Trade Between Euro Zone and Arab Countries: a Panel Study

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Abstract

We construct an aggregate data panel to estimate price and income elasticities of the Arab countries imports and exports from and to Euro zone. We study the non-stationarity of our series and verify the cointegration hypothesis among the variables using Pedroni's heterogeneous panel cointegration tests (2004). The panel data circumvent the problem of short span sample and increase the power of the non stationarity tests. Then, we estimate the idiosyncratic and panel cointegrating vectors using DOLS (Kao and Chiang, 2000), FMOLS (Phillips and Hansen, 1990) and group-mean DOLS and FMOLS developed by Pedroni (2000, 2001). Our variables are shown to be cointegrated. Arab imports from Euro zone countries are income inelastic, but price elastic. Results of export function are not conclusive and depend on the estimator

Keywords: Imports, Exports, Time series, Panel Cointegration, DOLS, FMOLS.

JEL Classifications: C22, C23, F11, F30, F40.

I Introduction

Euro Zone and Arab countries share many historical episodes and border the Mediterranean Sea, or are close to it. Economically speaking, euro zone countries are the major trade partner for the Arab countries. The reverse is not true though. As we see in table (1), euro zone trade with Arab countries represents a tiny share of its trade with the world. In the year 2000 for instance, exports of non-oil-rich Arab countries[1] to euro zone were worth more than 50% of their total exports while these same exports represented 0.86% only of total euro zone imports from the world. Also, in year 2000, imports of Arab countries from euro zone were worth 32% of total Arab countries imports while they were worth only 2.5% of the Euro zone total exports.

Since the volume of the Arab European trade is so small with respect to Europe's total trade, this topic has not been an attractive research subject in Europe. The closest work to our topic is Achy and Sekkat (2000) where the authors investigate the optimal exchange rate policy for MENA countries to support their product exports to euro zone. They consider the exports of five countries: Morocco, Algeria, Tunisia, Egypt and Turkey. Eleven production sectors are examined. The authors observe a slight variation in the trends of exported goods with an increasing volume of electrical goods in total exports. Despite this, food, textile, chemical and energy are the largest

[1] When we consider Arab exports to Euro zone countries (i.e. Euro zone imports from Arab countries), we consider only seven non oil exporters countries which are: Egypt, Jordan, Lebanon, Morocco, Sudan, Syria and Tunisia. When Imports from Euro zone countries, we consider eight more countries which are Algeria, Kuwait, Libya, Oman, Qatar, Saudi Arabia and UAE.

exporting sectors. The authors conclude that a real devaluation would have a significant effect on boosting the exports of all sectors.

This paper takes a macroeconomic view on the issue of trade between both euro zone and Arab countries. We study the elasticity of Arab countries' imports from and exports to euro zone countries with respect to income and relative prices. Specifically, we build a heterogeneous panel of the imports of 15 Arab countries and estimate imports' elasticities with respect to relative price and income. We also estimate exports' elasticities of non-oil-rich Arab countries by building a panel for the exports to euro zone countries.

Scarce and short span annual data has hindered research development in developing world. However, recent progress in heterogeneous panel literature has opened a wide gate for research in this side of the world. By building time series panels, researchers circumvent the lack of longer time series problem. Specifically, we use Im, Pesaran, and Shin (1997, IPS hereafter) to test the non-stationarity of our data. Then, we verify the cointegration relationship among the series using Pedroni's (2004) set of tests and we use DOLS (Kao and Chiang, 2000) and FMOLS (Phillips and Hansen, 1990) to estimate the idiosyncratic elasticities. Finally, we use two panel versions of both estimators proposed by Pedroni (2000, 2001) to estimate the panel average elasticities with respect to income and relative price.

Our results demonstrate that our series are non-stationary and are cointegrated as expected by the theory. Most of our idiosyncratic elasticities are shown to have the expected signs except for price elasticities using

FMOLS. Arab imports from euro zone countries are elastic but we get contradicting results regarding Arab exports to euro zone. Therefore, a price increase in euro zone may lead to an increase in Arab exports to euro zone and a decrease of Arab imports fro euro zone. An increase in Arab income yields an increase in imports from Europe. However, the results are inconclusive on the effect of European growth on Arab exports to euro zone. The remaining of this paper is organized as follows, section (2) presents the model and the methodology, section (3) is devoted for the results while we conclude in section (4).

2 Model and methodology

2.1 The model

We follow the imports and exports' model presented in details by Reinhart (1995). It is based on a simple rational model with perfect foresight.

2.1.1 The imports function

The demand for imports from foreign countries is given by

$$\ln\left(M_{i,t}\right) = \ln\left(GDP_{i,t}\right) - \ln\left(\frac{P_t^{ei}}{P_{i,t}}\right). \qquad (1)$$

where *ln* is the natural log of a variable, $M_{i,t}$ represents real imports of home country *i* from euro zone countries, $GDP_{i,t}$ is the real Gross Domestic Product of home country *i*, $P_{i,t}$ is the price level in home country *i* and P_t^{ei} is a European weighted price index built in function of its exports to home

country i as we shall see below, so that $\frac{P_t^{ei}}{P_{i,t}}$ is the relative price of imports for home country i.

To construct P_t^{ei}, we weight the annual price index in each Euro zone country j by its share in total euro zone (eleven euro zone countries) exports to the Arab country i. Then, we sum all those products. In other terms, the P_t^{ei} series is built as follows:

$$P_t^{ei} = \sum_{j=1}^{11} CPI_{j,t} * \varphi_{j,t}^{i}, \qquad \varphi_{j,t}^{i} = \frac{I}{\sum_{k=1}^{11} {}^{i}I_{k,t}} \qquad (2)$$

where $CPI_{j,t}$ is the Consumer Price Index in the European country j at time t. $\varphi_{j,t}^{i}$ is a weight placed on each European country j depending on the volume of its exports $I_{j,t}^{i}$ to Arab country i relative to the sum of all euro zone exports to i ($\sum_{j=1}^{11} I_{j,t}^{i}$) in period t.

The model states that imports of a country depend positively on its domestic product and negatively on the relative price and assumes unitary elasticities with respect to income and price. However, this may not be true for more than one reason (Reinhart 1995). First, the model is based on a rational agent whose utility function is additive and logarithmic which may not be necessarily true. Had we had assumed a CES utility function; the price elasticity will depend on the intratemporal elasticity of substitution. Second, the model assumes that imports are intended for consumption which is not true in aggregate data, and third, aggregating data on imports and prices may cause some measurement errors. Since there is no rational reason to assume that these distortions have the same effect across different countries,

it is appropriate to assume heterogeneity amongst different importers. Therefore, income and price elasticities may not necessarily equal unity nor equal each other. Hence, we assume the following imports econometric model:

$$m_{i,t} = \beta_{i0} + \beta_{i1}\, gdp_{it} + \beta_{i2} \ln\left(\frac{P_t^{ei}}{P_{i,t}}\right) + e_{it}\,, \qquad (3)$$

where $m_{i,t}$ and gdp_{it} are respectively the natural log of imports of the Arab country *i* from euro zone countries, and the natural log of its GDP. $\left(\frac{P_t^e}{P_{i,t}}\right)$ is the relative price, which is the foreign country's price, over the price level in the Arab country *i* in period *t* and e_{it} are the residuals.

The three variables of our model are expected to be non stationary and cointegrated, with $\{1, -\beta_{i,1}, -\beta_{i,2}\}$ as cointegrating vector.

2.1.2 The exports function

Exports of the Arab countries (home) to euro zone countries are the imports of those countries from home. They depend on importer's income and on the relative price. That is, the demand for home products in Euro countries is given by

$$\ln\left(X_{i,t}\right) = \ln\left(GDP_{i,t}^e\right) + \ln\left(\frac{P_{i,t}^e}{P_t^i}\right). \qquad (4)$$

where *ln* is the natural log of a variable, $X_{i,t}$ represents real exports of Arab countries to euro zone country *i*, P_{it}^e is the price level in the European country *i*, P_t^i is an Arab weighted price index as we shall see below, so that

$\left(\frac{P_{it}^{e}}{P_{t}^{i}}\right)$ is the inverse of the relative price of Arab exports with respect to the euro zone price. To concentrate on the purpose of this paper, we prefer to keep this setting of relative price in both equations. That is, an increase in relative price reflects, in both imports and exports models, an increase of the European price, a decrease in Arab price or a combination of both.

To construct the Arab Price Index P_t^i, we weight the price index in each Arab country by its share in the total Arab (seven Arab countries) exports to euro zone country *i*. Then, we sum all those products. In other terms, P_t^i is built as follows:

$$P_t^i = \sum_{j=1}^{7} DEF_{j,t} * \phi_{j,t}^i, \qquad \phi_{j,t}^i = \frac{X_{j,t}^i}{\sum_{k=1}^{7} X_{k,t}^i} \tag{5}$$

where $DEF_{i,t}$ is the GDP Deflator[2] in the Arab country *j* at time *t*. $\phi_{j,t}^i$ is a weight placed on each Arab country *j* deflator depending on the volume of its exports $X_{j,t}^i$ to euro zone country *i* relative to the sum of all Arab exports to *i* $(\sum_{j=1}^{7} X_{j,t}^i)$ in period *t*.

For same reason stated in the imports function, we can rewrite the econometric model of the exports function as it follows:

$$x_{i,t} = \delta_{i0} + \delta_{i1}\, gdp_{it}^{e} + \delta_{i2} \ln\left(\frac{P_{it}^{e}}{P_{t}^{i}}\right) + \zeta_{it} \ . \tag{6}$$

[2] Since CPI series are not available for those countries in the period considered here, we use GDP Deflator instead.

where $x_{i,t}$ and gdp_{it}^{e} are the natural log of Arab countries exports to the European country *i*, and the natural log of the GDP of this European country in period *t* and ζ_{it} are the residuals.

Here also, the three variables of our model are expected to be non-stationary and cointegrated, with {1, - δ_{i1}, -δ_{i2}} as a cointegrating vector. Since there is no reason to expect a homogeneous vector across members in the import or export function as stated above, and since imposing such a homogeneous condition across the panel countries may lead to serious consequences as seen in details below, we use the heterogeneous panel techniques proposed by Pedroni (2000 and 2004).

2.2 The Methodology

We test our series for the existence of unit roots. We use the *LM-bar* and *t-bar* unit root tests proposed by IPS (1997) which allow for heterogeneity in the residuals serial correlation across members. These tests have a greater power and better small-sample properties than previous tests such as those proposed by Quah (1992, 1994) and by Levin and Lin (1993). Moreover, IPS (1997) shows that *t-bar* test has better performance over *LM-bar* test in a small sample.

In conventional time series, the same unit root tests can be applied for both raw data and residuals with proper adjustments to the critical values when applied to the latter. But, Pedroni (2004) shows that testing for cointegration in panel data is not so straightforward. He observes that proper adjustments should be made to the test statistics themselves when the parameters estimation is allowed to vary across individual members. On the

other hand, imposing homogeneity falsely across members generates an integrated component in the residuals making them non-stationary. This leads the econometrician to conclude that her variables are not cointegrated even if they really are.

For these reasons, he developed two sets of statistics to test the null of no cointegration for the case of heterogeneous panels and derived their asymptotic distributions. The first set of three statistics (Panel-v, Panel-ρ and Panel-t) is based on pooling the residuals along the within dimension of the panel. The second set of statistics (Group-ρ and Group-t) is based on pooling the residuals along the between dimension of the panel. Under the alternative hypothesis, Panel-v statistic diverges to positive infinity. It is a one sided test therefore, where large positive values reject the null of no cointegration. The remaining statistics diverge to negative infinity, which means that large negative values reject the null of no cointegration.

We use DOLS methodology proposed by Kao and Chiang (1997) and FMOLS methodology proposed by Phillips (1992) to estimate the idiosyncratic cointegration vectors and the panel DOLS and FMOLS estimators proposed by Pedroni (2000, 2001) to estimate the panel's cointegrating vector. Two panel estimators are proposed: the within dimension estimator which pools the data along the within dimension and the group mean estimator which pools the data along the between dimension. While the former shows large distortions in small samples, the latter shows only small ones, allows for heterogeneous cointegrating vectors, and is more flexible when testing the average cointegrating vector as we shall see below.

3 Results

For the imports function, the data cover the imports of 15 Arab countries from the Euro zone. Those Arab countries are: Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia and the United Arab Emirates (UAE). The criterion for the country selection is data availability.

The real GDP data is obtained from UN estimates. Imports from European countries are taken from *Direction of Trade Statistics* database from the IMF. They are deflated by the local CPI as a proxy for price of imports.

As for the exports function, we consider only the Arab non oil-rich countries to estimate the exports function's because detailed data on oil exports to each European county are not available. Therefore, seven Arab counties are considered: Jordan, Lebanon, Morocco, Sudan, Syria and Tunisia.

Exports are deflated by the local GDP Deflator as a proxy for price of exports (such series is not available nor a CPI series). The data is annual and run from 1976 to 2003. Therefore, we have 28 annual observations for each member.

3.1 Unit Root Test

The results of the *t-bar* and *LM-bar* tests are shown in tables (2) and (3). We emphasize more on the results of *t-bar* because it has better performance in small samples than *LM-bar* test (IPS 1997) which results are shown for comparison only. As we can observe, the null hypothesis of non-stationarity cannot be rejected at conventional levels of confidence. The differentiated

data is stationary suggesting that all six series in our analysis are integrated of order one.

3.2 Cointegration Analysis

Table (4) shows the cointegration tests for our variables. The three import function variables and the three export function variables are cointegrated using all panel tests at 5% significance level. The cointegration is strongly supported by Panel-ρ and Panel-t which tend to under reject the cointegration hypothesis in small sample (Pedroni 2004). The ADF test is shown for comparison only. At the group level, data is cross-sectionally demeaned to consider any common time-specific component. Here also, we find supportive evidence of cointegration.

3.3 DOLS and FMOLS Estimation

The results of the DOLS and FMOLS regressions' estimations for both functions are shown in tables (5) and (6). At the idiosyncratic level, imports' income elasticity is positive and significant as expected by the theory in thirteen countries out of fifteen using FMOLS and in twelve countries using DOLS. The elasticity of imports with respect to relative price is negative and significant in fourteen countries using FMOLS and in thirteen countries using DOLS.

The panel estimators need more discussion. While the within dimension estimator (pooled estimator) tests H_0: $\beta_i=\beta$ for all i's versus H_1: $\beta_i=\beta_a\neq\beta$ where "β" is a hypothesized common value for β_i's under the null and β_a is an alternative common value, the between dimension estimator (group mean

estimator) is more flexible. It allows for heterogeneous elasticity under the alternative hypothesis. Specifically, the group mean estimator can be used to test H_0: $\beta_i=\beta$ versus H_1: $\beta_i\neq\beta$, so that the values of β_i's are not constrained to be equal under H_1.

The last two rows in table (5) show the results of the within and between dimension estimators. While the within dimension estimator shows almost a unit elasticity of imports with respect to income and relative price using either FMOLS or DOLS, the between dimension estimator results show different results. Income elasticity is around 0.5 and 0.6. That is imports are income inelastic. The price elasticity is higher than unity and is around -1.29 and -1.55 suggesting that imports are price elastic. The within dimension DOLS estimator outperforms panel FMOLS' estimator (Kao and Chiang, 2000). However, the results of the between dimension estimator can be trusted more for two reasons: (1) When the true slope coefficients are heterogeneous, the pooled (within dimension) estimators provide a consistent point estimate of the average regression while the group mean (between dimension) estimators provide the sample mean of the heterogeneous cointegrating vectors (Phillips and Moon, 1999), and (2) size distortions for the pooled estimator can potentially be fairly large in small samples in contrast to group mean estimators which exhibit little distortion in small sample (Pedroni 2001). It is also interesting that we get the same results obtained by Pedroni 2001. That is, when comparing the group-mean estimates, the difference between pooled panel and group mean estimators is larger than the difference between FMOLS and DOLS.

Table (6) reports the exports' elasticities of the Arab countries to Europe. The elasticity with respect to income is positive and significant in thirteen countries using FMOLS and in eleven countries using DOLS. It is also evident at the individual level that income elasticities in European countries are fairly larger than those of the Arab countries. This may suggest that imports from Europe are more necessary to Arab countries than are imports from Arab countries to euro zone countries. As for the price elasticity, it is useful to remind that relative price here is the ratio of European country's price over the Arab price index. An increase in the relative price causes, in theory at least, the Arab exports to Euro zone to increase. That is, the price elasticity is expected to be positive. At the individual level, it is clear that the price elasticity is positive and significant only in one country (Spain) using FMOLS and in five countries (Belgium, Finland, France, Germany, and Greece) using DOLS. However, using panel estimators, the results are different. Specifically, the within dimension estimates of income elasticity is positive and significant using both estimators while price elasticity estimate is significant only in the DOLS case. Such a non significant cointegrating parameter has been obtained by Kao, Chiang and Chen (1999). This result may arise because of sampling distribution On the other hand; the group-mean estimators are not very close to each other as in the case of import demand. While income elasticity is small and insignificant using group-mean FMOLS, it is positive and significant using DOLS. Also, both price elasticity estimates results in positive price elasticities as expected by the theory, but are far from each other (0.45 and 2.35).

What is interesting to observe is that idiosyncratic FMOLS estimates are quite different from the group-mean estimates. For instance, idiosyncratic income elasticities are high and significant in 14 countries. However, when group mean estimator is used, the test has more power and does not reject a zero elasticity. The reverse is true in the case of price elasticity. With only one positive and significant price elasticity (Spain), the group-mean estimate turns out to be positive and significant.

It is also important to observe the discrepancy between group-mean FMOLS and DOLS estimates. Income elasticity in the former is insignificant while it is high and positive in the latter. Also, price elasticity is positive and low in the former but positive and large in the latter.

Our results suggest that in the long run, Arab imports from Europe are price elastic but income inelastic. As for the exports to euro zone countries, the results are not conclusive. Group-mean FMOLS suggests that an increase in European price results in an improvement –with different amount depending on the estimator- in trade balance in favor of the Arab countries. An increase in European income may lead (DOLS) or not (FMOLS) to an increase in Arab exports to Europe.

4 Conclusion

We have estimated the elasticities of imports and exports of goods between the Arab counties and the Euro countries. We have used heterogeneous panel methodology suggested by Pedroni (2000, 2004) for cointegration and estimation analyses. It is shown that Arab imports are income inelastic but price elastic using either FMOLS or DOLS group estimator. Estimates of

Exports elasticities to euro zone countries using either estimator depend significantly on the estimator. The results of our paper are suggestive. Two factors may affect the validity of our results. The first is the use of GDP deflator to compare prices and to deflate trade values while the second is the equal weight that our methodology put on different members of the panel. While the first issue cannot be circumvented due to the lack of corresponding data series, the second one may require more econometric research.

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Table 1: Shares of Trade Between Arab and Euro Countries

	Arab countries		Euro zone countries	
	Exports to Euro zone countries*	Imports from Euro zone Countries**	exports to Arab countries+	Imports from Arab countries++
1980	39.23%	39.44%	5.95%	0.63%
1981	42.41%	35.74%	7.15%	0.85%
1982	44.13%	36.01%	7.77%	0.86%
1983	45.70%	36.87%	7.80%	0.90%
1984	50.35%	36.49%	6.97%	1.02%
1985	59.16%	36.34%	5.23%	0.92%
1986	42.86%	37.09%	3.89%	0.59%
1987	41.10%	35.34%	3.02%	0.51%
1988	38.35%	34.35%	2.97%	0.48%
1989	41.25%	33.51%	2.75%	0.58%
1990	38.07%	34.43%	2.69%	0.52%
1991	39.37%	33.36%	2.74%	0.55%
1992	40.44%	33.29%	3.02%	0.50%
1993	45.04%	33.73%	3.27%	0.64%
1994	44.47%	34.33%	2.89%	0.62%
1995	40.30%	34.01%	2.63%	0.54%
1996	35.51%	32.14%	2.56%	0.56%
1997	39.50%	31.27%	2.49%	0.62%
1998	45.72%	32.08%	2.57%	0.53%
1999	52.90%	33.16%	2.72%	0.77%
2000	56.21%	32.34%	2.56%	0.86%
2001	55.81%	31.45%	2.68%	0.91%
2002	49.49%	32.13%	2.88%	0.92%
2003	41.27%	31.87%	3.10%	0.72%

* (**) as percent of total Arab countries exports to the world (imports from the world).

+ (++) as percent of total Euro zone countries exports to the world (imports from the world).

Table 2: IPS tests – Imports

Variable			*t*-bar	*LM*-bar	First order difference	
					t-bar	*LM*-bar
Real Imports	Raw data	Constant	-1.22*	1.63*	-19.39	23.62
		Constant+ trend	0.97*	-0.76*	-17.23	17.38
	Demeaned data	Constant	-0.82*	1.50*	-20.75	24.34
		Constant+ trend	-2.26**	3.35	-19.32	18.13
RGDP	Raw data	Constant	0.46*	0.08*	-8.28	10.71
		Constant+ trend	-1.21*	1.73**	-6.16	7.08
	Demeaned data	Constant	-0.99*	1.02*	-9.69	12.17
		Constant+ trend	-1.42*	1.96**	-8.60	9.43
R. Price	Raw data	Constant	0.38*	-0.79*	-16.10	19.36
		Constant+ trend	-0.14*	0.43*	-14.55	14.49
	Demeaned data	Constant	-0.98*	1.23*	-19.28	22.39
		Constant+ trend	-1.57*	1.93**	-19.32	18.13

*(**) cannot reject the null of no-stationarity at the 5% (1%) level.

Table 3: IPS tests – Exports

Variable			*t*-bar	*LM*-bar	First order difference	
					t-bar	*LM*-bar
Real Exports	Raw data	Constant	0.32*	0.64*	-16.10	19.36
		Constant+ trend	-1.90**	2.69	-14.56	14.73
	Demeaned data	Constant	-2.29**	2.86	-19.05	21.68
		Constant+ trend	-2.27**	3.03	-16.96	15.86
Real GDP	Raw data	Constant	4.05*	-2.92*	-6.29	8.13
		Constant+ trend	5.34*	-1.24*	-4.61	5.38
	Demeaned data	Constant	2.37*	-0.05*	-6.89	8.62
		Constant+ trend	1.01*	-0.03*	-6.33	7.03
R. Price	Raw data	Constant	-0.45*	0.16*	-13.10	16.11
		Constant+ trend	1.07*	1.35*	-11.92	12.18
	Demeaned data	Constant	-2.07**	2.89	-14.21	17.03
		Constant+ trend	1.24*	-0.79*	-14.46	14.23

*(**) cannot reject the null of no-stationarity at the 5% (1%) level.

Table 4: Cointegration Analysis Tests

Test	Import Function	Exports function
Panel-v	3.05*	3.64*
Panel-ρ	-1.38**	-2.22*
Panel-t	-2.30*	-3.21*
Panel-adf	-1.81*	-2.00*
Group-ρ	-0.43	-1.54**
Group-t	-2.83*	-3.57*
Group-adf	-2.42*	-3.00*

*(**)reject the null of no cointegration at the 5% (10%) level

Table 5: Imports Elasticities' Estimates

Country	FMOLS Estimator: Elasticity with respect to		DOLS Estimator: Elasticity with respect to	
	GDP	PRICE	GDP	PRICE
Algeria	0.82* (2.11)	-1.23* (-5.50)	-2.28* (-3.55)	0.39 (1.05)
Bahrain	0.53 (1.45)	-0.87* (-2.45)	0.40 (1.67)	-1.36* (-5.10)
Egypt	1.24* (3.67)	-1.43* (-4.85)	0.28 (1.11)	-0.98* (-5.01)
Jordan	0.53 (1.63)	-0.91* (-3.94)	-0.14 (-0.49)	-0.54* (-3.06)
Kuwait	0.45* (2.45)	-1.09* (-5.74)	0.75* (3.16)	-1.33* (-9.23)
Lebanon	0.56* (4.96)	-1.11* (-5.65)	0.86* (10.24)	-1.05* (-7.29)
Libya	0.77* (4.05)	-1.24* (-9.37)	0.84* (8.13)	-1.48* (-28.11)
Morocco	1.02* (2.03)	-0.71** (-1.91)	1.02* (2.67)	-0.85* (-2.74)
Oman	1.10* (6.13)	-1.46* (-5.90)	0.75* (2.02)	-1.20* (-2.64)
Qatar	1.36* (3.39)	-1.15* (-3.63)	1.50* (7.11)	-1.05* (-7.19)
Saudi Arabia	0.42* (2.78)	-1.66* (-9.92)	1.01* (4.05)	-1.48* (-6.87)
Sudan	1.29* (5.07)	-1.78* (-6.31)	1.73* (10.31)	-2.40* (-13.48)
Syria	1.00* (3.02)	-1.56* (-5.85)	1.78* (4.50)	-2.58* (-7.73)
Tunisia	1.29* (3.89)	-0.71* (-2.38)	1.33* (14.63)	-0.99* (-14.26)
UAE	3.69* (3.22)	-0.05 (-0.10)	5.62* (2.52)	-0.07 (-0.23)
Within Dimension	1.07* (12.87)	-1.13* (-18.98)	1.03* (17.58)	-1.13* (-28.88)
Between Dimension	0.61* (9.89)	-1.55* (-11.78)	0.51* (12.23)	-1.29* (-11.84)

* Significantly different from zero at the 5%level.

Table 6: Exports Elasticities' Estimates

Country	FMOLS Estimator: Elasticity with respect to		DOLS Estimator: Elasticity with respect to	
	GDP	PRICE	GDP	PRICE
Austria	1.98**	0.62	-0.24	-0.06
	(1.94)	(0.52)	(-0.41)	(-0.08)
Belgium	1.92*	-0.13	-0.05	5.18*
	(4.37)	(-0.28)	(-0.15)	(5.69)
Finland	-0.71**	0.38	-2.84*	1.38*
	(-1.68)	(1.37)	(-5.02)	(3.16)
France	3.19*	-0.23*	2.22*	1.26*
	(20.28)	(-2.18)	(16.89)	(6.53)
Germany	2.26*	0.77	1.02*	4.94*
	(4.66)	(1.14)	(13.61)	(19.11)
Greece	1.96	-0.43*	3.23*	0.09*
	(1.22)	(-1.99)	(5.08)	(2.85)
Ireland	1.11*	0.60	4.23*	-1.17
	(2.46)	(1.16)	(4.81)	(-1.42)
Italy	5.95*	-1.68*	14.61*	-5.68*
	(2.78)	(-2.04)	(24.42)	(-20.55)
Netherlands	0.71**	0.70	2.83*	-1.34
	(1.91)	(1.33)	(3.70)	(-1.24)
Portugal	2.81*	-0.29	6.25*	-1.09*
	(4.75)	(-1.35)	(9.73)	(-4.25)
Spain	2.50*	0.55*	3.99*	-1.15*
	(5.70)	(2.39)	(10.63)	(-3.93)
Within Dimension	2.15*	0.08	3.20*	0.21**
	(14.58)	(0.02)	(25.11)	(1.77)
Between Dimension	-0.07	0.45*	2.59*	2.35*
	(0.72)	(4.97)	(-10.80)	(13.54)

* Significantly different from zero at the 5%level.

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