The Performance of Foreign Trade: The Palestinian case Compared with a selected Middle East Countries during the period 1968-98∗

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This paper examines the performance of external merchandise trade for a selected group of Middle East Arabian countries. Taking into account the role of exports for numerous economic considerations, it traces the main factors impacted these exports over the past three decades. Using trade ratio as a measure for exports throughout specific export supply function, it relates trade to economy activity (gross domestic product), competitiveness issue and investment-technology measure. By employing panel analysis techniques, fixed-effects-random- effects- procedures, we highlighted the heterogeneity among these countries. Generally, while gross domestic product was found with a significant positive impact on exportable, however raw material-commodities especially oil and oil products shaped that impact. Moreover, mix results were captured for the impact of liberal policies followed by some countries since the late 1980s, on the performance of trade. Apparently, competitiveness was continuing a matter for many countries, which experienced the negative impact of exchange rates misalignment on exportable. Distinctly, this study concludes the deficiencies of Palestinian trade, in the absence of independent policies, a situation wherein, the Palestinian Territories in the West Bank and Gaza Strip experienced the impact of compulsory integration with Israel.

Key words: Palestine, Imposed Customs Union, Trade Performance, Arabian Countries, Panel analysis

1- INTRODUCTION

Over the past three decades the Palestinian areas in the West Bank and Gaza Strip experienced the impacts of compulsory integration into the Israeli economy in the aftermath of the occupation of the area by Israel in 1967. Noteworthy, the main features of this integration the reorientation of semiskilled and unskilled labor force of the area to be employed in Israel and the Arab States and away from indigenous productive sectors, whose are critical to the development of this area, and the redirecting trade primarily to Israel. Within this integration, area's trade affected markedly by a forced customs union, which mainly implies sharing the same common external tariff with Israel on imports from the rest of the world and free movement for Israeli goods into Palestinian Territories. Meanwhile, in addition to tariff imposed in Israeli ports, many non-tariff barriers such as control through quality standards and health regulation or stopping trade by the closures of the area borders were imposed on Palestinian trade. These barriers on trade resulted in restriction for Palestinian trade with the rest of world to a large extent, where about 90 % of Palestinian trade (imports and exports) along most years in the past three decades was with Israel.

The key objective of this study is to evaluate the performance of external merchandise trade for PTs and to compare this performance with its counterparts in selected neighboring countries. For this purpose we select trade ratio as a measure for trade (exports in terms of imports in current prices). We relate this ratio to both the economy activity represented by gross domestic product, relative prices measure and technology factor measure. Using two specifications for trade ratio supply function we trace the impacts of these influencing factors on net trade.

By using fixed-effects random-effects panel procedures this study tries to highlight the heterogeneity among these countries, especially the Palestinian case. It uses a designed balanced panel annual data for the variables covers the countries Algeria, Bahrain, Egypt, Jordan, Morocco, Saudi Arabia, Syria, Sudan, Tunisia and Palestinian territories. These data were taken mainly from International Financial Statistics Yearbook, except for PTs we solve for the limitation of a unified source of data by using various available sources. In this respect, Israeli statistics covers the 1968-87 periods, the years 1988-93 data depended on World Bank estimates and the 1994-98 period covered by Palestinian statistics. Some missing data of prices and production were proxied by suitable way.

The structure of the study is as follows. Section two initiates with a preliminary. It shed light on similarities-differences within this group of countries and comments on descriptive statistics for the variables, which involve in empirical analysis. Section three overviews the main features and problems of external trade for these countries. Section four models trade by employing specific export- supply function. It sets the assumption of this modeling and formulates this modeling in the context of panel analysis. Section five presents empirical results. Lastly, section six gives the main conclusions.

2- Preliminary

The Palestinian trade to some extent has a similarity with some of its counterparts in neighboring countries like Jordan and Syria. This stems from the importance of agricultural contribution to trade until the early 1980s (International Trade Statistics Yearbook, 1988). However, remarkable differences are still pronouncing between Palestinian economies including trade and its counterparts in all Arab countries. These differences due to noteworthy facts: Firstly, PTs along the past three decades had weak economic capabilities. The area lost its economic depth in mandatory Palestine in the aftermath of Israeli-Arab war in 1948. It was left with narrow land, without mineral resources and few water resources (Roy, 1995). Secondly, since the First World War PTs in the West Bank and Gaza Strip were administered by consecutive governments with their different policies and interests. The area controlled by the British occupation (1917-1947), Jordanian-Egyptian administrations for the West Bank and Gaza Strip, respectively (1947-1967) and lastly by the Israeli occupation since 1967. Overall those periods most of the different policies practiced worked against the interests and development of the area directly or indirectly. Subsequently, these reasons together resulted in the current performance of economies, thereof trade's area.

In contrast, most of the selected countries in this comparison achieved their independence earlier. Over the past period they had their own independent policies and development programs. Moreover, countries like Algeria, Egypt, Morocco, Saudi Arabia and Syria are rich in their economic capabilities including arable land, water resources and mineral resources and oil reserves.

Pronounced example, compares between Palestine and a selected number of neighboring countries, was displayed through main four variables. These variables will be used in the forthcoming regression analysis. Summary statistics, which sheds light on exports, imports, gross domestic product and gross fixed capital formation are shown in Table (1). Clearly countries like Algeria, Egypt, Morocco, Saudi Arabia and Syria had recorded the highest figures for these variables, while Jordan, Palestine and Bahrain as small countries had achieved the smallest ones.

The past period was divided into two stages: The first stage lasted until 1979, witnessed a boom in oil prices following 1973. It affected the development programs in oil exporting countries positively. Also, countries like Egypt and Syria gained from their oil exports. Countries like Egypt, Syria, Jordan, Palestine and Sudan benefited from workers remittances in oil exporting countries. The second period starting in 1980 witnessed many events affected the different countries. Sluggishness in oil prices happened in mid 1980s. Many countries followed liberal policies in trade or introduced economic reform. Egypt introduced economic reform noticeably in the early 1990s while both Morocco and Tunisia liberalized their trade in the end of 1980s. The two Gulf Wars, fluctuations in oil prices and draught through many years, all these factors and others, affected the performance and hence trade of these countries. Along the period, as a whole, exports of oil producing countries like Algeria and Saudi Arabia increased in means and variations remarkably. The second stage from 1980 to 1998 witnessed a drastic increase of imports, in both mean and

variation, for Egypt, Jordan, Morocco, PTs and Tunisia. While this tendency of imports in Palestine, mainly, caused by the impact of the imposed customs union with Israel and as a kind of taking off for imports following Oslo agreement in 1994, the situation for these countries due to more liberal trade policies. Interestingly, to note here, that the variation in imports (expressed in terms of standard deviation) in PTs was more six times of its counterpart in exports for the second period. Furthermore, figures display that capital formation and trade figures (exports and imports) were highly kept up with the growth of gross domestic product during the period as a whole.

Table (1): Summary Statistics of the Variables: Exports, Imports, Gross Domestic Product (GDP) and Fixed Capital Formation (FC) for Panel Group

Country	Exports(mean)		Exports(s.d)		Imports(mean)		Imports(s.d)	
	68-79	80-98	68-79	80-98	68-79	80-98	68-79	80-98
Algeria	3590.00	10306.0	2861.5	2590.60	3718.0	9916.0	2661.0	2324.0
Bahrain	980.90	3418.0	816.43	675.70	951.9	3162.2	736.5	490.5
Egypt	1295.00	3875.0	591.88	695.31	2468.0	9815.4	1932.0	2253.4
Jordan	144.29	1119.3	122.67	429.45	631.0	2747.7	545.0	541.4
Morocco	1068.00	4120.4	554.42	1907.90	1632.0	5825.9	995.9	2304.2
Palestine	148.44	313.2	98.24	78.89	288.1	1138.1	181.0	595.1
S. Arabia	21112.00	49158.0	19877.00	24746.00	7537.0	25067.0	9502.7	4983.4
Sudan	413.58	471.7	135.50	155.86	552.1	971.4	274.8	361.7
Syria	664.06	2691.7	491.00	1018.40	1295.8	3329.8	995.2	927.9
Tunisia	610.40	3323.7	436.96	1436.80	1012.1	4723.2	737.8	1885.8
	GDP(mean)		GDP(s.d)		FC(mean)		FC(S.D)	
Algeria	13353.0	46965.0	10083.0	8061.1	5474.4	14096.0	4516.2	3252.1
Bahrain	1323.5	4367.2	657.9	1012.8	-	-	-	-
Egypt	12130.0	53223.0	6046.0	19523.0	2459.2	13473.0	2049.6	5706.1
Jordan	1247.2	5540.0	840.4	1176.9	316.3	1556.5	309.4	416.9
Morocco	7817.9	23595.0	4415.4	8396.9	1741.2	5182.6	1389.5	1625.5
Palestine	463.1	2192.9	259.9	1148.1	201.5	708.9	111.3	366.5
S. Arabia	37791.0	113080.0	35503.0	26240.0	8857.7	24365.0	10109.	5816.8
Sudan	4539.0	9080.8	2625.7	5126.9	-	-	-	-
Syria	4454.5	32252.0	2872.2	17814.0	1149.4	7353.1	963.9	4475.2
Tunisia	3496.8	12328.0	2054.3	4402.8	925.8	3155.4	696.0	1034.7

Note: These numbers are in millions of US dollars.

3- External trade: features and problems

Here we will discuss the main features and problems for external merchandise trade.

3.1 Trade Features

General features for most of these countries are a continuous trade deficit, strengthening of trade with Western Europe, Japan and US and a trade composition pattern similar to developing countries.

3.1.1.Trade Balance

These group, except Saudi Arabia, Bahrain, for all the period, and Algeria until 1990, (oil exporting countries), are still experiencing trade deficit.

Figure (1), which plots exports-imports data for this group of countries along 1968-98 period, gives the following main conclusions:

Firstly, for Jordan external economy continued to be under pressure from a large structural trade deficit over the past decades. The encouraging trend in exports started with the surging of regional trade in 1990s, especially trade with Syria, Iraq and Saudi Arabia. More specifically, trade with Iraq has surged after the imposing western trade sanction on Iraq since Second Gulf War. Also more gains from the doubled devaluation of dinar in 1989 were achieved. However, there was not much effect on trade deficit where the import bill remains at least twice the size of export earnings.

Secondly, Egypt has had an external trade deficit almost without interruption over all periods. However, open door policy introduced in mid 1970s proved a great stimulus to imports, causing the trade deficit to rise steeply. During the early 1980s, with foreign aid increasing, oil revenue plentiful and private international credit easily available, a high level of imports could be maintained. Dampened import demand in 1991 and 1992 as a result of the effects of the economic reform program reduced the trade deficit somewhat in dollar terms. But a marked recovery in import spending since 1993 has pushed the deficit up once more.

Thirdly, for both Morocco and Tunisia despite the continuity of trade deficit, they achieved some gain, even fluctuated, in exports since mid 1980s. Many factors favored their trade compared with other countries especially the entrance to EU markets (For the impact of European Union association agreement on these countries (see, Henri, 1998).

Fourthly, Syria seems to be gained from external trade in the early 1990s with exporting oil and benefiting from regional trade with Jordan and latter with Iraq. Subsequently, trade deficit decreased noticeably. In opposite direction, both Algeria and Sudan has witnessed a worsening in trade balance since the early 1990s. This situation fed by deterioration in political life in Algeria and war in Sudan (EIU, 1996-1998 issues).

Distinctively, Palestinian trade deficit increased sharply under the pressure of export compression accompanied with political constraints on PTs trade along the period.
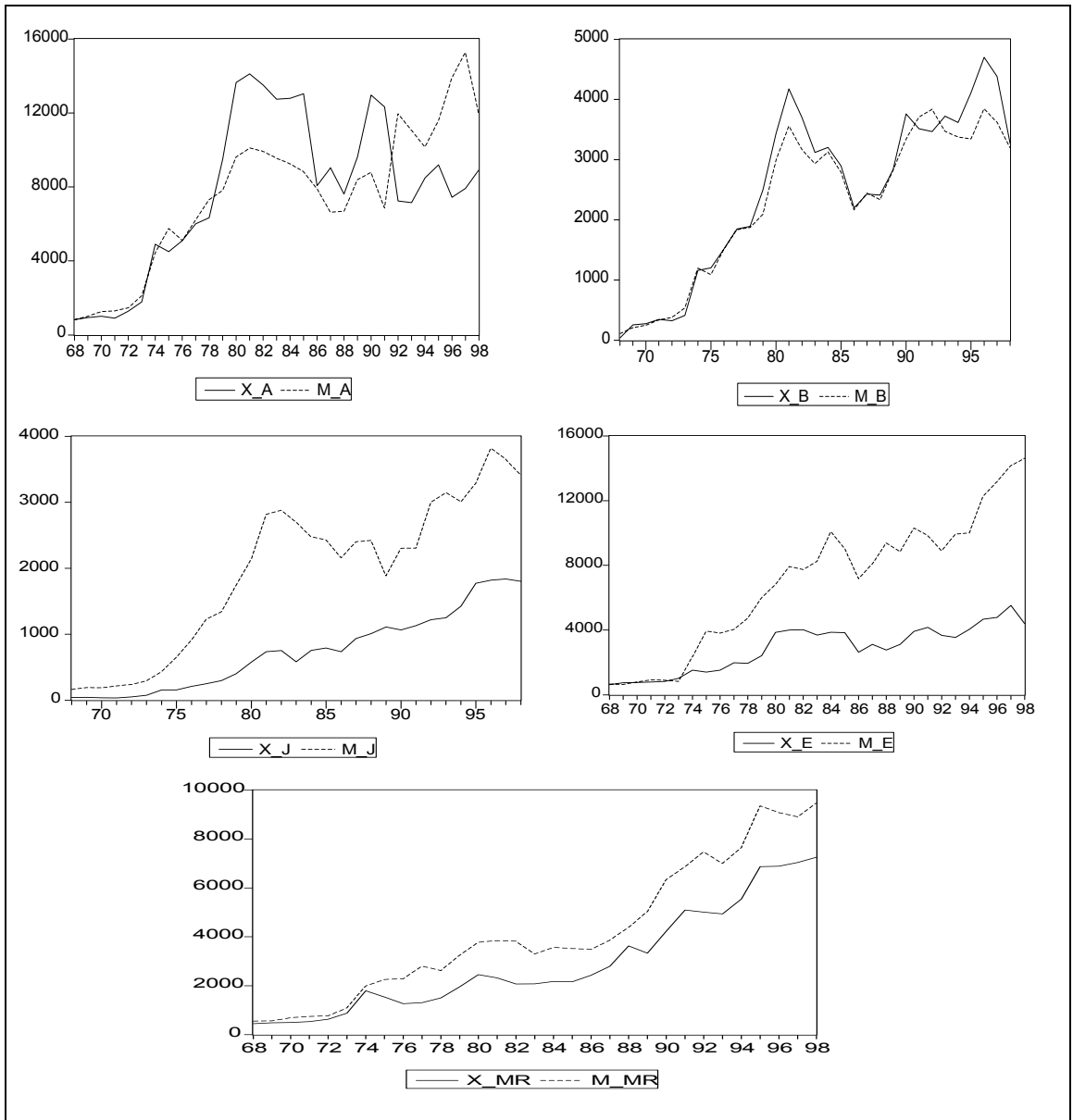
Figure (1): Exports and imports in millions US dollars for the countries; Algeria, Bahrain, Jordan, Egypt and Morocco (top left to bottom right)
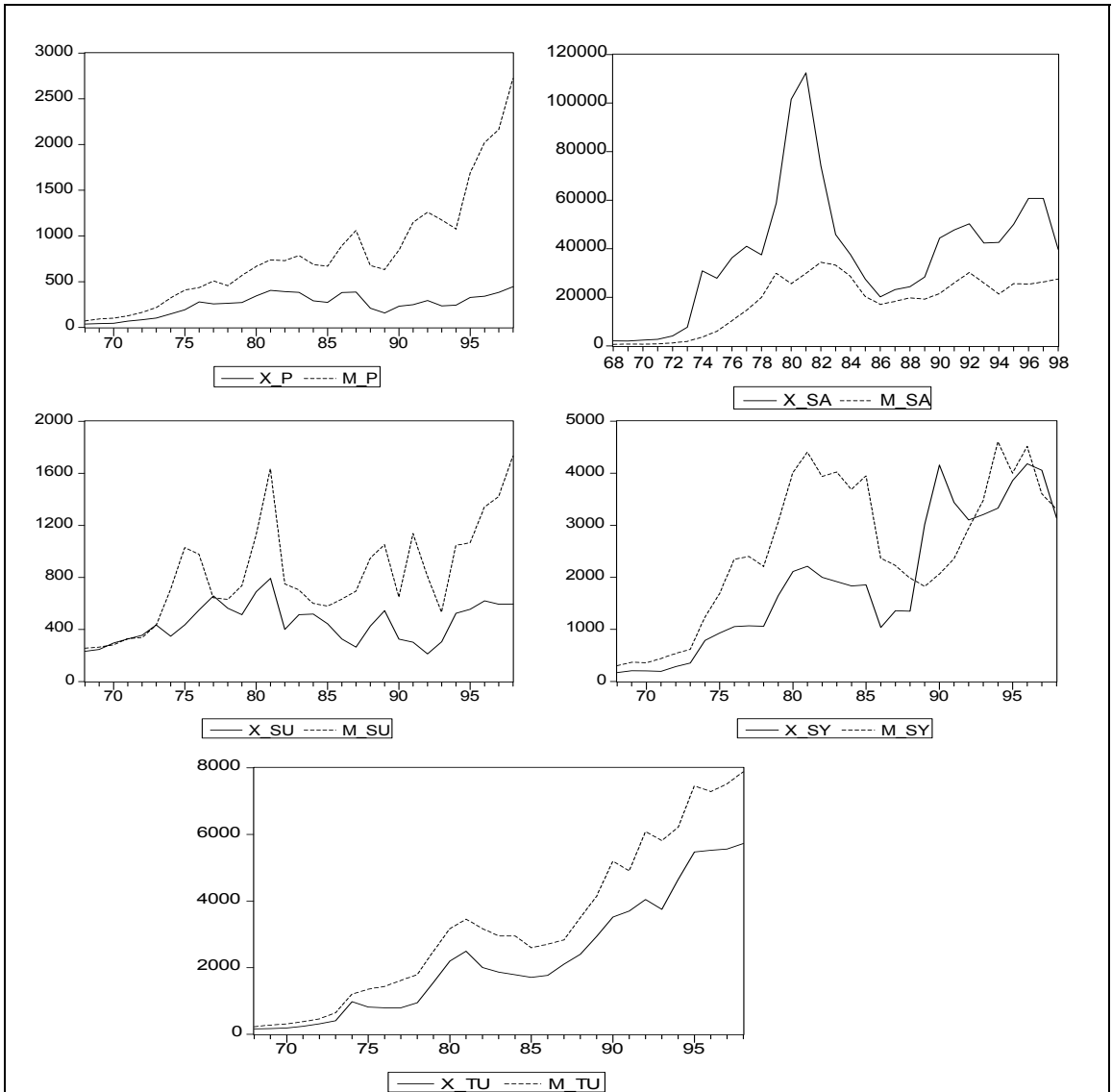
Figure (1): Exports and imports in million US dollars for the countries; Palestine, Saudi Arabia, Sudan, Syria and Tunisia (top left to bottom right)

3.1.2 Trade Composition

Trade composition (exports and imports) for these countries including Palestine shows the following: Firstly, oil and oil products occupied the first rank of exports for countries like Algeria, Saudi Arabia and Bahrain. Again it had the main importance for countries like Egypt and Syria since the early 1990s. Secondly, agricultural products occupied the first rank of exports for Morocco and Sudan and Palestine and the second rank of importance for Egypt, Syria, Jordan and Tunisia. Thirdly, oil refined products, chemicals, petro- chemical, and textile and processed food industries (all these industries have been witnessing development and diversification since the 1980s) mainly dominate the exports of these countries. While Algeria, Saudi Arabia and Bahrain and Egypt, to a lesser extent, export oil refined products and petro-chemical products, Egypt, Morocco, Syria and Tunisia export textiles and processed food. Bahrain, Egypt, Jordan and Morocco enjoy the specificity of exporting for specific commodities. Bahrain exports aluminum, Egypt exports engineering and metallurgical goods and both Jordan and Morocco exports tobacco. Lastly, concerning imports, machinery and transport equipment, manufactured goods and mechanical requirements are continuing to be the main imports for most countries. Furthermore, food, particularly wheat, clothing and oil petroleum are still principal components of imports for other countries. More specifically Jordan and Palestine import food, oil petroleum while Algeria and Saudi Arabia import food and clothing. Egypt imports food like wheat while Sudan imports petroleum (EIU, 1998).

3.1.3 Trade Direction

The direction of trade, for this group of countries, in a similar pattern for most developing countries, strengthened with Western Europe Japan and US since the early 1990s. These countries, mainly, export raw materials, crude oil and agricultural products to import capital goods. The destination of Arab trade towards industrial countries in Europe and America witnessed a drastic shifting for most countries following the collapse of Soviet Union and the central regimes in Eastern Europe. Algeria and Syria and earlier Egypt since mid 1970s shifted towards Europe and America in their trade destination. The Maghrebian countries trade (Algeria, Morocco and Tunisia) reflects the continuity of pre-independence relation with France and Spain for Morocco and the strengthening of trade relations with Europe union following signing trade agreements with these countries. Recently, intra - Arabian trade has grown among some of these countries. This trade depends on geographical and regional approximity (Kunzel and Havrylyshn, 1997). This situation infers trade between Tunisia and Libya, Sudan and both Egypt and Saudi Arabia, Palestine and both Egypt and Jordan and trade between Syria and Lebanon and Jordan and trade between Jordan and Iraq, Syria, Saudi Arabia and Gulf States (IMF, 1996-98) and (EIU, 1995-98).

3.2 Trade Problems

Noticeably, these problems include exogenous shocks, relating to rainfall and weather condition and fluctuations in raw material and oil prices, and competitiveness issue, which will be investigated through the impact of management of foreign exchange market.

3.2.1. Exogenous Shocks

The economic performance thereof the trade performance for these countries had fluctuated significantly and for many years during the past three decades. These fluctuations refer to the performance of the rain-fed agriculture sector or/and fluctuations in raw material oil prices and agricultural commodities- prices in international markets.

Rainfall and weather condition and draught influenced heavily the agriculture trade for Morocco, Tunisia, Algeria Sudan and Jordan. In particular, Sudan's export performance was determined by the production volume and international prices of a few key commodities. Clear adverse effects of these factors on external merchandise trade for the Maghrebian countries as well for Sudan was reflected in exports, (see, Figure 1).

From the other side, the economies performance of Saudi Arabia, Algeria then Bahrain have also experienced frequent swings in overall GDP growth, primarily as a consequence of wide fluctuations in real growth rates in the oil sector or changes in the price of oil. In addition to swings in rate of real governments expenditure in Saudi Arabia and Bahrain and a slump growth in Algeria, the collapse of oil prices in the early 1980s left its marked impact on trade performance for these countries, (see, Figure 1).

3.2.2 Competitiveness Issues

In addition to the factors mentioned above, the poor performance of exports, for many countries, is mainly blamed on insufficient exchange rate competitiveness, in addition to other factors deserve mention in case of Egypt like lack of modern technology, poor equality finished products etc. Here as a basis of comparison, we will consider real exchange rate (RER) as a measure of competitiveness for these selected countries. It is well known that that RER evolution depends on the behavior of two forces over time, namely, relative prices (foreign prices in terms of domestic prices) and the nominal exchange rate. Sometimes these relative prices were proxied by consumer price indices or tradable good prices in terms of non-tradable good prices.

In fact, all these selected countries like many other countries have, in the past, resorted to direct management of foreign exchange transaction over large periods of time through the use of multiple exchange arrangements and/or through quantitative and cost management of foreign exchange allocations.

Ideally, countries like Jordan, Egypt, Morocco and Tunisia are considered famous examples of countries experienced the impact of the RER misalignment. Figure (2) plots the evolution of RER for these countries in addition to the transmitted one for Palestine, where PTs transmitted the gradual devaluation of Israeli currency along time.

In Egypt, the incremental adjustments to exchange rate during 1974-77 did not stop the steady appreciation of RER of the pound. Major exchange rates realignment occurred on 1979. At that time, the government unified the exchange rates at the
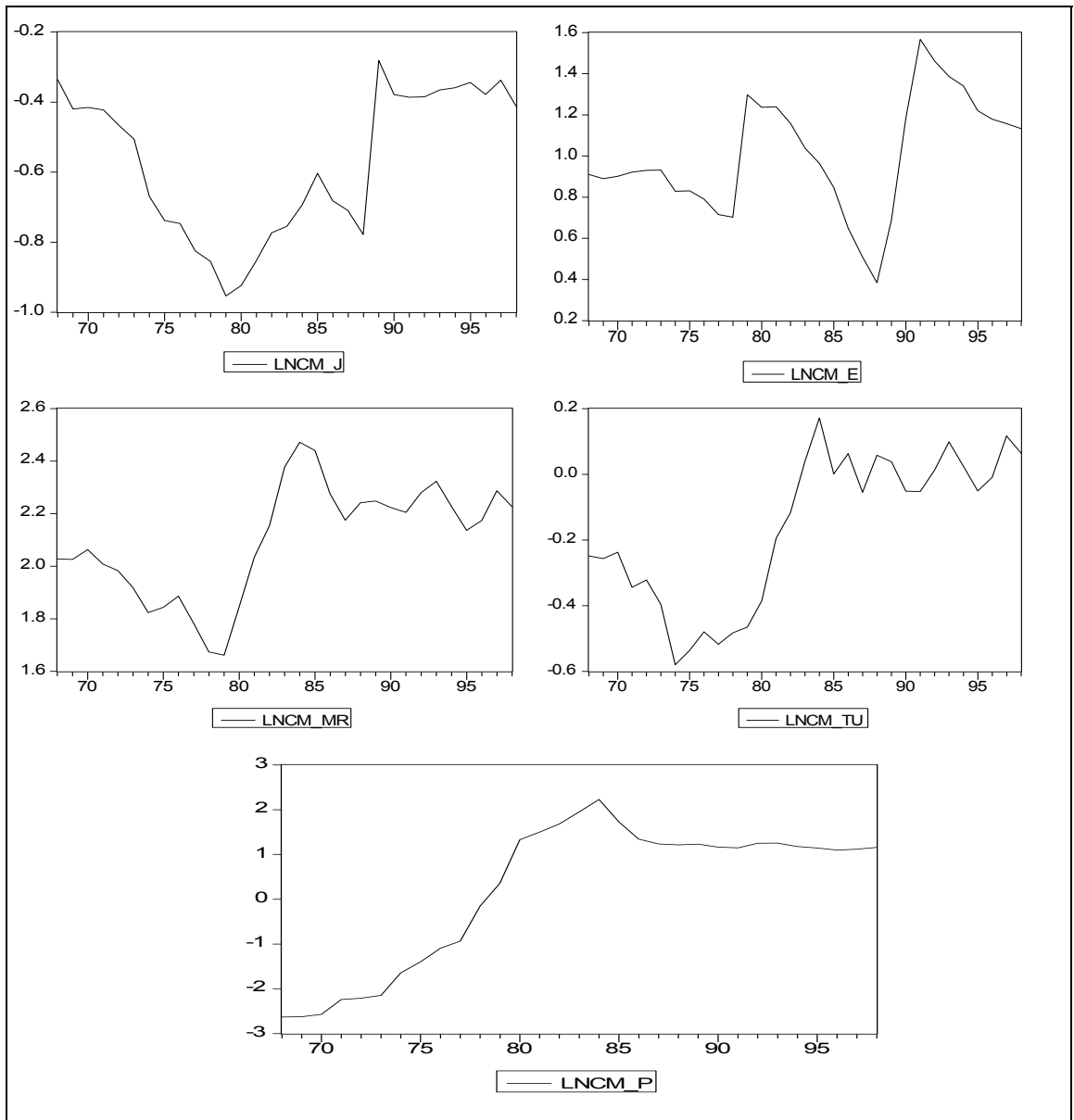
Figure (5.3.a): The evolution of the log-level real exchange rates (cm) for the countries: Jordan, Egypt, Morocco, Tunisia and Palestine (top left to right)

central bank pool and the commercial bank pool, resulting in a significant depreciation of the RER of the pound. The exchange policy that Egypt pursued from 1979 to 1980 has resulted in a steady appreciation of the RER of the pound which rose by about 67 percent during this period, substantially reducing Egypt's export competitiveness. The increased spread between the exchange rate of commercial bank pool and the own exchange rate prompted the government to establish a new bank foreign exchange market in 1987, where the exchange rate reflected at least in principle, the free market rate. As part of a comprehensive reform plan a free foreign exchange market for current account transaction was established on 1991. Then a unified exchange rate replaced all existing exchange rates. Thus the main devaluation of the pound has accompanied liberalization process since 1991 (Shabsigh and Domac, 1999).

For Jordan, the early failure to develop a strong indigenous industrial base referred to the overvalued dinar in 1980s. This, however, was rectified in 1988 with the double devaluation of the currency, instantly making Jordan a more attractive location for export-oriented industry. In the early 1990s the number of factories particularly textiles factories, grew steadily. Jordan has also benefited from the establishment of joint-venture fertilizer companies, notably with Asian countries (EIU, 1998). Exchange rate policy in Jordan, over the past period, which influenced the competitiveness of Jordan trade, experienced different phases. Firstly, the Jordanian dinar exhibited relative stability during 1975-85. It was supported by large capital inflows mostly in foreign aid from Gulf Arab countries and remittances from large number of Jordanians working abroad. This exchange policy has resulted in a RER appreciation during 1970-79. The period 1986-92 was characterized by increases instability in foreign exchange markets and by shifts in exchange rate regime as government attempted to stabilize the exchange rate. The ensuing recession during the second half of 1980s and the balance of payment pressures forced the partial fluctuation of the dinar. The crisis, however, continued to deepen and ended by big devaluation in 1989 (Shabsigh and Domac, 1999).

Once again, figure (2) shows that Moroccan dirham experienced significant instability in the early 1970s reflecting the instability of the French franc to which the dirham was fixed. During 1980-85, real depreciation of the dirham experienced. Following 1985 the real exchange rate fluctuated between appreciation and depreciation. Of importance to note here that there was evidence that Morocco had captured the positive impact of devaluation on exports since mid - 1980s onwards (see, Hanson and Harrison, 1999).

Similarly, for the same reasons with Moroccan dirham, the Tunisian dinar experienced both appreciation and depreciation. During the first half of the 1970s, the dinar experienced substantial RER appreciation. The ensuing recession and balance of payments pressures on the dinar led to depreciation until early 1989. The depreciation of the dinar, coupled with an ambitious economic reform program in the late 1980s and early 1990s (Shabsigh and Domac, 1999).

In a distinguished case, while peaks (depreciation) and troughs (appreciation) in RER for these countries mirrored their own stabilization policies, PTs transmitted the stabilization plan of Israel. As a result of introducing a comprehensive

stabilization plan in the end 1984, RER stabilized after a continuous trend of depreciation since the mid 1970s, Figure (2).

4 Modeling Trade Ratio

Here we relate trade ratio (exports in terms of imports in current prices) to both the economy activity represented by gross domestic product and relative prices (Bayoumi, 1999). For relative prices, we evaluate foreign prices at US prices, while domestic prices for group countries were proxied by consumer prices indices at 1995 price indices (see, Balassa, 1990, Edwards, 1988, Cottani et al. 1990 and Shabsigh and Domac, 1999). This modeling resembles track of studies in the literature are trying to show the impacts of different determinants on trade measures (see, Field and Pagoulatos, 1998 and Lane and Perotti, 1998). By pursuing this track of research, this modeling introduces trade ratio supply function as a base of comparison among the selected countries as follows,

$$z_{it} = \alpha_i + \beta_1 y_{it} + \beta_2 cm_{it} + \varepsilon_t \qquad (1)$$

where z represents trade ratio or net trade(exports expressed in terms of imports in current prices), y is economy activity represented by gross domestic product and cm is the measure of competitiveness, shown as follows,

$$cm = \log (e \, Pus/P) \qquad \text{for i country} \qquad (2)$$

where e represents nominal exchange rate, Pus foreign base price and P is domestic prices proxied by consumer price index.

This model assumes logs for variables at time t and for country i and ε is the error term.

For empirical analysis this model was extended to include fc term as a proxy for investment-technology factor, where fc is total fixed capital formation (see, Zarzoso and Burguet, 2000). It comprises both private and public investment for country. Thus we have the second specification,

$$z_{it} = \alpha_i + \beta_1 y_{it} + \beta_2 cm_{it} + \beta_3 \, fc_{it} + \varepsilon_t \qquad (3)$$

In advance we expect adding more reasonable explanatory variables in the right side to add gain for the explanation of trade ratio. For this purpose we added three specific time-country shift dummies to capture economic meanings. By doing that we get the third specification,

$$z_{it} = \alpha_i + \beta_1 y_{it} + \beta_2 cm_{it} + \beta_3 \, fc_{it} + \beta_4 d1_{it} + \beta_5 d2_{it} + \beta_6 d3_{it} + \varepsilon_t \qquad (4)$$

where d1 refers to oil exporting countries, it takes (1) for oil exporting country and 0 for others. In this case Algeria, Saudi Arabia and Bahrain took (1). Also we gave both Egypt and Syria (1) staring from 1990 onwards, where these counties became active exporters of oil. A shift dummy d2 was given for countries introduced trade liberalization or economic reform including openness to trade. For Morocco it takes the value (1) for the years since 1984, Tunisia takes (1) for the years since 1989 and Egypt takes (1) since 1991 onwards where comprehensive economic reform have

applied. The other countries took zeros for these dummies. Lastly specific shift dummy was given for both Jordan and PTs. Both countries witnessed a drastic shift of imports in the 1990s. Palestinian imports increased in the post of Oslo agreement, while Jordan imports have increased since the early 1990s with exodus of more refuges in the aftermath of Second Gulf War.

Using the above specifications the following discussion will employ fixed-effects-random-effects panel analysis tools.

5. Empirical Results (Panel Analysis)

This section describes panel data and presents estimation results.

5.1 Data Description

We used a designed panel data for these variables covers the countries Algeria, Bahrain, Egypt, Jordan, Morocco, Palestine, Saudi Arabia, Syria, Sudan and Tunisia for the first specification model (1) and only did we exclude Bahrain and Sudan for the second specification model (2) due to lack of enough data. So that, we have ten countries panel group one time and eight countries panel group in another time for the period from 1968 to 1998. These balanced panels data were taken mainly from International Financial Statistics Yearbook from different issues. Already, we found trade figures for both exports and prices in current US dollar prices. Some missing data were completed from Partners of Trade Quarterly. Figures of gross domestic product and fixed capital formation also taken form the International Financial Statistics Yearbook from different issues. Figures for PTs were extracted from different sources, to a lack of one unified source for data. These sources include World Bank (1993), Economic and Social Commission for Western Asia (ESCWA) and Palestinian Monetary Authority (PMA, 2000). In all cases, figures of gross domestic product and fixed capital formation were converted from native currency values to US dollar values. In respect with the competitiveness measure (real exchange rate), we proxied domestic prices by consumer prices indices for all countries by evaluating them at 1995 price index equals 100. As a reference for foreign prices, we used, as proxy for foreign prices, US price index of 1995 index equals 100 too. Dollar prices for different currencies were also drawn from the International Financial Statistics Yearbook by using different issues for the values of end of the year at official rates. Some missing data of prices and production were proxied by suitable way.

Table (2): Estimates of Trade Ratio Equation, Fixed Effects and Random Effects.

Explanatory variables	Dependent variable: trade ratio z_t			
	(1) Pooled LS	(2) GLS	(3) Pooled LS	(4) GLS
Constant	-	-.0644 (.2483) (-.2595)	-	-1.3484 (.3443) (-3.2964)
gdp	-.0192 (.0218) (-.8837)	-.0123 (.0218) (-.5630)	.4544 (.1060) (4.2879)	.4649 (.1059) (4.3884)
cm	-.1653 (.0318) (-5.2006)	-.1404 (.0300) (-4.6725)	-.1949 (.0371) (-5.2471)	-.1733 (.0365) (-4.7479)
fc	-	-	-.4254 (.0925) (-4.5990)	-.4280 (.0928) (-4.6118)
Fixed Effects-Random Effects	Fixed Effects	Random Effects	Fixed Effects	Random Effects
A-C	.7215 (.2318) (3.1122)	.6242	-.1511 (.2993) (-.5050)	.8173
B-C	-.0151 (.1914) (-.0788)	.0218	-	-
E-C	-.3605 (.2262) (-1.5937)	-.3859	-1.4819 (.3394) (-4.3668)	-.4460
J-C	-1.1037 (.1878) (-5.8772)	-1.064	-2.1064 (.2999) (-7.0216)	-1.0095
MR-C	.1602 (.2133) (.7512)	.1044	-.9076 (.3160) (-2.8712)	.1016
P-C	-.8445 (.1614) (-5.2317)	-.8208	-1.6029 (.2376) (-6.7461)	-.5217
SA-C	1.2203 (.2413) (5.0561)	1.1638	.0365 (.3602) (.10120)	1.0411
SU-C	.5601 (.2382) (2.3512)	.4193	-	-
SY-C	.2733 (.2165) (1.2626)	.1948	-.7505 (.3081) (-2.4358)	.2378
TU-C	-.2690 (.20245) (-1.3288)	-.2578	-1.289 (.3114) (-4.140)	-.2206
R2	0.7374	0.7213	0.7717	0.7565
SSR	33.38	35.4390	26.3160	28.0681
F statistics	836.87	-	400.6451	-
Number of obs.	310	310	248	248
Hausman Specification Test Test H0: difference in coefficients not systematic	$\chi2(2)=5.77$, Prob> $\chi2=0.0559$		$\chi2(3)=9.89$, Prob> $\chi2=0.0195$	

* The parentheses below the estimated coefficients are standard errors and t-values, respectively.

5.3.2 Estimation Results

This subsection shows three estimation results; fixed effects random effects, cross-sectional-fixed effect and GLS estimation with specific country-time dummies.

5.3.2.a Fixed Effects-Random Effects

Table (2) contains two estimation results for specification (1) and (2) under the assumption fixed effects and random effects. Under fixed effects procedure the individual-specific effect is treated as a fixed parameter. In contrast, random -effects approach considers α_i as a separate part of the disturbance varies by countries.

We first note before commenting on different estimation results that shifting from the first specification to the second gives more economical plausible results by using each panel procedure. One would expect trade ratio to rise with an increase in both gross domestic of production and fixed capital formation, that $\beta_1 > 0$, $\beta_3 > 0$. Relating, the impact of cm measure, one could expect $\beta_2 > 0$ if there was a depreciation or $\beta_2 < 0$ in case of appreciation of exchange rate. Before going on to evaluate estimation results, one can conclude on a priori consideration the fact that our panel consists of a randomly drown sample, where the sample includes varieties of countries as shown before.

Results of table (2) show that α_i as fixed effects are significantly different from zero. The statistics was calculated for both specifications by using SSR for pooled LS as a restricted model from table (3) and fixed effects as unrestricted model from table (2). It exceeds its approximate $F_{9\ 298}$ and $F_{7\ 247}$ for these specifications respectively. The calculated F statistics were found (76.883) and (68.14) respectively. So, a fixed- effects perspective established that there is significant heterogeneity in the intercept term of the two specifications of our model. Once again, shifting to random effects model displays noticeable changes in the estimate coefficients (elasticities), in addition to the fact that SSR figures denotes to the goodness of fit for random effects model compared with fixed effect model.

Furthermore, a closer look at the individual effect estimate shows a remarkable change between the two specification elasticity results. Of importance, to note significant individual effect estimates with the expected sign appeared for Egypt, Jordan, Morocco, Palestine and Tunisia. Economically, these results have not lacked the justification where more liberal trade policies in those countries or a drastic increase in imports led to a decline of exports in terms of imports. Also the change of coefficients estimates for Algeria, Saudi Arabia and Syria reflects a justified economic meaning.

In a distinguished case, close individual effect estimates for Jordan and Palestine reflects the similarity of trade in these neighboring countries. However, Palestine is still suffering of export compression. Positive estimates for random effects terms for Algeria, Saudi Arabia and Morocco are a noticing feature reflecting the difference from other countries. This situation due to the fact that the first two countries increased their export dominated by oil while the third one captured marked export under liberalization of trade accompanied exchange rate depreciation (see, Hanson and Harrison, 1999).

Having established that there is a significant heterogeneity in the intercept term of our models viewed from a fixed perspective and revealed from a random

perspective, we turn to the Hausman test to try and determine which one of these specifications is the appropriate one. The calculated χ^2 values were found 5.77 and 9.89 with prob-values 0.056 and 0.02 for both specifications respectively. Comparing the calculated statistics values with the relating critical values 10 and 5 percents, respectively, confirms that the null hypothesis of no dependence between the regressors and individual effect is rejected.

5.3.2.b Cross-Sectional- Fixed Effects Results (Within Estimates)

Tables (3.a) and (3.b) give results of the coefficient estimates for both cross-sectional and fixed effects estimations. In this case each country is treated separately and will be used as a benchmark for comparison to the attached panel results. For both empirical specifications, the differences between country coefficient estimate and fixed-effects can be noticed.

In the first specification of trade modeling, two main results have economic meanings. Firstly, the similarities of the positive significant impact of real exchange rate through (**cm**) measure on trade ratio for both Jordan and Palestine. Secondly, fixed-effects model highlights the significant negative effect of (**cm**) measure compared with OLS cross-sectional results. Meanwhile, using the specification (2) for trade ratio as a base of comparison between OLS cross-sectional estimates and panel fixed-effects results in more economic gain. In addition to showing more relief of the presumption of omitted-variable bias in the first specification of trade ratio, it gives other economic interpretations. Clearly, we see a positive significant impact of economy activity, represented by gross domestic product on trade ratio in panel results. In fact, evidence confirms this result. Al-Mutairi and El-Sakka, (2000) found that the growth in GDP for the countries Algeria, Bahrain, Egypt and Jordan impacted export positively.

Also, both (**cm**) and (**fc**) measures impacted trade ratio significantly with a negative sign. The impact of cm refers to the loss of competitiveness in pooled regression. These losing stems from two forces reacted separately or together. These forces are the appreciation of exchange rate and a rise in domestic price indices.

Again, the negative impact of (**fc**) measure on trade ratio implicitly means that the positive impacts on imports outstrip its counterpart on exports.

Distinctively, only in Palestine case, trade ratio gross domestic product elasticity was negative in the second specification for trade ratio. This situation reflected the impacts of imposing customs union with Israel in addition to Israeli policies practiced in the area. Once again, the similarity of trade performance for Jordan and Palestine becomes clearer under estimation comparison. Firstly, Jordan and Palestine captured the impact of currency devaluation. While Jordan gained from the marked devaluation of dinar in 1989 mainly, PTs transmitted the devaluation of both Jordanian dinar and Israeli shekel, which were circulated in the area.

Table (3.a): Cross-Section (OLS) and Fixed-Effects Results (Specification 1)

Explanatory variables	Constants	gdp	cm	R2	SSR
Algeria	.082 (.6449)* (.127)	.127 (.5601) (2.27)	-.42 (.1273) (-3.33)	.33	2.06
Bahrain	-1.07 (.4238) (-2.52)	.113 (.5689) (1.99)	-.18 (.1723) (-1.02)	.21	1.78
Egypt	3.32 (.4557) (7.28)	-.39 (.0455) (-9.10)	.011 (.0796) (.079)	.75	1.20
Jordan	-3.06 (.3177) (-9.63)	.31 (.0387) (7.89)	.93 (.1682) (5.94)	.76	1.03
Morocco	-.26 (.3788) (-.70)	-.05 (.0405) (-1.17)	.16 (.1390) (1.19)	.06	.62
Palestine	2.84 (.5246) (5.4)	-.56 (.0765) (-7.31)	.16 (.0466) (3.42)	.73	1.46
S. Arabia	3.83 (.8455) (4.50)	-.22 (.0663) (-3.27)	-.59 (.2600) (-2.26)	.31	4.7
Sudan	2.42 (.7446) (3.24)	-.17 (.0890) (-1.87)	-.27 (.0761) (-3.53)	.45	2.56
Syria	.72 (2.4527) (.29)	.03 (.1379) (.23)	-.48 (.4042) (-1.18)	.29	3.67
Tunisia	-.62 (.2710) (-2.28)	.03 (.0294) (.88)	.15 (.1057) (1.41)	.19	.31
Fixed Effects	-	-.0192 (-.0218) (-.8837)	-.1653 (.0318) (-5.2006)	.74	33.38
Pooled LS	-2.0123 (.2123) (-9.4793)	.1852 (.0239) (7.7639)	-.0303 (.0173) (-1.7557)	.17	106.1106

* The parentheses below the estimated coefficients are standard errors and t-values, respectively.

Table (3.b): Cross-Section (OLS) and Fixed-Effects Results (Specification 2)

Explanatory variables	Constants	gdp	cm	fc	R2	SSR
Algeria	.15201 (.6332)* (.2401)	.5306 (.2770) (1.9158)	-.5335 (.1521) (-3.6399)	-.4149 (.2790) (-1.4867)	.38	1.904
Egypt	1.4858 (.7083) (2.0976)	.1524 (.1796) (.8482)	-.0487 (.1196) (-.4070)	-.4285 (.1371) (-3.1260)	.82	.885
Jordan	-2.9670 (.6550) (-4.5299)	.2739 (.1991) (1.3762)	.9453 (.1922) (4.9186)	.0253 (.1579) (.1602)	.76	1.032
Morocco	-2.4211 (.2369) (-10.2182)	.7970 (.0725) (10.9966)	.0108 (.0578) (.1863)	-.6998 (.0585) (-11.962)	.85	.09
Palestine	3.0364 (.5099) (5.9545)	-1.006 (.2378) (-4.2251)	.1728 (.0449) (3.8466)	.4867 (.2474) (1.9668)	.76	1.2802
S. Arabia	.5722 (.8293) (.6899)	1.3016 (.2764) (4.708)	-1.1110 (.2036) (-5.4580)	-1.3711 (.2462) (-5.568)	.68	2.20
Syria	-3.457 (2.6276) (-1.3156)	.93541 (.3384) (2.764)	-.064 (.3881) (-.1630)	-.7075 (.2469) (-2.8655)	.46	2.8125
Tunisia	-1.5988 (.3426) (-4.660)	.4715 (.1204) (3.9158)	.052194 (.0907) (.5754)	-.3986 (.1056) (-3.7267)	.47	.203
Fixed Effects	-	.4544 (.1060) (4.2879)	-.1949 (.0371) (-5.2471)	-.4254 (.0925) (-4.5990)	.77	26.3160
Pooled LS	-2.9006 (.2693) (-10.7729)	.6251 (.1115) (5.6047)	.0227 (.0278) (.8162)	-.4229 (.11057) (-3.8245)	.32	80.4724

* The parentheses below the estimated coefficients are standard errors and t-values, respectively.

Secondly, the impact of (**fc**) on trade ratio was not significant, nevertheless, it had a positive sign and hence it differed from panel result. To try interpreting this result, descriptive statistics in table (1) shows the modest investment volume, compared with neighboring countries. These investments were dominated by private sector in the absence of independent government (The World Bank, 1993). This situation by any way is different for all Arabian countries, which witnessed a big share of public investments, in addition, to the impact of foreign and intra-investments, in some countries. The matter for Jordan again seems to reflect the modest of public investments in a comparison with big Arabian countries (EIU, 1998).

5.3.2.c GLS Estimation with Specific Country-Time Dummies
By using GLS, we would like to devise the estimating scheme in such a manner to reflect variation of the dependent variable across group countries. This time shift from OLS to generalized estimation as shown in Table (4) displays pronounced differences. It is noteworthy to see the following main results, while using the two specifications of trade ratio. Firstly, compared with the preceding estimation, fixed effects-random effects, considerable changes in the coefficient estimates (elasticities) happened. Particularly, trade ratio gdp elasticity values increased. Secondly, by using GLS estimation, coefficient estimates for (**cm**) (competitiveness measure) turned to be insignificant statistically in all estimation cases. Here it became less influencing factor on trade ratio compared with domestic production. Economically, this result could be justified. We can say that competitiveness issue was not such a problem for a number of these countries. Thirdly, a relatively highest coefficient estimate for oil exporting countries shift dummy and with the expected positive sign easily could be justified, where oil dominates the exports of many of these countries. Also, country shift dummies introduced for countries followed trade liberalization (d2) in case of Egypt, Morocco and Tunisia or witnessed a drastic change in import (d3), in case of Jordan and Palestine, were found significant and with the expected sign where imports outstripped exports. Lastly, GLS estimation produced more similarities in economic meanings for trade ratio in both specifications relating the coefficient estimates. Again by assuming that the error terms of panels are correlated in addition to having different scale variances in our balanced panels let to a noticeable change in the coefficient estimates as shown in the last column of Table (4). Now, drastic changes happened for the estimates of shift dummies. The significance of d1 (oil exporting country dummy) increased sharply. The second shift dummy d2 became insignificant and with opposite sign, while the significance of d3 also increased with the same sign. In respect with the two specifications of trade ratio, GLS heteroscedastic with cross-sectional correlation estimates shows large similarity. Indeed this case does not lack such a correlation, where many interconnections among these countries are found.

Table (4.a): GLS Pooled Estimates with Specific Country-Time Dummies Specification 1).

Explanatory variables	Dependent variable: trade ratio z_t					
	Generalized Least Squares					GLS hetroscedastic with cross-sectional correlation
cons	-2.0123 (.2112) (-9.525)	-1.3043 (.1863) (-7.000)	-2.1783 (.2122) (-10.265)	-1.9284 (.2062) (-9.351)	-1.3866 (.1908) (-7.266)	-.8912 (.0931) (-9.573)
gdp	.1852 (.0237) (7.802)	.0709 (.0221) (3.209)	.2091 (.0242) (8.637)	.1808 (.0231) (7.831)	.0887 (.0232) (3.820)	.0500 (.0116) (4.321)
cm	-.0303 (.0172) (-1.764)	.0102 (.0147) (0.692)	-.0366 (.0169) (-2.165)	-.0391 (.0168) (-2.325)	-.0018 (.0149) (-.121)	-.0243 (.0045) (-5.367)
d1(oe)	-	.7541 (.0647) (11.654)	-	-	.6877 (.0668) (10.290)	.4715 (.0261) (18.036)
d2(lb1)	-	-	-.3921 (.1099) (-3.567)	-	-.1736 (.0952) (-1.823)	.0769 (.0234) (3.284)
d3(lb2)	-	-	-	-.6579 (.1522) (-4.276)	-.4159 (.1312) (-3.169)	-.6211 (.0759) (-8.186)
$\chi2$ LL	$\chi2(2)=61.44$ -127.5003	$\chi2(3)=224$ -71.1812	$\chi2(3)=76.6$ -121.2645	$\chi2(3)=83.4$ -65.2222	$\chi2(5)=245$ 136.288	$\chi2(5)=626.1$ 136.288

Notes: The parentheses below the estimated coefficients denote standard error and z-values respectively. $\chi2$ tests have zero probability-values for different specifications.

Table (4.b): GLS Pooled Estimates with Specific Country-Time Dummies Specification 2).

Explanatory variables	Dependent variable: trade ratio z_t					
	Generalized Least Squares					GLS hetroscedastic with cross-sectional correlation
cons	-2.9006 (.26707) (-10.861)	-2.0339 (.2469) (-8.37)	-3.1015 (.2661) (-11.656)	-2.791 (.2655) (-10.510)	-2.1323 (.2532) (-8.422)	-1.9305 (.1070) (-18.050)
gdp	.6251 (.1106) (5.650)	.5909 (.0999) (6.221)	.6863 (.1091) (6.289)	.5912 (.1094) (5.401)	.6006 (.0949) (6.332)	.5917 (.0368) (16.080)
cm	.0227 (.0276) (.823)	-.0229 (.0241) (-.946)	.0136 (.0270) (.503)	.01147 (.0274) (.418)	-.0323 (.0239) (-1.351)	-.0574 (.0068) (-8.385)
fc	-.4229 (.10961) (-3.856)	-.5188 (.0947) (-5.481)	-.4613 (.1074) (-4.295)	-.3918 (.1084) (-3.613)	-.5073 (.0936) (-5.420)	-.5103 (.03517) (-14.510)
d1(oe)	-	.8045 (.0854) (9.425)	-	-	.7345 (.0871) (8.425)	.6485 (.0366) (17.721)
d2(lb1)	-	-	-.3903 (.1076) (-3.628)	-	-.2070 (.0965) (-2.146)	.0377 (.0225) (1.673)
d3(lb2)	-	-	-	-.4387 (.1530) (-2.868)	-.3335 (.1324) (-2.518)	-.5108 (.0625) (-8.177)
χ2 LL	χ2(3)=107.30 -96.21	χ2(4)=234 -58.24	χ2(4)=126 -89.79	χ2(4)=119 -92.16	χ2(6)=253 -53.39	χ2(6)=1049 117.50

Notes: The parentheses below the estimated coefficients denote standard error and z-values respectively. χ2 tests have zero probability-values for different specifications.

6.Conclusions

Using exports supply modeling the impact of three main influencing factors on exports were investigated for ten Middle east countries, in the context of panel analysis. Panel estimation results highlight the heterogeneity among these countries relating the performance of external merchandise trade. Mainly, gross domestic product was found with a significant positive impact on trade ratio for the pooled system. Also, raw material commodities especially oil and oil products have positive significant impact on exportable. Moreover, mix results are captured for the impact of liberal policies followed by some countries since the late 1980s,on the performance of trade. Particularly, liberal polices in Egypt and Jordan resulted in a negative impact on trade ratio. Apparently, the competitiveness issue is continuing a matter for many of these countries, where we have a negative impact of misalignment of exchange rates on trade ratio for a pool system in addition to OLS individual equations. Broadly, investment-technology factor has a negative significant impact on trade ratio for the pooled system, taking in consideration the fact that imports usually outstrip exports for each country. However, OLS individual country equations show that countries like Egypt ad Syria captured more gain from investment factor compared to other countries. Distinctively, these results show the deficiencies of Palestinian external trade in the absence of independent national policies. Trade ratio (exports in terms of imports) affected adversely by the growth in gross domestic product and weakly by growth in total investments, over the past three decades.

References

1-Al-Mutairi, N.H and El-Sakka, M.I., (2000) "Exports and Economic Growth: The Arab Experience", The Pakistan Development Review, Vol.39, No.2, pp. 153-169.

2-Balassa, B., (1985) "Exports, Policy Choices, and Economic Growth in Developing countries after the 1973 Oil Shock", Journal of Development Economics, Vol.18, pp. 23-35

3-Balassa, B., (1990) "Incentive Policies and Export Performance in Sub-Saharan African", World Development, Vol.18, pp. 383-391.

4-Baltagi, B.H., (1995): Econometric Analysis of Panel Data. Chichester. UK: John Wiley.

5-Baltagi, B.H., (1998): Econometrics. Berlin: Springer-Verlag.

6-Bayoumi, T., (1999)"Estimation Trade Equations from Aggregate Bilateral Data", IMF Working Paper, WP/99/74

7-Cottani, J., D. Cavallo, and M.S. Khan (1990) "Real Exchange Rate Behavior and Economic Performance in LDCs", Economic Development and Cultural Change, Vol. 39, pp. 61-76.

8-Cottani, J., D. Cavallo, and M.S. Khan (1990) "Real Exchange Rate Behavior and Economic Performance in LDCs", Economic Development and Cultural Change, Vol. 39, pp. 61-76

9-Domac, L. and Shabsigh, G., (1999) "Real Exchange Rate Behavior and Economic Growth: Evidence from Egypt, Jordan, Morocco, and Tunisia", IMF Working Paper, WP/99/40.

10-Erlet, H., (1997)"Panel Data: A Selective Survey", Working Paper No. 97-04, Research Department, Yapi-Kredi Bank.

11- Field M.K. and Pagoulatos E. (1998) "Foreign Trade Elasticities and Import Discipline", Applied Economics, Vol.30, pp.105-111.

12-Harrison, A., (1996) "Openness and Growth: A Time-Series, Cross-Country Analysis for Developing Countries", Journal of Development Economics, Vol.48, pp.419-447.

13-Harrison, A. and Hanson, G., (1999) "Who Gains from Trade Reform? Some Remaining Puzzles", Journal of Development Economics, Vol.59, pp. 125-154.

14-Hausman, J.A., (1978), "Specification Tests in Econometrics", Econometrica, Vol. 46, pp. 1251-1271.

15-Hausman, J.A and W.E. Taylor (1981), "Panel Data and Unobservable Individual Effects", Econometrica, Vol.49, pp. 1377-1398.

16-Havrylyshyn, O. and Kunzel, P. (1997), "Intra-Industry Trade of Arab Countries: An Indicator of Potential Competitiveness", IMF Working Paper, WP/97/47, pp. 1-26.

17-IMF, International Financial Statistics, Yearbook, Various Issues.

18-IMF, Partners of Trade Quarterly, 1998-2000 Issues.

19-Lane P.R. and Perotti R. (1998)"The Trade Balance and Fiscal Policy in the OECD", European Economic Review, Vol.42, pp.887-895.

20-Roy, S., (1995): The Gaza Strip, The Political Economy of De-development, Institute for Palestine Studies, Washington, DC.

21-Roy, S., (January 1998) "The Palestinian Economy after Oslo", Current History, Vol. 98, pp.19-25.

22-The Word Bank, (1993): Developing the Occupied Territories. An Investment in Peace, Vol.2, Washington, DC.

23-The Palestinian Monetary Authority (PMA), Statistical Bulletin, 18th Issue, Research & Monetary Policies Dept., Gaza, January 2000.

24-The Economist Intelligence Unit (EIU), Country Profile: Algeria, Bahrain, Egypt, Jordan, Morocco, Saudi Arabia, Sudan, Syria and Tunisia, Various Issues.

25-United Nations, Statistical Abstract of the Economic and Social Commission for Western Asia (ESCWA) Region, Various Issues.