

**EMU, EURO and EU-Membership:
An Evaluation from the Turkish Macroeconomic Perspective**

by

Aykut Kibritçiođlu
Department of Economics
Faculty of Political Sciences
Ankara University
06590 Cebeci, Ankara, Turkey
kibritci@dialup.ankara.edu.tr

Abstract: As a result of the macroeconomic convergence process in the light of the 1991 Maastricht Treaty, the monetary union between most of the EU countries started on January 1, 1999. Meanwhile, ten formerly eastern block countries and the Southern Section of Cyprus are preparing their economy for a full-membership to the EU while Turkey, as an associate-member of the Union since 1963 and as a part of customs union between Turkey and the EU since 1996, seems to be excluded from the next EU enlargement process. Therefore, this paper mainly intends to discuss the following two interrelated questions: (1) How far is Turkey different than the 11 membership candidate countries and the EU countries in terms of the ten selected macroeconomic indicators (1973-1997)? (2) To what extent will the introduction of the euro affect the balance-of-payments accounts and foreign exchange rates in Turkey?

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Aykut Kibritçiođlu
Ankara University, Turkey

1. INTRODUCTION

The economic integration attempts of Turkey into the European Union (EU) economies have an older history than it is commonly believed in the rest of the world. The customs union, which is created between Turkey and the EU countries on January 1, 1996, was still an implication of both the Association Agreement from 1963 in Ankara and the Additional Protocol from 1970/73 defining a concrete timetable with measures aimed at the creation over a 22-year period. The planned three-stage transition-process in order to establish a customs union between the parts has been delayed several times due to the political, social and macroeconomic problems in Turkey, and the political resistance against Turkey in some of the EU countries. In 1989, after two years following the full-membership application of Turkey to the EU, the European Commission declared its negative opinion on the application. Therefore, Turkey has a unique position in the history of economic integration now: She is the first and only country in the whole world that is a part of a customs union but excluded from the full-membership process and decision mechanisms within the union. In other words, it is true that Turkey is still a part of a customs union, but she can not influence the foreign trade policies that are decided within the EU and imposed to herself in order to realize as a part of the customs union.¹

The rejecting declaration of the EU regarding the full-membership application of Turkey in 1989 was mainly based on the following four official (and unofficial) arguments: (1) The democratization process in Turkey has some weaknesses. The human rights "violations" in the country must be

eliminated. (2) The political problems between the Turkish and Greek sections of the Cyprus island, and further between Turkey and Greece, must be solved before Turkey and/or "Cyprus" can participate in the EU. (3) Macroeconomic problems, such as existing high inflation rates in Turkey, hinder her from being a full-member of the EU. (4) Turkey is the only applicant country that has a Muslim majority in the population. This characteristic of the country underlines her main cultural difference in her relations with the EU and the potential member countries.

In the Agenda 2000, on the other hand, it is accepted that "the customs union has demonstrated the Turkish economy's ability to cope with the competitive challenge of free trade in manufactured goods", but is argued that Turkey is still not ready for full-membership because of both economic (macroeconomic instability and structural weaknesses) and political (development of democracy, human rights, relations with Greece, etc.) problems.

Furthermore, the next possible enlargement process of the EU, following the accession of Austria, Finland and Sweden to the Union in 1995, seems to cover only Southern Section of Cyprus and five of the Central and Eastern European countries (CC1), namely Poland, Hungary, the Czech Republic, Slovenia and Estonia, and not Turkey, which in fact has signed an association agreement with the EU much earlier than the above mentioned applicant countries (see Table 1). In addition to that, until December 1999, Turkey also seemed to be excluded from the list of the second group of candidate countries (CC2), which includes Romania, Bulgaria, the Slovak Republic, Lithuania and Latvia.²

In this context, it seems to be interesting to compare the political, social and economic situations in Turkey with that of the 11 candidate countries (CC = CC1 + CC2).³ One of the main purposes of this study is to investigate Turkey's and CCs' degrees of sufficiency for EU membership and to find out the dis/similarities between the considered 12 countries and the EU countries from a pure macroeconomic perspective. By restricting the comparisons only to the macroeconomic variables for the period between 1993-1997, I shall try to answer the following set of interrelated questions in the next section of this study: Do the CCs have better and stable macroeconomic conditions in comparison to Turkey? Do they or any one of them have a more similar macroeconomic structure to the EU countries than Turkey has? Is it fair to exclude Turkey from the EU's future enlargement process simply by arguing that her macroeconomic outlook is worse than that of the CCs?

The recent developments regarding the introduction of a single currency, the so-called *euro*, as a next step of the process of European Economic and Monetary Union (EMU) imply that the start of usage of the euro on 1 January 1999 as a medium of account and then the start of circulation of the first euro note and coins since 2002 (at the latest) is or will only be possible

as a result of the successful macroeconomic convergence process of the (most of the) EU countries in the light of the Maastricht Treaty of 1991.

Recently, United Kingdom, Sweden and Denmark seem to stay out of the euro zone because of the political contradictions. Greece, on the other hand, had to improve its several macroeconomic variables for being included in the euro zone.⁴ However, neither these countries nor the potential member-countries can avoid fulfilling the Maastricht convergence criteria and/or from accessing in the euro zone, if they really want to stay as a member or will be a part of the EU. In this context, it will not be false to argue that, the Maastricht convergence criteria constitute additional and clear macroeconomic integration barriers to most of the potential EU-member countries, although it is not expected from those countries to immediately join the monetary union or fulfill the Maastricht conditions, even if their application for full-membership has been accepted.

**Table 1: Milestones in the Enlargement Process of the EU:
From Associate to Full Membership**

	<i>Associate Membership</i>	<i>Application</i>	<i>EC Opinion</i>	<i>Start of Negotiations</i>	<i>Treaty of Accession</i>	<i>Accession Date</i>
Denmark		May 1967	Sept. 1967	June 1970	Jan. 1972	Jan. 1973
Ireland		May 1967	Sept. 1967	June 1970	Jan. 1972	Jan. 1973
UK		May 1967	Sept. 1967	Dec. 1969	Jan. 1972	Jan. 1973
Greece	1962	June 1975	Jan. 1976	July 1976	May 1979	Jan. 1981
Portugal	(b)	March 1977	April 1978	Oct. 1978	June 1985	Jan. 1986
Spain	(b)	July 1977	April 1978	Feb. 1979	June 1985	Jan. 1986
Turkey	1964	April 1987	Dec. 1989			
Austria	1994 (a)	July 1989	Aug. 1991	Feb. 1993	June 1994	Jan. 1995
Cyprus	1973	July 1990	June 1993	March 1998		2002 (?)
Malta	1972	July 1990	June 1993			
Sweden	1994 (a)	July 1991	Aug. 1992	Feb. 1993	June 1994	Jan. 1995
Finland	1994 (a)	March 1992	Nov. 1992	Feb. 1993	June 1994	Jan. 1995
Norway	1994 (a)	Nov. 1992	Mar. 1993	April 1993	June 1994	
Hungary	1992	March 1994	July 1997	March 1998		2002 (?)
Poland	1992	April 1994	July 1997	March 1998		2002 (?)
Romania	1993	June 1995	July 1997			
Slovak Rep.	1992	June 1995	July 1997			
Latvia	(c)	Oct. 1995	July 1997			
Estonia	(c)	Nov. 1995	July 1997	March 1998		2002 (?)
Lithuania	(c)	Dec. 1995	July 1997			
Bulgaria	1993	Dec. 1995	July 1997			
Czech Rep.	1992	Jan. 1996	July 1997	March 1998		2002 (?)
Slovenia	1996	June 1996	July 1997	March 1998		2002 (?)

(a) Free trade agreement since 1970s (Norway, Finland, Austria since 1973, Austria since 1972).

(b) Preferential trade agreement since 1970 for Spain, and since 1972 for Portugal.

(c) Free trade agreements since 1994.

Source: Nicholaides and Boean (1997) and Temprano-Arroyo and Feldman (1998).

The second discussion in this study, which is a complementary part of the former, covers considerations on the fulfillment degree of the Maastricht

criteria by Turkey and the CCs (Section 3). Then, the international transmission channels of the potential effects of creating a new and single European currency (Section 4) and particularly its impacts on balance of payments and foreign exchange rates in Turkey (Section 5) are also discussed. Finally, in the last section, I shall summarize the main conclusions and underline some of the implications of the study for the future relations between Turkey and the EU.

2. DEGREE OF MACROECONOMIC DIS/SIMILARITIES

Some of the basic indicators of Turkey, CCs and EU countries are presented in Table 2. According to these figures, Turkey is geographically more than two times larger than the unified Germany and reaches 1/4 of the whole EU region. The largest CC, namely Poland, can not exceed 41 % of Turkey in terms of area. Furthermore, Turkey as an EU applicant country has a population, which is equal to more than 57 % of the total population of all CCs. On the other hand, her population alone corresponds to about 16 % of the total population of 15 EU countries.⁵ If we look at the figures on the GDP per capita as a percent of the EU's average GDP, the picture dramatically changes: Turkey can only produce approximately 1/3 of the EU's average GDP. This is sharply lower than that of most of the EU countries and some of the CCs. Life expectancy at birth in Turkey implies another backwardness of the country in comparison to other considered countries.

Table 3 shows consumer price inflation, unemployment rates, real GDP growth, population growth, current account balance to GDP ratio, balance of general government balance to GDP ratio, nominal long-term interest rates, increase in money supply (M2 or M3), gross government debt stock to GDP ratio and growth rate of nominal exchange rates (unit price of the US dollar in terms of national currencies) as period averages (1993-1997) in the compared 27 countries.⁶ In order to determine the relative macroeconomic positions of the countries, these indicators are combined in pairs in Graphs 1 to 5. In Table 3 and Graphs 1 to 5, four reference countries (United States, Japan, South Korea and PR China) are added to the analysis. In each of these graphs, the data combinations, which belong to the EU countries and the CCs, are located in rectangles depicted by continuous and dotted borders respectively.

Table 2: Turkey, CCs and EU Countries: Selected Basic Indicators

	<i>Population (1996, millions)</i>	<i>Surface Area (thousands of sq. km)</i>	<i>GDP per Capita (1996, as % of EU Average) *</i>	<i>Life Expectancy at Birth (1995, in years)</i>
Germany	81.6	357	109.0	76
United Kingdom	58.1	245	95.6	77
France	58.1	552	106.0	78
Netherlands	15.5	37	106.6	78
Belgium	10.1	31	110.8	77
Luxembourg	0.4		166.4	
Ireland	3.5	70	96.9	77
Italy	57.2	301	103.3	78
Spain	39.6	505	76.4	77
Denmark	5.2	43	115.1	75
Greece	10.4	132	65.4	78
Portugal	9.8	92	67.3	75
Austria	8.0	84	110.4	77
Sweden	8.8	450	99.4	79
Finland	5.1	338	95.7	76
Turkey	60.8	779	31.7	67
Poland	38.6	313	32.1	70
Hungary	10.1	93	32.1	70
Czech Republic	10.3	79	50.9	73
Slovenia	1.9	20	34.6	74
Estonia	1.5	45	24.8	70
Cyprus (South)	0.7		82.0	
Romania	22.7	238	23.6	
Bulgaria	8.5	111	18.6	71
Slovakia	5.3	49	39.1	72
Lithuania	3.7	65	18.1	69
Latvia	2.5	65	16.8	79

* PPP (The average GDP in the EU was US\$ 19250 in 1996).

Sources:

- (1) *The Economist*, Special Report on "The European Economy: A Survey", May 31st - June 6th 1997.
- (2) IMF, *World Development Report 1997*, Washington DC, pp. 214-215.

Table 3: Selected Macroeconomic Indicators
(Annual Averages of 1993-1997, in %) *

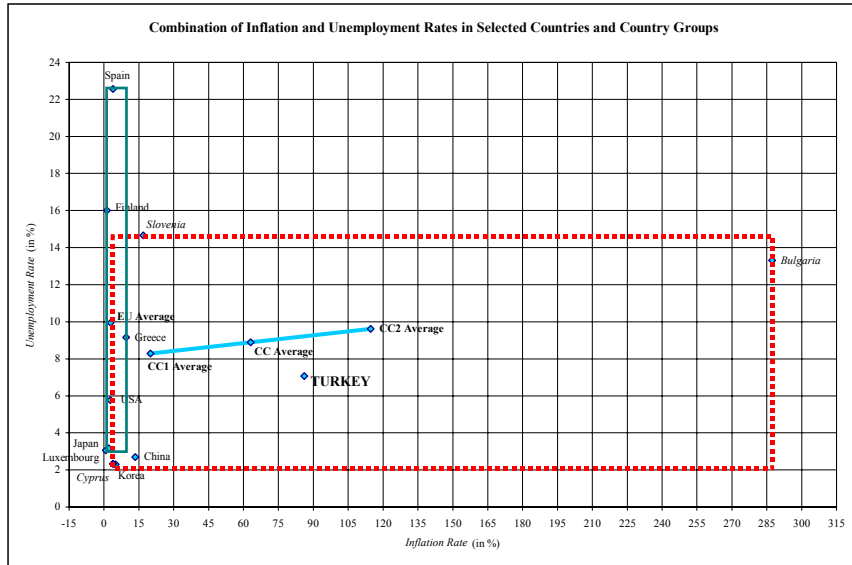
	Consumer Price Inflation	Unemployment Rate	Real GDP Growth	Population Growth	Current Account Balance / GDP	General Government Balance / GDP	Nominal Long-Term Interest Rate	Increase in Money Supply (M2 or M3)	Gross Government Debt Stock / GDP	Increase in Nominal Exchange Rate
Germany	2.3	8.6	1.4	0.35	-1.1	-3.2	6.0	6.2	55.6	2.5
U. Kingdom	2.3	8.8	3.0	0.31	-1.2	-5.4	7.9	7.0	52.2	1.7
France	1.8	12.1	1.5	0.39	1.6	-4.8	6.7	0.4	52.0	2.3
Netherlands	2.0	6.4	2.6	0.50	5.5	-2.4	6.7	3.9	77.5	2.5
Belgium	2.0	9.6	1.4	0.25	4.2	-4.4	6.9	4.7	129.8	2.6
Luxembourg	2.1	3.2	4.8	1.41	16.6	1.3	6.0	4.7	6.2	2.6
Ireland	1.9	12.8	8.2	0.58	4.2	-1.6	7.6	17.6	81.3	2.6
Italy	4.0	11.5	1.2	0.21	2.3	-6.9	9.8	3.9	122.8	7.3
Spain	3.9	22.6	1.9	0.15	-0.2	-5.6	9.0	7.9	65.4	8.0
Denmark	1.9	7.7	2.8	0.40	1.3	-1.8	7.8	5.0	73.7	2.2
Greece	9.5	9.2	1.6	0.33	-2.1	-9.5	16.4	10.9	110.3	7.8
Portugal	4.1	6.7	2.0	0.21	-2.2	-5.0	9.3	7.9	64.0	5.8
Austria	2.3	4.1	1.8	0.46	-1.4	-4.4	6.5	4.2	66.6	2.5
Sweden	2.5	9.7	1.6	0.35	0.6	-7.4	8.6	2.3	77.1	6.6
Finland	1.3	16.0	3.6	0.35	2.6	-4.8	7.1	1.2	57.8	4.2
United States	2.7	5.8	3.0	0.98	-1.8	-2.3	6.8	2.6	66.4	
Japan	0.7	3.1	1.5	0.21	2.3	-3.1	3.4	2.9	85.6	-0.3
South Korea	5.0	2.3	7.6	0.90	-2.0	1.6	11.9	16.7		4.3
PR China	13.4	2.7	11.6	1.06	-0.5	-7.4	10.5	33.1		10.0
Turkey	86.1	7.1	4.8	2.19	-1.4	-8.5	127.0	97.1	48.8	89.7
Poland	26.1	14.3	5.8	0.17	1.2	-3.0	26.4	34.6	48.7	22.0
Hungary	22.3	10.8	1.9	-0.32	-7.0	-6.3	27.3	16.1	71.1	24.0
Czech Rep.	11.5	3.6	2.9	-0.02	-2.2	-0.2	13.1	18.7	10.6	3.0
Slovenia	16.9	14.7	3.8	-0.12	1.7	-0.4	31.8	39.1	23.8	18.1
Estonia	38.9	4.1	1.7	-2.00	-5.2	-0.1	20.0	37.7	6.3	2.8
Cyprus	3.8	2.3	3.3	1.40	0.1	-2.7	8.7	12.7	53.9	3.5
Romania	123.8	9.1	2.0	-0.19	-3.1	-2.9	89.3	103.9	27.4	107.0
Bulgaria	287.3	13.3	-2.8	-0.59	-3.6	-9.1	255.0		105.5	270.7
Slovak Rep.	12.1	13.5	4.2	0.23	-1.8	-1.9	15.7	17.3	25.6	3.2
Lithuania	111.1	5.7	-2.5	-0.20	-6.3	-1.8	43.5	14.4	23.0	27.4
Latvia	39.2	6.5	-1.1	-1.36	3.8	-1.0	43.6	15.9	12.3	-3.4
EU (average)	2.9	9.9	2.6	0.42	2.0	-4.4	8.2	5.8	72.8	4.1
CC1 (ave.) **	19.9	8.3	3.2	-0.15	-1.9	-2.1	21.2	26.5	35.7	12.2
CC2 (ave.) **	114.7	9.6	0.0	-0.42	-2.2	-3.3	89.4	37.9	38.7	81.0
CC (ave) **	63.0	8.9	1.8	-0.27	-2.0	-2.7	52.2	31.0	37.1	43.5
Gen. Average	27.2	8.6	2.8	0.28	0.2	-3.7	27.6	18.3	58.7	21.4

Source: EC, IMF, CB and SIS (own calculations). For details, please see the Appendix 1 at the end of this chapter.

* It is possible that, for some of the variables and/or countries, the used period can differ from the period stated here because of the missing data.

** CC = CC1 + CC2, where CC1 = Poland + Hungary + Czech Rep. + Slovenia + Estonia + Cyprus (Greek Section) and CC2 = Romania + Bulgaria + Slovak Rep. + Lithuania + Latvia.

Graph 1: Inflation and Unemployment Rates (Annual Averages of 1993-1997, in %)

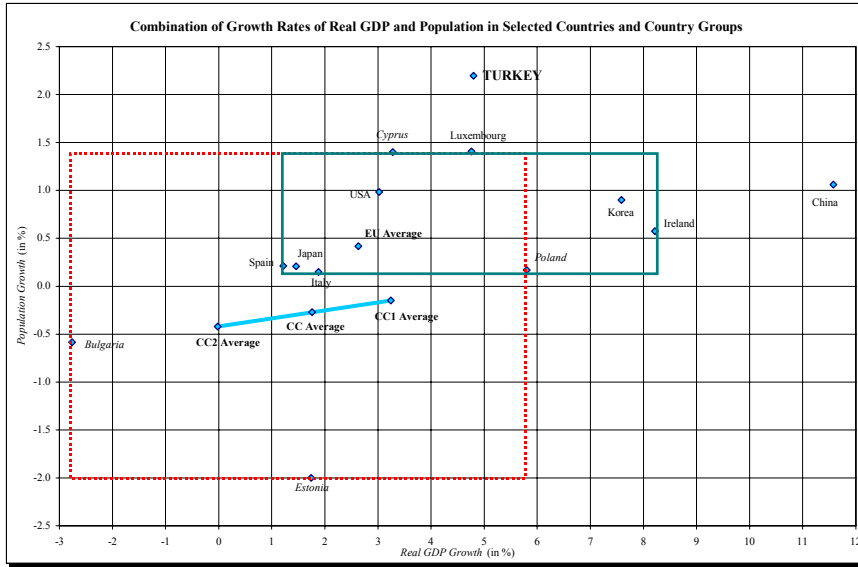


	Inflation Rate (%)	Unemployment R. (%)	
Japan	0.7	3.1	
USA	2.7	5.8	
EU (min. inflat.)	1.3	16.0	Finland
EU (min. unempl.)	2.1	3.2	Luxembourg
EU (average)	2.9	9.9	
EU (max. inflat.)	9.5	9.2	Greece
EU (max. unempl.)	3.9	22.6	Spain
South Korea	5.0	2.3	
PR China	13.4	2.7	
Turkey	86.1	7.1	
CC (min. inflat.)	3.8	2.3	Cyprus
CC (min. unempl.)	3.8	2.3	Cyprus
CC (average)	63.0	8.9	
CC (max. inflat.)	287.3	13.3	Bulgaria
CC (max. unempl.)	16.9	14.7	Slovenia
CC1 (average)	19.9	8.3	
CC2 (average)	114.7	9.6	

	Inflation Rate (%)	Unemployment R. (%)
EU (minimum)	Finland	Luxembourg
EU (maximum)	Greece	Spain
CC (minimum)	Cyprus	Cyprus
CC (maximum)	Bulgaria	Slovenia

Data Sources: EC, IMF, CB and SIS.

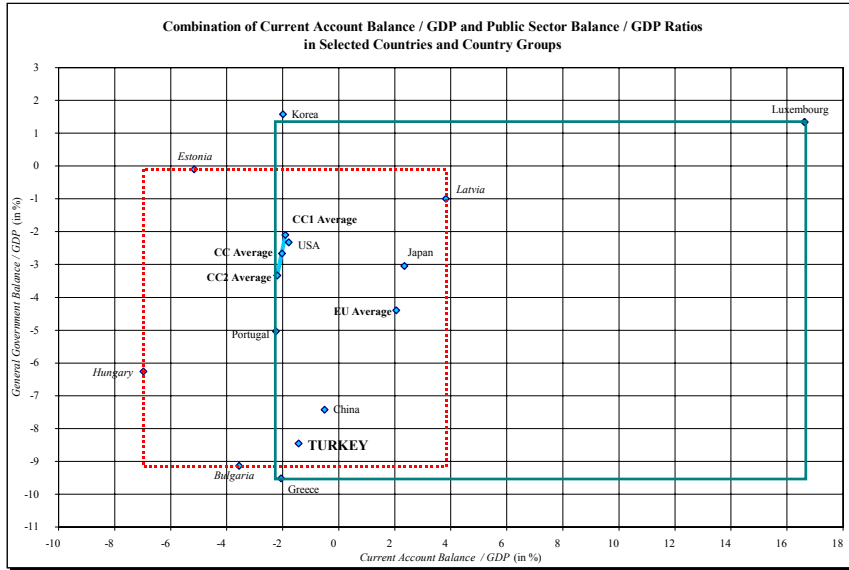
Graph 2: Annual Real GDP and Population Growth (Annual Averages of 1993-1997, in %)



	Real GDP Growth (%)	Population Gr. (%)		Real GDP Growth (%)	Population Gr. (%)
Japan	1.5	0.21	EU (minimum)	Italy	Spain
USA	3.0	0.98	EU (maximum)	Ireland	Luxembourg
EU (min. GDP gr.)	1.2	0.21	Italy	Bulgaria	Estonia
EU (min. pop. inc.)	1.9	0.15	Spain	Poland	Cyprus
EU (average)	2.6	0.42	CC (minimum)		
EU (max. GDP gr.)	8.2	0.58	CC (maximum)		
EU (max. pop. inc.)	4.8	1.41			
South Korea	7.6	0.90			
PR China	11.6	1.06			
Turkey	4.8	2.19			
CC (min. GDP gr.)	-2.8	-0.59			
CC (min. pop. inc.)	1.7	-2.00			
CC (average)	1.8	-0.27			
CC (max. GDP gr.)	5.8	0.17			
CC (max. pop. inc.)	3.3	1.40			
CC1 (average)	3.2	-0.15			
CC2 (average)	0.0	-0.42			

Data Sources: EC, IMF, CB and SIS.

Graph 3: Current Account Balance and General Government Balance to GDP (Annual Averages of 1993-1997, in %)

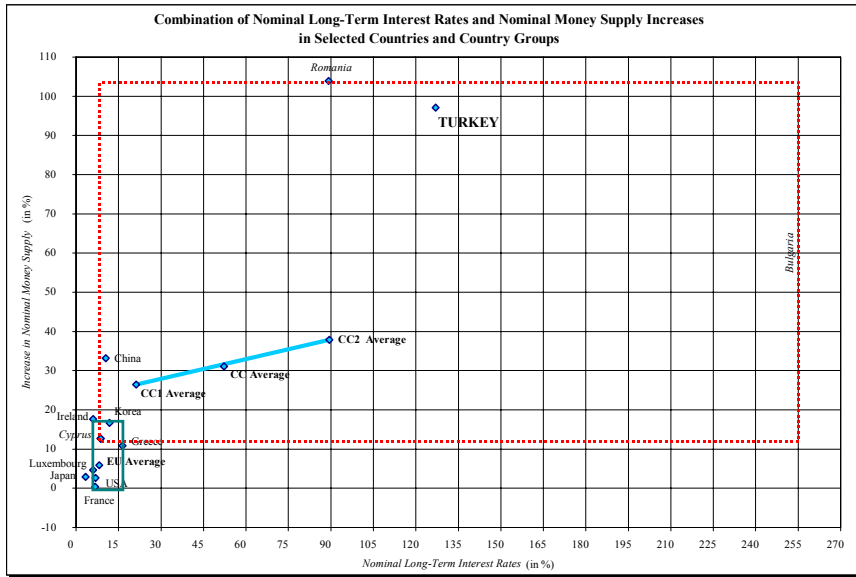


	CAB / GDP (in %)	GGB / GDP (in %)	
Japan	2.3	-3.1	
USA	-1.8	-2.3	
EU (min. CAB/GDP)	-2.2	-5.0	Portugal
EU (min. GGB/GDP)	-2.1	-9.5	Greece
EU (average)	2.0	-4.4	
EU (max. CAB/GDP)	16.6	1.3	Luxembourg
EU (max. GGB/GDP)	16.6	1.3	Luxembourg
South Korea	-2.0	1.6	
PR China	-0.5	-7.4	
Turkey	-1.4	-8.5	
CC (min. CAB/GDP)	-7.0	-6.3	Hungary
CC (min. GGB/GDP)	-3.6	-9.1	Bulgaria
CC (average)	-2.0	-2.7	
CC (max. CAB/GDP)	3.8	-1.0	Latvia
CC (max. GGB/GDP)	-5.2	-0.1	Estonia
CC1 (average)	-1.9	-2.1	
CC2 (average)	-2.2	-3.3	

	CAB / GDP (in %)	GGB / GDP (in %)
EU (minimum)	Portugal	Greece
EU (maximum)	Luxembourg	Luxembourg
CC (minimum)	Hungary	Bulgaria
CC (maximum)	Latvia	Estonia

Data Sources: EC, IMF, CB and SIS.

Graph 4: Nominal Long-Term Interest Rates and Nom. Money Supply Changes (Annual Averages of 1993-1997, in %)

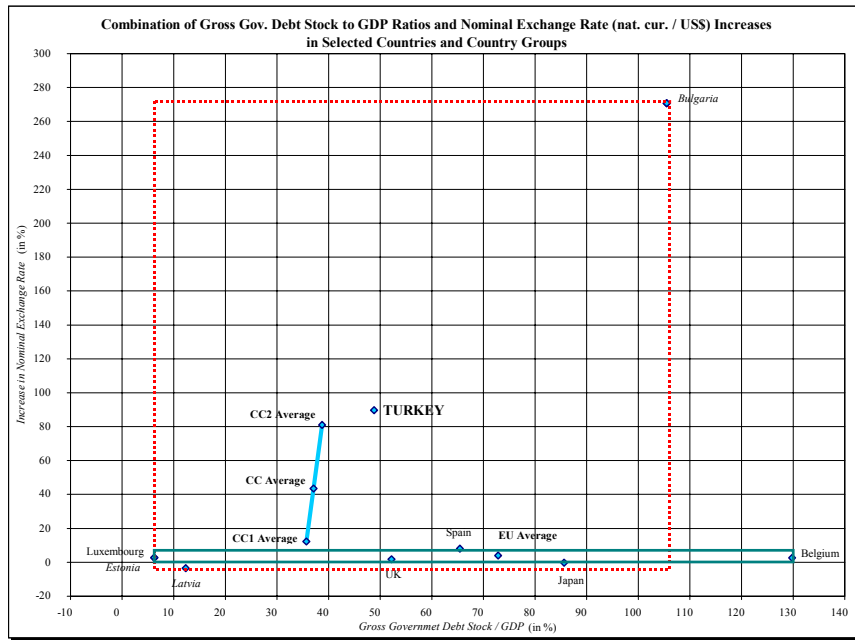


	NLT Int. Rat. (%)	NMS Increase (%)	
Japan	3.4	2.9	
USA	6.8	2.6	
EU (min. NIR)	6.0	4.7	Luxembourg
EU (min. NMSI)	6.7	0.4	France
EU (average)	8.2	5.8	
EU (max. NIR)	16.4	10.9	Greece
EU (max. NMSI)	6.0	17.6	Ireland
South Korea	11.9	16.7	
PR China	10.5	33.1	
Turkey	127.0	97.1	
CC (min. NIR)	8.7	12.7	Cyprus
CC (min. NMSI)	8.7	12.7	Cyprus
CC (average)	52.2	31.0	
CC (max. NIR)	255.0		Bulgaria
CC (max. NMSI)	89.3	103.9	Romania
CC1 (average)	21.2	26.5	
CC2 (average)	89.4	37.9	

	NLT Int. Rat. (%)	NMS Increase (%)
EU (minimum)	Luxembourg	France
EU (maximum)	Greece	Ireland
CC (minimum)	Cyprus	Cyprus
CC (maximum)	Romania	Bulgaria

Data Sources: EC, IMF, CB and SIS.

Graph 5: Gross Gov. Debt Stock / GDP and Nom. Exchange Rate Changes (Annual Averages of 1993-1997, in %)



	GGDS / GDP (%)	NER Increase (%)		GGDS / GDP (%)	NER Increase (%)
Japan	85.6	-0.3	EU (minimum)	Luxembourg	United Kingdom
USA	66.4		EU (maximum)	Belgium	Spain
EU (min. GGDS/GDP)	6.2	2.6	CC (minimum)	Estonia	Latvia
EU (min. NER)	52.2	1.7	CC (maximum)	Bulgaria	Bulgaria
EU (average)	72.8	4.1			
EU (max. GGDS/GDP)	129.8	2.6			
EU (max. NER)	65.4	8.0			
South Korea		4.3			
PR China		10.0			
Turkey	48.8	89.7			
CC (min. GGDS/GDP)	6.3	2.8			
CC (min. NER)	12.3	-3.4			
CC (average)	37.1	43.5			
CC (max. GGDS/GDP)	105.5	270.7			
CC (max. NER)	105.5	270.7			
CCI (average)	35.7	12.2			
CC2 (average)	38.7	81.0			

Data Sources: EC, IMF, CB and SIS.

All of the rectangles representing the EU zone in graphs, except that in Graph 3, have a *smaller* surface area than that of the CCs. This fact can be interpreted as an indication of the advanced macroeconomic convergence between the EU countries in comparison to that of the CCs.

On the other hand, Turkey's relative position to these country groups in five graphs gives us the possibility to answer some of the questions mentioned above. Turkey with an average inflation rate of 86.1 %, a real GDP growth rate of 4.8 %, an annual population growth rate of 2.2 % and a public sector borrowing requirement to GDP ratio of 8.5 % can be called as a relatively high-inflation and rapid-growing economy, which has large public sector deficits. These negative macroeconomic characteristic features of the Turkish economy are partly compensated by relatively lower official unemployment rates and moderate current account deficits as a percentage of GDP. Furthermore, higher currency depreciation, interest, and money-supply-growth rates must be accepted as unsurprising accompaniments of existing high inflation rates in the country since the late 1970s. In terms of the combinations in Graphs 1 to 5, Turkey's location is always inside the CCs' rectangle except the combination in Graph 2 because of the high population growth rates in the country. The combined Turkish ratios of current account balance to GDP and general government balance to GDP are even in accordance with the EU zone figures in Graph 3.

The degree of the similarity or convergence between individual countries, which are considered here, can also be analyzed by using statistical grouping techniques such as *cluster analysis*.⁷ However, in this study, I prefer to use simple correlation technique to measure the level of bilateral similarities. The correlation matrix in Table 4 has been derived from the data presented in the rows of the Table 3. Each correlation coefficient in the cells representing a different country-pair is calculated from the figures of the Table 3 under the assumption that the figures in the rows of this table can be interpreted as a data vector that implies the macroeconomic characteristics or structure of the relevant individual country.

Table 4: Degree of International Macroeconomic Similarities According to the Bilateral Correlation Coefficients *

	GER	UK	FRA	HOL	BEL	LUX	IRL	ITA	SPA	DEN	GRE	POR	AVU	SWE	FIN	USA	JAP	KOR	CHI	TUR	POL	HUN	CZE	SLN	EST	CYP	ROM	BUL	SLK	LIT	LAT	EUA	CC1A	CC2A	CCA	31CA		
Germany	GER	1.00																																				
U. Kingdom	UK	1.00																																				
France	FRA	0.99	0.99	1.00																																		
Netherlands	HOL	0.99	0.98	0.98	1.00																																	
Belgium	BEL	0.99	0.98	0.98	1.00	1.00																																
Luxembourg	LUX	0.07	0.08	0.12	0.16	0.13	1.00																															
Ireland	IRL	0.99	0.99	0.97	0.98	0.98	0.13	1.00																														
Italy	ITA	0.99	0.99	0.99	1.00	1.00	0.11	0.98	1.00																													
Spain	SPA	0.98	0.98	0.99	0.95	0.96	0.05	0.96	0.97	1.00																												
Denmark	DEN	1.00	0.99	0.99	1.00	1.00	0.11	0.99	1.00	0.96	1.00																											
Greece	GRE	0.99	0.99	0.98	0.99	0.99	0.08	0.98	0.99	0.96	0.99	1.00																										
Portugal	POR	1.00	0.99	0.98	0.98	0.99	0.06	0.98	0.99	0.97	0.99	1.00	1.00																									
Austria	AVU	1.00	0.99	0.98	0.99	1.00	0.09	0.98	1.00	0.96	1.00	1.00	1.00	1.00																								
Sweden	SWE	0.99	0.99	0.99	0.99	0.99	0.11	0.98	1.00	0.98	0.99	0.99	0.99	0.99	1.00																							
Finland	FIN	0.98	0.98	1.00	0.98	0.98	0.12	0.97	0.98	0.99	0.98	0.97	0.97	0.97	0.99	1.00																						
United States	USA	0.99	0.99	0.98	0.99	1.00	0.05	0.98	1.00	0.96	1.00	0.99	0.99	1.00	1.00	0.98	1.00																					
Japan	JAP	0.99	0.98	0.97	1.00	1.00	0.14	0.98	1.00	0.94	1.00	0.98	0.98	0.99	0.99	0.97	0.99	1.00																				
South Korea	KOR	0.57	0.63	0.07	0.27	0.28	-0.20	0.68	0.29	0.25	0.55	0.65	0.71	0.67	0.29	0.04	0.55	0.43	1.00																			
PR China	CHI	0.57	0.61	0.08	0.31	0.34	-0.08	0.71	0.35	0.29	0.46	0.67	0.70	0.65	0.34	0.06	0.43	0.51	0.87	1.00																		
Turkey	TUR	0.13	0.17	0.08	0.07	0.06	-0.13	0.09	0.10	0.13	0.09	0.21	0.20	0.13	0.13	0.05	0.14	0.05	0.72	0.69	1.00																	
Poland	POL	0.75	0.77	0.69	0.68	0.68	-0.06	0.73	0.71	0.75	0.71	0.78	0.78	0.73	0.72	0.68	0.72	0.67	0.78	0.84	0.71	1.00																
Hungary	HUN	0.90	0.90	0.87	0.86	0.86	-0.08	0.85	0.89	0.89	0.88	0.93	0.93	0.90	0.90	0.86	0.91	0.85	0.60	0.59	0.52	0.91	1.00															
Czech Rep.	CZE	0.35	0.39	0.26	0.26	0.26	-0.17	0.36	0.28	0.33	0.30	0.38	0.39	0.33	0.29	0.24	0.29	0.26	0.91	0.86	0.81	0.82	0.58	1.00														
Slovenia	SLN	0.37	0.41	0.31	0.28	0.28	-0.06	0.38	0.30	0.40	0.32	0.40	0.41	0.34	0.33	0.30	0.32	0.26	0.86	0.82	0.86	0.85	0.62	0.93	1.00													
Estonia	EST	0.01	0.04	-0.08	-0.07	-0.07	-0.24	0.01	-0.05	-0.01	-0.04	0.05	0.05	-0.01	-0.05	-0.10	-0.05	-0.07	0.72	0.78	0.74	0.59	0.28	0.88	0.73	1.00												
Cyprus	CYP	0.98	0.98	0.95	0.97	0.97	0.09	0.98	0.97	0.94	0.98	0.99	0.99	0.99	0.97	0.94	0.98	0.97	0.93	0.92	0.23	0.80	0.91	0.45	0.46	0.11	1.00											
Romania	ROM	-0.03	-0.01	-0.09	-0.10	-0.10	-0.24	-0.07	-0.06	-0.02	-0.08	0.04	0.04	-0.03	-0.04	-0.11	-0.02	-0.11	0.61	0.70	0.93	0.61	0.38	0.73	0.74	0.81	0.06	1.00										
Bulgaria	BUL	0.08	0.09	0.06	0.03	0.03	-0.21	0.00	0.08	0.09	0.05	0.16	0.15	0.09	0.11	0.03	0.15	0.02	0.57	0.71	0.96	0.63	0.50	0.73	0.76	0.76	0.13	0.99	1.00									
Slovak Rep.	SLK	0.76	0.79	0.73	0.68	0.68	-0.09	0.75	0.70	0.78	0.71	0.76	0.77	0.72	0.72	0.72	0.71	0.67	0.77	0.72	0.56	0.92	0.85	0.82	0.81	0.56	0.78	0.41	0.41	1.00								
Lithuania	LIT	0.06	0.07	0.04	0.02	0.02	-0.26	-0.02	0.05	0.06	0.03	0.13	0.11	0.07	0.07	0.01	0.07	0.02	0.23	0.32	0.65	0.47	0.39	0.53	0.39	0.74	0.09	0.77	0.83	0.39	1.00							
Latvia	LAT	0.11	0.14	0.10	0.06	0.05	0.00	0.06	0.07	0.10	0.08	0.17	0.14	0.10	0.09	0.06	0.06	0.05	0.49	0.38	0.72	0.51	0.38	0.71	0.61	0.76	0.16	0.64	0.68	0.56	0.78	1.00						
EU (ave.)	EUA	1.00	0.99	0.99	1.00	1.00	0.12	0.99	1.00	0.97	1.00	0.99	0.99	1.00	1.00	0.99	1.00	0.99	0.45	0.48	0.11	0.73	0.89	0.31	0.34	-0.03	0.98	-0.05	0.07	0.73	0.05	0.09	1.00					
CC1 (ave.) **	CC1A	0.73	0.75	0.66	0.66	0.66	-0.09	0.71	0.68	0.71	0.69	0.76	0.76	0.71	0.70	0.65	0.69	0.65	0.83	0.84	0.73	0.99	0.90	0.87	0.87	0.64	0.79	0.62	0.63	0.94	0.50	0.58	0.70	1.00				
CC2 (ave.) **	CC2A	0.09	0.11	0.07	0.04	0.04	-0.22	0.01	0.08	0.10	0.06	0.17	0.16	0.10	0.11	0.04	0.13	0.03	0.40	0.44	0.88	0.60	0.50	0.61	0.61	0.69	0.14	0.91	0.99	0.44	0.90	0.75	0.08	0.61	1.00			
CC (ave.) **	CCA	0.28	0.30	0.25	0.22	0.22	-0.20	0.21	0.26	0.29	0.24	0.36	0.35	0.28	0.29	0.22	0.31	0.21	0.51	0.54	0.91	0.76	0.66	0.73	0.73	0.73	0.34	0.91	0.96	0.62	0.86	0.77	0.27	0.77	0.97	1.00		
Ave. of All	31CA	0.85	0.86	0.82	0.81	0.81	-0.03	0.81	0.84	0.83	0.83	0.89	0.88	0.85	0.85	0.80	0.86	0.80	0.60	0.62	0.60	0.94	0.99	0.64	0.66	0.39	0.87	0.48	0.59	0.85	0.50	0.49	0.84	0.93	0.60	0.74	1.00	

Source: own calculations (Please see also Table 3).

* For Bulgaria, money supply increase is excluded from calculations of correlation coefficients because of the missing data. The ratio of gross government debt stock to GDP is also excluded for South Korea and PR China. Nominal exchange rates are not considered for the case of the USA.

** CC = CC1 + CC2, where CC1 = Poland + Hungary + Czech Rep. + Slovenia + Estonia + Cyprus (Greek Section) and CC2 = Romania + Bulgaria + Slovak Rep. + Lithuania + Latvia.

If we extract the calculated coefficients for Turkey and EU (in average) from the Table 4, and sort them separately as seen in Tables 5 and 6, we can focus a little bit more on the details of comparisons from the perspective of the Turkish economy. These two tables state that Turkey's macroeconomic conditions seem similar to that of most of the CCs. On the one hand, according to the rank in Table 5, Bulgaria, Romania, Slovenia and the Czech Republic have the most similarity with Turkey while EU countries like Luxembourg, Finland, Belgium and Netherlands have a fully different macroeconomic environment than Turkey has. The ranking in Table 6, on the other hand, implies that Turkey is closer to the EU countries than the CCs like Romania, Estonia, Lithuania, Bulgaria and Latvia. The most similar economies to the EU economy between all applicant countries are Cyprus, Hungary, the Slovak Republic and Poland. Three of them belong already to the first group of the CCs, which will access to the EU earlier than the others.

International comparisons presented in Table 3 to 6 and Graph 1 to 5 can be repeated by considering the *stability* of development of each national indicator over the period of 1993-1997. Under the assumption that standard deviation measures the stability of the selected national macroeconomic variables, the figures in Table 7 are calculated for each indicator - country pair regarding the relevant five-year data. Then, by using these data, bilateral correlation coefficients are calculated in order to investigate international similarities in terms of the stability structure of the considered countries (Table 8). Again, we can extract the coefficients for Turkey and EU (in average) respectively and sort them as seen in Table 9 and 10. Overall macroeconomic stability in countries like Slovenia, Greece, Portugal and Hungary seems highly correlated with the degree of stability in the Turkish economy (Table 9). At the same time, the Turkish macroeconomic stability characteristics are closer to that of the EU average in comparison to the CCs like Poland, Slovenia, Bulgaria, Romania, the Slovak Republic, Lithuania, Estonia and Latvia (Table 10).

**Table 5: International Rank of
Macroeconomic Similarity:
Turkey as a Benchmark**

	<i>Correlation Coefficient</i>
1 Bulgaria	0.956
2 Romania	0.925
3 CC (average)	0.910
4 CC2 (average)	0.880
5 Slovenia	0.862
6 Czech Republic	0.808
7 Estonia	0.738
8 CCI (average)	0.728
9 South Korea	0.725
10 Latvia	0.724
11 Poland	0.711
12 PR China	0.686
13 Lithuania	0.648
14 <i>Average of 31 Countries</i>	0.601
15 Slovak Republic	0.562
16 Hungary	0.522
17 Cyprus (Gr. Sec.)	0.231
18 Greece	0.206
19 Portugal	0.205
20 United Kingdom	0.167
21 United States	0.145
22 Spain	0.134
23 Germany	0.133
24 Austria	0.131
25 Sweden	0.128
26 EU (average)	0.114
27 Italy	0.097
28 Ireland	0.095
29 Denmark	0.092
30 France	0.076
31 Netherlands	0.066
32 Belgium	0.058
33 Finland	0.054
34 Japan	0.050
35 Luxembourg	-0.132

Source: calculations in Table 4.

**Table 6: International Rank of
Macroeconomic Similarity:
EU15 in Average as a Benchmark**

	<i>Correlation Coefficient</i>
1 Denmark	0.998
2 Italy	0.998
3 Germany	0.998
4 Sweden	0.998
5 Austria	0.997
6 United States	0.996
7 Netherlands	0.996
8 Belgium	0.996
9 Portugal	0.994
10 Greece	0.994
11 United Kingdom	0.994
12 Japan	0.992
13 France	0.991
14 Ireland	0.987
15 Finland	0.986
16 Cyprus (Gr. Sec.)	0.979
17 Spain	0.975
18 Hungary	0.889
19 <i>Average of 31 Countries</i>	0.843
20 Slovak Republic	0.730
21 Poland	0.726
22 CCI (average)	0.703
23 PR China	0.476
24 South Korea	0.448
25 Slovenia	0.341
26 Czech Republic	0.313
27 CC (average)	0.268
28 Luxembourg	0.119
29 Turkey	0.114
30 Latvia	0.095
31 CC2 (average)	0.082
32 Bulgaria	0.073
33 Lithuania	0.050
34 Estonia	-0.028
35 Romania	-0.051

Source: calculations in Table 4.

Table 7: Selected Macroeconomic Indicators
(Standard Deviations, % over 1993-1997) *

	Consumer Price Inflation	Unemployment Rate	Real GDP Growth	Population Growth	Current Account Balance / GDP	General Government Balance / GDP	Nominal Long-Term Interest Rate	Increase in Money Supply (M2 or M3)	Gross Government Debt Stock / GDP	Increase in Nominal Exchange Rate
Germany	136.8	69.6	152.1	21.2	35.6	59.3	66.5	433.1	608.7	1000.1
U. Kingdom	60.4	127.1	90.6	6.9	117.0	230.9	47.3	322.6	260.6	883.2
France	33.5	39.0	163.6	12.0	77.8	120.9	81.5	396.4	518.0	912.3
Netherlands	73.7	70.6	108.0	18.5	35.1	211.7	57.7	412.6	337.9	1019.0
Belgium	60.2	44.4	170.2	27.2	62.6	179.1	80.7	851.4	527.4	1052.5
Luxembourg	94.8	38.5	225.2	25.1	243.1	80.2	70.0	851.4	43.6	1052.5
Ireland	55.7	215.3	287.8	74.9	69.1	140.1	68.8	685.0	1210.2	830.2
Italy	128.6	74.4	158.0	9.1	107.1	272.6	214.1	286.7	239.4	1271.1
Spain	121.0	117.4	179.4	10.6	88.0	195.6	203.2	65.6	420.3	1219.3
Denmark	37.7	153.8	96.3	8.5	107.6	190.5	101.1	837.8	643.2	977.2
Greece	337.6	41.6	193.0	41.6	73.0	391.0	369.9	286.2	132.0	945.6
Portugal	189.0	68.8	158.4	33.0	56.8	171.8	282.4	160.4	153.7	1092.7
Austria	96.5	28.3	83.5	18.9	67.3	131.3	54.5	175.7	283.1	1002.6
Sweden	141.7	39.7	238.5	69.5	146.9	459.5	139.4	187.7	122.0	1731.1
Finland	45.3	134.4	280.1	14.1	264.0	276.5	154.7	217.1	136.1	1739.2
United States	25.6	76.0	68.7	8.7	23.9	92.9	32.1	197.0	43.2	
Japan	75.4	37.8	143.6	8.7	65.4	135.3	79.3	49.9	870.3	1273.1
South Korea	72.6	38.3	145.8	1.6	212.6	199.7	61.0	140.3		841.9
PR China	820.2	14.1	177.3	3.2	149.4	373.7	127.7	758.2		2227.2
Turkey	1507.8	89.7	574.8	0.1	207.3	244.1	2643.1	2997.7	676.2	4647.1
Poland	842.9	237.6	133.2	8.1	194.1	43.0	490.1	379.7	70.7	806.3
Hungary	403.9	75.0	187.2	4.9	273.5	125.4	354.1	277.7	431.3	1231.9
Czech Rep.	536.5	92.8	235.5	9.3	435.5	138.6	58.0	1152.4	49.5	973.1
Slovenia	961.5	46.7	97.8	48.2	200.9	82.6	1223.4	1791.2	42.4	1277.9
Estonia	3170.5	34.9	765.4	136.9	489.5	138.6	544.6	1151.5	91.9	977.2
Cyprus	89.9	46.2	225.5	1.4	224.3	163.5	24.9	256.2	63.6	695.7
Romania	9251.5	177.0	518.2	9.1	223.0	167.7	2510.2	4259.4	558.6	3818.4
Bulgaria	44495.7	196.3	560.0	32.9	569.9	505.7	6378.1		42.4	33073.0
Slovak Rep.	794.4	95.8	450.6	23.7	689.8	203.9	201.0	110.4	155.6	576.0
Lithuania	16883.2	150.9	992.1	13.4	410.4	194.6	3275.4	2179.8	106.1	6585.3
Latvia	4034.5	70.2	822.4	37.4	1185.3	220.1	2820.3	3592.6	212.1	941.9
EU (ave.)	107.5	84.2	172.3	26.1	103.4	207.4	132.8	411.3	375.7	1115.2
CC1 (ave.) **	1000.9	88.9	274.1	34.8	303.0	115.3	449.2	834.8	124.9	993.7
CC2 (ave.) **	15091.8	138.0	668.7	23.3	615.7	258.4	3037.0	2535.6	215.0	8998.9
CC (ave.) **	7405.9	111.2	453.5	29.6	445.1	180.3	1625.5	1515.1	165.8	4632.4
Gen. Average	2760.6	88.5	280.1	23.8	229.2	198.1	736.0	848.8	312.1	2555.8

Source: EC, IMF, CB and SIS (own calculations). For details, please see the Appendix 1 at the end of this chapter.

* It is possible that, for some of the variables and/or countries, the used period can differ from the period stated here because of the missing data.

** CC = CC1 + CC2, where CC1 = Poland + Hungary + Czech Rep. + Slovenia + Estonia + Cyprus (Greek Section) and CC2 = Romania + Bulgaria + Slovak Rep. + Lithuania + Latvia.

**Table 8: Degree of International Macroeconomic Similarities According to the Bilateral Correlation Coefficients
(in Terms of Standard Deviations) ***

	GER	UK	FRA	HOL	BEL	LUX	IRL	ITA	SPA	DEN	GRE	POR	AVU	SWE	FIN	USA	JAP	KOR	CHI	TUR	POL	HUN	CZE	SLN	EST	CYP	ROM	BUL	SLK	LIT	LAT	EUA	CC1A	CC2A	CCA	31CA		
Germany	GER	1.00																																				
U. Kingdom	UK	0.91	1.00																																			
France	FRA	0.99	0.94	1.00																																		
Netherlands	HOL	0.95	0.99	0.96	1.00																																	
Belgium	BEL	0.93	0.89	0.94	0.93	1.00																																
Luxembourg	LUX	0.75	0.84	0.78	0.85	0.89	1.00																															
Ireland	IRL	0.85	0.63	0.84	0.69	0.80	0.47	1.00																														
Italy	ITA	0.86	0.97	0.89	0.96	0.80	0.80	0.51	1.00																													
Spain	SPA	0.88	0.92	0.89	0.91	0.72	0.64	0.58	0.96	1.00																												
Denmark	DEN	0.92	0.86	0.93	0.90	0.98	0.83	0.86	0.75	0.69	1.00																											
Greece	GRE	0.70	0.84	0.72	0.84	0.67	0.71	0.30	0.93	0.85	0.60	1.00																										
Portugal	POR	0.81	0.90	0.82	0.90	0.72	0.73	0.41	0.98	0.96	0.65	0.94	1.00																									
Austria	AVU	0.92	0.97	0.93	0.97	0.82	0.77	0.61	0.98	0.98	0.79	0.86	0.95	1.00																								
Sweden	SWE	0.77	0.93	0.81	0.91	0.71	0.74	0.38	0.98	0.94	0.64	0.92	0.96	0.95	1.00																							
Finland	FIN	0.79	0.94	0.83	0.91	0.72	0.78	0.41	0.98	0.94	0.66	0.87	0.96	0.96	0.98	1.00																						
United States	USA	0.42	0.78	0.50	0.76	0.79	0.84	0.36	0.63	-0.11	0.73	0.30	0.15	0.36	0.34	0.45	1.00																					
Japan	JAP	0.92	0.85	0.92	0.86	0.74	0.52	0.78	0.84	0.94	0.74	0.67	0.81	0.91	0.79	0.80	-0.11	1.00																				
South Korea	KOR	0.90	0.95	0.93	0.93	0.77	0.78	0.74	0.97	0.96	0.75	0.87	0.94	0.97	0.98	0.99	0.33	0.97	1.00																			
PR China	CHI	0.95	0.92	0.92	0.94	0.84	0.83	0.78	0.93	0.89	0.81	0.92	0.92	0.95	0.91	0.89	0.49	0.91	0.90	1.00																		
Turkey	TUR	0.73	0.74	0.73	0.79	0.78	0.82	0.40	0.81	0.70	0.72	0.85	0.83	0.75	0.71	0.72	0.49	0.55	0.69	0.83	1.00																	
Poland	POL	0.43	0.45	0.36	0.46	0.36	0.50	0.04	0.56	0.49	0.30	0.69	0.65	0.52	0.51	0.50	0.00	0.32	0.48	0.74	0.76	1.00																
Hungary	HUN	0.87	0.88	0.86	0.88	0.74	0.72	0.53	0.94	0.94	0.70	0.88	0.95	0.95	0.88	0.90	-0.04	0.86	0.92	0.94	0.82	0.70	1.00															
Czech Rep.	CZE	0.59	0.65	0.58	0.66	0.76	0.91	0.33	0.59	0.40	0.70	0.57	0.53	0.56	0.53	0.55	0.71	0.29	0.58	0.75	0.74	0.60	0.58	1.00														
Slovenia	SLN	0.43	0.43	0.41	0.48	0.60	0.70	0.18	0.46	0.28	0.54	0.59	0.48	0.39	0.35	0.36	0.53	0.15	0.33	0.59	0.88	0.73	0.51	0.78	1.00													
Estonia	EST	0.08	0.01	-0.02	0.06	0.06	0.20	-0.15	0.09	0.02	-0.02	0.30	0.16	0.08	0.07	0.03	0.00	-0.06	0.04	0.40	0.35	0.77	0.28	0.49	0.52	1.00												
Cyprus	CYP	0.76	0.91	0.81	0.88	0.77	0.88	0.40	0.91	0.83	0.70	0.81	0.87	0.89	0.92	0.94	0.60	0.69	0.97	0.89	0.71	0.48	0.83	0.73	0.42	0.14	1.00											
Romania	ROM	0.23	0.16	0.13	0.21	0.23	0.31	-0.01	0.22	0.14	0.17	0.43	0.30	0.21	0.17	0.13	0.10	0.06	0.13	0.52	0.54	0.87	0.40	0.56	0.69	0.95	0.19	1.00										
Bulgaria	BUL	0.42	0.41	0.33	0.44	0.37	0.50	0.05	0.50	0.46	0.29	0.64	0.58	0.50	0.49	0.44	-0.31	0.34	0.44	0.75	0.65	0.93	0.64	0.76	0.75	0.88	0.44	0.95	1.00									
Slovak Rep.	SLK	0.12	0.18	0.10	0.14	0.00	0.20	-0.17	0.27	0.27	-0.07	0.35	0.33	0.28	0.32	0.33	-0.34	0.17	0.39	0.42	0.21	0.60	0.46	0.36	0.15	0.68	0.43	0.54	0.69	1.00								
Lithuania	LIT	0.15	0.11	0.05	0.14	0.05	0.15	-0.13	0.21	0.19	-0.01	0.42	0.31	0.21	0.21	0.15	-0.18	0.09	0.15	0.48	0.40	0.85	0.41	0.38	0.47	0.95	0.16	0.95	0.95	0.67	1.00							
Latvia	LAT	-0.01	-0.08	-0.07	-0.03	0.12	0.26	-0.14	-0.03	-0.17	0.07	0.21	0.03	-0.09	-0.11	-0.13	0.27	-0.25	-0.14	0.21	0.50	0.68	0.15	0.54	0.80	0.80	0.01	0.84	0.70	0.37	0.69	1.00						
EU (ave.)	EUA	0.95	0.99	0.97	0.99	0.91	0.84	0.68	0.97	0.94	0.88	0.85	0.93	0.98	0.92	0.93	0.70	0.88	0.95	0.94	0.80	0.49	0.92	0.65	0.48	0.07	0.90	0.21	0.45	0.20	0.16	-0.02	1.00					
CC1 (ave) **	CC1A	0.52	0.52	0.47	0.55	0.56	0.70	0.17	0.57	0.44	0.48	0.69	0.61	0.53	0.51	0.50	0.32	0.30	0.51	0.79	0.82	0.92	0.68	0.83	0.85	0.80	0.59	0.88	0.95	0.57	0.78	0.77	0.56	1.00				
CC2 (ave) **	CC2A	0.31	0.29	0.22	0.31	0.21	0.30	-0.04	0.39	0.35	0.13	0.57	0.48	0.39	0.38	0.33	-0.15	0.24	0.33	0.64	0.54	0.92	0.56	0.48	0.54	0.91	0.33	0.94	0.99	0.68	0.98	0.65	0.33	0.85	1.00			
CC (ave) **	CCA	0.33	0.31	0.24	0.33	0.23	0.33	-0.02	0.41	0.37	0.16	0.58	0.50	0.41	0.40	0.35	-0.13	0.25	0.35	0.66	0.56	0.93	0.58	0.51	0.57	0.91	0.36	0.94	0.99	0.69	0.98	0.66	0.35	0.87	1.00	1.00		
General Average	31CA	0.52	0.51	0.45	0.54	0.43	0.50	0.14	0.61	0.56	0.35	0.73	0.67	0.60	0.58	0.54	-0.05	0.44	0.55	0.81	0.70	0.95	0.74	0.61	0.63	0.82	0.54	0.88	0.99	0.65	0.90	0.58	0.56	0.91	0.97	0.97	1.00	

Source: own calculations (Please see also Table 3).

* For Bulgaria, money supply increase is excluded from calculations of correlation coefficients because of the missing data. The ratio of gross government debt stock to GDP is also excluded for South Korea and PR China. The indicator of exchange rate stability is not considered for the case of the USA.

** CC = CC1 + CC2, where CC1 = Poland + Hungary + Czech Rep. + Slovenia + Estonia + Cyprus (Greek Section) and CC2 = Romania + Bulgaria + Slovak Rep. + Lithuania + Latvia.

Table 9: International Rank of the Similarity in Terms of Macroeconomic Stability: Turkey as a Benchmark

	<i>Correlation Coefficient</i>	
1	Slovenia	0.880
2	Greece	0.848
3	PR China	0.829
4	Portugal	0.828
5	Hungary	0.825
6	Luxembourg	0.824
7	CCI (average)	0.818
8	Italy	0.807
9	EU (average)	0.802
10	Netherlands	0.785
11	Belgium	0.777
12	Poland	0.763
13	Austria	0.749
14	United Kingdom	0.743
15	Czech Republic	0.736
16	Germany	0.728
17	France	0.726
18	Finland	0.722
19	Denmark	0.718
20	Sweden	0.712
21	Cyprus (Gr. Sec.)	0.706
22	<i>Average of 31 Countries</i>	0.695
23	Spain	0.695
24	South Korea	0.692
25	Bulgaria	0.652
26	CC (average)	0.562
27	Japan	0.553
28	Romania	0.540
29	CC2 (average)	0.536
30	Latvia	0.496
31	United States	0.487
32	Lithuania	0.404
33	Ireland	0.400
34	Estonia	0.352
35	Slovak Republic	0.210

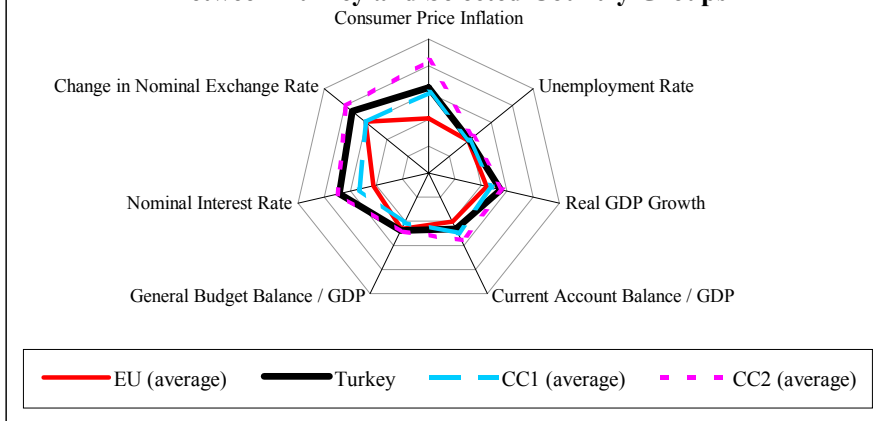
Source: calculations in Table 8.

Table 10: International Rank of the Similarity in Terms of Macroeconomic Stability: EU15 in Average as a Benchmark

	<i>Correlation Coefficient</i>	
1	Netherlands	0.995
2	United Kingdom	0.986
3	Austria	0.981
4	Italy	0.973
5	France	0.966
6	South Korea	0.951
7	Germany	0.948
8	PR China	0.943
9	Spain	0.937
10	Finland	0.931
11	Portugal	0.927
12	Sweden	0.922
13	Hungary	0.918
14	Belgium	0.910
15	Cyprus (Gr. Sec.)	0.900
16	Japan	0.880
17	Denmark	0.876
18	Greece	0.855
19	Luxembourg	0.844
20	Turkey	0.802
21	United States	0.698
22	Ireland	0.676
23	Czech Republic	0.646
24	CCI (average)	0.564
25	Average of 31 Countries	0.544
26	Poland	0.492
27	Slovenia	0.481
28	Bulgaria	0.453
29	CC (average)	0.353
30	CC2 (average)	0.331
31	Romania	0.214
32	Slovak Republic	0.195
33	Lithuania	0.156
34	Estonia	0.065
35	Latvia	-0.018

Source: calculations in Table 8.

**Graph 6: Similarities in Terms of Macroeconomic Stability
Between Turkey and Selected Country Groups**



Data of Graph 6

	Standart Deviations of Selected Indicators (1993-97)						
	Consumer Price Inflation	Unemployment Rate	Real GDP Growth	Current Account Balance / GDP	General Budget Balance / GDP	Nominal Interest Rate	Change in Nominal Exchange Rate
EU (average)	107.5	84.2	172.3	103.4	207.4	132.8	1115.2
Turkey	1507.8	89.7	574.8	207.3	244.1	2643.1	4647.1
CC1 (average)	1000.9	88.9	274.1	303.0	115.3	449.2	993.7
CC2 (average)	15091.8	138.0	668.7	615.7	258.4	3037.0	8998.9

Source: see the Table 4 and 8.

In Graph 6, seven of the stability indexes for Turkey and different country groups are combined within a radar-type graph with logarithmic scaled axes.⁸ These stability comparisons imply that Turkey has a more stable economy than the CC2 countries in terms of all variables considered here. Changes in consumer prices, real GDP growth rates, nominal interest rates, exchange rate changes, general budget deficit to GDP ratios, and unemployment rates, however, have more stable patterns in the CC1 countries in comparison to that in Turkey. Furthermore, the EU countries in average are more stable than all other countries in terms of most of the indicators.

To sum up, it is possible to state that Turkey's macroeconomic framework does not seem to be worse than most of the CCs in terms of the considered ten macroeconomic indicators and of their stability. Therefore, she can easily be considered between the CC2s (at least). However, still sustaining high inflation for more than 15 years for a high-populated applicant country like Turkey, with a radically distorted domestic income distribution and widely differentiated interregional development levels, are

very harmful regarding the integration efforts of the country to the EU economies. The introduction of a three-year program for disinflation and structural reforms at the start of 2000, on the other hand, aims to provide the necessary macroeconomic improvements for being ready to be included to the EU.

Now, we can briefly look at the convergence issue of applicant countries, and then consider the potential effects of the euro on the Turkish economy.

3. EURO AND CONVERGENCE PROCESS: AN APPLICANT COUNTRY VIEW

According to the well-known Maastricht Treaty, the so-called *convergence criteria* state that, (1) budget deficits have to be below 3 percent of GDP, (2) the public debt to GDP ratio has to be less than 60 percent, (3) any country wishing to join to the monetary union must have an inflation rate no higher than 1.5 percent above the average of the three lowest-inflation countries, (4) long term interest rates (as a measure of inflationary expectations) in any participating country must not exceed by more than 2 percentage points that of, at most, the three best performing countries in terms of price stability, and (5) participants of the monetary union must not have experienced devaluation of their currency for at least two years.

The fact that most of the EU countries satisfy these criteria implies that at least 11 of them may enter into the euro zone at the beginning of the next year. These criteria, however, are not accession criteria for the CCs and Turkey. The Copenhagen European Council in 1993 have stressed that “one of the criteria for EU membership is the ability of applicant countries to adhere to the aims of EMU rather than their ability to actually join the euro area”.

Recently, Temprano-Arroyo and Feldman (1998, 25-27) and Fischer et al. (1998) examined whether the CCs (and Turkey) satisfy the Maastricht criteria. Former authors conclude that none of the transition and Mediterranean countries considered satisfy all of the (first four) conditions in terms of the Maastricht Treaty in 1997.⁹ The examination context of Fischer et al. (1998), however, provides a broader framework regarding the convergence indicators referred in the Maastricht Treaty. This is also the case for the macroeconomic indicators abundantly used in the previous section of this study. Furthermore, in the case of the CCs and Turkey, one must not ignore the problems regarding the convergence of the institutional and structural policies faced by applicant countries. These problems

consciously have been left outside the framework of the present analysis but these are analyzed by some of the authors mentioned above in detail.

4. INTERNATIONAL TRANSMISSION CHANNELS FOR EURO'S EFFECTS

Euro's possible effects in- and outside the euro zone have been an interesting research area for many economists in recent years.¹⁰ In order to discuss the potential implications of the introduction of the euro for the *outside* world, it is necessary to have some idea on its possible effects *inside* the EU. According to the optimistic scenarios on euro's internal effects, it is expected that as a result of (1) the increasing transparency in terms of prices in the EU countries, (2) the decline in transaction costs regarding all exchange rate conversions inside the euro zone, and (3) the minimization of the exchange rate risk due to the fixed exchange rates between the EU-zone currencies, competition in markets for goods and services will intensify by allowing for both higher output-growth and more jobs, and the development of European capital markets will be promoted. This consideration implicitly covers most of the transmission channels for the international effects of the euro. They can be summarized as follows:¹¹

Institutional effects. The introduction of the euro as an important step in the way of completing the EMU may require some institutional or legislative adjustment measures in some of the third countries, especially if they are applicant countries, which hope that they can access the EU in a foreseeable future. The ongoing European economic and monetary unification process, in a sense, impose them to take the necessary steps towards ensuring the independence of central banks from the public authorities, liberalization of capital flows, participation on the EU-wide payments system, called the Trans-European Automated Real Time Gross Settlement Express Transfer (TARGET), etc. like discussed in Temprano-Arroyo and Feldman (1998) in detail.

Preparation effects. One of the earlier impacts which may be seen as a by-product of the introduction of the euro is the cost increases that are related to the adjustment preparations of the economic agents such as firms, banks and governments in third countries. This effect may be definitive and not negligible in many cases, however, it is difficult to quantify totally.

Denomination or invoicing effects. The introduction of the euro, first of all, will influence the currency invoicing of both exports and imports in goods and services, and financial assets which are internationally tradable. As an additional implication, the currency composition of the existing public and private debt and asset stocks in third countries will also be affected by

this event. The degree of these once-for-all changes and the speed of the related adjustment process will depend on (1) the intensity of trade in goods, services and financial assets between the EU and non-EU countries, (2) the pre-euro invoicing or denomination composition of all tradeables in third countries, (3) the expectations of macroeconomic policy makers and other economic units in these countries regarding the future behavior of the euro against the US dollar and other main currencies in the world, and (4) whether the use of the euro will be obligatory for trade partners in third countries, and if yes, at which stage of the introduction of the euro.

Trade effects. The transmission through international trade in goods and services covers both a trade creation effect, which will stimulate imports of the EU from third countries, and a trade diversion effect, which may mean a negative impact for third countries because of the increase in intra-EU trade. The net result of this effects and its relative importance for the relevant third country depend, firstly, on the role of the EU countries in exports and imports of the considered country, and secondly, on the expectations of non-EU actors and macroeconomic policy makers on the future behavior of the euro against the main currencies of the world.

Financial market effects. The euro will initially influence the non-EU economies through the transactions in international financial markets with euro-denominated assets more than trade in goods and services. The actions of private and public sectors of third countries in international financial markets may be affected by both the extent to which the euro will assume the role of a vehicle currency on foreign exchange markets, and will be used in portfolio holdings and international holdings (Bekx 1998).

Exchange rate effects. From the perspective of the individual euro-zone countries, the introduction of the euro also implies a transition into an era of "single monetary policy - multiple national fiscal policies" which will have a crucial role by the determination of the prices of euro in terms of the major international currencies of the world like the US dollar and the Japanese yen in the future. Authorities' possible interventions in foreign exchange markets in third countries in order to affect the prices, and the design of their accommodating monetary and fiscal policies will then also be a function of the future behavior of the euro. Finally, it must be noted that third countries in which currency substitution exists will face additional influences as a result of the expected changes in exchange rates between the euro and other international currencies.

5. EXPECTED EFFECTS OF THE EURO ON THE TURKISH ECONOMY

Turkish authorities including the governor of the Central Bank often state that the official institutional preparations regarding the introduction of euro are on course.¹² Recently, it has been decided to add the euro to the list of the convertible currencies in Turkey. Several similar measures required to harmonize the Turkish laws with that of the euro zone are coming into force. Furthermore, it is expected that the high value payment system, called the Real Time Gross Settlement System (RTGS), which is developed by the Turkish Central Bank and has been operational since 1992 will be connected with the RTGS systems of member countries starting on 1 January 1999. By connecting the Turkish banks, the direct participants of the national RTGS system, to TARGET companies, investors and individuals with financial activities will benefit from fast, secure and reliable cross-border transfer of their funds with minimum risk.

Observations regarding the preparations in the Turkish private financial and real sectors, however, are mixed. Some of the bank managers, on the one hand, express that they are ready for the euro without any remarkable adjustment costs. On the other hand, it is argued that small and medium scaled enterprises in Turkey do not have any preparations for the euro.

The starting point for quantifying the expected benefits and costs of the euro for a third country like Turkey must be the prediction of the extent of euro's internal effects. Different scenarios on the growth stimulating effects of the euro versus the possibility of an inward orientation of the EMU countries provide a vague result with reference to the net trade effects on the outside world. According to the simulation exercises of the IMF, even if the expected effect on the EMU countries may be substantial, the impact on non-EU countries may be relatively small in average (Bekx 1998, 5; Chauffour and Stemitsiotis 1998, 13). For the case of the Mediterranean partner countries, Chauffour and Stemitsiotis (1998) conclude that the growth effect of the introduction of the euro on the region is likely to significantly exceed that for the developing countries as a whole, but it will be limited.

A discussion on the future invoicing effects of the euro must be based on the past and present situation of the EU currencies in international trade in goods, services and financial assets both in the world as a whole and in the individual country considered. The combined invoicing share of the main EU currencies in world exports of goods was about 30.2 %, while the share of the US dollar amounted was 52.0 % in 1995. Currently, the German mark serves as a second global vehicle currency on foreign exchange transactions, however, its role seems to largely limited to trade between currencies of the EU. At the end of 1995, the share of the European currencies on outstanding

international bonds and on world private portfolio are 37.1 % and 36.9 % respectively, while the same ratios for the US dollar are about 34.2 % and 39.8 % respectively.

**Table 11: Currency Denomination of Selected Indicators in Turkey
(1996, in percent of total)**

	US Dollar	Japanese Yen	EU Currencies						Other Currencies	Total
			DEM	GBP	FRF	ITL	NLG	EU 15		
Merchandise Exports	57	0	28	5	4	3	0	40	3	100
Merchandise Imports	60	2	21	3	3	5	0	32	6	100
International Service Receipts	50	0	33	4	3	1	0	41	9	100
International Service Payments	63	2	20	3	3	2	0	28	7	100
Interest Receipts	61	0	35	1	1	0	0	37	2	100
Interest Payments	37	17	32	1	2	0	0	35	11	100
Capital Account Receipts	57	10	30	1	0	0	0	31	2	100
Capital Account Payments	57	11	29	1	0	0	0	30	2	100
Outstanding External Debt *	38	16	35	1	2	0	1	39	7	100
Foreign Exchange Deposits	47		45		2		2	49	4	100
<i>Average Share for BoP-Transactions</i>	55	5	29	2	2	1	0	34	5	100
<i>Overall Average Share</i>	53	6	31	2	2	1	0	36	5	100

Sources: Chauffour and Stemitsiotis (1998) and Central Bank of Turkey (own calculations).

* As a total of medium and long term external debt.

BoP: Balance of Payments

The extent to which a country like Turkey will be affected through the transmission channels considered in the previous section may vary depending on factors like the intensity of Turkey's trade in goods, services and financial assets with the EU countries, the expectations on the future role of the euro as a reserve currency, or the exchange rate policy of the authorities in the country. Table 11 provides some figures which may be used in order to develop some scenarios on euro's various possible implications for stock and flow variables in the case of Turkey. The share of the EU countries as a market for Turkey's exports of goods was about 49.5 % in 1996. The share of the same countries on Turkey's imports amounted to 52.5 %. In the same year, more than 34 % of all payments and receipts related to total merchandise trade, services, interest and capital account in the balance of payments of Turkey were denominated in terms of 15 EU currencies in average.¹³ The share of the debts invoiced in terms of the EU currencies was 39 % of all medium and long term outstanding external debt of the country. The combined share of the foreign exchange deposits invoiced in terms of German, French and Dutch currencies was 48.9 % while that of the US dollar was about 46.9 %. The consideration of these ratios all together underlines the great importance of the EU countries and their currencies for Turkey's economic relations worldwide.

The possible changes in the currency compositions presented above depend clearly on how the euro will behave against the main currencies of

the world in the future. And the discussions on the future variations of the euro present both optimistic and pessimistic scenarios, depending on different assumptions or expectations about the future macroeconomic policies in the EU and other major industrialized countries. Therefore, it is difficult to predict the definitive direction of the currency invoicing effects for Turkey. Under the assumption of an appreciating euro against the US dollar, the Japanese yen and the Turkish lira at the same time, for example, it may be expected that Turkish exporters of goods, services and capital will prefer to make trade in terms of the strong euro. Turkish importers' preferences, however, will be in the opposite direction, namely in favor of weakening currency or currencies against the euro. As long as Turkish exporters can receive their income in terms of the euro, and Turkish importers can avoid to make the required payments in terms of the appreciating currency, Turkey can benefit from these developments.

By considering that part of a stock variable such as the external debt stock, which will be denominated in terms of the euro, we can expect that the appreciation of the euro will raise the burden of debt for the country. However, this effect will be compensated at least partially by an opposite impact of the weakening currencies, which will be used for denomination of the external debts before the appreciation of the euro.

Although it seems very difficult to quantify the net effect of the creation of the euro on Turkey exactly we can expect that the main channels through which the euro could impact the Turkish economy are trade in goods with the EU countries, foreign tourism receipts, worker's remittances, foreign debt management, and currency substitution. Furthermore, both all of the possible influences via the transmission channels mentioned above and the fact that Turkey will be in an ongoing process of economic integration into the EU will provide Turkish governments in the future with a very different environment for design of macroeconomic policies.

6. CONCLUDING REMARKS

In Turkey, it is commonly argued that sustainability of high inflation rates is fed by (1) high public sector deficits, (2) monetization of budget deficits, (3) rising interest rates resulting from the crowding-out effect of the public sector borrowing in a shallow domestic capital market, (4) political instability which results in inflationary pressures due to the populist additional expenditures before each general and local election, (5) increases in some of the imported input prices from time to time, (6) high military expenditures for eliminating the terroristic actions of the PKK, (7) massive infrastructure investments of the government such as for the Southeastern

Anatolian Project, (8) government's financial and military support to the Turkish Republic of Northern Cyprus, and/or (9) existing inflationary expectations of the economic agents in the country for more than 15 years. As long as these reasons exist and their negative interrelationship matter, it seems that the inflation in Turkey would still prevail.

Only by declining the public sector borrowing requirement sharply, accelerating the privatization process, slowing down the inflation (expectations) immediately, and hence both decreasing the depreciation speed of the Turkish lira and reducing the distortionary effects of the increasing prices on income distribution and other macroeconomic variables in the economy, and fighting against the economic (and political) corruption in the country, Turkey will become a more stable and matured membership candidate for the EU in terms of the macroeconomic indicators.

It is also clear that this efforts must be supported by accelerating the process of harmonizing Turkey's legal framework with that of the EU in trade-related (especially competition policy, intellectual and industrial property rights, customs regulations, and state aids) and financial (liberalization of capital flows, developing an efficient, and market-oriented financial sector, maintaining the independence of central bank from government, participation in the European System of Central Banks) areas.

Additionally, the process of external economic liberalization which is continuing in terms of foreign trade in goods since 1980, in terms of determination of exchange rates since 1981, and in terms of international financial flows since 1989 must be deepened further within the economic and legislative frameworks of the World Trade Organization and the EU.

The non-economic aspects regarding the integration of Turkey in the European economy, including the improvements in the human rights position and democratization of the country, are surely crucial too, not only because of the need to qualifying for EU membership, but also as a natural must of the well-being of the whole people in the country. That is, the need for further improvements both in political and economic areas in Turkey are actually not dependent solely on the want of the country to join to the EU. The EU part, on the other side, must support Turkey's strong efforts in the way of further political and economic integration in the rest of the world, if they really want Turkey to enter to the EU in a reasonable future.

APPENDIX: NOTE ON THE DATA SOURCES

The macroeconomic data used in calculations in this study is mainly collected from the following publications of the European Commission (EC) in order to ensure the international comparability of the indicators:

European Commission (1996): *European Economy: 1996 Broad Economic Policy Guidelines*, No. 62. Luxembourg: EC Directory-General for Economic and Financial Affairs.

European Commission (1997): *European Economy: Economic Trends (Report on Convergence in the European Union in 1996)*, No. 1 - January 1997. Luxembourg: EC Directory-General for Economic and Financial Affairs.

European Commission: *European Economy*, various issues of different supplements. Luxembourg: EC Directory-General for Economic and Financial Affairs.

European Commission: *Eurostatistics*, various issues. Luxembourg: EC Directory-General for Economic and Financial Affairs.

In some of the cases, the remaining data lacks are partially eliminated by using the following data sources of the IMF or the Turkish authorities, if not otherwise stated in the study:

International Monetary Fund (1998): *International Financial Statistics*, CD-ROM Version, April 1998. Washington, DC: IMF.

Central Bank of the Republic of Turkey: *Electronic Data Distribution System*, URL: <http://www.tcmb.gov.tr>, Ankara: CBRT.

State Institute of Statistics: *Statistical Yearbook of Turkey*, various issues. Ankara: SIS.

NOTES

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- ¹ Therefore, some of the economists in Turkey claim that a free-trade-area agreement with the EU was a better solution for Turkey in comparison to a customs-union agreement. See, for example, Tezel (1996).
- ² In December 1999 the Helsinki European Council reaffirmed the importance of the enlargement process, in which the 13 candidate countries (including Malta and Turkey) participate on an *equal footing*. This new strategy, however, does not imply that the distinction between CC1 and CC2 here is fully meaningless. The CC1 countries have still more chances to participate the EU earlier because of the existing economic and political differences between these countries.
- ³ For a discussion on the enlargement policy of the EU and its link with the external dimension of human rights policy with special reference to the Turkish case please see Nas (1997).
- ⁴ Although Denmark and Greece are outside the EMU, they participate in the *European Exchange Rate Mechanism* (ERM). However, UK and Sweden are both outside the EMU and the ERM.
- ⁵ In Turkey, more than 32 % of the population is under 15 years, which compares only 18 % in the EU.
- ⁶ The selection of indicators was limited by both the availability and the reliability of the data especially for the CCs. Therefore, some of other relevant macroeconomic indicators has been excluded from the comparisons here.
- ⁷ Cluster analysis serves to organize observed data into meaningful structures. For two applications of the cluster analysis in the context of the EU countries please see Oktay (1997) and Artis and Zhang (1998).

- ⁸ In Table 7, smaller coefficients of standard deviation for a specific indicator mean more stability in terms of this variable. But more stability (smaller coefficients) in this sense does not definitely mean that this trend is better or more wishful than in the corresponding country, and vice versa. For example, a relatively high coefficient resulting from a sharp downward trend in CPI inflation in a country like A must imply a better performance in favor of this country in comparison to a country like B which has stable inflation rates but that are likely fixed at a very high level of inflation.
- ⁹ As noted in Temprano-Arroyo and Feldman (1998, 25-26), some of the indicators required for the examination may not correspond to Maastricht definitions and coverage in case of the CCs. Therefore, these results are incomparable with that of the EU countries in reality.
- ¹⁰ Please see Funke and Kenedy (1997), Bekx (1998), Chauffour and Stemitsiotis (1998) and Benassy-Quere and Lahreche-Revil (1998). For the discussion on euro's expected implications for Turkey see İmren (1997), Özbay (1997), Canevi (1998), Çavuşoğlu (1998), Ege (1998), Erçel (1998a, 1998b, 1998c) and Güvenen (1998).
- ¹¹ For an alternative framework presented to study the possible international effects of the introduction of the euro, see Kibritçioğlu (2000).
- ¹² See Erçel (1998a, 1998b and 1998c).
- ¹³ In 1996, the EU citizens accounted for 44 % of the tourists travelling in Turkey. Most of all worker remittances of Turkey comes from the EU countries since the 1960s. According to the data of the Turkish Undersecretariat of Treasury, the average share of enterprises with foreign capital in Turkey was about 64 % in the period of 1954-1997.

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