THE CENTRAL BANK OF THE REPUBLIC OF TURKEY

A COMPARISON OF THE PRICE COMPETITIVENESS OF TURKISH AND SOUTH EAST ASIAN EXPORTS IN THE EUROPEAN UNION MARKET IN THE 1990S

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ABSTRACT

The relative lack of diversification with respect to export markets and products makes export receipts of Turkey vulnerable to fluctuations in the demand conditions. Given that most of the Turkish exports face intense competition from close substitutes produced in other countries, avoiding large fluctuations in export receipts, and maintenance/growth of market shares in such major export destinations as the EU market often require price competition. This paper investigates the significance and nature of price competition between Turkish and South East Asian (SEA) exporters of selected manufacturing products in the EU market where this competition is particularly stiff. For this purpose, we estimate a model which posits that the relative market shares of Turkish and SEA exporters in the EU markets for commodities we consider are related to prices of imports from respective countries. Our analysis concentrates on “Textiles and Garments”, a leading export category that brings in a considerable part of Turkey’s export receipts, and “Technology Intensive Products” that has recently become an export category of increasing significance for Turkey. Our results indicate that price competition plays a significant role in explaining the EU market shares of

Turkish and SEA exporters and provide useful information on the magnitudes of relative price elasticities. Furthermore, they provide grounds for an evaluation of the possible contributions of Turkey's geographic proximity to the EU market, and the Turkey-EU Customs Union (CU) agreement to the price competitiveness of Turkish products against their SEA competitors.

Key Words **:** Exports, Price competition, European Union, Turkey, South East Asia

JEL Classification **:** F14, C33

I. INTRODUCTION

Turkish economy has experienced a considerable structural transformation within the past two decades. Liberalization of the economy began with the introduction of a far-reaching structural adjustment program in 1980. Implementation of the program started with a devaluation of the overvalued domestic currency and was later supported by a set of measures to liberalize trade and financial markets. The program represented a major switch for Turkish economy away from an import substitution-based development strategy to an outward oriented strategy based on promotion of exports (Uygur, 1997). The switch to outward orientation led to a boom in Turkish exports, which were mostly concentrated in agricultural and livestock products, and the value of exports increased from $2.26 billion in 1979 to $12.96 billion in 1990 and to almost $27 billion in 1999. With such industries as textiles and garments, iron and steel, and food-processing ranking among the leading contributors to this boom, the composition of exports began to change in favor of manufactured goods (Sayan and Demir, 2001).

The changing composition of exports towards manufacturing products initially signaled increased diversity, particularly until 1987 Erlat and Sahin, 1998). Yet, Turkish exports remained relatively concentrated from then on, but this time in certain sectors of manufacturing industry. Textiles and garments, for example, gained remarkable shares (Erlat, 1993) reaching about 44 % of total exports after 1989. Likewise, the bulk of Turkish exports continued to be shipped to relatively few markets, particularly the European Union (EU), despite the increasing number export destinations after 1980[1].This relative lack of diversification with respect to export

[1] Over the past decades, the EU's share in Turkey's exports has been around 50 % with Germany alone having an average share of 20 % (Sayan, 2000).

markets and products makes export receipts vulnerable to fluctuations in the demand conditions. Given that most of the Turkish exports face intense competition from close substitutes produced in other countries, avoiding large fluctuations in export receipts, and maintenance/growth of market shares often require price competition. In addition to its traditional significance as a major export destination, the EU market is where Turkish exporters of various manufacturing products face a rather stiff competition, particularly from South East Asian (SEA) producers, as frequently stated in press releases by Turkish Exporters' Association.

The purpose of this paper is to empirically investigate the significance and nature of price competition between Turkish and South East Asian exporters of selected manufacturing products in the EU market in the 1990s (more precisely, from 1990 to 1997, on account of the lack of comparable data beyond this year). For this purpose, we develop and estimate a model in the lines of Merkies and Van Der Meer (1988) that relate the respective shares of Turkish and SEA exporters in the EU markets for commodities we consider to prices each country's exporters charge relative to others. Our analysis concentrates on two commodity groups: "Textiles and Garments" that have long been a major export category[2], and commodities we classify as "Technology Intensive Products" that make up an up-and-coming export category-and has recently become even more important (see Appendix A for the commodity coverage of these sectors). The reason why we consider these two product groups is obvious in the case of textiles and garments: Due to the sizable share of these products in total exports, changes in the export performance of this sector affect Turkey's export receipts

[2] In the light of the discussion by Erlat and Sahin (1998) around a more strict use of the terminology of "traditional" and "non-traditional" exports in the literature, we deliberately avoid calling textiles and garments a "traditional" export sector here.

considerably. Exports of technology intensive commodities, on the other hand, have an increasing share in the world trade and they significantly contribute to growth (Guerrieri and Milana, 1995). They are highly tradable and may potentially play a significant role in improving a country's international competitiveness (Daniels, 1999).

As for the countries in our sample, we consider China (People's Republic), Hong Kong, Korea and Taiwan as main SEA competitors of Turkish exporters in the EU markets for product groups we are interested in. The list of countries making up the EU is given in Appendix A, whereas Appendix B shows the values of export similarity indices we calculated for SEA countries vis-à-vis Turkey, over the 1990-1997 period.

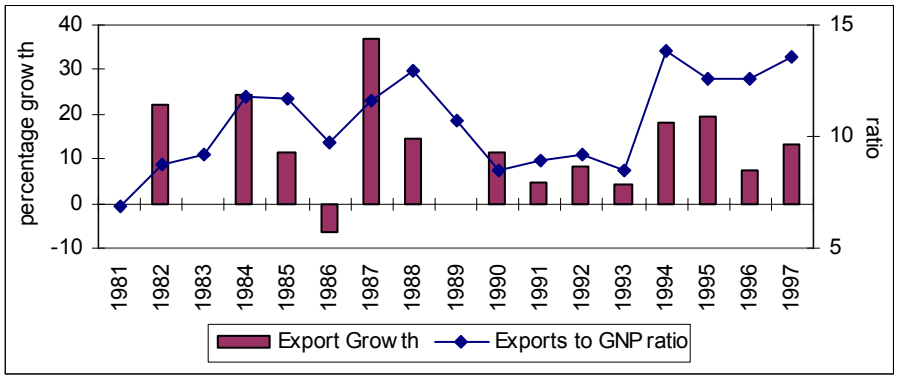
Our results reveal that price competition plays a significant role in explaining the EU market shares of Turkish and SEA exporters and provide useful information as to the magnitudes of relative price elasticities. Furthermore, they provide grounds for an evaluation of the possible contributions of Turkey's geographic proximity to the EU market, and the Turkey-EU Customs Union (CU) agreement to the price competitiveness of Turkish products in the EU markets against their SEA competitors.

The rest of the paper is organized as follows. The next section overviews the export performance of Turkey within the last decade by placing a special emphasis on the developments concerning the exports of product groups we consider. Section III describes the framework of empirical investigation and the data, and discusses the choice of sample period. Empirical findings are presented in Section IV. The last section concludes the paper with a summary of the findings, a discussion on the possible benefits of Turkey's CU membership with the EU and suggestions for further research.

II. EXPORT PERFORMANCE OF TURKEY IN THE 1990S

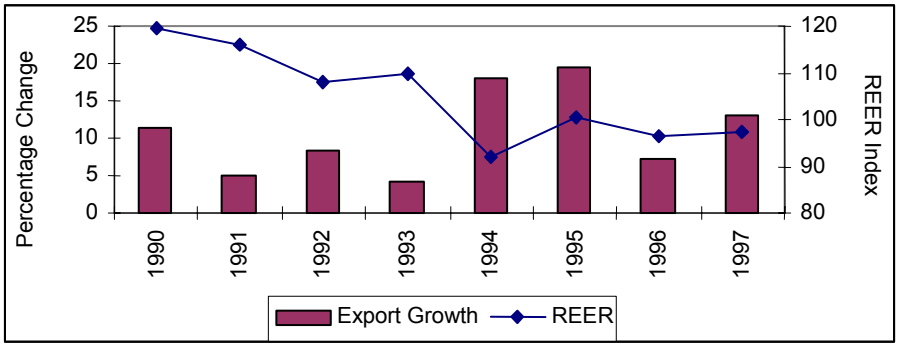
The data on export performance of Turkey during the 1990s highlight an episode of slower export growth between 1990 and 1993, followed by a period when the country picked the high growth rates of the 1980s (Figure 1). The low export growth episode corresponds to the overvaluation of domestic currency, whereas the period after the sizable real depreciation of 1994 is when high growth rates of exports were restored (Figure 2). This matching between the periodicity of high (low) rates of export growth and real depreciations (appreciations) implies that the export performance and real exchange rate movements are strongly correlated (Brada, Kutan and Zhou, 1997).

FIGURE 1
EXPORT GROWTH AND EXPORTS TO GNP RATIO: 1980-1997



Source: SIS (2000) and CBRT (2000).

FIGURE 2
EXPORT GROWTH AND REAL EFFECTIVE EXCHANGE RATE[3]: 1990-1997

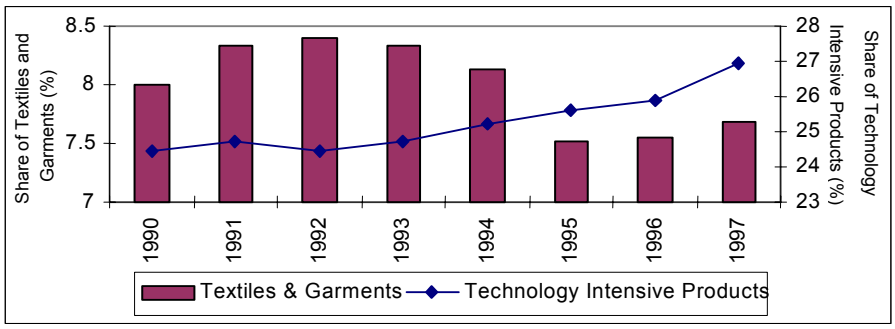


Source: SIS (2000) and CBRT (2000).

In addition to changes in the real value of TL, the developments and changing demand conditions in major export markets, particularly the EU, affected Turkey's performance during the period under consideration. A recent study by Kotan (2000), for example, shows, by using constant market share (CMS) analysis, that the EU's import growth lagging behind the expansion of imports in the rest of the world during 1990-1997 has impeded Turkish exports to some extent. The results in Kotan (2000) indicate further that the slow down in the expansion of import demand by the EU happened at the same time as a change in the composition of its imports. The EU's demand for textiles and garments declined during the second half of this period, whereas its demand for technology intensive products increased, leading to a gradual increase in the share of technology intensive goods imports (Figure 3).

[3] The real value of Turkish lira was calculated against a currency basket which is composed of 1 US dollar and 1.5 German marks. Turkish private manufacturing prices were taken as an indicator of domestic inflation rate whereas the foreign inflation rate was calculated as a weighted average of US and German producer price indices, with respective weights set at 0.544 and 0.456. A fall (rise) in the index shows real depreciation (appreciation) of the Turkish lira against the currency basket.

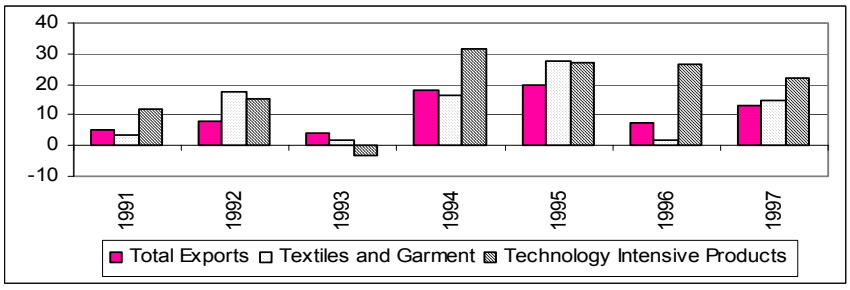
FIGURE 3
SHARES OF "TEXTILES AND GARMENTS" AND "TECHNOLOGY INTENSIVE PRODUCTS" IN THE EU IMPORTS 1990-1997



Source: OECD International Trade Statistics CD-ROM.

Since textiles and garments are among Turkey's leading export products, the decline in the share of this product group in total imports by the EU, Turkey's major market, affected the composition of Turkish exports as well. The average growth rate of manufacturing exports rose from 7.5 % a year in 1990-1993 to 16.2 % in 1994-1997 on average, thereby exceeding the growth of total exports in the second half of the 1990s. While the growth of textiles and garment exports followed a similar pattern, the exports of technology intensive products showed a remarkable progress, with their annual growth rate more than tripling from an average of 8.1 % in 1990-1993 to 26.8 % in 1994-1997 on average (Figure 4).

FIGURE 4
GROWTH RATES OF TURKISH EXPORTS BY SECTORS: 1991-1997



Source: OECD International Trade Statistics CD-ROM.

While a more careful and detailed examination is needed to derive stronger and more precise conclusions, the following observations can safely be made concerning the developments in Turkish exports and the EU imports in the 1990s. Turkish exporters of technology intensive products managed to increase their shipments to the EU just when the demand for these products expanded there, thereby serving to counter the effects of the reductions in textiles and garments exports on Turkey's export receipts. Had they not been able to increase their supply as quickly to meet part of the increased demand for technology intensive products in the EU, however, it might have been impossible to avoid fluctuations in Turkey's export receipts. Thus, even though the recent developments in the EU's demand for imports do not seem to have affected export receipts of Turkey in any alarming way, the relatively heavy dependence of the composition and volume of Turkish exports on these developments is a cause for concern for Turkish policy makers and exporters alike.

In general, excessive concentration of exports with respect to markets and product groups has the potential to adversely affect the overall export performance of a country. As discussed by Lloyd (1994), such excessive concentration may be particularly troublesome for the exporting country when the world demand for the products in question or the total demand for imports in major markets contracts. In such cases, exporting country can have serious difficulties in maintaining its market shares or even face decreasing shares. Furthermore, there is little policy makers of the exporting country can do about such exogenous developments other than encouraging product/market diversity which, of course, will take time to accomplish. As far as the changes in export performance due to shifts in the degree of competitiveness are concerned, on the other

hand, policy actions may be very effective. In fact, relative price disturbances may alter the competitive position of a country in the export market and have a considerable effect on the overall export performance (Lloyd, 1994).[4] Evaluating the relative competitive position of Turkish exporters in the EU market for product groups in our sample, and potential improvements in this position requires that consideration be given to the performance of the SEA exporters of the same products. The results in the next section provide evidence concerning the importance of price competition in the EU market in the selected product groups, and discusses Turkey's additional advantages of geographic proximity and membership in the CU with the EU.

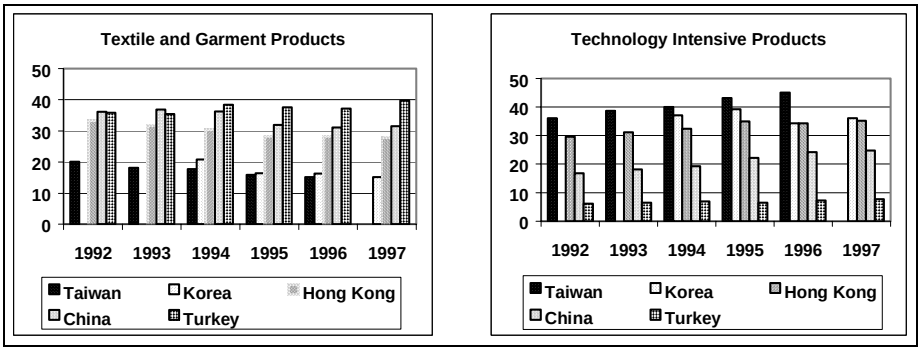
III. DATA AND METHODOLOGY

This section first describes how the estimations aiming to investigate the significance of price competition between Turkey and the SEA countries in our sample are carried out for "Textiles and Garments" and "Technology Intensive Products".[5] Both commodity groups are among the leading export categories of the countries we consider (Figure 5).

[4] When there is an increase in the export price of a commodity produced by a country, importers of that product will shift their demand to a possible substitute of that commodity which has a relatively lower price. Such a substitute can usually be found through exporters from other countries who are able to charge relatively lower prices, due to a number of reasons such as lower transportation and/or insurance costs, lower tariff rate advantages, or some other cost advantages. In such cases, disturbances to relative prices charged by different exporters of the same commodity (or close substitutes) trigger a demand reaction.

[5] In the literature, technology intensive products are usually defined according to the R&D intensities of firms. The products produced by firms with R&D expenditure to sales ratio of higher than 4 percent threshold value are divided into two sub-groups: leading edge and high-level technology products. Technology intensive commodities we consider here (as listed in Appendix A) correspond to what Grupp (1995) calls high-level technology products.

FIGURE 5
SHARES OF PRODUCT GROUPS CONSIDERED IN TURKISH AND SEA EXPORTS:1992-1997



Source: OECD International Trade Statistics CD-ROM.

We begin our analysis by considering homothetic import demand functions resulting from a two-stage utility maximization process (Merkies and Van Der Meer, 1988). At the first stage of the problem, a constant elasticity of substitution (CES) utility function is maximized subject to the import budget of importing country (EU in this case) to be allocated between a number of commodities indexed by $k \in \{1,2,\ldots,m\}$. The solution of this problem yields

$$M^k = \delta^k M \left(\frac{P^k}{P} \right)^{(1-\sigma)} \qquad (1)$$

where the optimum demand for commodity *k* imports by the EU, M^k, depends on the total demand for imports, M; the ratio of the import price index of commodity *k*, P^k, to the overall import price level, P, and a parameter representing the stable taste pattern of the EU, δ^k [6]. In addition, σ is defined to be the elasticity of substitution at the top-level of utility maximization.

[6] See Kotan (2000) for detailed derivations of equations (1) and (2a).

At the second stage, a utility function similar to the first stage is maximized subject to the budget allocated to the imports of commodity *k* (i.e., M^k determined in the previous stage) so as to determine imports from individual country exporters. Letting the set of countries supplying commodity *k* to the EU be indexed over *n*∈{Turkey, China, Hong Kong, Korea and Taiwan}, solution of this problem yields:

$$M_n^k = \delta_n^k M^k \left(\frac{P_n^k}{P^k} \right)^{(1-\sigma^k)} \qquad (2a)$$

Equation (2a) shows that M_n^k, the optimum import demand for each commodity *k* by the EU from each exporter *n* depends on M^k, the optimum level of import demand for commodity *k* –as determined through equation (1); a price ratio and the corresponding stable taste pattern parameter, δ_n^k. The price ratio shows the price that exporting country *n* charges for commodity *k* relative to that commodity's average import price in the EU market. σ^k in equation (2a) is the elasticity parameter which, when subtracted from 1, measures the percentage change in the share of exporting country *n* in the commodity *k* imports resulting from a one percent increase in the price charged by country *n* exporters relative to the average import price. This interpretation of σ^k follows from

$$d \ln\left(\frac{M_n^k}{M^k} \right) = (1-\sigma^k) d \ln\left(\frac{P_n^k}{P^k} \right) \qquad (2b)$$

which predicts that, when the price of commodity *k* imported from Turkey increases relative to the respective average import price of the same commodity in the EU market, the demand shifts away from Turkish exporters towards the other exporters of the same product. In other words, when the price of commodity *k* exported from Turkey to

the EU increases, Turkey loses its relative price competitiveness and hence, its relative share in the EU market.

In order to proceed with the estimation, equation (2a) is linearized by taking natural logarithms first. Total differentiation of both sides of the equation lets stable taste pattern term disappear from the expression. Both sides of the equations are then multiplied by the base period values of the relevant dependent variable in order to obtain the error terms with equal variances[7]. The resulting equation is given as follows:

$$M_n^k\left[d\ln(M_n^k)\right] = M_n^k\left[d\ln(M^k) + (1-\sigma^k)d\ln\left(\frac{P_n^k}{P^k}\right)\right] + \varepsilon_n^k \qquad (3)$$

When estimating equation (3), 20 sub-sectors were covered under textiles and garment exports and 48 sub-sectors under technology intensive product exports. The product coverage of each category is given in Appendix A in terms of three-digit Standard International Trade Classification (SITC) Revision 3. Values and prices of total imports and exports were taken from IMF-International Financial Statistics CD-ROM. Manufacturing exports of Turkey and SEA countries to the EU countries, as well as manufacturing imports of the EU from Turkey, SEA countries and the rest of the world were obtained from the OECD International Trade Statistics CD-ROM in values and quantities. Export and import prices were calculated by dividing values by respective quantities and then indexing by Laspeyres method.[8]

[7] Note that this transformation does not change the expected values of estimated parameters, but only the precision with which they are estimated. See Merkiees and Meer (1988) for a further discussion on this issue.

[8] Although there is no consensus on the proper method of indexation in the literature, the Laspeyres method is relatively more common (Fagerberg and Sollie, 1987, Lohrmann, 1999).

SEA countries to be included in the sample were determined based on export similarity indices calculated for Turkey vis-à-vis China, Hong Kong, Korea and Taiwan (see Appendix B). A considerable degree of similarity was found in the case of textiles and garments. In this category, Turkey was found to exhibit the highest degree of export similarity with Hong Kong and China but a relatively modest similarity of exports with Taiwan and Korea. In the case of technology intensive products, the highest index number for any SEA country in the 1990-1997 period was 22 percent pointing to low export similarities. Unlike the export similarities for textiles and garments, however, similarity indices for technology intensive exports turned out to be fairly stable throughout the 1990s. Furthermore, the remarkable progress of technology intensive products in Turkish exports in the second half of 1990s justified the inclusion of all four SEA countries in the analysis.

A fixed-effects model was used in the panel data estimation of equation (3) using generalized least squares (GLS) (Hisao, 1989; Matyas, 1995). The reason behind the choice of fixed-effects model was that even if the random-effects model were valid, the fixed-effects estimator would still produce consistent estimates of the identifiable parameters, while the reverse would not be true. Still, Wu-Hausman test was applied to check for the true specification.[9]

[9] The Hausman test statistic is defined as $H = (\hat{\beta}_{RE} - \hat{\beta}_{FE})' (\Sigma_{RE} - \Sigma_{FE})^{-1} (\hat{\beta}_{RE} - \hat{\beta}_{FE})$ where RE and FE represents random and fixed effects, respectively. $\hat{\beta}$ is the pooled GLS estimator and Σ is the covariance matrix of the error terms. This statistic is distributed asymptotically as χ^2 with *k* degrees of freedom under the null that the hypothesis that random effect specification is correct. For a detailed discussion, see Johnston and Dinardo (1997).

IV- EMPIRICAL FINDINGS

The empirical analysis was carried out first by considering the 1990-1997 period as a whole. Two successive sub-periods, 1990-1993 and 1994-1997, were then considered separately to see if results would differ across these two periods respectively corresponding to low- and high-export growth episodes of Turkish exports (and high and low values of real exchange rates).

Table 1 presents the panel data estimation results for textiles and garments. It is clear from the results that relative prices have a statistically significant effect on relative shares of Turkey, China, Hong Kong, Korea and Taiwan in the EU's textiles and garments imports with an expected sign during the period 1990-1997. In other words, when the exporters of a given country increase their own price relative to the price charged by others, that country loses part of its share in the EU market. Estimated values of parameters indicate that the EU's demand for textiles and garments imports from all countries in the sample is elastic –and even more so for imports from Turkey and Hong Kong. Furthermore, the R^2 values reported in Table 1 imply that price competition explains nearly half of the relative share movements of Turkey and SEAs in the EU's textiles and garments market.

When the estimation was repeated for two consecutive subperiods separately, the estimates of elasticities of substitution did not deviate much, implying that the textiles and garments exporters do not have wide margins for charging high mark-ups over costs in the short to medium-run. It is observed from the associated R^2 values that price competition better explains the share of each exporter in the EU market during 1990-1993 period than the 1994-1997 period, except for Hong Kong. This, in turn, implies that price competition for

the maintenance of the existing market shares was stiffer in the former period that in the latter.

TABLE 1
ESTIMATION RESULTS FOR TEXTILES AND GARMENTS

Periods/ Countries	$1-\sigma^k$	Elasticity of Substitution	R^2	DW Statistic
1990-1997				
Turkey	-0.8087*	1.8087	0.57	2.69
China	-0.4338*	1.4338	0.40	2.73
Hong Kong	-0.8570*	1.8570	0.68	2.72
Korea	-0.3850*	1.3850	0.47	2.84
Taiwan	-0.4646*	1.4646	0.54	2.57
1990-1993				
Turkey	-0.7676*	1.7676	0.73	3.09
China	-0.4984*	1.4984	0.96	2.88
Hong Kong	-0.8952*	1.8952	0.71	2.85
Korea	-0.2253*	1.2253	0.78	3.09
Taiwan	-0.3790*	1.3790	0.79	3.11
1994-1997				
Turkey	-0.9381*	1.9381	0.69	2.85
China	-0.4445*	1.4445	0.44	2.99
Hong Kong	-0.9846*	1.9846	0.82	2.80
Korea	-0.3248*	1.3248	0.55	3.63
Taiwan	-0.3136*	1.3136	0.51	3.04

Note: * denotes significance at one percent level.

The estimation results presented in Table 2 indicate that a relatively higher price charged by an exporter will reduce its market share relative to others in the case of the technology intensive products as well, and this effect is significant throughout the 1990-1997 period for all countries included in the sample. While the EU's elasticities of substitution among the exporters of technology intensive products turned out to be higher than that of textiles and garments during the same period, they are observed to decrease to some extent after 1993. This implies that the pressure of stiff price competition is somewhat relieved in the 1994-1997 period compared to the previous subperiod. Still, the elasticities of substitution remain high and charging higher mark-ups over costs seems rather difficult to do without losing relative market shares.

TABLE 2
ESTIMATION RESULTS FOR TECHNOLOGY INTENSIVE PRODUCTS

Periods/ Countries	$1-\sigma^k$	Elasticity of Substitution	R^2	DW Statistic
1990-1997				
Turkey	-0.9550*	1.9550	0.98	2.45
China	-0.5047*	1.5047	0.75	2.26
Hong Kong	-0.7655*	1.7655	0.71	2.60
Korea	-0.7598*	1.7598	0.81	2.46
Taiwan	-0.6355*	1.6355	0.75	2.62
1990-1993				
Turkey	-0.9874*	1.9874	0.99	2.51
China	-0.6685*	1.6685	0.97	2.86
Hong Kong	-0.8203*	1.8203	0.90	2.82
Korea	-0.8689*	1.8689	0.90	2.64
Taiwan	-0.6656*	1.6656	0.94	2.64
1994-1997				
Turkey	-0.8789*	1.8789	0.97	2.32
China	-0.3364*	1.3364	0.72	2.41
Hong Kong	-0.6722*	1.6722	0.73	2.65
Korea	-0.7181*	1.7181	0.79	2.49
Taiwan	-0.5698*	1.5698	0.74	2.66

Note: * denotes significance at one percent level.

A comparison of results in Tables 1 and 2 reveals that price competition explains a greater portion of the alterations in the relative shares of Turkey and SEAs in the EU market of technology intensive products as compared to textiles and garments –particularly in the 1990-1993 period as indicated by R^2 values that are close to 1. However, the effect of relative prices on the relative shares of SEAs in the EU market decreases from 1990-1993 to 1994-1997. Turkey, on the other hand, could not reduce the pressure of relative prices on its market share during the two consecutive periods and hence, continued to face a strong price competition during the entire period.

V- CONCLUSIONS

This paper investigated the significance and nature of price competition between Turkish and South East Asian exporters of

selected manufacturing products in the EU market between 1990 and 1997. For this purpose, we estimated a model which posits that the relative market shares of Turkish and SEA exporters in the EU markets for commodities we consider are related to prices of imports from respective countries. Our analysis concentrated on two commodity groups: “Textiles and Garments” that have long been a leading export category, and commodities we classified as “Technology Intensive Products” that has recently become an export category of increasing significance for Turkey. Textiles and garments were picked since changes in the export performance of this sector affect Turkey’s export receipts considerably due to their sizable share in total exports. Exports of technology intensive commodities, on the other hand, were considered due to their increasing share in the world trade and their potentially significant contributions to the improvements in a country’s international competitiveness and hence, to growth. We considered People’s Republic of China, Hong Kong, Korea and Taiwan as main SEA competitors of Turkish exporters in the EU markets for these product groups.

The results of the panel data estimation suggested that relative price movements are an important factor affecting the relative shares of Turkey and SEAs in the EU market for both product groups considered, but especially for technology intensive products. More precisely, our estimation results showed, for both commodity groups we considered, that an increase in the price charged by exporters from a particular country over prices charged by others will lead to a decline in that country’s share in the EU imports. Furthermore, the EU’s import demand for both product groups turned out to be elastic, implying that the exporters of these products would not be able to enjoy high margins between prices and costs. This further implies that

the exporters who want to make a headway against the competition should try to charge lower prices by reducing their costs. Within this framework, Turkish exporters seem to have two potentially important advantages over their competitors from SEA: First, the geographic proximity of Turkey to the EU markets is expected to enable Turkish exporters to charge relatively lower prices by reducing transportation costs.[10] Secondly, the Customs Union (CU) agreement signed between Turkey and the EU makes it possible for Turkish manufacturing exports be imported into the EU without the customs duties that SEA exports are subject to.

While the cost advantage of Turkish exporters due to geographic proximity would have been expected to be equally applicable to both textiles and garments, and technology intensive products, our examination of the differences between CIF and FOB prices of EU imports led to an interesting observation[11]. The differences we calculated between CIF import and FOB export prices for the product groups and countries in our sample indicated that even though Turkish exporters of textiles and garments shipping to the EU market seemed to enjoy a proximity advantage over SEA countries, no such advantage was apparent in the case of technology intensive products.

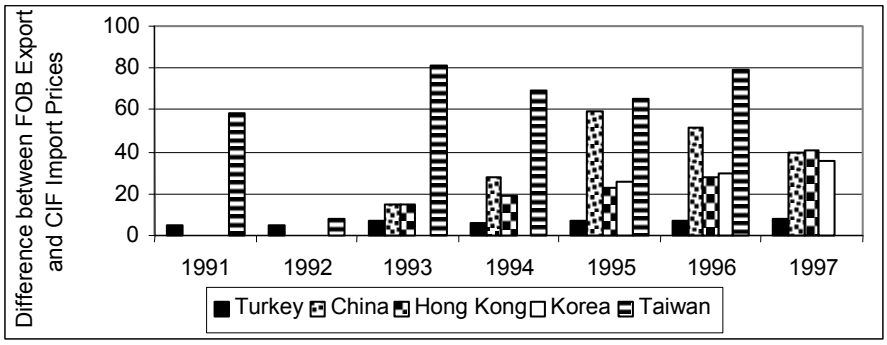
The calculated differences between CIF and FOB prices for textiles and garments for Turkey and SEA countries in the EU market

[10] Using a sample of non-EU trade partners of Turkey, Sayan (1998) showed, on the basis of results from a gravity model, that the distance from Turkey to the country of destination is a significant factor affecting Turkish exports negatively.

[11] Import and export prices are defined as inclusive of cost of insurance and freight (CIF) and free on board (FOB), respectively. The difference between two prices comprises of freight and insurance costs. While the freight costs are directly and positively related to the distance between exporting and importing countries, the distance affects insurance costs as one of several factors that insurance companies consider in determining the level of risk premium to be charged.

are presented in Figure 6. It can be clearly observed that the difference is markedly lower for Turkish exporters than that for all other countries in our sample, clearly pointing to a cost advantage Turkish exporters of textiles and garments enjoy due to their proximity to the EU market.

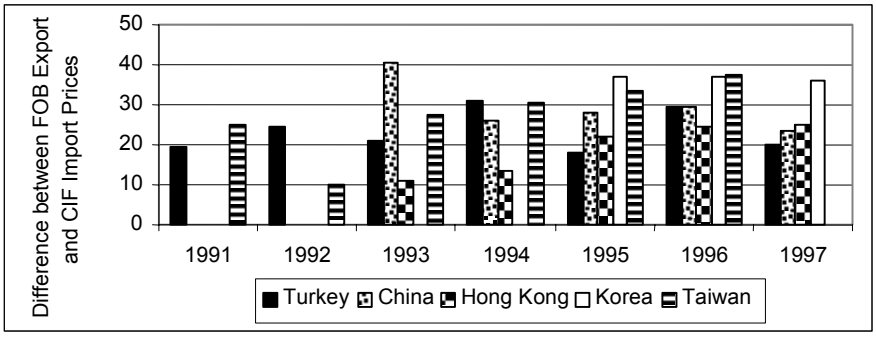
FIGURE 6
THE DIFFERENCE BETWEEN EXPORT (FOB) AND IMPORT (CIF) PRICES FOR TEXTILES AND GARMENTS: 1992-1997



Source: Authors' calculations based on OECD data.
Note: The data was not available for the countries/years whose bars are missing from the figure.

When the difference between CIF import and FOB export prices of technology intensive products by countries are considered, the situation is somewhat reversed. Figure 7 shows that the price difference of Turkey remains lower than some of the SEA countries in some years but becomes larger in other years. Thus, Turkey's proximity advantage is not as strong in the case of technology intensive products as in the case of textiles and garments.

FIGURE 7
THE DIFFERENCE BETWEEN EXPORT (FOB) AND IMPORT (CIF) PRICES FOR TECHNOLOGY INTENSIVE PRODUCTS: 1991-1997



Source**:** Authors' calculations based on OECD data.
Note: The data was not available for the countries/years whose bars are missing from the figure.

One possible explanation for this disappearance of the cost advantage due to proximity of Turkey in some years could be the scale economies provided to SEA countries by the voluminous shipments of technology intensive products to the EU (Noland, 1997). Hence, to the extent that the volume of shipments enables SEA exporters to enjoy economies of scale in the exportation of technology intensive products, thereby reducing their costs, Turkish exporters may lose the cost advantages that their proximity to the EU market could potentially create.

The foregoing discussion in this section indicates that the geographic proximity of Turkey to the EU markets is likely to provide a cost advantage to Turkish exporters by reducing freight costs but this proximity alone might not be sufficient to give them a leading edge while competing against SEA exporters for various markets in the EU. The exemption, thanks to the CU with the EU, of Turkish manufacturing products from customs duties, on the other hand, appears to provide a cost advantage to Turkish exporters, that is hard to be beaten by the competition from the SEA. Yet, the effects of CU

with the EU on Turkey's price competitiveness could not be explored in detail here due to data restrictions and therefore, left for a future study. One can safely argue, however, that given the estimation results reported in the previous section showing the intensity of price competition and the values of elasticities, the elimination of duties that the importers of Turkish products were required to pay following the force into effect of the CU in 1996 must have significantly contributed to the competitive power of Turkish exports over the SEA products which remained subject to those duties.

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APPENDIX A
Country and Product Coverage

TABLE A1
COUNTRIES INCLUDED IN THE ANALYSIS

Importing Countries		Exporting Countries
Austria	Ireland	China
Belgium-Luxembourg	Italy	Hong Kong
Denmark	Netherlands	Korea
Finland	Portugal	Taiwan
France	Spain	Turkey
Germany	Sweden	
Greece	United Kingdom	

TABLE A2
3-DIGIT SITC PRODUCT GROUPS COVERED UNDER TEXTILES AND GARMENTS

611	Leather	658	Made-up articles of textile materials, n.e.s.
612	Manufac. of leather, n.e.s.; saddlery and harness	831	Travel goods, handbags and similar containers
613	Furskins, tanned or dressed, excluding 8483	841	Men's clothing of textile fabrics, not knitted
651	Textile yarn	842	Women's clothing, of textile fabrics
652	Cotton fabrics, woven	843	Men's or boys' clothing, of textile, knitted, crocheted
653	Fabrics, woven, of man-made fabrics	844	Women's clothing, of textile, knitted or crocheted
654	Other textile fabrics, woven	845	Articles of apparel, of textile fabrics, n.e.s.
655	Knitted or crocheted fabrics, n.e.s.	846	Clothing accessories, of textile fabrics
656	Tulles, trimmings, lace, ribbons & other small wares	848	Articles of apparel, clothing access., excluding textile
657	Special yarn, special textile fabrics and related	851	Footwear

TABLE A3
3-DIGIT SITC PRODUCT GROUPS COVERED UNDER TECHNOLOGY INTENSIVE PRODUCTS

522	Inorganic chemicals, oxides	751	Office machines
523	Other inorganic chemicals	752	Automatic data processing (ADP) equipment
531	Synthetic dye, nat. indigo, lakes n.e.s.	759	Office, ADP mach. parts, accessories
541	Medicinal, pharmaceutical products	761	Television receivers
562	Manufactured fertilizers	762	Radio broadcast receivers
582	Products of condensation etc.	763	Sound recorders, phonograph
583	Polymerization products etc.	764	Telecomm. equip., parts, accessories
591	Pesticides, disinfectants	771	Electric power machinery n.e.s.
711	Steam boilers and aux plant	772	Switch gear etc., parts n.e.s.
712	Steam engines, turbines	773	Electrical distributing equipment
713	Internal combustion piston engines	774	Electro-medical, X-ray equipment
714	Engines and motors n.e.s.	775	Household type equipment n.e.s.
716	Rotating electrical plant	776	Transistors, valves, etc.
718	Other power generating equipment	778	Electrical machinery n.e.s.
721	Agricultural machinery excluding tractors	792	Aircraft etc.
722	Tractors non-road	871	Optical instruments
723	Civil engineering equipment etc.	872	Medical instruments
724	Textiles, leather machinery	873	Meters and counters n.e.s.
725	Paper mill machinery etc.	874	Measuring, controlling instruments
726	Printing, book-binding machinery etc.	881	Photo apparatus, equipment n.e.s.
727	Food-machinery, non-domestic	882	Photo, cinema supplies
728	Other machinery for specialized industry	883	Developed cinema film
736	Metalworking machinery-tools	884	Optical goods n.e.s.
737	Metalworking machinery n.e.s.	885	Watches and clocks

APPENDIX B

Export Similarities

Export similarity index is defined as:

$$S(n,m) = \{\sum_{k} \text{Minimum}[X_k(1m), X_k(2m)]\} * 100$$

where $X_k(nm)$ is the share of commodity *k* in country *n*'s exports to country *m* for n=1,2 (Finger and Krenin, 1979).

It determines the proportion of the commodity basket of one exporter which is perfectly matched by that of the other exporter by removing the effects of relative scale of total exports.

TABLE B1
SIMILARITY INDICES FOR TEXTILES AND GARMENTS EXPORTS TO THE EU: TURKEY VERSUS SEA COUNTRIES, 1990-1997

Years	Turkey vs. China	Turkey vs. Taiwan	Turkey vs. Hong Kong	Turkey vs. Korea	Total Export Similarity
1990	40.52	23.60	46.85	34.46	21.58
1991	43.84	23.67	47.77	35.18	21.94
1992	42.20	22.44	49.18	32.03	21.08
1993	41.14	21.75	50.17	29.37	19.86
1994	39.42	21.57	47.61	26.50	19.39
1995	35.03	20.62	47.01	23.74	18.54
1996	34.77	20.41	46.56	23.41	18.35
1997	34.38	21.62	44.94	24.29	18.97

SOURCE: Authors' calculations based on OECD data.

TABLE B2
SIMILARITY INDICES FOR TECHNOLOGY INTENSIVE EXPORTS TO THE EU MARKET: TURKEY VERSUS SEA COUNTRIES, 1990-1997

Years	Turkey vs. Hong Kong	Turkey vs. China	Turkey vs. Korea	Turkey vs. Taiwan	Total Export Similarity
1990	18.18	18.78	18.61	19.72	17.80
1991	17.93	19.07	18.50	20.00	17.55
1992	18.55	18.85	18.22	20.18	17.90
1993	18.84	18.26	18.26	19.52	17.54
1994	19.21	18.29	18.49	19.94	17.45
1995	19.11	18.31	18.37	19.65	17.39
1996	19.57	18.47	18.88	20.01	17.79
1997	20.08	18.93	18.96	19.98	17.88

SOURCE: Authors' calculations based on OECD data.