits could be closed. In this perspective, labour migration was seen as an important policy instrument to overcome the economic problems and clearly expressed in five-year development plans. Although the outflow of migrant workers was primarily determined by the host country demand and was subject to large fluctuations and high risk, the achievement of Turkey's development plans was made increasingly dependant on labour export (Paine, 1974:36).

The period of 1970-74 was a period in which foreign exchange difficulties were minimized with the help of rapid increase in workers' remittances and external credits (Boratav, 2003:128). In 1974, the rapid increase in oil prices and unemployment together with inflation seen in the countries, which Turkey had close relationships, adversely affected Turkey's external position (Kepenek, 1997:139). Besides, some limitations to labour immigration were introduced in the European countries and this had an adverse effect on labour emigration from Turkey. Despite these, compared to the other developing and developed countries, Turkey overcame this oil shock less harshly and postponed the crisis. In this manner, it is noteworthy that the role of worker remittances was significant. After the oil shock, in 1975 and 1976, Turkey achieved 6.1 per cent and 9 per cent growth rates respectively with continuous investments and good export performance (SPO, 2003).

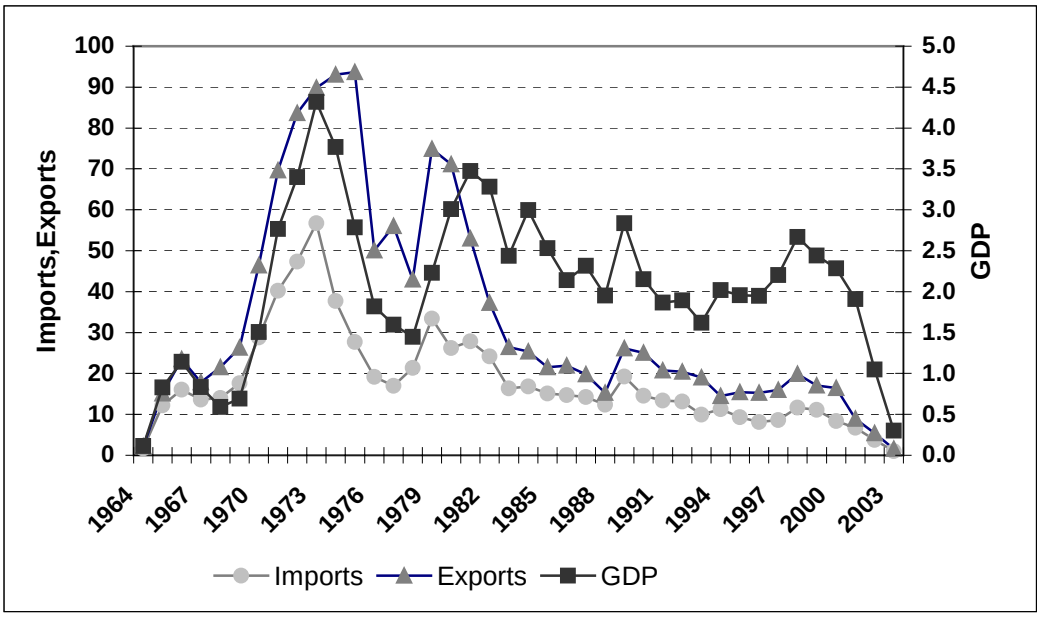
Since the 1960s, migration of workers was seen as a costless way of reducing unemployment. However, unemployment situation deteriorated during the planned period (See Figure 2.7). In the First Five-Year Development Plan, it was targeted that total employment would increase by 3 per cent annually but the realization was only 2 per cent. As seen in Figure 2.7, according to estimates by Bulutay (1995), there was an upward trend in the unemployment rate. Although the target in the development plan had been achieved, unemployment would still have increased because of higher growth rate of the active population (Paine, 1974:35). Also, the difference between actual and planned employment was observed in the second five-year plan period. The official total unemployment index increased from 100 in 1962 to 162 in 1972 (Paine, 1974:36). Despite the emigration of Turkish workers, increase in the unemployment rate in this period can be attributed as one of the failures of import substitution industrialization strategy. Şenses (1994) mentioned that overvaluation of Turkish lira and negative real interest rates in longer periods accompanied by high real wages created a tendency of substitution of capital for labour and thus, import substituting economic policies did not perform well in terms of employment creation. Paine (1974:5) emphasized that agricultural mechanization tended to reduce labour requirements and displace the rural proletariat. However, it is certainly evident that if there had been no labour emigration and remittances, unemployment rates would have been worse than the realized rates.



Source: Bulutay (1995:262) estimation for 1960-1988, SPO (2003) for 1989-2003.

Figure 2.7. Unemployment Rate (1960-2003), Per cent**.**

The effects of remittances sent by Turkish migrants on trade deficits were significant. For the years 1972 and 1973, the flow of remittances exceeded the trade deficits and they had a very important contribution in delaying the balance of payments crisis of 1973. In 1972 and 1973 total remittances received were equivalent to 47 per cent and 57 per cent of imports of Turkey, respectively (See Figure 2.8).



Source: State Institute of Statistics, Statistical Yearbook of Turkey, 2002.

Figure 2.8. The Ratio of Workers' Remittances to Imports, Exports and GDP (1964-2003).

Since the 1960s, the main aim of the import substituting industrialization strategy was reducing the dependency on imported goods by producing the goods domestically instead of importing and by this way reducing the balance of payments deficits. However, this strategy brought about unexpected results and the share of imports in GDP displayed an upward trend.

Through the end of the 1970s, exports as a percentage of imports considerably declined, balance of payments deficits increased and external finance difficulties emerged. Especially from 1977 onwards, as a result of inadequate source of finance for imports, important difficulties emerged on the supply side. As a result of decline in imports, industrial production, which was highly dependent on imports, declined considerably. On the other hand, expansionary fiscal policy was maintained.

Moreover, second oil shock in 1979 worsened the existing situation; the inflation rate accelerated and the balance of payments crisis deepened. Thus, it became very clear that the import substituting industrialization strategy could not be sustained with these economic difficulties coupled with the political instability.

After serious economic difficulties in the late 1970s, Turkey shifted toward a new period in the beginning of 1980s. In this context, 1980 Stabilization and Structural Adjustment Program constitutes a turning point for Turkey in terms of economic policy since export-led growth strategy rather than import-substituting industrialization emerged on the main concern in order to overcome the economic difficulties experienced in the late 1970s. With the new strategy, more liberal type of economic activities, more close relationships with other countries, more stable economy, support for exports and more emphasis on private investment were strongly emphasized.

Workers' remittances have preserved their importance in absolute terms in the Turkish economy in the 1980s and 1990s and peaked at 5.4 billion dollars in 1998. After 1980, with trade liberalization, trade volume as a share of GDP, which can be considered as an indicator of openness, increased significantly. Thus, although remittances in absolute value have increased especially in the 1990s, the ratio of workers' remittances to exports and imports has declined and relative share of remittances in the Turkish economy has shrunk.

2.4. Policies and Measures of the Turkish Government to Attract Remittances

The Turkish Government undertook several measures and introduced a number of policy measures in order to attract remittances and therefore provide contributions to Turkish economy. Special interest rates were provided to Turkish workers for their foreign currency accounts in the Turkish Central Bank. Also, special exchange rates on remittances were available for the Turkish workers. Turkey has also signed social security agreements with several countries to protect the rights of Turkish migrants. For the Turks abroad, easiness for the compulsory military service such as shortening

the compulsory military service, by paying the government a specified amount in foreign currency was provided. In addition, Turkish emigrants benefited from special import privileges for consumer goods and machinery (Martin, 1991:33).

As a policy measure, a two-tier exchange rate regime was adopted in Turkey in May 1979 and this led to an increase in remittances. Moreover, two important deposit accounts have been offered by the Central Bank of Republic of Turkey (CBRT) to attract workers' remittances. Since 1976, there has been a foreign exchange programme that offers premium interest rates on foreign currency accounts in CBRT (Martin, 1991:33). Now, this programme corresponds to the Foreign Currency Deposit Accounts with Credit Letter. The second deposit account is Super Foreign Exchange Account which was first introduced in 1994 by the Central Bank in order to overcome the difficulties in finding loans. This type of account offers more attractive interest rates than Foreign Currency Deposit Accounts with Credit Letter. The main reason behind this can be explained by the fact that the funds deposited in these accounts can be withdrawn abroad as well as in Turkey, while in Super Foreign Exchange Accounts, withdrawals can only be made in Turkey (Köksal and Liebig, 2004).

In order to channel the savings of migrants to productive investment, Turkey established two important programs linked to migration, Village Development Cooperatives (VDCs) and Turkish Workers Company (TWC). They will be discussed at length in the following sub-sections.

2.4.1. Village Development Cooperatives (VDC)

Village Development Cooperatives were initiated firstly by the Ministry of Rural Affairs in 1962 aiming at the creation of new job areas and efficient use of potential savings (Abadan-Unat, 2002:76). Moreover, promoting rural development and giving priority to people, who wished to migrate in order to work abroad were among other objectives. In the 1963-65 period, a person who wished to be a member of a cooperative had to pay initially 2,000 Turkish liras and commit himself to pay

another 8,000 Turkish liras[4] (Abadan-Unat, 2002:74). When Turkish migrants went to abroad, they would continue to pay the fees. With the savings of the members going abroad, the finance of the investment projects would be realized and when the migrants came back to Turkey, they would benefit from the job opportunities provided by the investments undertaken by the cooperatives (Abadan-Unat, 1975:114).

A boom in the number of VDCs and members of these cooperatives was observed in the mid 1960s. The number of cooperatives, which was 383 in 1964, substantially increased and reached 1,349 in 1967 (Penninx and Van Renselaar, 1978:53).

However, most of the migrants thought VDCs as a way to jump ahead in the emigration queue. VDCs were used as an instrument to go abroad as soon as possible for the people who wanted to emigrate. Moreover, some migrants paid only some portion of the fees and once they went abroad, they did not pay the rest of the fees. Therefore, the financial resources of these cooperatives that would trigger development were limited (Martin, 1991:35).

In addition to these problems, poor technical management structure of these cooperatives and application of projects without detailed investigation caused the depletion of scarce capital and dissolving of these cooperatives (Yüksel, 1982:18). As a result of the problems, most of the cooperatives turned out to be failures. The cooperative in Çandır Yozgat was one of the failure examples. This cooperative aimed to build a factory, which would produce sunflower oil. The cooperative found an appropriate place for the factory, but failed to find necessary seeds. Thus, this factory provided only 0.24 per cent of total sunflower production in Turkey (Abadan-Unat et.al, 1975:240).

The survival of these cooperatives was not so long. A remarkable slowdown in the increase of the number of these cooperatives was observed through the end of 1960s

[4] For 1963-65 period, 1 US Dollar was equivalent to 9 Turkish liras. Therefore, 2,000 and 8,000 Turkish liras were around 222 and 889 US Dollars respectively.

due to the unwillingness of the Demirel Cabinet to support these cooperatives and the economic recession in the Federal Republic of Germany and thus, slowdown in the recruitment of foreign workers in 1966-67. Depending on this, in one year from 1967 to 1968, the number of cooperatives displayed a limited increase only from 1349 to 1381 (Abadan-Unat, 2002:75). After the oil shock in 1973 and the recruitment ban of Western European countries, VDCs lost their popularity and efforts to establish new VDCs came to an end.

2.4.2. Turkish Workers Company (TWC)

One of the policy measures of Turkish government to attract and channel the savings of the migrants was Turkish Workers Companies. First Turkish Workers Companies were founded in 1963 by the Turkish migrants residing abroad. Emigrant workers invested their funds as shareholders of these companies. Between 1963-1975, around 150 Turkish Workers Companies were founded (Şenel, 1977: 9). In the early 1980s, around 80 TWCs were operating and their employment was 11 thousands people (Abadan-Unat, 1986:358). Since Turkish workers Companies have been small enterprises and their credit usage has been limited, their investments were not large-scale.

In the late 1980s, Turkish Workers Companies generally fell into one of the following three groups. First group included the companies that opened and failed; the second group included companies that opened, ran into trouble and rehabilitated by a special Turkish Bank and provincial authorities and the last group included the companies that were very successful to abandon their migrant shareholders roots (Martin, 1991:35). Most of the Turkish Workers Companies fell into the first group.

According to the survey results of Şenel (1977), the main financial problems of TWCs were difficulty in collecting equity capital, in finding credits, in finding shareholders due to the previous failures and in capital accumulation because of not fulfilling the commitments of shareholders in time. Moreover, unstable economic environment, changes in the exchange rates and cyclical fluctuations were the other

factors that caused financial difficulties. Most of the TWCs complained about the Turkish bureaucracy and the decline in the value of the Turkish lira that affected their savings and investment plans negatively (Martin, 1991:36).

Due to these problems, most of the Turkish Workers Companies, which were supported mostly with the aim of industrializing the regions of origin, turned out to be failures. Besides, they were unable to create significant employment opportunities.

In the 1960s and the 1970s, on the other hand, as there was no stock market in Turkey, encouraging the establishment of Turkish Workers Companies constituted an effective policy in channeling the savings of the emigrant workers to Turkish industrial investments (Martin, 1991:38).

Besides the Village Development Cooperatives and Turkish Workers Companies, the Turkish government established a bank called State Industrial and Workers' Investment Bank (DESIYAB) in 26 November 1974 especially to promote programs to aid worker-owned and managed cooperatives (Koç and Onan, 2001). The main objectives of DESİYAB were:

- Contributing to the development and industrialization of Turkey.
- Assisting to expand the industrialization to the national level
- Uniting savings of domestic workers and especially workers abroad as an economic power in domestic country,
- Channeling the savings to the profitable and productive investments in line with the development plan, especially industrial investments (Dündar, 1982:149).

However, DESİYAB[5] could not achieve the expected success. Therefore, it had not played a significant role in channeling the savings of the migrants.

[5] DESİYAB merged with Turkish Tourism Bank and was called as Turkish Development Bank. Today, Turkish Development Bank no longer has the same role and objectives as the DESİYAB.

CHAPTER 3

LITERATURE REVIEW

In this chapter, the literature regarding the impact of workers' remittances on the remittance-receiving economies is discussed. Firstly, the ongoing debate about this issue on several country examples is presented. Secondly, studies for Turkey is provided. Lastly, concluding remarks of the chapter are presented.

3.1. Studies on Workers' Remittances

The issue of workers' remittances, especially in the second half of the last century, has created a hot debate about the contribution of workers' remittances on economic development of remittance receiving countries. The literature about this issue includes a significant number of studies. While some studies address the positive impact of remittances on countries of origin, some studies stress the negative effects of remittances on economic development. However, a large part of these studies are qualitative, give information about the general situation and try to analyze the impact of remittances based on surveys and survey data. On the other hand, only a small number of studies have tried to analyze the macroeconomic impact of remittances on the emigrating country by building an econometric model.

Russell (1986) summarizes the benefits and costs of remittances on the emigrating country as shown in Table 3.1. The literature involves a wide variety of studies supporting only positive or negative impact of remittances or supporting both.

Table 3.1 Benefits and Costs of Remittances from International Worker Migration.

Benefits	**Costs**
1. Ease foreign exchange constraints and improve balance of payments.	1. Are unpredictable
2. Permit imports of capital goods and raw materials for industrial development.	2. Are spent on consumer goods which increases demand, increases inflation and pushes up wage levels.
3. Are potential source of savings and investment capital formation for development.	3. Result in little or no investment in capital generating activities.
4. Cushion effects of oil price increase.	4. High import content of consumption demand increases dependency on imports and exacerbates BOP problems.
5. Net addition to resources.	5. Replace other sources income, thereby increasing dependency
6. Raise the immediate standard of living of recipients.	6. Are spent on 'unproductive' or 'personal' investment (e.g. real estate, housing)
7. Improve income distribution (if poorer / less skilled migrate)	7. Create envy and resentment and induce consumption spending among non-migrants

Source: Russell, 1986:678.

When the studies that mention the positive impact of remittances on the countries of origin are investigated, it is seen that the main points considering the contribution of remittances are balance of payments, foreign exchange revenue, economic growth, employment and finance of imports. Most of the studies yield similar results. At a macroeconomic level, workers' remittances provide foreign exchange to finance the import bill, contribute to the current account balance, increase national income and affect employment positively. Moreover, remittances carry importance in terms of savings and investment capital for development. On the other hand, from a microeconomic perspective, remittances increase the migrant workers' standards of living and provide funds to meet their basic needs such as food, clothing and education. For instance, Gökdere (1978:150-51) notes that migrant families in Turkey increased the consumption of some products such as meat and eggs, which increased their prices despite the existence of price controls in the early 1970s.

There exist a wide variety of examples concerning the net benefit of remittance inflows to the countries of origin. For instance, most of the researchers believe that remittances decrease the effects of external shocks. Debabrata and Kapur (2003) mention that in India, remittances have mitigated the impact of oil shocks of 1973, 1979 and 1990-1991 by reviving foreign exchange reserves, smoothing domestic consumption and investment. Stahl and Habib (1991:174) point out that remittances can contribute to investment thereby growth from the supply side through their contribution to the expansion of loanable funds.

Ratha (2003) points out the positive effects of remittances in many remittance-receiving countries where remittances have financed the building of schools, clinics and other infrastructure.

Burki (1991:153), while evaluating the migration from Pakistan to the Middle East, emphasizes that remittances enable the remittance-receiving households to improve the development of their human capital by meeting their basic health, education, nutrition and shelter needs.

In the study of Leon-Ledesma and Piracha (2001), the impact of remittances on employment performance, investment and consumption for the Central and East European (CEE) countries is analyzed empirically[6]. A productivity equation, an investment-output equation and a consumption-output equation are estimated using a set of 11 transition countries during the 1990-1999 period. It is found that the impact of remittances on unemployment depends on its effect on productivity growth and entrepreneurial investment. Result of estimations imply that the average elasticity of consumption-output ratio with respect to remittances for all countries is 0.0326, which is lower than that for investment-output ratio (0.0541). Both consumption and investment are found to be positively affected by remittances but the effect on

[6] In the study of Leon-Ledesma and Piracha (2001), remittances are defined as the sum of workers' remittances and compensation of employees. On the other hand, in this thesis remittances refer to only workers' remittances.

consumption is not as strong as on investment contrary to some previous research results.

After running a simple regression for several countries such as Korea, Philippines, Ghana, Mexico etc., Faini (2002) concludes that remittances have a positive impact on economic growth. Moreover, Solimano (2003) notes that use of remittances on investment and consumption can increase output and growth and contribute to the economic development of the emigrating country. However, he stresses that if the commitment of the migrants to the country of origin becomes institutionalized, then the positive developmental effects of their remittances might become more permanent.

It is mostly agreed that rural recipients have a tendency of consuming more domestically produced goods and thus produce larger income multipliers when compared to the urban recipients (Cornelius 1990; Durand, et al 1996, Meyers, 1998). Adelman, Taylor and Vogel (1988) build a Mexican village social accounting matrix and find that each additional 100 dollars remitted from the United States add about 178 dollars to village income. Thus, the multiplier effects can be quite large locally.

Hyun (1989) analyzes the impact of remittances on current account and domestic demand through private consumption and fixed investment for Korea. He uses the complete model of the Korean economy and finds that in Korea in the 1970s a 10 percent increase in remittances caused a 0.32 per cent increase in private consumption, a 0.53 percent increase in fixed investment, a 0.22 per cent increase in GDP, a 0.24 per cent increase in GNP in the long-run and leads a 0.40 per cent decrease in the ratio of the current account deficit to GNP in the long-run. In line with Gökdere (1978) who pointed that the short-run effects of remittances can differ from their long-run effects, Hyun (1989) emphasizes that a decrease in exports as a result of an increase in prices and wages can be observed as the more immediate effects of remittances, however, in the long-run the net effect of remittances on growth would be positive.

Glytsos (2002) estimates a dynamic, simultaneous Keynesian type model for investigating the impact of remittances on consumption, investment, imports and output for eight countries; Algeria, Egypt, Greece, Jordan, Morocco, Portugal, Syria and Tunisia for the period of 1969-1993. The findings of the study point out a rather unstable situation in all countries, with fluctuating positive and negative effects of remittances. The growth of the economies of Egypt and Jordan are found to be strongly dependent on remittances. For the other countries, the effect of remittances on growth is very limited and in some years negative impact of remittances to growth is observed. Glytsos (2005) is the revision of Glytsos (2002)'s study of with some further analyses. This study covers the period of 1969-1998 and the macroeconometric model is applied for five countries; Egypt, Greece, Jordan and Morocco. Results of this study are similar to the results of the previous one.

Meyers (1998) points out that in the literature there is a fair consensus about the use of remittances mostly on food, clothing, health care, consumer durables, personal investments such as housing and land. Therefore, remittances are mostly directed to unproductive activities, do not channel into productive investment and do not contribute to the economic development of the recipient economy. Based on this, most research figure out the negative impact of the remittances on the labour exporting country.

Keely and Tran (1989:502) enumerates the negative effects of remittances on the recipient economy as follows:

> Beyond fostering dependency and being unstable, remittances destroy the process of economic development. The litany of complaints includes that remittances are infrequently (at best) invested in capital generating activities or even in job creating enterprises. Rather, they are spent on consumer goods with high import content; consumer goods, which increase local demand so that wage levels are pushed up and inflation increases; or unproductive personal investment like housing and land. At the social level remittances are accused of creating envy and eroding work habits.

El-Sakka and McNabb (1999), using data for Egypt, concludes that imports financed through remittance earnings have a very high-income elasticity. This is explained as these imports can be consumer durables and luxury goods or they can be undertaken by higher income groups. Therefore, this can imply that multiplier effects of remittances may be lower. Parallel to this, Stalker (1994:125) remarks that planes from the Middle East were filled with migrant workers together with television sets, video recorders and other electronic goods. Glytsos (1993) points out that in the rural areas of Greece remittances can be used as an important tool for emulating urban consumption habits such as dress, automobile-buying habits etc.

El-Sakka (1997) also draws attention to the drawbacks of heavy dependency on labour exports and remittances. He mentions that this dependency can make the recipient countries more vulnerable to external shocks and in the event of the flow is disrupted; the countries have a high probability of facing an economic shock. During the Gulf War, Jordan, Yemen and Sudan fell into trouble due to the massive return of migrants.

Sofranko and Idris (1999:476) investigated the use of remittances in business investment in Pakistan and according to the estimation results, it is found that 42 per cent of remittances are used for basic family needs, 29 per cent are spent on other consumer goods, and 13 per cent is used in some kind of business venture. Thus, a small portion of remittances are channeled into business investment.

It is mostly argued that there is a high possibility of excessive reliance on remittances and this can postpone the necessary policy measures for long-run economic development. Moreover, remittances can increase the demand and cause inflation. As a negative consequence of remittances, "Dutch Disease" effect[7] is mentioned in some of the studies (Athukorala, 1993, Quibria, 1996: 97, Lucas, 2004, Kapur, 2004). In the countries that receive substantial amount of remittances, real exchange rate tends

[7] One of the possible effects of large inflows of foreign resources on the performance of the economy is known as 'Dutch disease effect'. For instance, the flow of remittances to the home country can result in exchange rate appreciation. Because of this, local export sectors can be affected negatively and the competitiveness of the economy can weaken.

to appreciate and thus, development of export sector can be negatively affected. Bourdet and Falck (2003), who analyze the macroeconomic impact of remittances on the real exchange rate in Cape Verde, draw attention to the Dutch Disease effect created by remittances. They mention that inflow of remittances generates a spending effect and this gives rise to increased spending and demand in the economy under the assumption of positive income elasticity. As a result of excess demand, an increase in the price of non-tradables is observed since supply of non-tradables is limited. Since the price of tradables is determined in the world market, the real value of domestic currency rises[8]. Thereby, remittances cause Dutch Disease effect and affect the competitiveness of the tradable sector negatively. However, the magnitude of this effect on the economies can vary. On the other hand, Quibria (1996:97) mentioned that in order to mitigate the detrimental impact of the Dutch Disease, some policy measures could be undertaken including the depreciation of the currency and structural reforms in the production sector for greater economic efficiency.

One of the recent studies about remittance flows was published as an IMF working paper (Chami, Fullenkamp and Jahjah, 2003). In this study, a model is built to examine the causes and effects of remittances on an economy. A panel of aggregate data on remittances that includes up to 113 countries over 29 years is collected and panel estimation methods to take advantage of cross-sectional variation is used. According to the results, it is found that remittances have negative effects on economic growth. The reason of this negative effect is the moral hazard problem that exists between remitters and recipients. The dependency on remittances makes the recipients to use these funds as a substitute for labour income and to lower their work effort. Therefore, it is concluded that remittances do not seem to be a significant source of capital for economic development.

Although some studies take only the negative impact of remittances into consideration and do not agree with the existence of the developmental impact of remittances, some studies provide a more complete description and assessment of the situation. For instance, Glytsos (1993) mentions that most of the literature draws

[8] Real exchange rate is defined as the domestic relative price of tradables to non-tradables.

attention to the first round effects of remittance spending and ignores diffused multiple effects and thereby they reach inconclusive evidence on the impact of remittances. For the case of Greece, Glytsos builds an input output table. According to his analytical results, he finds that Dr 14 billion remittances spent generates Dr 24 billion worth of gross output and this gives the value of the multiplier as 1.7. Also, he emphasizes that his findings do not support the popular opinion, which is the first round spending of remittances on consumption and housing does not constitute productive investment. It is stressed that spending of remittances even on final consumer goods has a significant impact on industries producing investment goods.

As Glytsos has mentioned, Taylor et al. (1996) stress that almost all studies lack analyses including the second and third-round impacts of consumption spending in terms of their impact in generating employment and economic development.

Stahl and Habib (1989) accept that small portion of remittances is directly used for investment purposes and also mention that their potential contribution toward economic development is minimal. In their study, for Bangladesh by using input-output tables, a simple remittance multiplier for the period of 1976-1988 is found. For this period the average value of remittance multiplier is found to be approximately 1.24. This is the result of multiplier effect of consumption. Also, it is mentioned that although a relatively small portion of remittances is spent on investment goods, remittances are mostly spent within the sector, which have relatively strong linkages with the rest of the economy contributing to broader economic expansion.

Even if the remittances are used unproductively, mostly on consumption, they produce some multiplier effects. For example, according to the results of the study by the Bangladesh Institute of Development Studies, in Bangladesh multiplier effects of remittances on GNP, consumption and investment are found to be 3.3, 2.8 and 0.4 respectively (Van Doorn, 2002).

Durand, et al. (1996) points out that although the large part of the remittances are spent on conspicuous consumption or wasteful activities rather than production,

infusion of remittances has positive consequences for local, regional and national development. In Mexico, at the national level, 2 billion dollars amount of remittances is estimated to create 6.5 billion dollars worth of additional production, with especially strong multiplier effects in manufacturing and services.

Koç and Onan (2001) disagree with the point that remittances are used unproductively mostly on consumption, land or house that would not contribute to economic development and point out that the definitions and content of productive investment can be arbitrary. For instance, schooling and housing expenditures are not in the list of productive investment. The welfare effects of remittances to the receiving households are significant.

Stalker (1994:129) comments that some consumption expenditure can be viewed as an investment. Better housing, food and clothing can increase the productivity of people and contribute to the economy positively.

3.2. Studies on Workers' Remittances for Turkey

Mostly, remittances are accused of creating inflation and increasing imports (Russell, 1986:678; Keely and Tran, 1989:502). On the other hand, Martin (1991:57) notes that as remittances added to both supply and demand for goods, remittances may not have had a severe inflationary effect in Turkey. For the case of Egypt, El-Sakka (1997) by investigating the Own Exchange Import System in Egypt, which is only financed through remittances, showed that capital and intermediate goods, which are used for production, constitute nearly two thirds of the imports under the system.

Gitmez (1991:133) remarks that the interests of Turkey and its migrant workers did not match due to the insufficient social and economic progress and emigration benefited only migrants and their families and improved their living standards. On the other hand, remittances did not lead to development in Turkey and Turkey has not jumped up the development ladder meaning that Turkey grew but not faster than non-emigrant countries.

Since 1960s, as workers' remittances gained importance in Turkey, several surveys considering all aspects of the migration and remittances have been conducted. Although these survey results provide information from a micro perspective, they can shed some light on the debate whether remittances were used productively and contributed to the economic development of Turkey or not.

The Central Bank of Turkey conducted a survey in 1984. According to the survey results, it is found that 85 per cent of returned migrants had purchased housing in Turkey (Martin 1991:56).

The 1970 Abadan survey results have shown that about half of the workers' remittances were channeled to building and purchasing housing. 23 per cent of remittances were spent on establishing a business which are mostly less productive individual enterprises (see Table 3.2). Shortly, this survey results provide clues supporting the idea of failure of remittances in contributing to productive investment (Gökdere, 1978: 226).

Table 3.2. Uses of workers' remittances

	Distribution
Housing	% 49
Business establishing	% 23
Family enterprise enlarging	% 6
Plot purchasing	% 9
Agriculture machines	% 2
Car/Lorry	% 5
Education	% 5
Share Certificate, bond	% 1

Source: Gökdere, 1978:226.

SPO has conducted a survey in 1971 among the workers who had returned at the latest by 1970. This survey sheds some light on the uses of remittances and its effect on the economy. As shown in Table 3.3, in SPO survey, it is found that 46 per cent of rural sample, 27 per cent of urban sample and 35 per cent of total sample had put their savings into a work venture. With these figures it is difficult to make an assessment since there is no information about whether they reach to succeed or failed. (Paine 1974:114).

Table 3.3. Percentage of returned Turkish migrant workers who put savings into a work venture, SPO survey, 1971

	Total, %	**Urban, %**	**Rural, %**
Yes	35	27	46
No	58	63	50
n/a	8	10	5

Source: Paine (1974:115)

In Table B.5, SPO survey results on percentages of returned Turkish migrant workers who reported buying certain goods with their savings are presented. These survey results support the notion that returned migrant workers have a high propensity to spend their savings. About two-thirds have declared that they purchased a house or a building plot, which are considered as unproductive investment. Consumer durables are also important items, nearly half of the SPO migrants reported that they had purchased a radio. Returned workers also spent their savings on consumer durables mostly purchased from abroad, but work-related investment goods were purchased mostly in Turkey. Only 4 per cent of the total sample mentioned that they had put their savings in a bank. Paine (1974:120) points out that the survey results indicate a high propensity to spend out of savings but only a moderate propensity to spend on imported goods.

A study of regional effects of remittances and return migration in Boğazlıyan in Yozgat province was conducted in 1974. As a result of this study, it is found that

remittances were mostly used for consumption and housing (Abadan et al, 1975:411).

From a micro perspective, recently a survey considering the remittances based on the data from the 1996 Turkish International Migration Survey (TIMS-96) was conducted. Table B.6 shows how the remittances are spent by region and household migration status. In general, the results of the study imply that remittance-receiving households use their savings to satisfy their basic consumption needs. For 12 per cent of all the households receiving remittances, 80 per cent of remittances are spent for daily expenses. 7 per cent of remittances are used for medical bills, 4 per cent for wedding ceremonies and 3 per cent for the purchase of land or a house (Koç and Onan, 2001). It is clearly observed that non-migrant households have a tendency to spend their remittances on daily expenses (85 per cent) more than the other type of households. Another important result of the study is that households in less developed regions spent more on daily expenses than those in developed regions. In developed recent migration regions, 59 per cent of the remittances are devoted to daily expenses. However, this ratio increases to 86 per cent in less developed established migration regions. Generally it is seen that in established migration regions remittances are spent much more on daily expenses than in recent migration regions. This can be attributable to the previous investment performance in expenses other than daily expenses of the households in established migration regions (Eurostat, 2000:90).

Most of the survey results conducted in Turkey in different periods and different regions from a micro perspective seem to support the general idea that remittances are mostly used for consumption and personal investments such as land and housing.

In sum, considering the impact of remittances on the remittance receiving economies at a macro level, it is very difficult to draw a certain picture. There are two opposing sides, one side points out the negative impact of remittances, and the other side emphasizes the positive, developmental impact of remittances. On the other hand, most of the studies while accepting some drawbacks of the remittances to the country of origin, they draw attention to the point that remittances contribute positively to the

development of the recipient economy. Although the surveys at micro level can be beneficial in determining the uses of remittances and forming a general idea, they are not adequate in assessing the whole picture. In conclusion, there is still an ongoing debate whether remittances contribute to the recipient economy positively or negatively. Absolutely, future researches and studies will determine the direction of this debate.

CHAPTER 4

EMPIRICAL ANALYSIS

In this chapter, firstly the data used in the model is presented in detail. Then, model specification and empirical results are provided.

4.1. Data

In this section, the data used in the model are presented in detail. The sources and their final form are given. The values of variables are shown in Table B.7.

Workers' Remittances (R): The data of workers' remittances received via official channels for the period of 1964-2003 is available in SPO 1950-2003 Social and Economic Indicators. The data is given in millions of current US Dollars. For the same period, average exchange rates are received from the website of Central Bank of Turkey and official Consumer Price Index is obtained from OECD Economic Outlook database. Firstly, by using average exchange rates, workers' remittances are converted into billions of Turkish Lira (TL). Then, the data of workers' remittances in terms of TL is deflated by Consumer Price Index[9]. Therefore, real workers' remittances in terms of billions of TL are obtained.

Private Final Consumption Expenditures (Cp): Real final private consumption expenditures at constant 1987 prices in terms of TL, as a component of Gross Domestic Product (GDP) calculated from the expenditure side is available starting from 1987 in SPO. However, the data of real final private consumption expenditures at constant 1987 prices for the period of 1964-2003 is available in OECD Economic Outlook database.

[9] Base year for Consumer Price Index is 1987.

Government Final Consumption Expenditures (Cg): Like the data of real final private consumption expenditures, the data of government final consumption expenditures at constant 1987 prices in terms of TL for the period of 1964-2003 is obtained from the OECD Economic Outlook database.

Gross Fixed Capital Formation (Inv): Gross fixed capital formation includes both private and public sector investments. Moreover, the change in stocks is reflected in this item. The data of gross fixed capital formation at constant 1987 prices in terms of TL for the period of 1964-2003 is obtained from the OECD Economic Outlook database.

Capital Stock (K): As a proxy to capital stock, the cumulative gross fixed capital formation is used for the period of 1964-2003.

Exports of Goods and Services (Ex): The data of exports of goods and services at constant 1987 prices in terms of TL for the period of 1964-2003 is obtained from the OECD Economic Outlook database.

Imports of Goods and Services (Im): The data of imports of goods and services at constant 1987 prices in terms of TL for the period of 1964-2003 is obtained from the OECD economic outlook database.

Gross Domestic Product (GDP) and Statistical Discrepancy (Statdev): The data of gross domestic product and statistical discrepancy at constant 1987 prices in terms of TL for the period of 1964-2003 are obtained from the OECD Economic Outlook database.

The level of Income (Y): This data is derived from GDP and workers' remittances. The level of income is defined as the summation of GDP and workers' remittances.

Dum74: This variable is a dummy variable, which is used for the year of 1974 just after the first oil shock in 1973.

Dum2001: This variable is a dummy variable, which is used for the year of 2001 corresponding the financial crisis of Turkey.

Dum: This variable is a dummy variable, which is used for the year of 1974 just after the first oil shock in 1973, 1978 debt crisis, 1980, 1981, 1982 corresponding the transition period of Turkey, 1994 and 2001 corresponding the economic crises of Turkey.

4.2. Model Specification

A linear demand oriented simultaneous equation macroeconometric model is constructed in order to determine the effects of workers' remittances on key macro variables such as private consumption, investment, imports and especially the level of income. Glytsos (2002) builds a model with a Keynesian basis and a dynamic perspective for some Mediterranean countries like Egypt, Greece, Jordan, Morocco etc. Since this model estimates the relative effects of remittances and the time distribution of these effects for different macroeconomic variables that affect economic growth and development, application of the same model for Turkey is found to be appropriate. In this model, there are three behavioral equations, which are consumption function, investment function and import function. A national income identity is also included. The main point of the model is to determine the short-run and long run effects of an exogenous shock of remittances on these key macro variables and thus expose the effects of workers' remittances on economic development of Turkey.

In our analysis, firstly, a macro econometric model of Turkey using time series annual data covering the period of 1964-2003 is constructed and estimated. Then, these estimates of the model are used to obtain short and long run multipliers of endogenous variables with respect to remittances. Lastly, these multipliers are used in order to determine the actual effects of remittances on output growth of Turkish economy over time.

Structure of the model is as follows:

MODEL

$$Cp_t = \alpha_0 + \alpha_1 Y_t + \alpha_2 Cp_{t-1} \quad \textbf{(1)}$$

$$Inv_t = \beta_0 + \beta_1 Y_t + \beta_2 K_{t-1} \quad \textbf{(2)}$$

$$Im_t = \delta_0 + \delta_1 Y_t + \delta_2 Im_{t-1} \quad \textbf{(3)}$$

$$Y_t = Cp_t + Cg_t + Inv_t + Ex_t - Im_t + R_t + statdev_t \quad \textbf{(4)}$$

Cp= Private final consumption expenditures

Inv = Gross fixed capital formation (private and public), including change in stocks

Y= GDP + Remittances

Im = Imports of goods and services.

Ex= Exports of goods and services.

K= Cumulative gross domestic investment.

R= Workers' remittances

Cg = General government consumption expenditure.

t= time.

In this model the endogenous variables are private final consumption expenditures, gross fixed capital formation, imports of goods and services and a kind of income including GDP and workers' remittances. The other variables are exogenous variables[10].

First equation is the dynamic consumption equation. In this equation, the level of income, which also includes remittances, and lag of private final consumption expenditures are used as explanatory variables[11]. The coefficients of these explanatory variables are expected to be positive. This equation is based on partial adjustment model[12].

Second equation is the investment equation. Like in Glytsos (2002)'s study, it is assumed that investment is a positive function of income as a proxy of profits and a negative function of lagged capital stock.

Third equation is the imports equation and in this equation the level of income and lag of imports as an indicator of adaptive expectations are used as explanatory variables. Both coefficients are expected to be positive.

The method is estimation of the model by using two stage least squares (TSLS), which is the most common method for estimating simultaneous-equations models. Generally, in simultaneous-equations models, ordinary least squares (OLS) estimators are biased and inconsistent. The problem in OLS application is the presence of explanatory endogenous variables, which are correlated with the stochastic disturbance terms. If these variables could be replaced by the related variables that are uncorrelated, the problem will disappear. In the method of TSLS,

[10] The disturbance terms are ignored.

[11] Remittances are tried to be directly included as an exogenous variable in all behavioral equations. However, both statistically and economically unjustified results are obtained.

[12] For instance, if the equilibrium relationship between Cp and Y is defined as $Cp_t^* = \beta_1 + \beta_2 Y_t$ and the dynamic adjustment process is defined by the following partial adjustment model: $dCp_t = \lambda (Cp_t^* - Cp_{t-1}) + u_t$. λ shows the proportion of the deviation adjusted in any one period. When the first equation is substituted into the second one, the following equation is obtained: $Cp_t = \theta_1 + \theta_2 Y_t + \theta_2 Cp_{t-1} + u_t$ (Stewart and Gill, 1998:186).

by using instrumental variables (IV), the estimators will be consistent and efficient (Intriligator, 1978:384).

4.3. Empirical Results

In this section, first estimation results of the model are presented. Secondly, derivation of impact multipliers and their values are provided. Thirdly, derivation of dynamic (interim) multipliers and their values are explained. Finally, estimated macroeconomic effects of remittances on output growth are discussed.

4.3.1. Estimation Results

The following equations are estimated by TSLS:

The values in parentheses are the t-values.

Consumption Equation:

CP = 4252.7 + 0.350*Y + 0.428*CP(-1) - 4359.7*DUM74- 4566.3*DUM2001

(3.872) (4.395) (3.174) (-2.395) (-2.041)

Adjusted R^2=0.992 **DW**=1.90

(**Instrumental variables (IV):** Cp(-2), Y(-1), Im(-1), CGFCF(-1), R, Cg, DUM74, DUM2001)

Investment Equation:

INV= -5762.5 + 0.329*Y - 0.002*K(-1) - 8686.8*DUM2001 + 4765.6*DUM74

(-1.915) (3.749) (-0.144) (-2.801) (1.882)

Adjusted R^2=0.944 **DW**=1.24

(**IV:** Cp(-1), Cp(-2), Y(-1), Y(-2), Cg(-1), Cg(-2), Ex(-1), Ex(-2), DUM74, DUM2001)

Import Equation:

IM = -4866.9 + 0.160*Y + 0.691*IM(-1) - 3244.6*DUM

(-2.149) (3.005) (5.598) (-2.392)

Adjusted R^2=0.956 **DW**=1.88

(**IV:** Cp(-1), Y(-1), Y(-2), Cg, Cg(-1), Im(-2), Inv(-1), DUM)

As a result of estimations, it is obviously seen that all coefficients except the coefficient of capital stock are significant and expected signs are achieved.

Table 4.1. Estimated Short-run and Long-run MPC and MPI for Turkey.

	SHORT-RUN (1)		LONG-RUN (2)		Proportion (%) of toatal effects of an increase in income in the first year (3)=(1): (2)*100	
	MPC [1]	**MPI [1]**	**MPC[2]**	**MPI[2]**	On consumption	On Imports
TURKEY	0.350	0.160	0.612	0.518	57.2	30.9

(1) Short-run MPC = $\partial Cp_t / \partial Y_t$, Short-run MPI = $\partial IM_t / \partial Y_t$,

(2) Long-run MPC= $\partial \overline{Cpt} / \partial Yt = \partial Cp_t / \partial Y_t * (1/ 1- \partial Cp_t / \partial Cp_{t-1})$

Long-run MPI= $\partial \overline{IM_t} / \partial Y_t = \partial IM_t / \partial Y_t * (1/ 1- \partial IM_t / \partial IM_{t-1})$

$\overline{Cp}$ and $\overline{IM}$ are the private consumption and imports under the condition that $Cp_t = Cp_{t-1}$ and $IM_t = IM_{t-1}$. (Glytsos 2002).

Table 4.1 provides the short-run and long-run marginal propensities to consume (MPC) and short-run and long-run marginal propensities to import (MPI). The short-run MPC and long-run MPC are found to be 0.350 and 0.612 respectively. The short-run MPI is relatively low (0.160) and the long-run MPI is relatively high (0.518). These findings show that the consumption is increased more anxiously following an increase in income but the imports are increased relatively less impatiently.

4.3.2. Impact Multipliers

After estimating the equations, in order to determine the relationship between an endogenous variable and all the predetermined variables in the system of equations, the reduced form of the equations should be obtained. When the necessary substitutions are undertaken, the following reduced form of the model (1) to (4) is obtained:

$$W_{it} = \Pi_0 + \Pi_1 Cp_{t-1} + \Pi_2 Y_{t-1} + \Pi_3 Im_{t-1} + \Pi_4 K_{t-1} + \Pi_5 Cg_t + \Pi_6 Ex_t + \Pi_7 R_t + \Pi_8 Statdev_t$$

W_{it} stands for any of endogenous variables Cp, Inv, Im, and Y. The parameters Π's are known as impact or short-run multipliers showing the change in any endogenous variable as a result of a one unit of change in any predetermined variable.

For the consumption equation after making the necessary substitutions, the following reduced form is obtained[13]:

$$ACp_t = \alpha_0 (1 - \beta_1 + \delta_1) + \alpha_1 (\beta_0 - \delta_0) + \alpha_1 Cg_t + \alpha_1 Ex_t + \alpha_1 R_t + \alpha_1 Statdev_t + \alpha_2 (1 - \beta_1 + \delta_1) Cp_{t-1} + \alpha_1 \beta_2 K_{t-1} - \alpha_1 \delta_2 Im_{t-1} \quad \textbf{(1*)}$$

$$A = 1 - \beta_1 - \alpha_1 + \delta_1$$

[13] For details, see Green (2003:380)

From the reduced form, the short-run or impact multiplier which is equal to α_1 / A can be obtained. It is found to be 0.728. This means that one unit increase in remittances in the current year leads to a 0.728 unit increase in private consumption expenditures.

For the investment equation, the following reduced form is obtained:

$$AInv_t = \beta_0(1- \alpha_1 +\delta_1) +\beta_1(\alpha_0 -\delta_0) + \beta_1 Cg_t + \beta_1 Ex_t + \beta_1 R_t + \beta_1 Statdev_t +(1-\alpha_1+\delta_1)\beta_2 K_{t-1} + \beta_1\alpha_2 Cp_{t-1} - \beta_1\delta_2 Im_{t-1} \quad \textbf{(2*)}$$

$$A= 1- \beta_1-\alpha_1+\delta_1$$

From the reduced form, the short-run or impact multiplier which is equal to β_1 / A can be obtained. It is found to be 0.684. This means that one unit increases in remittances in the current year leads to a 0.684 unit increase in gross fixed capital formation.

For the import equation, the following reduced form is obtained:

$$AIm_t = \delta_0(1- \alpha_1 - \beta_1) +\delta_1 (\alpha_0 +\beta_0) + \delta_1 Cg_t + \delta_1 Ex_t + \delta_1 R_t + \delta_1 Statdev_t +\delta_1\beta_2 K_{t-1}+\delta_1\alpha_2 Cp_{t-1} +\delta_2(1- \alpha_1 - \beta_1)Im_{t-1} \quad \textbf{(3*)}$$

$$A= 1- \beta_1-\alpha_1+\delta_1$$

From the reduced form, the short-run or impact multiplier which is equal to δ_1 / A can be obtained. It is found to be 0.333. This means that one unit increases in remittances in the current year leads to a 0.333 unit increase in imports.

When the reduced form equations of consumption, investment and import are inserted into the income identity, the following reduced form for the income identity is obtained:

$Y_t = \Psi + ((\alpha_1 + \beta_1 - \delta_1)/A+1)\ Cg_t + ((\alpha_1 + \beta_1 - \delta_1)/A+1)\ Ex_t + ((\alpha_1 + \beta_1 - \delta_1)/A+1)\ R_t + ((\alpha_1 + \beta_1 - \delta_1)/A+1)\ Statdevt + (\alpha_2/A)Cp_{t-1} + (\beta_2/A)K_{t-1} - (\delta_2/A)Im_{t-1}$

$A= 1- \beta_1-\alpha_1+\delta_1$

From the reduced form, the short-run or impact multiplier for the income which is equal to $(((\alpha_1 + \beta_1 - \delta_1)/A)+1)$ can be obtained. It is found to be 2.079. From this, it is implied that the impact multiplier for income is equal to impact multiplier for consumption plus impact multiplier for investment minus impact multiplier for import and plus 1. This means that one unit increases in remittances in the current year leads to a 2.079 unit increase in the level of income through the multiplier effects.

4.3.3. Dynamic Multipliers

From the reduced form of the structural equations short-run or impact multipliers are obtained. These structural parameters show the immediate effects of remittances on the endogenous variables. On the other hand, it is beneficial to determine the dynamic effects of remittances on endogenous variables. For instance a change in remittances by one unit in year 1 with no further increase in the subsequent years in 2,3 ….n, the dynamic or interim multipliers can be obtained (See Appendix A for detail).

From the following reduced form consumption equation by making necessary substitutions, the dynamic multipliers can be found by the following stages:

$ACp_t = \alpha_0 (1- \beta_1 + \delta_1) + \alpha_1 (\beta_0 - \delta_0) + \alpha_1 Cg_t + \alpha_1 Ex_t + \alpha_1 R_t + \alpha_1 Statdev_t + \alpha_2 (1- \beta_1 + \delta_1)\ Cp_{t-1} + \alpha_1\beta_2 K_{t-1} - \alpha_1\delta_2 Im_{t-1}$ **(1*)**

It should be noted that (1*) implies that:

$$ACp_{t+1} = \alpha_0 (1- \beta_1 +\delta_1) +\alpha_1 (\beta_0 -\delta_0) + \alpha_1 Cg_{t+1} +\alpha_1 Ex_{t+1} + \alpha_1 R_{t+1} + \alpha_1 Statdev_{t+1} +\alpha_2 (1- \beta_1 +\delta_1) Cp_t +\alpha_1\beta_2 K_t -\alpha_1\delta_2 Im_t \quad \textbf{(1**)}$$

Substituting (1*) into (1**) yields:

$$Cp_{t+1} = c + (\alpha_1 /A)Cg_{t+1} + (\alpha_1 /A)Ex_{t+1} + (\alpha_1 /A)R_{t+1} + (\alpha_1 /A)Statdev_{t+1} + (\alpha_2 (1- \beta_1 +\delta_1)/A)* ((\alpha_1 /A)Cg_t + (\alpha_1 /A)Ex_t + (\alpha_1 /A)R_t + (\alpha_1 /A)Statdev_t + \alpha_2 (1- \beta_1 +\delta_1)/A Cp_{t-1} +(\alpha_1\beta_2/A)K_{t-1} -(\alpha_1\delta_2/A)Im_{t-1})) + (\alpha_1\beta_2/A)K_t -(\alpha_1\delta_2/A)Im_t$$

It can be clearly observed from the above equation that any change of remittances in the current year has the following effect on private consumption in the following period:

$$\partial Cp_{t+1}/\partial R_t=(\alpha_2 (1- \beta_1 +\delta_1)/A)* (\alpha_1 /A)$$

Let $\alpha_2 (1- \beta_1 +\delta_1)/A= P$

Continuing this process of iteration, the following dynamic (interim) multipliers can be found:[14]

$$\partial Cp_{t+2}/\partial R_t = P^2* (\alpha_1 /A)$$

$$\partial Cp_{t+3}/\partial R_t = P^3* (\alpha_1 /A)$$

The same stages are undertaken for the reduced form investment equation:

$$AInv_t = \beta_0(1- \alpha_1 +\delta_1) +\beta_1(\alpha_0 -\delta_0) + \beta_1 Cg_t + \beta_1 Ex_t + \beta_1 R_t + \beta_1 Statdev_t +(1-\alpha_1+\delta_1)\beta_2 K_{t-1} + \beta_1\alpha_2 Cp_{t-1} - \beta_1\delta_2 Im_{t-1} \quad \textbf{(2*)}$$

[14] The dynamic (interim) multipliers are calculated for 3 years, since the dynamic multipliers for investment converges to zero in 3 years.

It should be noted that (2*) implies that:

$$AInv_{t+1} = c_1 + \beta_1 Cg_{t+1} + \beta_1 Ex_{t+1} + \beta_1 R_{t+1} + \beta_1 Statdev_{t+1} + (1-\alpha_{1+}\delta_1)\beta_2 K_t + \beta_1\alpha_2 Cp_t - \beta_1\delta_2 Im_t \quad \textbf{(2**)}$$

$$K_t = K_{t-1} + Inv_t \quad \textbf{(*)}$$

Substituting (2*) into (2**) by using the identity (*) yields:

$$Inv_{t+1} = c_1 + (\beta_1/A)Cg_{t+1} + (\beta_1/A)Ex_{t+1} + (\beta_1/A)R_{t+1} + (\beta_1/A)Statdev_{t+1} + ((1-\alpha_{1+}\delta_1)\beta_2/A)K_{t-1} + (\beta_2 (1-\alpha_{1+}\delta_1)/A)*((\beta_1/A)Cg_t + (\beta_1/A)Ex_t + (\beta_1/A)R_t + (\beta_1/A)Statdev_t + ((1-\alpha_{1+}\delta_1)\beta_2/A)K_{t-1} + (\beta_1\alpha_2/A)Cp_{t-1} - (\beta_1\delta_2/A)Im_{t-1})) + (\beta_1\alpha_2/A)Cp_t - (\beta_1\delta_2/A)Im_t$$

From the above equation it is found that:

$$\partial Inv_{t+1}/\partial R_t = (\beta_2 (1- \alpha_1 + \delta_1)/A)* (\beta_1/A)$$

Let $\beta_2 (1- \alpha_1+\delta_1)/A = M$

Continuing this process of iteration, the following dynamic (interim) multipliers can be found:

$$\partial Inv_{t+2}/\partial R_t = M^2 * (\beta_1/A)$$

$$\partial Inv_{t+3}/\partial R_t = M^3 * (\beta_1/A)$$

Finally, following the same steps, dynamic multipliers from the reduced form import equation are obtained:

$$AIm_t = \delta_0(1- \alpha_1 -\beta_1) + \delta_1(\alpha_0 + \beta_0) + \delta_1 Cg_t + \delta_1 Ex_t + \delta_1 R_t + \delta_1 Statdev_t + \delta_1\beta_2 K_{t-1} + \delta_1\alpha_2 Cp_{t-1} + \delta_2(1-\alpha_1-\beta_1)Im_{t-1} \quad \textbf{(3*)}$$

It should be noted that (3*) implies that:

$$AIm_{t+1} = c_2 + \delta_1 Cg_{t+1} + \delta_1 Ex_{t+1} + \delta_1 R_{t+1} + \delta_1 Statdev_{t+1} + \delta_1\beta_2 K_t + \delta_1\alpha_2 Cp_t + \delta_2(1 - \alpha_1 - \beta_1)Im_t \quad \textbf{(3**)}$$

Substituting (3*) into (3**) yields:

$$Im_{t+1} = c_2 + (\delta_1/A)Cg_{t+1} + (\delta_1/A)Ex_{t+1} + (\delta_1/A)R_{t+1} + (\delta_1/A)Statdev_{t+1} + (\delta_1\beta_2/A)K_t + (\delta_1\alpha_2/A)Cp_t + (\delta_2(1 - \alpha_1 - \beta_1)/A)*((\delta_1/A)Cg_t + (\delta_1/A)Ex_t + (\delta_1/A)R_t + (\delta_1/A)Statdev_t + (\delta_1\beta_2/A)K_{t-1} + (\delta_1\alpha_2/A)Cp_{t-1} + (\delta_2(1 - \alpha_1 - \beta_1)/A)Im_{t-1}))$$

This process of iteration continues and any change of remittances in the current year has the following effect on the imports in the following periods:

$$\partial Im_{t+1}/\partial R_t = \delta_2(1 - \alpha_1 - \beta_1)/A * (\delta_1/A)$$

Let $\beta_2(1 - \beta_1 + \delta_1)/A = N$

$$\partial Im_{t+2}/\partial R_t = N^2 * (\delta_1/A)$$

$$\partial Im_{t+3}/\partial R_t = N^3 * (\delta_1/A)$$

Table 4.2. Time Distribution of the Effects of a Unit Change in Remittances on Certain Macroeconomic Variables. (Impact and Dynamic Multipliers)

	Impact Multipliers (short-run impact)	**Dynamic (interim) Multipliers**		
	Year 1	Year 2	Year 3	Year 4
Consumption	0.728	0.538	0.398	0.294
Investment	0.684	-0.0023	0.000008	-0.00000003
Imports	0.333	0.153	0.071	0.033
Income	2.079	0.382	0.327	0.262

For the income identity, dynamic multipliers can be calculated by adding the multipliers for consumption and investment and then subtracting them from the multiplier for imports. Table 4.2 provides the impact and dynamic remittance multipliers for consumption, investment, import and income. As it can be observed, the impact of remittances on the endogenous variables is positive for both the short-run and long-run. It is very clear that the effect of remittances on investment wears out in the second year but the effect of remittances on private consumption reduces gradually.

4.3.4. Estimated Macroeconomic Effects of Remittances on Output Growth:

In this section, the estimated dynamic multipliers are applied to the actual annual changes of remittances for calculating the quantitative impact of current remittances on current and future growth rates of output. For this purpose, for 4 year time distribution of remittance effect on output growth through the changes in consumption, investment and imports, the following analytical expression is applied:

$$(Y_t - Y_{t-1}) = \Delta Y_t = \frac{\partial Y_t}{\partial R_t} * dR_t + \frac{\partial Y_t}{\partial R_{t-1}} * dR_{t-1} + \frac{\partial Y_t}{\partial R_{t-2}} * dR_{t-2}$$

$$+ \frac{\partial Y_t}{\partial R_{t-3}} * dR_{t-3}$$

The results of calculation for Y for each year of the period 1968-2003 together with the corresponding actual growth rates are presented in Table B.8. Because of the lags, 4 years from the original period is lost.

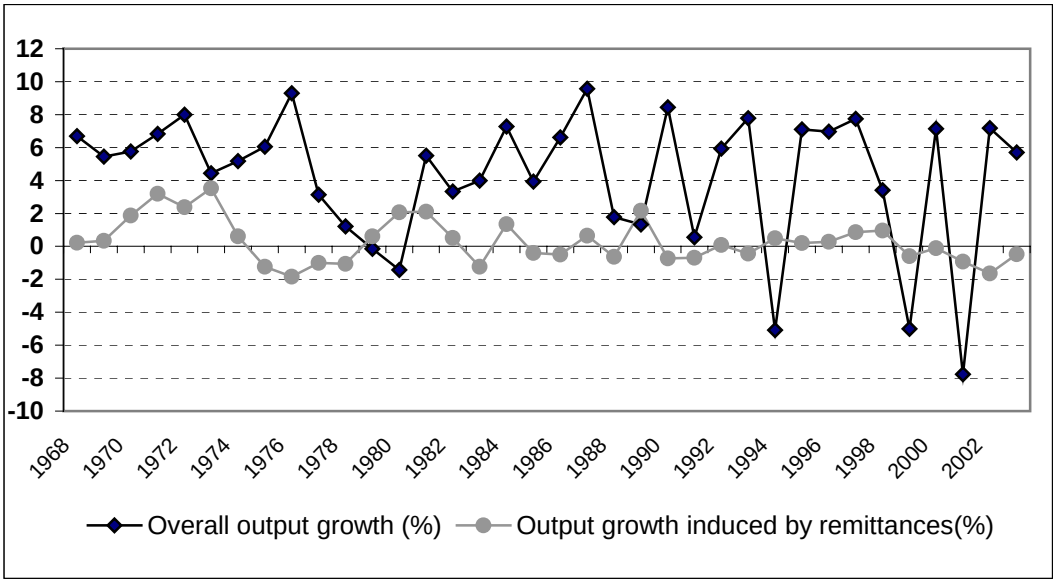


Figure 4.1: Rates of Output Growth Induced by Remittances and Overall Rates of Output Growth, 1968-2003.

According to the results of our analysis, remittances affect output growth in a positive manner. Thus, it is clear that remittances contribute to output growth through the multiplier effects. However, in some years the reduction in remittances leads a positive induced growth rate due to the dominant impact of previous high increases in remittances arising from the dynamic nature of the analysis. As it is seen from Figure 4.1, the highest induced growth rate belongs to the year of 1973, which is the date of first oil shock. It is clearly observed that induced growth rates reach to maximum levels in the early 1970s and for the period of 1970-73 growth rate induced by remittances has been 2.7 per cent on average[15]. Similar to the early 1970s, in the early 1980s, the induced growth rates are relatively high. For the period of 1980-82 induced growth rates by remittances realize as 1.6 per cent. For the other periods, induced growth rates by remittances, positive or negative are between 0.5 per cent and 2 per cent, demonstrating moderate effects in either direction. As the weight of workers' remittances in the economy has been gradually falling, the moderate impact of remittances on output growth is surely expected. In Table B.8, also elasticity of long-term induced growth rates of output with respect to growth

[15] Following the devaluation in 1970, like workers' remittances exports increased significantly. Turkish exports, which were 588 million dollars in 1970, increased to 1.3 billion dollars in 1973. Thus, in the early 1970s, the contribution of exports to growth is noteworthy.

rates of remittances is presented. These elasticities except two years are positive and are generally changing over time within very narrow limits.

As this model is the application of Glytsos (2002)'s model for Turkish case with some modifications[16], comparing the results of this study with our analysis can be beneficial. However, comparing the results with the recent study of Glytsos (2005) is more appropriate. Glytsos (2005)'s macroecenometric model is applied for the period of 1969-1998 for five countries Egypt, Greece, Jordan, Morocco and Portugal. In this study, according to the TSLS estimates for consumption, MPC is found to be between 0.32-0.39 for Egypt, Greece and Portugal. MPC is 0.24 for Jordan and lower than the values of other countries. As a result of our TSLS estimates, MPC is found to be 0.35 for Turkey, which is very similar to the values of Egypt, Greece and Portugal. In his study, the coefficient of income in the investment equation is found to be between 0.13-0.39 for all countries except Egypt. For Turkey, the coefficient of investment is obtained as 0.33. In the imports equation, MPI for all countries except Morocco are between 0.14-0.40 and the highest value belongs to the Jordan. As a result of our TSLS estimates, MPI for Turkey is 0.16. In Glytsos (2005)'s study, impact and dynamic multipliers vary between the countries. However, the impact of remittances (except investment in Egypt) on all variables is positive for both the short-run and the long- run. Only in Morocco, negative dynamic multipliers prevail but the overall impact is positive. In all countries the effect of remittances on investment and imports wears out in the first or second year. Results of our analysis for Turkey also show that the impact of remittances on investment and imports wears out in the second year. In Glytsos (2005)'s study, after applying the estimated dynamic multipliers to the actual annual changes of remittances on current and future growth rates of output, it is found that the contribution of remittances to growth is noteworthy in the economies of Egypt and Jordan. Similar to Turkey, in some years negative induced growth rates are observed in Egypt and Jordan. Similar to early 1970s of Turkey, in the early 1990s, by devaluation in Egyptian pound by 25 per

[16] In Glytsos (2002)'s study, lag of income is used as an explanatory variable in the imports function. However, in our analysis adding lag of income as an explanatory variable in imports function produces insignificant results.

cent, remittances increased and raised output mostly through imports and consumption in Egypt. In Morocco and Greece, negative and positive induced growth rates are observed but they are very weak. For Portugal, remittance induced effects are generally small and in many years negative induced rates are observed.

Therefore, the results of our analysis are consistent with the results of Glytsos (2005)'s study. Moreover, the results of our analysis support the argument that remittances are mostly used in consumption as mentioned in the surveys conducted considering the uses of remittances in Turkey (Eurostat, 2000:90; Abadan et al, 1975:411).

CHAPTER 5

CONCLUSION

In the second half of the twentieth century, migratory flows have drawn attention as an important issue from the sociological side. Economic consequences of these migratory flows have also carried considerable importance for the policy makers and economists. As workers' remittances have represented a significant part of international capital flows and major source of foreign exchange for the labour exporting countries, remittances as well as their impact on economic development of the emigrating countries have constituted an increasingly important topic on the international agenda.

The issue of workers' remittances has come into the agenda of Turkey after the starting of Turkish migration to Western Europe in the early 1960s. By the early 1970s, approximately 40 per cent of total migrants to Western Europe were from Turkey. In addition to Western Europe, significant number of Turkish workers migrated to the North African, Middle Eastern and Gulf countries in the late 1970s and to Russia and the Commonwealth of Independent States in 1990s. Turkey has become one of the most important labour exporting countries and significant amount of workers' remittances have come into the country. Turkish governments also encouraged the emigration of Turkish workers by special treatments and incentives to Turks abroad in order to decrease unemployment and benefit from its favorable effects on the balance of payments through remittances. Since 1964, workers' remittances increased continuously and contributed to the reduction of trade deficits. Workers' remittances played an important role in delaying balance of payments crisis of 1973. Turkey overcame this oil shock less harshly and postponed the crisis. Therefore, considering the significance of remittances for Turkey, analyzing the impact of remittances on Turkish economy from a macroeconomic perspective is worth investigating.

As a first effort, this thesis has mainly focused on the time distribution impact of workers' remittances on output growth through consumption, investment and imports in Turkey for the 1964-2003 period, using annual data. A macroeconometric demand-oriented simultaneous equation model with a dynamic perspective consisting of three behavioral equations and national income identity is built. This model with some modifications is the application of Glytsos (2002)'s model, which is applied in the past to some Mediterranean countries, to the Turkish case.

In our analysis, firstly consumption, investment and imports equations are estimated by TSLS, which is the most common method for estimating simultaneous-equations models. From these results of estimations, short and long run MPC and MPI are obtained. According to the findings, it is concluded that consumption is increased more anxiously following an increase in income but the imports are increased relatively less impatiently.

After estimating the equations, reduced forms of these equations are obtained in order to find out the impact multipliers. Impact multipliers obtained from the reduced form equations of consumption, investment and imports are used to find out the impact multiplier for income. It is found that one unit increase in remittances in the current year leads to a 2.079 unit increase in the level of income through the multiplier effects.

Dynamic multipliers which show the impact of one unit change in remittances in the current year without any change in subsequent years on the endogenous variables, are also found for the following 3 years in order to determine the long-run multiplier effects of exogenous shocks of remittances on consumption, investment, imports and thus output growth. In our analysis, it is found that the effect of remittances on investment turns out to be negative and wears out in the second year but the effect of remittances on private consumption reduces gradually. Lastly, the estimated dynamic multipliers are applied to the actual annual changes of remittances for calculating the quantitative impact of current remittances on current and future growth rates of output. For this purpose, for 4 year time distribution of remittance effect on output growth through the changes in consumption, investment and imports is analyzed.

According to the results of our analysis, it is found that remittances affect output growth in a positive manner through the multiplier process. In some years the reduction in remittances leads to a positive induced growth rate due to the dominant impact of previous high increases in remittances. It is noteworthy that the highest induced growth rate by remittances to the output growth belongs to the early 1970s especially 1973. The year 1973 constitutes an important date since it corresponds to the first oil shock, which affected both the developing and developed countries adversely. After this oil shock, most of the Western European countries imposed the recruitment ban. For Turkey, in this year remittances as a proportion of imports and GDP has reached their maximum level for the period of 1964-2003 and realized as 56.7 per cent and 4.3 per cent, respectively. This shows that remittances contributed to the finance of imports and economic growth considerably in the early 1970s. As domestic production of Turkey has mostly depended on imports, this situation can support the view that remittances spent on imports can be beneficial to development through imports of machinery and other intermediate goods that increased domestic production (Russell, 1992:274). In the second half of the 1970s, following the labour recruitment ban in Europe the amount of remittances declined dramatically and growth rate induced by remittances became negative. In the early 1980s, Turkish migration to North Africa, Middle East, and Gulf countries led an increase in remittance flows. Thus, for the period of 1980-82 induced growth rates by remittances increased and realized as 1.6 per cent. Although remittances in absolute level have increased especially in the 1990s, the ratio of workers' remittances to exports and imports has declined and relative importance of remittances in the Turkish economy has shrunk. Therefore, the contribution of remittances to output growth has been moderate in 1990s.

As a conclusion, it should be mentioned that workers' remittances have contributed to the Turkish economy. Although they have been mostly used for consumption and imports as mentioned in most of the studies both for Turkey and other countries, remittances contributed to economic growth of Turkey positively through the multiplier process especially in the early 1970s.

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APPENDICES

APPENDIX A

DYNAMIC MULTIPLIERS

In Intriligator (1996:31), dynamic or interim multiplier is explained with an example in details. Thus, it will be appropriate to show an example for the derivation of the dynamic multipliers.

Assume that, in a simultaneous equations model the equations are estimated and reduced form equations are obtained. Let a reduced form equation for any variable, which can be Y, can be given as the following:

$$Y_t = \phi_1 Y_{t-1} + \phi_2 X_t + \phi_{3+} u_t \qquad (1)$$

It should be noted that (1) implies that:

$$Y_{t-1} = \phi_1 Y_{t-2} + \phi_2 X_{t-1} + \phi_{3+} u_{t-1} \qquad (2)$$

Dynamic multiplier and long-run multiplier can be calculated by making some iteration.

Substituting (2) into (1) yields:

$$Y_t = \phi_1^2 Y_{t-2} + \phi_2 (X_t + \phi_1 X_{t-1}) + \phi_3 (1 + \phi_1) + (u_t + \phi_1 u_{t-1}) \qquad (3)$$

Similarly, determining Y_{t-2} from (1) and inserting the result in (3) yields:

$$Y_t = \phi_1^3 Y_{t-3} + \phi_2 (X_t + \phi_1 X_{t-1} + \phi_1 X^2_{t-2}) + \phi_3 (1 + \phi_1 + \phi_1^2) + (u_t + \phi_1 u_{t-1} + \phi_1^2 u_{t-2}) \qquad (4)$$

By continuing this process of iteration back to the base year, t=0, the general form is produced as follows:

$$Y_t = \phi_1^{t}Y_{t-3}+\phi_2 (X_t +\phi_1 X_{t-1} +\phi_1 X^2_{t-2} +\ldots+\phi_1^{t-1}X_1)+\phi_3(1+ \phi_1+ \phi_1^2+\ldots+\phi_1^{t-1})+(u_t + \phi_1 u_{t-1} +\phi_1^2 u_{t-2}+\ldots+\phi_1^{t-1}u_1) \quad (5)$$

In the above expression, it is seen that the direct impact of X_t on Y_t which is the impact multiplier, is ϕ_2 . The next term represents the indirect effects of X_{t-1} on Y_t and this continues to past periods. These effects are the dynamic multipliers. For instance, the effect of a change in X_t in the preceding period on Y_t in the current period can be clearly seen from (5) as:

$$\partial Y_t/\partial X_{t-1}=\phi_1\phi_2$$

In this analysis, the emphasis is on how a change in X_t in the preceding periods affects Y_t. However, as mentioned in Stewart and Gill (1998:184-185), it is sometimes more appropriate to examine the impact of a change in the current X_t on future values of Y_t. In our thesis, it is found to be more useful to look at the impact of a change in the remittances in the current period on future values of endogenous variables.

APPENDIX B

TABLES

Table B.1. Recruitment and Social Security Agreements of Turkey, 1961-2000

	Recruitment Agreements	**Social Security Agreements**
United Kingdom	-	09 September 1961
Federal Republic of Germany	30 October 1961*	30 April 1964
Austria	15 May 1964	1. 12 October 1966 2. 28 October 1999
Belgium	16 July 1964	4 July 1966
Netherlands	19 August 1964	5 April 1966
Switzerland	-	1 May 1969
France	8 April 1965	20 January 1972
Sweeden	10 March 1967	2 September 1977
Norway	-	20 July 1978
Australia	5 October 1967	-
Macedonia	-	06 July 1998
Turkish Rep. Of Northern Cyprus	-	09 March 1987
Denmark	-	1. 13 November 1970 2.22 October 1976
Libya	5 January 1975	1. 20 March 1976 2. 13 September 1984

***** Agreement was revised at 30 September 1964.

Source: Gökdere, 1978; Turkish Ministry of Labour and Aydaş (2002)

Table B.2. Turkish Workers Sent Abroad Through Turkish Employment Service (1961-2003)

Years	Germany	Austria	Belgium	France	Netherlands	Switzerland	Australia
1961	1476	0	0	0	0	0	0
1962	11025	160	0	0	0	0	0
1963	23436	937	5605	63	251	36	0
1964	54902	1434	6651	25	2958	193	0
1965	45572	1973	1661	0	2181	122	0
1966	32580	469	0	0	1208	153	0
1967	7199	1043	0	0	48	215	0
1968	41409	673	0	0	875	97	107
1969	98142	973	0	191	3404	183	970
1970	96936	10622	431	9036	4843	1598	1186
1971	65684	4620	583	7897	4853	1342	879
1972	65875	4472	113	10610	744	1312	640
1973	103793	7083	265	17544	1994	1109	886
1974	1228	2501	555	10577	1503	770	1138
1975	640	226	59	25	32	229	401
1976	2101	672	72	6	98	281	339
1977	2413	583	45	15	85	246	542
1978	1333	54	41	13	48	326	549
1979	933	23	27	11	40	406	407
1980	764	944	35	21	32	549	409
1981	274	184	13	6	31	379	321
1982	75	12	2	9	2	163	125
1983	43	7	2	4	4	209	181
1984	17	2	3	0	5	69	145
1985	23	16	7	4	5	110	250
1986	17	52	0	3	12	137	391
1987	27	74	2	4	18	83	422
1988	85	34	1	6	19	96	372
1989	51	142	3	7	21	38	271
1990	62	423	15	14	31	64	255
1991	49	315	2	33	22	66	308
1992	1685	239	7	21	21	52	208
1993	1999	82	2	8	12	32	166
1994	2032	10	1	17	12	13	139
1995	2246	16	1	13	13	18	248
1996	2443	5	2	16	5	31	97
1997	1800	1	2	9	2	13	21
1998	1734	1	0	33	1	10	4
1999	2350	1	1	25	2	5	11
2000	2135	1	1	87	1	1	4
2001	2437	5	1	202	2	1	5
2002	3367	2	0	341	131	2	11
2003	3366	11	2	422	431	0	4
Total	**685758**	**41097**	**16213**	**57318**	**25998**	**10759**	**12412**

Table B.2. Turkish Workers Sent Abroad Through Turkish Employment Service (1961-2003) (Cont'd).

Years	Iraq	Libya	Saudi Arabia	Jordan	Yemen	Other Countries	Total
1961	0	0	0	0	0	0	1476
1962	0	0	0	0	0	0	11185
1963	0	0	0	0	0	0	30328
1964	0	0	0	0	0	13	66176
1965	0	0	0	0	0	11	51520
1966	0	0	0	0	0	0	34410
1967	0	92	342	0	0	8	8947
1968	0	0	0	0	0	43	43204
1969	0	0	87	0	0	25	103975
1970	0	19	1	0	0	4903	129575
1971	0	58	45	0	0	2481	88442
1972	0	86	28	0	0	1349	85229
1973	0	664	4	0	0	2478	135820
1974	0	1015	0	0	0	924	20211
1975	0	2121	251	0	0	435	4419
1976	0	4098	1832	0	0	1059	10558
1977	0	8582	4722	0	0	1853	19084
1978	0	7726	5769	0	0	2993	18852
1979	0	9825	8522	0	0	3436	23630
1980	0	15090	5643	0	0	5016	28503
1981	10467	30667	14379	251	0	1781	58753
1982	8906	26686	12325	298	0	514	49388
1983	7367	23292	20238	321	0	263	52470
1984	2430	16410	25985	185	390	172	45815
1985	1612	9680	35067	10	381	120	47353
1986	2160	8381	23771	88	337	209	35608
1987	1729	10986	27109	0	39	167	40807
1988	3717	13194	34645	27	308	244	53021
1989	2549	12608	32319	2	139	1375	49928
1990	1274	8606	33077	0	5	3783	47707
1991	0	4728	40782	1	0	6525	53020
1992	0	2432	46467	0	0	8403	60000
1993	0	2549	35826	0	0	22313	63244
1994	0	1869	13050	5	0	43939	61145
1995	0	1753	14529	0	0	40390	59483
1996	0	2063	5635	80	0	30313	40697
1997	0	1833	7657	15	0	21963	33321
1998	0	1032	6821	0	0	16266	25907
1999	0	698	5178	20	0	9184	17475
2000	0	385	1862	166	0	9002	13645
2001	37	238	4657	203	0	12443	20242
2002	191	1037	6399	234	0	15156	26916
2003	601	2515	6064	368	104	20605	34151
Total	**43040**	**233018**	**481088**	**2274**	**1706**	**292157**	**1905640**

Source: Turkish Employment Organization, Turkish Ministry of Labour and Social Security, Statistical Yearbook 2003.

Table B.3. Numbers of Turkish Citizens, Turkish Workers and the Unemployment Rates Abroad (2003).

Country	No.of Resident Turkish Citizens	No.of Workers	No.of Unemployed Persons	Unemployment Rate (Turkish Workers) (%)	General Unemployment Rate (%)
A) WESTERN EUROPE					
Germany	2053600	732189	161541	23.30	9.60
France	311356	76122	32623	30.00	9.20
Holland*	299909	51000	17000	28.00	4.10
Austria	134229	57098	6874	10.75	6.54
Belgium	70701	25874	9936	38.00	10.00
Sweden	38844	5800	1700	22.50	4.00
United Kingdom	79000	44000	-	11.50	3.60
Denmark	35232	15596	3449	22.40	5.70
Italy	10000	-	-	-	10.50
Finland	3325	-	-	-	15.90
Spain	1000	-	-	-	23.30
Luxemburg	210	60	-	-	2.30
Switzerland	79476	33764	3021	8.10	1.90
Norway	10000	6000	-	-	4.50
Liechtenstein	809	339	49	7.80	4.00
SUB-TOTAL	3127691	1047842	236193		
B) TURKISH REPUBLICS					
Azerbaijan	5000	2000	-	-	-
Turkmenistan	5000	-	-	-	-
Uzbekistan	3700	1881	-	-	-
Kazakhstan	7000	-	-	-	-
Kyrgyzstan	2050	1500	-	-	-
Tajikistan	300	-	-	-	-
SUB-TOTAL	23050	5381	-	-	-
C) MIDDLE EAST AND NORTH AFRICA					
Saudi Arabia	100000	95000	-	-	-
Libya	2650	2130	-	-	-
Kuwait	3000	2750	-	-	-
Jordan	1130	200	-	-	-
Qatar	400	400	-	-	-
SUB-TOTAL	107180	100480	-	-	-
D) OTHER COUNTRIES					
Russia	30000	10514	-	-	-
Belarus	70	4	-	-	-
Georgia	1200	500	-	-	-
Ukraine	800	350	-	-	-
Moldova	200	-	-	-	-
Israel	10000	-	-	-	-
Japan	1729	1729	-	-	-
United States	130000	-	-	-	-
Canada	35000	-	-	--	-
Australia	52620	13500	2278	20.00	6.60
South Africa	500	250	-	-	-
SUB-TOTAL	262119	26847	2278	-	-
TOTAL	3520040	1180550	238471	-	-

Source: Turkish Ministry of Labour, http://www.calisma.gov.tr/yih/yurtdisi_isci.htm

Table B.4. Remitances, Selected Indicators and Relative Share of Remittances in Selected Indicators (1964-2003) (Millions of dollars)

Years	Work.Rem.	GDP	Imports	Exports	Imp. -Ex.
1964	9	7841	537	411	126
1965	70	8442	572	464	108
1966	115	10058	718	491	228
1967	93	11168	685	522	162
1968	107	18168	764	496	267
1969	141	20307	801	537	264
1970	273	18128	948	588	359
1971	471	17027	1171	677	494
1972	740	21776	1563	885	678
1973	1183	27391	2086	1317	769
1974	1426	37846	3778	1532	2245
1975	1312	47109	4739	1401	3337
1976	982	54032	5129	1960	3168
1977	982	61497	5796	1753	4043
1978	983	67819	4599	2288	2311
1979	1694	75915	5069	2261	2808
1980	2071	68797	7909	2910	4999
1981	2490	71671	8933	4703	4230
1982	2140	65193	8843	5746	3097
1983	1513	62071	9235	5728	3507
1984	1807	60291	10757	7134	3623
1985	1714	67707	11343	7958	3385
1986	1634	76306	11105	7457	3648
1987	2021	87324	14158	10190	3968
1988	1776	90954	14335	11662	2673
1989	3040	107189	15792	11625	4167
1990	3246	150735	22302	12959	9343
1991	2819	151113	21047	13593	7454
1992	3008	158746	22871	14715	8156
1993	2919	180400	29428	15345	14083
1994	2627	130231	23270	18106	5164
1995	3327	169956	35709	21637	14072
1996	3542	181958	43627	23224	20402
1997	4197	190426	48559	26261	22298
1998	5356	200835	45921	26974	18947
1999	4529	185390	40671	26587	14084
2000	4560	199733	54503	27775	26728
2001	2786	145890	41399	31334	10065
2002	1936	184484	51554	36059	15495
2003	2321	240595	69340	47253	22087

Table B.4. Remitances, Selected Indicators and Relative Share of Remittances in Selected Indicators (1964-2003) (Cont'd).

Work.Rem as a percentage of				
Years	**GDP**	**Imports**	**Exports**	**Imp. -Ex.**
1964	0.1	1.7	2.2	7.1
1965	0.8	12.2	15.1	64.7
1966	1.1	16.0	23.4	50.5
1967	0.8	13.6	17.8	57.3
1968	0.6	14.0	21.6	40.0
1969	0.7	17.6	26.3	53.3
1970	1.5	28.8	46.4	76.0
1971	2.8	40.2	69.6	95.3
1972	3.4	47.4	83.6	109.2
1973	4.3	56.7	89.8	153.8
1974	3.8	37.7	93.1	63.5
1975	2.8	27.7	93.6	39.3
1976	1.8	19.1	50.1	31.0
1977	1.6	16.9	56.0	24.3
1978	1.4	21.4	43.0	42.5
1979	2.2	33.4	74.9	60.3
1980	3.0	26.2	71.2	41.4
1981	3.5	27.9	52.9	58.9
1982	3.3	24.2	37.2	69.1
1983	2.4	16.4	26.4	43.1
1984	3.0	16.8	25.3	49.9
1985	2.5	15.1	21.5	50.6
1986	2.1	14.7	21.9	44.8
1987	2.3	14.3	19.8	50.9
1988	2.0	12.4	15.2	66.4
1989	2.8	19.3	26.2	72.9
1990	2.2	14.6	25.0	34.7
1991	1.9	13.4	20.7	37.8
1992	1.9	13.2	20.4	36.9
1993	1.6	9.9	19.0	20.7
1994	2.0	11.3	14.5	50.9
1995	2.0	9.3	15.4	23.6
1996	1.9	8.1	15.3	17.4
1997	2.2	8.6	16.0	18.8
1998	2.7	11.7	19.9	28.3
1999	2.4	11.1	17.0	32.2
2000	2.3	8.4	16.4	17.1
2001	1.9	6.7	8.9	27.7
2002	1.0	3.8	5.4	12.5
2003	1.0	3.3	4.9	10.5

Source: State Institute of Statistics, Statistical Yearbook of Turkey, 2002, and SPO, Economic and Social Indicators (1950-2003).

Table B.5. Percentage of returned Turkish migrant workers who reported buying certain goods with their savings, S.P.O. survey, 1971.

			Total		Urban		Rural	
			No.		No.		No.	
			%		%		%	
Building Plot			23	6	12	6	6	4
House	A		2	1	2	1	-	-
	T		107	30	56	27	51	33
Property			12	33	3	2	9	6
Marriage			19	5	16	8	3	2
Household	A		61	17	47	23	14	9
	T		19	5	6	3	13	8
Car	A		22	6	17	8	5	3
	T		9	3	7	3	2	1
Clothes			140	39	82	40	58	38
Radio	A		138	38	61	30	57	37
Tape Recorder, Record Player			54	15	41	20	13	9
Camera/Watch			6	2	3	2	3	2
Cooker/Fridge/Sew.Machine			4	1	1	1	3	2
Presents			5	1	5	2	-	-
Field/Orchard			41	11	7	3	34	22
Tractor			4	1	-	-	4	3
Agricultural Mac.	A		3	1	-	-	3	2
	T		11	3	-	-	11	7
Farmstock: Livestock/Bees/Wheat			6	2	1	1	8	3
Shop			9	3	6	3	3	2
Café/Hotel			3	1	2	1	1	1
Buying Stock			7	2	3	1	4	3
Workshop			3	1	3	1	-	-
Industrial Mach.	A		6	2	8	2	1	1
	T		20	6	12	6	8	5
Bicycle			3	1	3	2	-	-
Motorcycle			5	1	2	1	3	2
Bus/Lorry			8	2	2	1	6	4
Bank			14	4	10	5	3	2
Debts			30	8	14	7	16	10
Illness/Doctor			5	1	4	2	1	1
Tourism			8	2	7	3	1	1
Children's education			1	-	-	-	1	1

The data in this table represent minimum frequencies. Percentages are of workers who chose to mention that they had bought the good in question. They therefore do not add to 100. A Abroad , T Turkey.

Source: Paine (1974:118)

Table B.6. The Ways of Spending Remittances by Region and Household Migration Status in Turkey. (TIMS-96).

Migration Status/remittances	Developed-Established Migration Region (1)	Less Developed-Established Migration Region (2)	Developed-Recent Migration Region (3)	Less Developed-Recent Migration Region (4)	Total
Current migrant hh					
Daily expenses	80,0	82,5	64,3	64,7	75,0
Land/house	0,0	2,5	0,0	5,9	2,6
Medical expenses	0,0	2,5	28,6	11,8	9,2
Marriage expenses	0,0	7,5	0,0	0,0	3,9
Other items	20,0	5,0	7,1	17,6	9,2
Recent current migrant hh					
Daily expenses	75,0	75,0	66,7	71,4	72,4
Land/house	0,0	3,6	0,0	7,1	3,4
Medical expenses	0,0	3,6	25,0	14,3	10,3
Marriage expenses	0,0	10,7	0,0	0,0	5,7
Other items	25,0	7,1	8,3	7,1	8,6
Non-recent current migrant hh					
Daily expenses	50,0	100,0	0,0	33,3	76,5
Land/house	0,0	0,0	100,0	0,0	0,0
Medical expenses	0,0	0,0	0,0	0,0	5,9
Marriage expenses	0,0	0,0	0,0	0,0	0,0
Other items	50,0	0,0	0,0	66,7	17,6
Return migrant hh					
Daily expenses	75,0	80,0	0,0	100,0	76,7
Land/house	25,0	0,0	0,0	0,0	3,3
Medical expenses	0,0	0,0	33,3	0,0	3,3
Marriage expenses	0,0	13,3	0,0	0,0	6,7
Other items	0,0	6,7	66,7	0,0	10,0
Recent return migrant hh					
Daily expenses	66,7	90,0	0,0	100,0	73,7
Land/house	33,0	0,0	0,0	0,0	5,3
Medical expenses	0,0	0,0	33,3	0,0	5,3
Marriage expenses	0,0	0,0	0,0	0,0	0,0
Other items	0,0	10,0	66,7	0,0	15,8

Table B.6. The Ways of Spending Remittances by Region and Household Migration Status in Turkey. (TIMS-96). (Cont'd).

Migration Status/remittances	Developed-Established Migration Region (1)	Less Developed-Established Migration Region (2)	Developed-Recent Migration Region (3)	Less Developed-Recent Migration Region (4)	Total
Non-recent return migrant hh					
Daily expenses	100,0	50,0	-	100,0	80,0
Land/house	0,0	0,0	-	0,0	0,0
Medical expenses	0,0	0,0	-	0,0	0,0
Marriage expenses	0,0	50,0	-	0,0	20,0
Other items	0,0	0,0	-	0,0	0,0
Non-migrant hh					
Daily expenses	86,7	94,7	57,1	83,3	84,9
Land/house	0,0	0,0	0,0	16,7	3,8
Medical expenses	0,0	5,3	42,9	0,0	7,5
Marriage expenses	6,7	0,0	0,0	0,0	1,9
Other items	6,7	0,0	0,0	0,0	1,9
Total					
Daily expenses	83,3	86,1	59,1	78,4	80,0
Land/house	4,2	1,4	0,0	8,1	3,2
Medical expenses	0,0	2,8	31,8	5,4	7,1
Marriage expenses	4,2	6,9	0,0	0,0	3,9
Other items	8,3	2,8	9,1	8,1	5,8

1.Region mostly includes the Western part of Turkey (Denizli, Uşak etc.)

2.Region refers the Central Anatolia (Aksaray, Yozgat etc.)

3.Region refers to Eastern part of Turkey (Gaziantep, Kahramanmaraş etc.)

4.Region refers to Southeastern part of the country (Adıyaman, Urfa etc.)

Source: Koç and Onan (2001)

Table B.7. Data Used In the Model

	R	Cp	Cg	Inv	K	Ex	Im
1964	21	19499	1236	3751	3751	1462	1883
1965	157	19998	1295	3742	7493	1501	1874
1966	238	21819	1391	5014	12507	1677	2340
1967	169	22494	1512	5065	17571	1818	2157
1968	183	24132	1614	5597	23169	1820	2538
1969	230	25410	1719	5753	28922	1945	2586
1970	520	25977	1781	6939	35861	2223	3155
1971	985	28317	1888	6334	42196	2567	3461
1972	1267	30144	2027	7299	49495	2941	4119
1973	1777	30582	2200	8239	57735	3455	4935
1974	1702	28203	2383	13194	70929	3127	5154
1975	1341	30555	2914	13723	84652	3338	5782
1976	947	33457	3379	15060	99713	4127	6593
1977	845	40024	3508	11156	110869	2811	6386
1978	705	40814	3408	8559	119429	3577	4476
1979	950	40325	3326	8723	128152	3334	4150
1980	1461	42703	2711	8724	136876	3184	7024
1981	1873	39459	4035	11942	148818	5205	7902
1982	1819	42166	3607	10423	159242	6976	8554
1983	1362	45007	4204	10232	169474	7891	10002
1984	1784	48654	4284	10320	179794	9898	11975
1985	1664	48358	4889	12005	191798	9707	11183
1986	1519	51179	5341	13306	205104	9212	10788
1987	1730	51019	5845	19179	224282	11642	13269
1988	1500	51638	5783	17606	241888	13786	12670
1989	2339	51105	5831	19221	261109	13751	13543
1990	1915	57803	6297	23183	284292	14102	18014
1991	1605	59366	6528	20825	305117	14627	17074
1992	1658	61282	6765	23549	328665	16236	18938
1993	1555	66545	7344	30733	359399	17484	25715
1994	1841	62962	6938	21652	381051	20138	20090
1995	1893	66011	7411	28595	409646	21746	26033
1996	1987	71614	8047	30135	439781	26521	31376
1997	2370	77620	8379	33717	473498	31593	38417
1998	2811	78113	9036	33322	506820	35383	39313
1999	2321	76077	9623	30369	537189	32890	37876
2000	2239	80774	10310	36363	573552	39198	47498
2001	1741	73356	9430	21084	594636	42097	35700
2002	1026	74894	9940	28653	623288	46787	41350
2003	973	79862	9697	34496	657784	54264	52541

Table B.7. Data Used In the Model (Cont'd)

	GDP	Stat.dev	Y	CPI	Dum74	Dum2001	Dum
1964	23913	-151.7	23934	0.004	0	0	0
1965	24539	-122.9	24696	0.004	0	0	0
1966	27413	-148.3	27651	0.004	0	0	0
1967	28647	-84.7	28815	0.005	0	0	0
1968	30562	-62.9	30745	0.005	0	0	0
1969	32191	-51.0	32420	0.006	0	0	0
1970	33765	0.1	34286	0.006	0	0	0
1971	35645	0.1	36630	0.007	0	0	0
1972	38292	0.1	39559	0.008	0	0	0
1973	39541	0.0	41319	0.009	0	0	0
1974	41754	0.0	43456	0.012	1	0	1
1975	44749	0.0	46089	0.014	0	0	0
1976	49431	0.0	50378	0.016	0	0	0
1977	51114	0.1	51958	0.021	0	0	0
1978	51883	0.1	52588	0.034	0	0	1
1979	51559	0.1	52509	0.055	0	0	0
1980	50298	0.0	51758	0.107	0	0	1
1981	52740	0.0	54612	0.147	0	0	1
1982	54619	-0.1	56437	0.189	0	0	1
1983	57333	-0.1	58695	0.249	0	0	0
1984	61181	-0.2	62965	0.369	0	0	0
1985	63776	-0.1	65440	0.535	0	0	0
1986	68250	-0.1	69769	0.720	0	0	0
1987	74722	305.8	76452	1.000	0	0	0
1988	76306	163.0	77806	1.688	0	0	0
1989	76498	134.2	78838	2.756	0	0	0
1990	83578	207.8	85493	4.418	0	0	0
1991	84353	81.8	85958	7.333	0	0	0
1992	89401	508.0	91059	12.472	0	0	0
1993	96590	199.8	98145	20.716	0	0	0
1994	91321	-279.0	93161	42.512	0	0	1
1995	97888	158.1	99781	80.396	0	0	0
1996	104745	-194.8	106733	145.044	0	0	0
1997	112631	-260.9	115001	269.303	0	0	0
1998	116114	-427.6	118925	497.244	0	0	0
1999	110646	-437.0	112967	819.793	0	0	0
2000	118789	-357.6	121029	1269.986	0	0	0
2001	109885	-381.5	111626	1960.861	0	1	1
2002	118612	-310.6	119638	2842.545	0	0	0
2003	125485	-292.9	126458	3562.247	0	0	0

Note: R: Remittances, Cp: Private consumption expenditures, Cg: Government consumption expenditures, Inv: Gross fixed capital formation, K: Capital Stock, Ex: Export, Im: Import, Stat.dev: Statistical Discrepancy, Y:GDP+Remittances, CPI: Consumer Price Index, Billions of TL.

Source: OECD Economic Outlook, SPO Economic and Social Indicators (1950-2003).

Table B.8. Long-term Effects of Current Changes in Remittances on Output.

Years	Rate of Growth of Remittances	Rate of Growth of Output (%Y)	Induced Change in Output	Elasticity
1968	8.5	6.7	0.23	0.03
1969	25.6	5.4	0.33	0.01
1970	126.3	5.8	1.88	0.01
1971	89.3	6.8	3.20	0.04
1972	28.6	8.0	2.38	0.08
1973	40.3	4.4	3.53	0.09
1974	-4.2	5.2	0.61	-0.15
1975	-21.2	6.1	-1.24	0.06
1976	-29.3	9.3	-1.84	0.06
1977	-10.8	3.1	-1.00	0.09
1978	-16.6	1.2	-1.06	0.06
1979	34.8	-0.1	0.61	0.02
1980	53.7	-1.4	2.06	0.04
1981	28.2	5.5	2.12	0.08
1982	-2.9	3.3	0.51	-0.17
1983	-25.1	4.0	-1.24	0.05
1984	30.9	7.3	1.35	0.04
1985	-6.7	3.9	-0.40	0.06
1986	-8.7	6.6	-0.50	0.06
1987	13.9	9.6	0.65	0.05
1988	-13.3	1.8	-0.62	0.05
1989	56.0	1.3	2.17	0.04
1990	-18.1	8.4	-0.74	0.04
1991	-16.2	0.5	-0.69	0.04
1992	3.3	5.9	0.08	0.03
1993	-6.2	7.8	-0.45	0.07
1994	18.4	-5.1	0.50	0.03
1995	2.8	7.1	0.21	0.08
1996	5.0	7.0	0.28	0.06
1997	19.2	7.7	0.86	0.04
1998	18.6	3.4	0.96	0.05
1999	-17.4	-5.0	-0.59	0.03
2000	-3.5	7.1	-0.10	0.03
2001	-22.3	-7.8	-0.92	0.04
2002	-41.1	7.2	-1.64	0.04
2003	-5.1	5.7	-0.47	0.09