How Does the Euro Exchange Rate Affect Arabic European Trade: a Heterogeneous Panel Study

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Abstract

We construct an aggregate data panel to estimate price and income elasticities of the Arabic countries imports and exports from and to Euro zone countries. 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. The Arabic imports from and exports to Euro zone countries are inelastic. However, an appreciation of the Euro would have a stronger effect on imports from euro than exports to Europe which means that an appreciation of the Euro improves the Arabic European trade balance in favor of the former. However one should be cautious in interpreting the results of the paper because it puts equal weights on different European partners and the use of proxies for relative prices.

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

JEL Classifications: C22, C23, F14, F31, F41.

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I Introduction

Euro Zone and Arabic 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 Arabic countries. But this economic relation is not symmetric. Arabic countries are not Euro zone major trade partner. As we see in table (1), the latter's trade with Arabic countries represents a tiny share of its trade with the world. In year 2000 for instance, exports of non oil exporting countries[1] to the 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 Arabic countries from Euro zone were worth 32% of total Arabic countries imports while they were worth 2.5% of the Euro zone total exports.

Since the volume of the Arabic European trade is so small with respect to Europe's 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 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 to the issue of trade between both the Euro zone and Arabic countries. We study the elasticity of Arabic countries' imports to and exports from the Euro zone countries. Specifically, we build a heterogeneous panel of 15 Arabic countries and estimate the elasticities of imports from Euro zone with respect to relative price and income. The only criterion of selecting those countries is the existence of data. We also estimate the elasticity of export of non oil Arabic countries by building a panel for the imports of the eleven Euro zone countries from those Arabic countries. Studying the elasticities of imports and exports reveals the effects of Euro swings on trade between both blocks.

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

Scarce and short span annual data has hindered research development in developing world. However, the recent progress in heterogeneous panel literature has opened a wide gate for research in this side of the world. Building panels for estimation circumvents the lack of longer time series problem. Specifically, we use Im, Pesaran, and Shin (1997, IPS hereafter) to test the non stationarity property 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. We also 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. Most of our idiosyncratic elasticities are shown to have the expected signs. Our results show that Arabic imports from euro zone countries are almost unit elastic but Arabic exports to euro zone are inelastic. Therefore, a euro appreciation will lead to improve the trade balance between both blocks in favor of the Arabic countries.

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 The Model and the 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 import function

The demand for imports from foreign countries is given by

$$\ln(M_t) = \ln(GDP_t) - \ln\left(\frac{P_t^*}{P_t}\right). \qquad (1)$$

where *ln* is the natural log of a variable, M_t represents real imports of home country *H* from the foreign country *F*, GDP_t is the real Gross Domestic Product of home country, and $\left(\frac{P_t^*}{P_t}\right)$ is the relative price of imports with respect to home country's price level.

The model states that imports of home country depend positively on the foreign income and negatively on relative price and assumes a unitary elasticity with respect to price and income. 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 an additive logarithmic function which may not be 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 and exports are intended for consumption which is not true in aggregate data, and third, aggregating data on exports and prices may cause some measurement errors. Since we cannot confirm nor there is any rational reason that these distortions have the same effect across different countries, it is appropriate to assume heterogeneity amongst the different importers or exporters. Therefore, income and price elasticities may not need to be equal unity. Hence, we assume the following imports econometric model:

$$m_{i,t} = \beta_{i0} + \beta_{i1}\, gdp_{it} + \beta_{i2} \ln\left(\frac{P_t^*}{P_{i,t}}\right) + e_{it}\,, \qquad (2)$$

where $m_{i,t}$ and gdp_{it} are respectively the natural log of imports of an Arabic country i from euro zone countries, and the natural log of its GDP. $\left(\frac{P_t^*}{P_{i,t}}\right)$ is the relative price, which is the foreign country's price, Euro zone in our case, over the price level in the Arabic 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 export function

The export demand function for the product of the home country H is given by

$$\ln(X_t) = \ln\left(GDP_t^*\right) + \ln\left(\frac{P_t^*}{P}\right). \qquad (3)$$

where *ln* is the natural log of a variable, X_t represents real exports of home country *H* to the foreign country *F*, GDP_t^* is the real Gross Domestic Product of the foreign country *F*, and $\left(\frac{P_t^*}{P}\right)$ is inverse of the relative price of exports of the home country with respect to the foreign country's price level. We prefer to keep the home price level as numeraire in our two equations for a simple comparison. With this setting, an appreciation of the relative price can be easily interpreted as an appreciation of the Euro and vice versa in both imports and exports models. For the same reason stated in the imports function, we can rewrite the econometric model of the exports function as it follows:

$$x_{i,t} = \delta_{i0} + \delta_{i1}\, gdp_{it}^* + \delta_{i2} \ln\left(\frac{P_{it}^*}{P_t}\right) + e_{it} \ . \qquad (4)$$

where $x_{i,t}$ and gdp_{it}^* are the natural log of Arabic countries exports to the European country *i*, and the natural log of the GDP of this European country in period *t*. $\left(\frac{P_{it}^*}{P_t}\right)$ is the price level in the European country *i* over the price level of the Arabic countries in period *t* and e_{it} are the residuals.

Here also, the three variables of our model are expected to be non stationary and cointegrated, with $\{1, -\delta_{i,1}, -\delta_{i,2}\}$ 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 ???? consequences as seen in details below, we use the heterogeneous panel techniques proposed by Pedroni (2000 and 2004).

2.2 The Methodology

We firstly, 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 the tests proposed by Quah (1992, 1994) and by Levin and Lin (1993). Moreover, IPS (1997) showed 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) showed that testing for cointegration in panel data is not so straightforward. He observed 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 cointegration 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; allow for heterogeneous cointegration 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 Arabic countries from the Euro zone. Those Arabic 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 the data availability. The relative price for each Arabic country is built as the European price index (EPI) divided by its price level. To construct the European price index, we multiply the price index in each Euro zone country by a weight proportional to its share in European exports to Arabic countries. Then, we sum all those products. In other terms, the EPI is built as follows:

$$. \ EPI_t = \sum_{i=1}^{15} CPI_{i,t} * \frac{I_{i,t}}{\sum_{i=1}^{15} I_{i,t}} \qquad \textbf{(5)}$$

where EPI_t is the European price index, $CPI_{i,t}$ is the CPI in country i at time t, $I_{i,t}$ is the imports of all Arabic countries (fifteen countries) from the Euro zone country i at time t.

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.

Since detailed data on oil exports to each European county are not available, we consider only the Arabic non oil exporting countries data to build the exports function. Therefore, we consider the exports of seven Arabic counties which are: Jordan, Lebanon, Morocco, Sudan Syria and Tunisia. The relative price was built as the price level in the European country over the Arab Price index which was constructed in the same way as the European price index. However, we consider only the seven countries' CPIs. These exports are also deflated by the local GDP Deflator. 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 take into consideration the results of the *t-bar* because it has better performance in small sample data than *LM-bar* test (IPS 1997) which results are shown for comparison only. The differentiated data is stationary which 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 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 table (5). At the idiosyncratic level, imports' price elasticity is negative and significant as expected by the theory in thirteen countries out of fifteen using either FMOLS or DOLS. The elasticity of imports with respect to real GDP is positive and significant in eleven countries using FMOLS and in eight countries using DOLS.

The panel estimators need more discussion. The Within Dimension estimator (pooled estimator) tests H_0: $\beta_i=\beta$ for all i versus H_1: $\beta_i=\beta_a\neq\beta$ where "β" is a hypothesized common value for β_is under the null and β_a is an alternative common value. However, the Between Dimension estimator (group mean estimator) is more useful because it allows for heterogeneous elasticity under the alternative hypothesis. Specifically, the group mean estimator can be used to test H_0: $\beta_i=\beta_0$ versus H_1: $\beta_i\neq\beta_0$, so that the values of β_i are not constrained to be equal under H_1.

The last two rows in the right side of 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 relative price and income using either FMOLS or DOLS, the between dimension estimator results show some smaller estimations. The price elasticity is close but less than unity, but the income elasticity is smaller and is around 0.4-0.5. Even if panel DOLS estimator outperforms panel

FMOLS estimator (Kao and Chiang, 2000), the results of the between dimension estimator can be trusted more than those of the within dimension estimators for two reasons: (1) When the true slope coefficients are heterogeneous, the pooled (within dimension) estimator provides a consistent point estimate of the average regression while the group mean (between dimension) estimator 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 the to the group mean estimator where they exhibit little distortion in small samples as long as the time series dimension is smaller than the cross sectional dimension (Pedroni 2001). It is also interesting that we get the same results obtained by Pedroni 2001. That is, when comparing the 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 Arabic countries to the Europe which, in other term, are the imports of those European countries. We remind that the relative price here is the ratio of European country's price over the Arabic price index. A Euro appreciation then, is an increase in this relative price and causes, in theory at least, the Arabic exports to Europe to increase At the individual level, it is clear that the price elasticity is positive and significant only in two countries using either FMOLS and DOLS. The elasticities with respect to income show better performance where the elasticity is positive and significant in nine countries out of eleven using either estimator. It is also evident at the individual level that income elasticities in European countries are fairly larger than those of the Arabic countries. However, using panel estimators, the results are different. Specifically, the within dimension estimate is small and its sign depends on the estimator. FMOLS estimator shows a positive elasticity while DOLS shows a negative elasticity. This contradiction is due to the large distortions using panel estimators. The group-mean estimate of price elasticity is positive and larger (0.28 and 0.49) using either estimator as expected by the theory.

It is interesting on the other hand, to observe that the idiosyncratic exports' elasticities with respect to income using either estimator are positive and significant in nine countries. But what is striking is that group-mean estimates are negative and not significant in either estimator. As in the case of price elasticity, one would expect more power for the test and therefore more compatibility with the theory which is not the case here.

Our results suggest that in the long run, Arabic imports from Europe are unit elastic and the exports to Europe are price inelastic. A one percent appreciation of the Euro would yield 0.9-0.99% decrease in Arabic imports from Euro countries and 0.28-0.49% increase in Arabic non oil exports to these countries which will improve the Arabic countries trade balance with this block. Even if the average exports elasticity is fairly smaller than the imports elasticity, we cannot suggest that a Euro appreciation would be in favor of the Arabic trade balance for the simple reason that both samples do not include the same countries. However, given that the excluded countries are oil exporters, where more than 80% of their exports consist of oil product, we do not think that the exports elasticity changes significantly have we included them.

These results are not decisive and are only a little step in evaluating the effects of a Euro appreciation for two reasons. Specifically, the GDP Deflator and the CPI have been used to deflate exports and imports. They have also been used to calculate the relative prices which may not be very precise. This price measurement includes tradable and non tradable items, but exports and imports do not. On the other hand, the within dimension and between dimension estimators do place equal weights on all members. It is not improbable that the results may change if different weights were assigned to different panel members.

4 Conclusion

We have estimated the elasticities of imports and exports of goods between the Arabic counties and the Euro countries. We have used heterogeneous panel methodology suggested by Pedroni (2000, 2004) for cointegration and estimation analysis. It is shown that Arabic imports and exports are price and income inelastic using FMOLS and DOLS. Since imports' price elasticity is greater than exports, this paper indicates that a euro appreciation would be change the Arabic European trade balance would change in favor of the former. 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 Arabic and Euro Countries

	Arabic countries		Euro zone countries	
	Exports to Euro zone countries*	Imports from Euro zone Countries**	exports to Arabic countries+	Imports from Arabic 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 Arabic 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	First order difference *LM*-bar
Real Imports	Raw data	Constant	-0.72*	0.96*	-14.69	18.67
		Constant+ trend	1.69*	-1.37*	-12.60	13.43
	Demeaned data	Constant	-1.54*	2.23	-18.75	22.40
		Constant+ trend	-1.30*	1.95	-16.58	16.43
RGDP	Raw data	Constant	2.54*	-0.15*	-18.15	17.74
		Constant+ trend	0.57*	-0.29*	-18.04	14.07
	Demeaned data	Constant	-0.65*	0.79*	-16.94	16.92
		Constant+ trend	-1.12*	1.15*	-15.62	12.38
R. Price	Raw data	Constant	0.73*	-1.29*	-10.92	14.38
		Constant+ trend	-0.34*	0.69*	-8.38	10.03
	Demeaned data	Constant	-1.18*	1.33*	-14.07	18.22
		Constant+ trend	-1.06*	1.41*	-12.33	13.45

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

Table 3: IPS tests – Exports

Variable			*t*-bar	*LM*-bar	First order difference *t*-bar	First order difference *LM*-bar
Real Exports	Raw data	Constant	1.49*	-0.77*	-17.68	20.70
		Constant+ trend	-1.04*	1.76	-14.59	14.71
	Demeaned data	Constant	-0.86*	0.83	-18.62	21.45
		Constant+ trend	-1.56*	2.76	-16.98	16.01
Real GDP	Raw data	Constant	3.72*	-2.35*	-6.29	8.13
		Constant+ trend	-1.43*	2.61*	-4.61	5.38
	Demeaned data	Constant	2.80*	-0.14*	-6.89	8.62
		Constant+ trend	1.55*	-0.51*	-6.33	7.03
R. Price	Raw data	Constant	-0.74*	0.39*	-10.90	14.46
		Constant+ trend	1.26*	-1.31*	-8.83	10.07
	Demeaned data	Constant	-1.54*	2.23	-2.15	2.65
		Constant+ trend	-0.87*	1.57	-2.36	2.90

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

Table 4: Cointegration Analysis Tests

Test	Import Function	Exports function
Panel-v	3.81*	5.36*
Panel-ρ	-1.89*	-2.45*
Panel-t	-2.81*	-3.69*
Panel-adf	-3.39*	-3.37*
Group-ρ	-0.77	-2.49*
Group-t	-2.89*	-5.20*
Group-adf	-3.67*	-5.02*

*reject the null of no cointegration at the 5%level

Table 5: Imports Elasticities' Estimates

Country	FMOLS Estimator: Elasticity with respect to		DOLS Estimator: Elasticity with respect to	
	PRICE	GDP	PRICE	GDP
Algeria	-0.72* (-4.17)	-0.10 (-0.25)	-0.22* (-2.23)	-1.85* (-7.56)
Bahrain	-1.04* (-4.93)	0.98* (4.07)	-1.81* (-3.72)	1.16* (3.54)
Egypt	-0.41* (-1.96)	0.30 (1.18)	-1.30* (-2.38)	0.63 (1.75)
Jordan	-0.79* (-4.73)	0.37* (1.99)	-0.74* (-5.90)	0.29 (1.14)
Kuwait	-1.12* (-7.29)	0.91* (3.74)	-1.10* (-7.08)	0.74 (1.78)
Lebanon	-0.03 (-0.16)	1.04* (4.00)	0.47* (3.66)	1.97 (0.04)
Libya	-1.28* (-7.41)	2.99* (3.78)	-1.52* (-15.74)	3.53* (5.80)
Morocco	-1.86* (-7.47)	1.90* (8.76)	-1.47* (-4.48)	1.95* (6.05)
Oman	-1.06* (-6.49)	0.87* (6.46)	-1.47* (-10.76)	0.88* (6.26)
Qatar	-0.78* (-3.81)	0.79* (3.29)	-0.63* (-6.10)	0.64* (4.14)
Saudi Arabia	-1.82* (-8.17)	0.13 (0.33)	-2.01* (-6.24)	-0.15 (-0.16)
Sudan	-0.20 (-0.88)	-0.37 (-0.80)	-0.46 (-1.55)	1.93 (1.90)
Syria	-1.42* (-4.53)	0.70* (2.03)	-2.06* (-7.28)	1.34* (3.94)
Tunisia	-1.06* (-4.90)	1.28* (7.95)	-0.90* (-6.55)	1.10* (9.84)
UAE	-0.61* (-2.37)	2.07* (7.09)	-0.76* (-3.50)	2.60* (5.66)
Within Dimension	-0.95* (-17.88)	0.92* (13.84)	-1.06* (-20.62)	1.12* (13.72)
Between Dimension	-0.88* (-9.90)	0.47* (9.31)	-0.99* (-13.98)	0.41* (10.79)

* 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	
	PRICE	GDP	PRICE	GDP
Austria	-1.29 (-1.20)	2.94* (3.07)	-1.62 (-1.07)	2.03 (2.03)
Belgium	1.24* (8.14)	1.20* (7.45)	1.77 (11.24)	0.59 (3.88)
Finland	-0.03 (-0.11)	-0.27 (-0.68)	-0.05 (-0.08)	-0.38 (-0.54)
France	0.06 (0.52)	2.84* (18.28)	-0.13 (-1.86)	3.08 (29.36)
Germany	0.45 (0.92)	2.28* (5.50)	-1.57 (-2.16)	3.09 (7.98)
Greece	-0.38* (-2.06)	0.49 (0.40)	-0.38 (-2.55)	0.18 (0.10)
Ireland	1.44* (4.86)	0.62* (3.05)	1.69 (9.33)	0.72 (2.47)
Italy	-0.72* (-2.24)	3.27* (4.05)	-0.57 (-2.66)	1.79 (3.08)
Netherlands	0.45 (1.63)	0.84* (4.27)	-0.00 (-0.03)	1.04 (9.76)
Portugal	-0.34* (-2.28)	3.33* (7.50)	-0.40 (-3.54)	3.81 (9.37)
Spain	0.17 (0.61)	3.18* (6.18)	0.18 (1.40)	3.50 (13.11)
Within Dimension	0.10* (2.65)	1.88* (17.81)	-0.10 (2.42)	1.77 (24.30)
Between Dimension	0.28* (4.29)	-0.13 (1.63)	0.49 (2.98)	-0.77 (-0.26)

* Significantly different from zero at the 5%level.