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Estimating the Effect of Common Currencies on Trade:

The Case Study of EU and Turkey

Naib Alakbarov*

Abstract

Here is estimated the effect of monetary union and the exchange rate volatility on trade. First of all, Frankel and Rose (1997, 1998) have developed the idea that the suitability of European countries for the EMU cannot be judged on the basis of historical data. I use an augmented gravity model to estimate the effects of currency unions and exchange rate volatility on trade. The model is “augmented” in that the standard gravity model only includes income and distance variables. The estimated results show that two countries that use the same currency trade more, but it can be seen that the currency union effect of trade is not large. These findings are similar to those in Nardis and Vicarelli (2003). That is, they are not as large as those found in Rose (2000) and Glick and Rose (2002). The effect of the variable of ECU is also positive und significant. These findings are similar to those in Berger and Nitsch (2005), which claim that the potential trade-creating affects of the EMU must be viewed and analyzed in the proper historical perspective.

1. The Concept of Endogeneities of Optimum Currency Areas

The question remains whether only certain types of economies are suitable for the EMU. First of all, Frankel and Rose (1997, 1998) have developed the idea that the suitability of European countries for the EMU cannot be judged on the basis of historical data since the structure of these economies is likely to change in the event of the formation of the EMU. This idea is an application of the well-known “Lucas Critique”. In his essay Lucas (1976), argues that, the structure of an economic model consists of optimal decision rules for economic agents. He also argues that these optimal decision rules may vary systematically according to changes in the series structure that is relevant to the decision maker. It follows that any change in policy will systematically alter the structure of econometric models. He points out that comparisons of the effects of alternative policy rules using current macro econometric models are invalid regardless of the performance of these models over the sample period or in ex ante short-term forecasting (Lucas 1976).

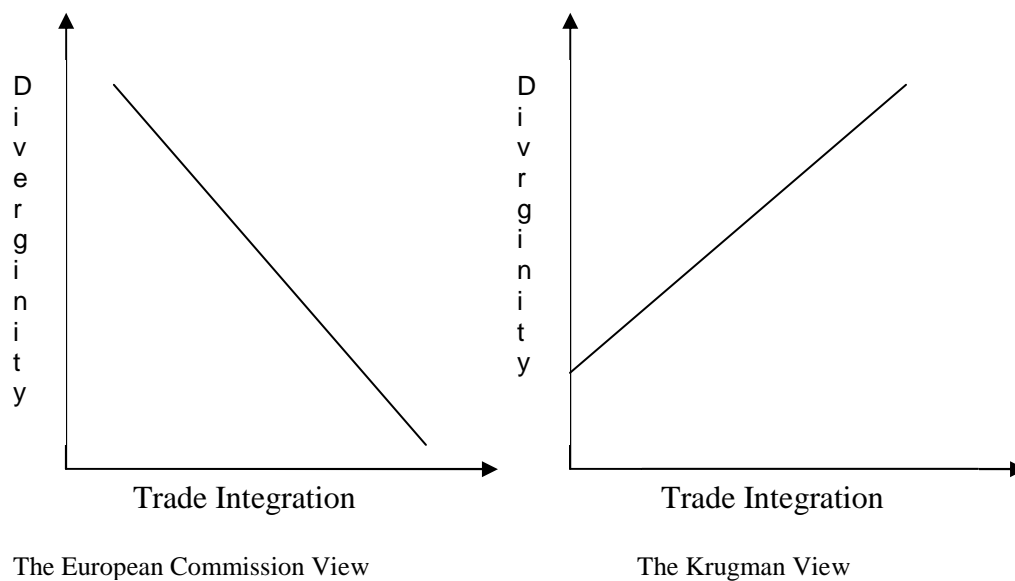
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With respect to foreign trade, Frankel and Rose (1997) argue that the more one country trades with others, the more highly correlated will be their business cycles. They point out that integration changes over time and European countries trade with each other more than in the past. These developments show no sign of slowing and may indeed continue. The correlation of business cycles across countries depends on trade integration in their view. It needs to be stressed that the EMU itself may promote intra-European trade, if the effects of the exchange rate risk and transaction costs are important, as EMU proponents claim. According to Hefeker (1996) the increased degree of trade among EC members, especially increased intra-industrial trade, has reduced the interests of industries in protection because of the threat of retaliation. This has given rise to the momentum for economic integration and finally the Common Market Program.

Strictly in terms of manufactured goods, some factors have been proven to be more important than others when it comes to trade. Balassa and Bauwens (1988) have analyzed the determinants of intra-European trade in manufactured goods. They have found that, relative factor intensity of trade is positively correlated with relative factor endowments. They have also found that the extent of intra-industry trade is positively correlated with average per capita incomes, average country size, trade orientation and the existence of a common border. In addition, it is negatively correlated with income inequality, inequality in country size and distance. They have shown that economic integration contributes to trade among the participating countries. They further applied this conclusion to the European Common Market and the European Free Trade Association. Their findings also suggest that members of similar linguistic and cultural groups tend to trade more with each other than with non-members.

The Commission of the European Communities also holds that there exists a strong relationship between trade integration and the correlation of business cycles across countries is also pictured by (1990). But certain researchers, such as Krugman (1993), have pointed out that, as trade becomes more highly integrated, countries can specialise more. Increased specialisation may reduce the international correlation of incomes, given sufficiently large supply shocks.

Figure Fehler! Kein Text mit angegebener Formatvorlage im Dokument.:1 The European Commission and the Krugman views



Let's first compare and contrast the views of the European Commission and those of Krugman. De Grauwe (2005) has analysed both of these views. First we will consider the European Commission view. On the horizontal axis is the measure of the degree of trade integration between these countries. On the vertical axis we give the degree of divergent movements of output and employment between groups of countries which are candidates to form a monetary union. The European Commission view can be represented by a downward-sloping line. It says that as the degree of economic integration between countries increases, asymmetric shocks will occur less frequently.

The second view, which is labelled as the Krugman view, is represented by a positively sloped line instead of a downward sloping line. This tells us that, when economic integration increases, the countries involved become more specialized so that they will be subjected to more rather than fewer asymmetric shocks.

A clear cut judgment regarding the correct view is difficult to formulate. Nevertheless it is reasonable to claim that a presumption exists in favour of the European Commission view. De Grauwe (2005) has formulated the reason as follows. As market integration between countries proceeds, national borders become less and less important as factors that determine the location of economic activity. As a result, it becomes more and more likely that concentration and agglomeration effects will be blind to the existence of the borders. This creates the possibility that the clusters of economic activity will encompass borders. Put differently, it becomes more and more likely that the relevant regions in which some activity is centralized will transgress one or more borders.

It can be said as well that there is a presumption in favour of the hypothesis that economic integration will make asymmetric shocks between nations less likely. The issue remains essentially an empirical one which includes two aspects. The first one has to do with the question of whether monetary unions lead to increased economic integration. The second aspect to the empirical issue relates to the question of how this increased integration affects the asymmetry of shocks.

Recently many researchers have done important research regarding the first aspect. Rose (2000) shows that two countries with the same currency trade more than comparable countries with their own currencies, perhaps over three times as much. While reducing exchange rate volatility also increases trade, the effect of a common currency appears to be an order of magnitude larger than that of eliminating exchange rate volatility but retaining separate currencies.[†]

More recent research has centered on locating the precise relationship between the adoption of a common currency and trade. Rose and van Wincoop (2001) have accounted for the influence of a common currency on trade by estimating the empirical “gravity” equation. The standard “gravity” equation says that trade between a pair of countries is a negative function of the distance between these countries and a positive function of their combined GDP’s. But Rose and van Wincoop (2001) have added a number of additional effects to this standard specification, including: the combined per capita GDP of the countries, whether the countries are landlocked, share a common language, land border or colonizer, belong to a common regional free trade agreement (FTA), and so forth. They found that, the currency union effect of trade is large, and two countries that use the same currency trade more. The estimate without country-fixed effects indicates that currency union is associated with an increase in trade of almost 400 percent. Adding country effects reduces both the economic and statistical impact of the currency union effect, but it remains economically large (a trade effect of over 230 percent) and statistically significant.

It is also entirely possible that joining a currency union impacts a specific type of trade more than others. Artis (1998) has showed the benefits of joining a currency union with other countries as an increasing function of bilateral trade in relation to output, or “bilateral openness”. The costs of entering such a union are shown as a decreasing function of bilateral openness, since the value of the exchange rate as a stabilisation instrument decreases with the degree of integration.

[†] Many observers expect that a common currency increases the volume of trade between countries. The argument generally is as follows: transaction costs and especially exchange rate volatility constitute a barrier to trade which decreases the volume of the exchange of goods and services that would otherwise take place.

With respect to the European Union, it is also frequently argued that currency union has caused business cycle synchronization through its effect on trade. It is also important to analyse the border effect on trade. Clark and Wincoop (2001) have pointed out that business cycle correlation among U.S. regions is significantly higher than among European countries, and these differences are mostly related to European national borders. They have also showed that the lower level of trade between European countries, in comparison to U.S. regions, can account for most of the observed border effect. They do not find that there is a direct link between the higher degree of monetary and fiscal policy coordination among the U.S. regions and their higher cycle synchronization. There could, however, be an indirect link through the effect of common policies on trade, particularly in light of recent evidence in Rose (2000) that trade among countries in a monetary union is much larger than trade among countries that are not in a monetary union. These findings suggest that the adoption of a single currency in Europe is not likely to increase the extent of European business cycle synchronization, except possibly indirectly in the long run through the effect of the single currency on trade.

There have been a number of different types of critical response, each of which expresses strong skepticism of the data and conclusions within currency union research. Nitsch (2002, 2004), Berger and Nitsch (2005) have argued that simple manipulations of the data set and the regression specification reduce the estimated currency union effect on trade by about one-half. According to Nitsch (2002) the currency unions in Rose's data set are often very small countries. These countries are mostly islands and former colonies, which have adopted the currency of a larger country. An application of the results to larger economies therefore seems to be overly ambitious. Nitsch (2002) also claims that Rose completely ignores values of zero and/or unreported trade. However, ignoring these observations should hardly affect the coefficient of estimates, because most members of currency unions are either small or poor territories with expected little trade with other countries. In addition, he argues that Rose also misses many intra-currency union observations.

There is some interest, on the part of policy makers, in determining whether monetary integration affects the intensity of trade relations within a currency union. If it is indeed the case, it can be asked further under which conditions monetary integration is likely to add to the intensity of trade relations among members. Nitsch (2004) and Saiki (2005) have investigated whether the trade effect of monetary integration differs across country pairings. The findings of Nitsch (2004) indicate that the aggregate estimate of the common currency masks considerable heterogeneity among country pairs. He found that the trade effect of a common currency is particularly strong for countries with large economies. This is mainly because larger countries are more likely to have a diversified production structure and,

generally may operate as regional suppliers so that they benefit most strongly from currency union.

It can be showed that the relative elasticity of demand and supply when developed countries, such as France and the US, trade with developing countries is the main source of asymmetric effect of currency union. Saiki (2005) found that the effect of currency union is very small (0.03) and neutral for US imports from developing countries. On the other hand, for developing countries' imports from the US, the effect of currency union is positive (0.22) and statistically significant. For France the effect of currency union is larger (0.16) but again neutral when France imports from developing countries. This implies that the effect of currency union on France's imports from developing countries is neutral. On the other hand, for developing countries' imports from France, the effect of currency union is as large as 0.5 and statistically significant. The conclusion to be drawn from these results is that when trade is between industrial countries (which anchors the currency) and a developing country, the effect of a currency union is substantially smaller than what Rose (2000) found. Furthermore, according to Saiki (2005), the large currency union effect is mainly a phenomenon between two small countries trading with each other.

Some studies, such as Berger and Nitsch (2005), claim that the potential trade-creating affects of the EMU must be viewed and analyzed in the proper historical perspective. They took the formation of a monetary union as a continued process and they emphasize that the creation of the EMU was a culmination of an integration process. They pose this question: *"What has been the Euro's impact on trade above and beyond the impact of previous and ongoing steps toward economic integration in Europe?"* They have taken a long-run view of European integration and agreed that the introduction of the Euro has almost no measurable effect on trade. In particular, the elements of European economic integration, such as trade liberalization, economic harmonization, and low exchange rate volatility must be seen as the source of the incremental trade effect of the Euro. As soon as this long-term trend are taken into account and eliminated, the introduction of the Euro has no additional effect on trade.

Other research has called attention to the incorrect specification of Rose's empirical methods. It is possible, that the characteristics shaping trading costs are very different for countries that do and do not share a common currency. If, in historical experience, countries that belong to currency unions are systematically different from those that do not and the relationship between trade and its observable determinants is more complex than a linear regression would make it, the impact of common currency on trade can be grossly miscalculated. For instance, Persson (2001) has argued that Rose's empirical methods could

seriously distort his estimates. Therefore he has proposed that Rose's empirical specifications are inappropriate.

If forming a currency union has a large positive effect on trade, the break-up of a union would be expected to have a significant adverse effect, but Thom and Walsh (2002) have not found this to be true. They present a case study of Ireland's break with sterling following its decision to join the exchange rate mechanism (ERM) of the European Monetary system in 1979. Their research finds support from studies that have reported large currency union effects. The end of the currency union between Ireland and the UK was an isolated event with the other economic relationships between the former partners remaining the same. Free trade and normal commercial relations were maintained between these countries after the end of the currency union. Therefore they argue that the effects of the change of exchange rate regime can be isolated from extraneous influences. The impact of the change of exchange rate regime was minimized by the existence of free trade before and after the currency union, while the costs of exchange rate uncertainty were lowered by the rapid development of an efficient forward foreign exchange market. They observe as well that their findings stand in sharp contrast to those of Rose (2000) and Glick and Rose (2002) who claim that leaving a currency union can lead to a halving of trade between the former partners. However, in the case of the currency union between the UK and Ireland, there is not any difference before and after the currency union, because it was between two members of the EEC and ended without any disruption of free trade and commercial relations between the former partners.

Some researches, such as Nardis and Vicarelli (2003), Micco, Stein and Ordoñez (2003) and Mélitz (2004), have found that the adoption of the euro has had a positive but not an inordinate impact on bilateral trade between European countries. Nardis and Vicarelli (2003) have calculated the variation in the EMU trade with respect to both intra-EMU trade before the introduction of the common currency and the EMU trade with other economies that do not share the European currency. They have found that other things being equal, the euro causes an 8.9 per cent rise in EMU trade (the impact of currency union on trade ranging between 9 and 10 per cent). Under what conditions will countries find it advantageous to join a currency union? Mélitz (2004) has argued that, countries will only form a currency union if they already enjoy particularly close economic or political ties with one another. If so, much of the impact of a currency union may be attributable to features of the relationship having nothing to do with a common currency. According to Melitz's calculations, the impact of currency union on trade is about 0,7-1,3. Micco, Stein and Ordoñez (2003) have analysed the currency union effect on trade using post-1999 data. Their estimation for the Euro's impact on

trade using different samples and different methodologies range between 4 and 16 %. This effect is statistically significant and economically important, but not as spectacular as the early Rose (2000) estimates. Furthermore, they find no evidence that EMU has diverted trade of member countries away from non-member countries. In fact, EMU countries seem to have increased their trade with non EMU countries, as well as with fellow EMU members.

Some authors show that there is little robust evidence that dollarization promotes greater trade with the United States, especially among those countries that are the most likely candidates for dollarization. For example, Klein (2005) considers only trade between the United States and countries in the Western Hemisphere since these countries are the most likely candidates for a dollar currency union. He found that there is no strong evidence that these countries, which include non-industrial countries, have seen an increase in trade with the United States as a result of dollarization. These results contrast with those of Rose and his co-authors. According to Klein (2005) *“The source of the difference between the results in his paper and the results in the work by Rose and co-authors is that here he focuses on samples that may better represent the behavior of potential candidates for dollarization.”* He also demonstrates that it can not be shown that the United States trades more with dollarized non-industrial countries than it does with other non-industrialized countries.

In contrast, Klein and Shambaugh (2006) have shown a large, significant effect of a fixed exchange rate on bilateral trade between a base country and a country that pegs its currency. They declare that the reasons for a country to peg are macroeconomic stability and the provision of a nominal anchor. One of the benefits of a fixed exchange rate is that it presumably expands trade, at least with the base country. They find that with few controls, pegging appears to increase trade by as much as 80%. However, these are clearly over-estimates and when more appropriate controls are included, the results are 40% with country effects or 20% with country pair fixed effects. They find as well that indirect pegs do not appear to have a strong impact on trade unless they come as part of an exchange rate system, in which case they seem to have a positive impact on trade. They have not found any evidence of trade diversion. Instead, pegged countries seem to trade more with all other countries. But they conclude that the impact of a fixed exchange rate on trade may or may not be sufficient to offset some of the costs of fixing the exchange rate.

Some research has demonstrated that the EMU effect on intra-area trade is larger if extra-area trade is also included in the estimates. For example, Faruquee (2004) has analysed the impact of the EMU within the Euro area and argues that the implications of the Rose study are unclear for several reasons. First, the analysis did not directly include countries operating

under the EMU in the sample. Second, the sample countries that did belong to currency areas were mostly smaller, poorer countries. Finally, the cross-sectional analysis provides a comparative benchmark across trading partners that belong to an (existing) currency union arrangement against those that do not. But the more relevant issue for EMU involves the possible change in the level of trade for member states over time, before and after the introduction of the single currency. Like intra-trade, extra-area trade has also grown faster in relative terms when compared to other industrial country trade flows. Consequently, excluding extra-trade from the control group raises the estimated EMU impact on trade between member states when measured relative to trade between partner countries remaining exclusively outside the euro area. This also suggests that monetary union has not had trade diverting effects-an important issue when considering the overall welfare implications, since both intra- and extra-area trade have increased on a comparative basis under the single currency.

2. Econometric Methodology

The gravity model of international trade is one of the most commonly used empirical tools in international economics. The basic idea behind the model is that international trade between a pair of countries can be predicted as being proportional to their national income and inversely proportional to the distance between them. The gravity equation acquired its name based upon a similar function describing the force of gravity in Newtonian physics.

I use an augmented gravity model to estimate the effects of currency unions and exchange rate volatility on trade. The model is “augmented” in that the standard gravity model only includes income and distance variables. In order to account for as many other factors as possible, my equation adds other variables.

The estimated regressions take the following form:

a) $\text{trade} = \beta_1 + \beta_2 \text{euro} + \beta_3 \text{RER} + \beta_4 \text{border} + \beta_5 \text{ecu} + \beta_6 \text{language} + \beta_7 \text{time} + \beta_8 \text{size} + u_t$

b) $\text{openness} = a_1 + a_2 \text{euro} + a_3 \text{size} + a_4 \text{trade} + u_t$

- The euro variable denotes a value of 1 for 1999-2003 (after the Euro) and 0 for 1975-1998 (before the Euro). That is, this variable helps us to find the degree of difference of trade and openness before and after the Euro.
- The language variable is the dummy variable, which is 1 when two countries share the common language, 0 otherwise.

- The RER variable denotes the mean of the real exchange rate of the change in the logarithm of the year-end bilateral exchange rate between currencies of countries i and j.
- The border variable denotes a value of 1 if countries i and j have a common border, 0 otherwise.
- The ECU variable is the dummy variable, which is 1 if ECU was used in at least one country, from i and/or j.
- The language variable denotes a value of 1 if countries i and j have a common language.
- The time variable was used to de-trend the effect of time on the trade variable.
- The variable size is the mean of the logarithm of the two GDPs measured in U.S. dollars. The trade variable is the mean of the ratio of bilateral exports to domestic GDP for the two countries.
- The variable of openness is the mean of the shares of imports and exports in GDP for the two countries.

3. Results

The results that obtained from the regressions are taken as follows:

RANDOM EFFECT:

	TRADE	OPENNESS
RER	-0.39 (-8.26)***	
euro	0.093 (3.23)***	0.09 (21.16)***
border	1.50 (6.01)***	
ecu	1.51 (5.27)***	
language	0.81 (2.08)**	
time	0.03 (9.37)***	
size	-0.16 (1.61)	0.04 (5.65)***
trade		0.10 (22.17)***
C	-18.9 (-17.26)***	2.01 (13.82)***

$R^2 = 0.47$ (within effect)	$R^2 = 0.62$ (within effect)
$\chi^2 = 1225.6^{***}$	$\chi^2 = 2353.3^{***}$
Number of obs. = 1426	Number of obs. = 1426
Number of groups = 55	Number of groups = 55

***-1%; **5%; *10%;

I have used the data for Austria, Denmark, Germany, France, the Netherlands, Italy, Spain, Finland, Sweden, Turkey and the UK.

In this model we can see the effect of two common currencies on trade: the one is the variable of ECU, the other is the Euro.

It is clearly seen that both the Euro and ECU dummy variables are positive and statistically significant. That is, there is a significant and positive difference between the degree of difference of trade and openness. Moreover, two countries that use the same currency trade more, but it can be seen that the currency union effect of trade is not large. These findings, related to the introduction of the euro and its effect on the bilateral trade of European countries, are similar to those in Nardis and Vicarelli (2003). That is, they are not as large as those found in Rose (2000) and Glick and Rose (2002). The effect of the variable of ECU is also positive und significant. These findings are similar to those in Berger and Nitsch (2005), which claim that the potential trade-creating affects of the EMU must be viewed and analyzed in the proper historical perspective

Frankel (2003) has observed that there are three sorts of ways in which an increase in trade among members of a group affect the advisability of opting for a common currency. The first factor has to do with the long run determination of growth: currency unions increase openness and openness in turn raises real income. Frankel and Rose combine estimates of the effects of a common currency on trade and the follow on effects of higher trade on GDP in order to derive estimates of the effects of common currencies on GDP. Joining a currency union with particularly important trading partners can have a large impact. The second and the third factors have to do with the theory of optimum currency areas, which weighs the advantages of fixed exchange rates versus the advantages of floating ones. These factors consider the advantages of a common currency from the viewpoint of exporters and importers, and the advantages of monetary independence. The last factor concerns cyclical fluctuations. The most important advantage of flexible exchange rates is to retain the ability to respond to cyclical downturns and booms by means of monetary policy. I have also found that the currency union has a positive and statistically significant effect on the degree of openness of a particular economy.

It remains to be seen exactly how the ERM affects the synchronization of business cycles across economies. Artis and Zhang (1995) have researched the effects of the Exchange-Rate Mechanism (ERM) of the European Monetary System (EMS) on the international business cycle in terms of the linkage and synchronisation of cyclical fluctuations among countries. They have found that the business cycles have become more group-specific in the ERM period than before. The results of their investigation provide strong support to the hypothesis that ERM membership has promoted a shift of business cycle correlation to that of the anchor country of the system. They have also noticed that the character of the cycle for Germany changed in this period and has become less-clear cut. They have concluded that the linkages of the ERM countries with the German cycle strengthened considerably in the ERM period. They stress as well that the business cycles in the major countries have become more synchronized as a result of increased international trade, openness of financial markets and global capital flows.

I have used the definition of the business cycle that is used by Artis and Zhang (1995). They have defined it in terms of the growth cycle, representing cyclical movements around the long-run growth trend of an economy. The yearly data span the period from 1975 to 2003 for a sample of 19 countries. There are Austria (AUS), Belgium (BEL), the United Kingdom (UK), Denmark (DEN), Finland (FIN), France (FR), Germany (GER), Greece (GR), Italy (IT), the Netherlands (NET), Hungary (HUN), Poland (POL), Portugal (POR), Ireland (IR), Malta (MAL), Romania (ROM), Spain (SP), Sweden (SW), Turkey (TUR) and the United Kingdom (UK). I have used the Hodrick- Prescott (HP) filter to de-trend the data (Hodrick and Prescott, 1997). The HP Filter is a smoothing method that is widely used among macroeconomists to obtain a smooth estimate of the long-term trend component of a series. Technically, the HP filter is a two-sided linear filter that computes the smoothed series by minimizing the variance, subject to a penalty that constrains the second difference.

$$\sum_{t=1}^T (y - s_t)^2 + \lambda \sum_{t=2}^{T-1} ((s_{t+1} - s_t) - (s_t - s_{t-1}))^2$$

The first part measures the fitness and the second is a measure of the smoothness. Ravn and Uhlig (2002) set λ 100 for annual data; 1,600 for quarterly data; 14,400 for monthly data.

Table Fehler! Kein Text mit angegebener Formatvorlage im Dokument.-1: Correlations of the Business cycles of main economies

[illegible]

It can be clearly seen that the cycles in Austria, Belgium, the Netherlands, France, Italy and Malta have become more synchronised with the German cycle. The correlations are moreover comparatively high. And there are no doubts about the beneficial consequences of the adoption of the common currency from the view of the structural characteristics of these economies. It is interesting to note that the business cycles of Portugal have also become more synchronised with the German ones and the cycles of the first group of countries. But in the case of Sweden, the cycles of Sweden are more synchronised with the cycles of the first countries and less synchronised with German cycles. These countries are considered to be in the second group. In the third group are Finland, Denmark and Spain and in the fourth group are Turkey, Greece, Ireland and the UK. The results for Turkey vis-à-vis Germany and the other countries imply that Euro adoption can be relatively costly for Turkey.

Appendix

The Foreign Trade Relationship between Turkey and the European Union

The main findings of the OCA theory show that when countries have different economic structures, they are likely to face asymmetric shocks. Much of the literature on Optimum Currency Areas focuses on the countries which have relatively advanced bilateral trade relationships. Such countries are prime candidates for a currency area. On this score, I want to analyze the foreign trade relationship between Turkey and the European Union.

European countries, especially those in the European Union, are the largest importers of Turkish goods. In 2000, exports to the EU (15) reached 14.5 billion dollars, but its share in total exports fell to 52.2 percent. Although at the end of 2004 exports to the EU (15) have reached 32.5 billion dollars, its share in total exports decreased to 51.6 percent. In 2004, the EU has enlarged to include 10 new members. However, Turkey's export to these countries is much lower than to the original 15 members. Currently, they have approximately a 3% share in total Turkish exports.

It follows that European Countries, especially European Union Members, have an important share in Turkey's imports. They are in the first rank largely due to their geographical proximity to Turkey and their level of economic development. Due to its imports of crude oil and natural gas from CIS countries, this region is ranked second in Turkish imports. The Middle East countries are in third place in Turkey's imports because of the imports of crude oil, and North America is in fourth place as a result of the high-level trade relationship with the USA.

Briefly, in comparison with the 1980s, Turkey's foreign trade has developed greatly in terms of quantity and quality. This is as a result of both domestic developments and international developments. Turkey aims to make this development sustainable and to diversify her exports and imports both in terms of geography and sector by implementing new strategies.

As a consequence it can be said that Turkey has a relatively good trade relationship with the countries of the European Union. Frankel and Rose (1997, 1998) have argued that the more one country trades with others, the more highly correlated will be their business cycles, and, therefore these countries should form a currency union. Because this situation is found in Turkey, it can be counted as a positive aspect of the relationship between the EU and Turkey.

Tabelle Fehler! Kein Text mit angegebener Formatvorlage im Dokument.-1: Exports by Countries

Exporte nach Ländergruppen (in \$ millionen)								
	2000	2001	2002	2003	2004	2005	2006	2007
EU (27)	15 664	17 546	20 415	27 394	34 399	41 365	47 934	60 394
GERMANY	5 179	5 366	5 869	7 485	8 745	9 455	9 686	11 994
OTHER EUROPEAN COUNTRIES (except EU)	1 854	2 095	2 607	3 362	36 581	5 855	7 962	10 843
EFTA	324	316	409	538	657	821	1 189	1 323
CIS	1 649	1 978	2 279	2 963	3 956	5 057	6 993	10 088
RUSSLAND	644	924	1 172	1 368	1 859	2 377	3 238	4 727
NORTH AMERICAN COUNTRIES	3 309	3 297	3 596	3 973	5 174	5 276	5 439	4 541
USA	3 135	3 126	3 356	3 752	4 832	4 911	5 061	4 171
OECD	19 585	21 307	24 498	31 920	42 648	47 325	54 481	65 674
AFRICA	1 373	1 521	1 697	2 131	2 963	3 631	4 566	5 976
NEAR AND MIDDLE EASTERN	2 573	3 261	3 440	4 465	7 238	10 184	11 316	15 081
TOTAL	27 775	31 334	36 059	47 253	63 121	73 476	85 535	107 272

Quelle: www. tuik.gov.tr (Turkish Statistical Institute)

Tabelle Fehler! Kein Text mit angegebener Formatvorlage im Dokument.-2: Importe der Türkei nach Ländergruppen

Importe der Türkei nach Ländergruppen (in \$ millionen)								
	2000	2001	2002	2003	2004	2005	2006	2007
EU (27)	28 527	19 823	25 689	35 140	48 103	52 696	59 401	68 612
GERMANY	7 198	5 335	7 042	9 453	12 516	13 634	14 768	17 540
OTHER EUROPEAN COUNTRIES (except EU)	6 148	5 738	7 487	10 342	15 757	20 386	25 695	34 253
EFTA	1 156	1 481	2 512	3 396	3 890	4 440	4 522	5 775
CIS	4 167	3 390	3 421	3 741	5 066	5 823	6 936	9 033
RUSSLAND	3 911	3 261	3 099	3 496	4 697	5 376	6 261	8 166
NORTH AMERICAN COUNTRIES	5 693	4 630	5 555	7 777	12 886	17 253	23 373	31 263

USA	3 887	3 436	3 892	5 451	9 027	12 907	17 806	23 508
OECD	36 821	447	34 154	45 545	62 309	69 583	77 813	91 857
AFRICA	2 714	2 819	2 696	3 338	4 781	6 047	7 405	6 784
NEAR AND MIDDLE EASTERN	3 373	3 016	3 186	4 455	5 139	7 967	10 568	12 641
TOTAL	54 503	41 399	51 554	69 340	97 540	116 774	139 576	170 063

Quelle: www.tuik.gov.tr (Turkish Statistical Institute)

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