Intra-Middle East Trade: An Empirical Assessment

Rock-Antoine Mehanna

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Abstract

This paper examines the intra-trade effects of the Middle East by employing a gravity model. It also attempts to investigate whether the Gulf Cooperation Council (GCC) is well integrated with the rest of the world. Unlike previous regional studies that estimate Arab and Islamic trade, this study focused on the Middle East, thereby overcoming two traditional pitfalls. Firstly, Middle Eastern countries based on their geographic location would differ from Arab countries in that the latter group would omit significant trading partners such as Iran and Turkey. Secondly, a strict Islamic grouping falls short of capturing geographic proximity—an essential ingredient of the gravity model—where several Islamic countries are located in far apart regions such as Jordan and Indonesia. Empirical results show that intra-Middle East trade is significantly low compared to its trade with the rest of the world. Additional findings reveal that the GCC trading bloc, though not significant, had some tendency to trade above than what the model predicts.

التجارة البينية في الشرق الأوسط: تقييم تجريبي

روك أنطون مهنا

ملخص

تدرس الورقة واقع التجارة البينية للشرق الأوسط باستخدام نموذج الجاذبية. كما تحاول معرفة إن كان لدول مجلس التعاون لدول الخليج العربية علاقات تكاملية جيدة مع باقي دول العالم. خلافاً للدراسات الإقليمية السابقة التي تقدر تجارة الدول العربية والإسلامية، فإن هذه الدراسة تركز على الشرق الأوسط، وبذلك يمكن التغلب على عقبتين تقليديتين. الأولى، أن البلدان الشرق الأوسطية إستناداً إلى موقعها الجغرافي تختلف عن الأقطار العربية باعتبار أن هذه المجموعة الأخيرة ستبعد شركاء تجاريين مهمين مثل إيران وتركيا . ثانياً، إن التصنيف الإسلامي يسقط عامل القرب الجغرافي وهو العنصر الحاسم في نموذج الجاذبية — حيث أن دولاً إسلامية عديدة تقع في أقاليم مختلفة مثل الأردن وأندونيسيا . تبين النتائج التجريبية أن التجارة البينية في الشرق الأوسط كانت منخفضة بشكل جوهري مقارنة بحجم تجارتها مع باقي دول العالم . وهناك نتائج إضافية تفيد بأن تجارة دول مجلس التعاون رغم أنها ليست هامة بشكل جوهري إلا أن هناك اتجاهاً أعلى للمتاجرة مما يتوقع النموذج.

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Introduction

This paper examines the intra-trade effects of the Middle East (ME)[1] in a global framework by using a gravity model. It also attempts to investigate whether the Gulf Cooperation Council (GCC)[2] is well integrated with the rest of the world. The purpose of this study is to postulate whether ME countries trade significantly among each other, and whether the GCC trading bloc formed by the six member countries exhibit above average trade activities compared with the rest of the countries in the sample. This paper argues that intra-Middle East trade is too low compared with the rest of the world and a burgeoning GCC bloc could be a viable example to develop and expand.

Although gravity models have been extensively used in the literature to estimate bilateral trade among countries, they have, never been used to predict intra-Middle East trade while incorporating the GCC bloc. Most previous studies that pivoted around the region under study examined either intra-Arab trade (Al-Atrash and Yousef, 2000) or intra-Islamic trade (Hassan, 2000). These past regional studies fell short for two main reasons.

Firstly, Arab countries, which were mainly selected based on their common Arabic language or being a member of the Arab League, would fail to encompass major regional but non-Arab trading partners, such as Iran and Turkey. For instance, Iran is a major trading partner with the ME, where its exports and imports with the region constituted 4.1 and 7.4%, respectively (Table 1). In 1998, Iran was the largest populated ME country with 62 million people and the second largest ME economy with an approximate gross domestic product (GDP) of US$ 112 billion.

Table 1. Direction of Iran Trade, 1999

	Exports		Imports	
	Value ($b)	Share (%)	Value	Share
Industrial countries	7.52	49.5	6.18	51.7
Developing countries	7.41	48.8	5.56	46.5
Africa	0.65	4.3	0.16	1.3
Asia	4.86	32	2.64	22.1
Central/East. Europe	1.17	7.7	1.08	9.0
ME	0.62	4.1	0.89	7.4
Western Hemisphere	0.11	0.7	0.79	6.7
Others	0.26	1.7	0.16	1.8
Total	15.19	100.0	11.95	100.0

Source: IMF, Direction of Trade Statistics, 2000

Moreover, since the GCC bloc is the main trading bloc in the ME region, this would give even more evidence for the inclusion of countries like Iran, where 95% of its ME trade lies with the GCC members (Table 2). Alternatively, although Turkey has been lately categorized as a European rather than a Middle Eastern country, still this traditional ME State behaves relatively

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[1] ME stands for Middle East (and Middle Eastern) and it represents the following fifteen countries: Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, UAE, and Yemen.

[2] GCC stands for Gulf Cooperation Council and it represents the following six countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

as a natural trading partner with its neighbors. In fact, Turkey's trade with the ME in 1999 accounted for a combined 3% of exports and imports out of its global trade (IMF DOTS, 2000).

Table 2. Direction of Iran Trade with GCC, Middle East and the World, 1999

	Iran/ME Trade		Iran/World Trade	
	Value ($b)	Share (%)	Value	Share
GCC	1.43	95	1.43	5.3
Other	0.08	5	25.4	93.6
ME	1.51	100	1.51	5.6
World	--	--	27.14	100

Source: IMF, Direction of Trade Statistics, 2000

Secondly, a strict Islamic grouping falls short to capture geographic proximity—an essential ingredient of the gravity model—where several Islamic countries exist in different regions such as Jordan and Indonesia. Subsequently, unlike previous studies that estimated Arab and Islamic trade, this study focused on the Middle East, thereby overcoming the aforementioned traditional downfalls by including non-Arab major trading partners and incorporating a cluster framework of geographic proximities reflected in the ME grouping compared with the rest of the world.

Middle East and GCC Trade Patterns

Intra-Mid East trade ($25 billion) constitutes a small portion (7.4%) of total ME trade with the world ($336 billion). In 1999, ME exports and imports accounted for 7.3 and 7.6%, respectively (Table 3). This would give a preliminary evidence of the low intra-trade activity among ME countries compared with the rest of the world. On the other hand, GCC members comprised a significant 72% of intra-ME trade (Table 4). Even when accounting for the "oil exporting" factor, import figures still showed that the GCC share in trade with the ME remained high, and increased to 74%.

Table 3. Direction of ME Trade, 1999

	Share of Exports (%)	Share of Imports (%)
Industrial Countries	53.3	62.8
Developing Countries	39.8	34.4
Africa	2.4	1.6
Asia	26.4	17.9
Central/East. Europe	2.6	5.0
ME	7.3	7.6
Western Hemisphere	1.1	2.3
Others	6.9	2.8
Total	100.0	100.0

Source: IMF, Direction of Trade Statistics, 2000

Table 4. Direction of GCC Trade with ME and World, 1999

	GCC-ME Trade		GCC-World Trade	
	Value ($ billion)	Share (%)	Value	Share
GCC	18	72	18	5.4
Other	7	28	293	87.2
ME	25	100	25	7.4
World	--	--	336	100

Source: IMF, Direction of Trade Statistics, 2000

The ME region imported mostly from industrial countries (63%) and exported mostly to industrial countries (53%) and Asia (26%) (Table 3). The GCC bloc trade activity with the rest of the world is somehow similar to that of the ME, except that it exports more to Asia (34%) and less to industrial countries (41%) as shown in Table 5. Despite the bulk of the GCC imports coming from industrial countries (61.3%), and exports going mostly to Asia, GCC members still import considerably (16%) from the ME region as demonstrated in Table 3.

Table 5. Direction of GCC Trade, 1999

	Share of Exports (%)	Share of Imports (%)
Industrial Countries	40.95	61.3
Developing Countries	45.47	38.55
Africa	1.8	1.18
Asia	34.4	17.4
Europe	0.52	2.3
ME	8.4	15.8
Western Hemisphere	0.4	1.9
Others	13.58	0.15
Total	100	100

Source: IMF, Direction of Trade Statistics, 2000

However, the GCC trade openness pattern differs significantly from the broader ME trade picture. Actually, the ME region (excluding GCC countries in many cases) has been lagging behind the rest of the world in terms of trade openness, infrastructure, foreign direct investment (FDI), and legal, banking and accounting systems (Fischer, 1993).

Barriers to Trade in the Middle East

The ME region (notwithstanding GCC open trade regimes) has been one the largest protectionist trading regions in the world (Sharer, 1998). Tariff barriers, as well as non-tariff barriers, i.e. voluntary export restraints (VER), and quotas, are extensive in many ME countries such as Syria and Libya. Rauch (1999) pointed out that despite the region's geographical proximity, common language (Arabic), religion (Moslem, albeit diverse sects) and culture that are critical for trade in differentiated products, many regional differences have remained due to boundary disputes (e.g., Iran and Iraq), ideological conflicts (e.g., Syria's and Iraq's Baathist regimes), income disparities (e.g., Gulf states and Yemen), religious tensions (e.g., Iran and Gulf States), and many consecutive wars (e.g., Iraq/Iran, Iraq/Kuwait, and Arabs/Israel).

The ME region also lags behind the rest of the world in introducing political reforms, trimming bureaucracies and the role of government, improving infrastructure, setting out policies that would attract FDI, as well as stimulating the domestic private sector, strengthening accounting, legal and banking standards, and developing sound educational and health systems. For instance, Bolbol (1998) argued that ME economic reform remains stagnant within the state due to several contributing factors that include political opposition, the unique nature of Arab kinship and tribal relationship, and the timidity of the private sector. There are several factors that contribute to this discouraging scenario. These include large budget deficits, high inflation, fiscal instability, restrictive licensing and foreign exchange allocation, state-owned enterprises and monopoly, subsidies, as well as other activities that discourage imports (El-Erian, 1994).

Liberalizing trade[3] in goods as well as in services is needed. However, engaging in internal reforms should be a priority. For instance, Wahba (1998) indicated that ME countries do not meet the prerequisites for successful financial liberalization, and hence show a clear need for reforming the financial system before opening external competition. Having said that, the caution here is against the potential inherent risk in liberalizing all financial services without any capital control — an example of such financial risks is the recent 1997 Asian crisis.

The previous discussion was about "policy" trade impediments, which may to a certain extent be dealt with on a governmental level. However, more structural trade barriers inhibit the ME region and hence, are more difficult to correct. The small market size of most ME countries (notwithstanding a potential ME integration case) discourages efficient economies of scale according to the Schumpeterian context where innovation is fostered by larger markets and scale economies. The lack of product complementarity in the ME hinders intra-regional trade (Fischer, 1993).

From a comparative advantage perspective, the region's similar resource endowments (i.e. oil and agriculture products) and production structures spur inter-trade at the expense of intra-regional trade. In addition, the narrow export base and similar factor endowments in the region limit trade based on product differentiation. Accordingly, both international trade models, the Heckscher-Ohlin model, which estimated trade based on different factor endowments, and the intra-industry model, which predicted trade based on product differentiation, do not theoretically support an intra-ME trade.

Studies reported that differences in per capita income in the ME have contributed to fundamental trade barriers (Fischer, 1993), since richer countries (e.g., Gulf States) would prefer to buy more high quality and luxury goods that are usually produced in industrialized countries. Specifically, industrialized countries experience great trade flows among each other due to their large appetite for raw materials, fuel, intermediate goods, machinery, and consumer goods.

However, neither the comparative advantage theory nor recent events (i.e. the North American Free Trade Agreement and other successful North-South trade arrangements) would fully advocate this same level of development argument. In contrast, some studies (Rivera-Batiz and Xie, 1993) showed that a North-South trading bloc could have a positive impact on both trade and growth. Similarly, Chui, Levine and Pearlman (2001) examined North-South trade using an endogenous growth model, and indicated that new winners could emerge: unskilled workers in the North and skilled workers in the South.

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[3] In the context of this study, trade represents the summation of both exports and imports.

Alternatively, the GCC countries stood in a much better trade position than their average ME counterparts. Mehanna and Hassan (forthcoming) found that, in an ME framework, the GCC is a viable economic bloc resulting in some significant trade activities. In fact, GCC members have one of the best communications and infrastructure networks since they leapfrogged by initially installing state of the art systems (World Bank, 1999). They have open trade policies and their markets are far better integrated with international markets than many other ME countries. For instance, Qatar has recently begun exporting liquefied natural gas (LNG) while targeting new markets in Europe, India and Asia, thereby helping the country to become a major player in the international gas arena (Middle East Economic Digest, 1999).

Nonetheless, Gulf sheikhdoms are still dependent on one commodity, oil (along with some basic petroleum products), as their major source of revenue, and the diversification of their exports base still falls short to providing a sustainable economy. This reliance on oil, a commodity subject to volatile international prices and unsteady cash flows, is by no means a sustainable determinant of growth for the GCC bloc or other ME countries. Greater effort should be taken by investing oil proceeds in deeper and wider (horizontal and vertical product integration) petrochemical products along with fostering other potential competitive sectors. For example, vertical specialization which is the use of imported inputs in producing goods that are exported, could account for 30% of the growth in some countries' exports (Hummels, Ishii and Yi, 2001).

Apparently, some GCC members and very few ME countries started opening their economies through attempting gradual political reforms and more aggressive market- oriented strategies along with bolder trade liberalization policies. Examples are the Jabal Ali free-duty zone in UAE and Dubai's liberal tourist hub in a relatively conservative region (Mehanna and Hassan, forthcoming).

Similarly, in the ME region, GCC members have small market size, high transportation costs due to a desert landscape and/or rough terrain, and similar resource endowments and production structures, i.e. oil and gas. However, their similar geo-political position, per capita income and political structures (sheikhdoms and monarchical), common religious sect (Sunni), borders and colonial ties (British Colonies) seem to play a greater role in enhancing their sub-regional intra-trade activities. Nevertheless, their open trading regimes and market oriented economies have probably allowed them to trade with the rest of the region; thus, benefiting from a superior allocation of resources.

Liberalizing trade in the ME region could provide several advantages. Among others, these are greater economies of scale and Pareto superiority, deeper capital markets, a better environment for FDI, less smuggling and administrative expenditures among member countries, larger product selection, lower prices for ultimate consumers (due to fiercer competition), and higher economic growth per capita (Mehanna and Hassan, 2002). Still, several trade impediments reign over the whole ME region regarding production and cost structures, product complementarity and differentiation, factor endowments, and communications and transportation costs. For instance, the major transport and insurance cost disadvantage that developing countries incur when trading may be decreased by shifting from a cost-insurance-freight (c.i.f.) valuation of traded goods to free-on-board (f.o.b.) valuation (Erzan and Yeats, 1991).

Spurring intra-ME trade would encounter several difficulties including the aforementioned structural ones and other macro-political ones. Ekholm, Torstensson and Torstensson (1996) analyzed the ME post-normalized trade flows (post-peace phase) based on a

gravity equation, and postulated that there is no large overall potential for increased trade within the Middle East and North Africa (MENA) region or with Europe.

Despite all the political, economic, structural and natural challenges that ME countries face, they should embark on internal reforms and then liberalize their trade. After all, their lack of production base in capital and equipment goods may prove to be an advantage rather than a disadvantage. Interestingly, a recent study (Mazumdar, 2001) reported that investment in domestically produced equipment reduces the growth rate while investment in imported equipment increases it.

Methodology

Gravity model offers a systematic framework for measuring the normal pattern of trade. International trade flows were determined by comparative advantage, possibility of intra industry trade, transport cost, and so forth. Trade policy may revise the normal trade flows.. A gravity model of international trade estimated the trade flow as a function of variables that directly or indirectly affected the determinants of normal trade flow. A modified version of the gravity model may be used to examine whether trade, exports and imports among ME countries and among members of the GCC were low compared to other countries in the sample. These flows were estimated while controlling for additional pertinent variables such as oil-exporting countries and pertinent regional blocs.

One weakness of the gravity model is that it encompasses a regional trading arrangement in a dichotomous variable, therefore not detecting the various dynamics that are germane to such a trade agreement, the extent of its implementation and bureaucracy, as well as surrounding institutional policies. Nonetheless, the strength of the gravity model is reflected in its reliable empirical evidence in estimating bilateral trade flows.

This study employed a gravity model to estimate intra-ME trade as compared with the rest of the world, in addition to incorporating the GCC bloc and other pertinent blocs. The gravity model has been extensively used in the literature to predict bilateral trade. For instance, Havrylyshyn and Pritchett (1991) used a gravity model to endeavor the trade effects between Eastern and Western Europe. Frankel, Stein and Wei (1995) estimated the gravity model in the Americas and Western Hemisphere; while Bayoumi and Eichengreen (1995) explored effects of trade on the European Community (EU) and European Free Trade Area (EFTA). However, intra-ME trade is still unexplored.

The typical gravity model specification predicted that bilateral trade between two trading partners is a function of the size of their economies, populations (or per capita incomes), and the distance between them (Bergstrand, 1985):

$$Tij = f(GDPi, GDPj, PCIi, PCIj, DISTij) \hspace{3cm} \text{Equation (1)}$$

where T is the value of trade (exports, imports, or both) between countries i and j; GDP is the real gross domestic product (or GNP, the gross national product) is the so-called gravity variable and a proxy for the size of economy; PCI is per capita income measured by GDP (or GNP) over population; and $DIST$ is the geographic distance between the two countries' capitals. All these variables are logged.

Due to the specific nature of many ME countries as oil-exporters, methodological bias (oil bias) could be a result of inflating trade figures relative to non oil-exporting countries, thus overestimating ME trade activities. Therefore, the standard model is extended as follows. The dependent variable trade is presented in three forms: (a) Total Trade, which is the summation of imports and exports; (b) Exports; and (c) Imports. Import figures shield the variable from oil exports, whereas total trade and exports values would be subject to imbedded oil exports. However, when using trade and export values as dependent variables, two dummy variables representing oil-exporters in reporting and partner countries are added to the equation to isolate the oil bias.

Moreover, the distances between countries' capitals could also be upwardly biased, hence exaggerating the distance of large size countries. Therefore, a dummy variable - Border if the trading partners have common national borders, is also added to the model. This Border dummy variable is included to reduce the bias that the Distance variable could carry from measuring distances between large size countries, a very plausible case in the ME region. This model is also modified to incorporate major specific regional trade arrangements (GCC, ASEAN, and EU) based on the proximity feature of the gravity theory (i.e. major blocs within a geographic proximity of the ME).

Subsequently, the modified model becomes:

$Log\ M_{ij} = \alpha + \beta\ Log\ (GDP_i*GDP_j) + \eta\ Log\ (PCI_i*PCI_j) + \theta\ Log\ (DIST_{ij}) + \mu\ (BORDER_{ij}) + \varphi\ (ME_{ij}) + \Sigma^n_1\chi\ (RTA_{ij})$ Equation (2)

$Log\ X_{ij} = \alpha + \beta\ Log\ (GDP_i*GDP_j) + \eta\ Log\ (PCI_i*PCI_j) + \theta\ Log\ (DIST_{ij}) + \mu\ (BORDER_{ij}) + \phi\ (OIL_i) + \lambda\ (OIL_j) + \varphi\ (ME_{ij}) + \Sigma^n_1\chi\ (RTA_{ij})$ Equation (3)

$Log\ T_{ij} = \alpha + \beta\ Log\ (GDP_i*GDP_j) + \eta\ Log\ (PCI_i*PCI_j) + \theta\ Log\ (DIST_{ij}) + \mu\ (BORDER_{ij}) + \phi\ (OIL_i) + \lambda\ (OIL_j) + \varphi\ (ME_{ij}) + \Sigma^n_1\chi\ (RTA_{ij})$ Equation (4)

where M_{ij}, X_{ij} and T_{ij} are imports, exports, and total trade, respectively, between countries i and j; α, β, η, θ, μ, ϕ, λ, φ, and χ are the estimated coefficients of the constant term, size of economy, per capita income, distance, border, reporter and partner oil-exporting countries, ME countries, and regional trade arrangements (GCC, ASEAN, EU), respectively.

It is expected that the value of trade correlated positively with the size of economy and negatively with distance. The relation of per capita income with trade was inconclusive: the intra-industry model predicted a positive link, while the comparative advantage theory (which was based on different factor endowments) postulated a negative one. However, as argued earlier in this paper, a positive link was more plausible due to similar factor endowments in the region and the consumer demand in some rich ME and GCC countries for quality goods, which were more likely to be produced in industrialized countries. The dummy variable "border" is assigned '1' in case both countries share common borders, while the "oil" dummy variables take the value of '1' if reporter (or partner) country is an oil-exporter.

The ME dummy variable indicating both countries designated as ME was the main explanatory variable of this study and was expected to be negative; thus, implying lower trade than the model predicts. And finally, regional trade arrangements were all expected to be positive, though not necessarily significant for the GCC, which as discussed earlier, may exhibit

above average trade activities in an ME framework but not necessarily in a global one (Mehanna and Hassan, forthcoming).

All trade and GDP values were in real and constant US$ and were averaged from 1996 through 1999.. Data were taken from the IMF Direction of Trade Statistics, the World Bank World Development Indicators and governments' web sites.

According to the International Monetary Fund (IMF) and World Bank there are 15 ME countries: Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, UAE, and Yemen (formerly, Yemen Arab Republic and Yemen P. D. Republic: merged into Republic of Yemen on May 20, 1990).

This paper included all ME countries excluding Israel and Iraq for the following reasons. The Israeli-Arab conflict resulted in an Arab boycott of trade relations with Israel except with Egypt and Jordan. Consequently, the total bilateral trade between the ME (practically, only Egypt and Jordan have trade relation with Israel) and Israel, in 1999, constituted only 0.2% of Israel's total trade with the world. Moreover, Israel represents a mere 1% of all ME intra-trade. Due to the war exogenous factor and this negligible share of trade, Israel was excluded from the sample. Iraq was also excluded from the sample due to the United Nations' trade sanctions that were imposed on Iraq after its invasion of Kuwait in 1990.

This study included a stratified sample of 13 ME countries and 20 other major trading partners with the ME from around the globe. The sample under study constituted around 90% of trade activity with the ME. Therefore, this paper analyzed 33 countries, leaving it with 528 data points (33*32)/2).

Empirical Results

Descriptive statistics as shown in Table 6, present a large dispersion in trade figures ranging from $1.5 billion up to $12 billion. In addition, exports and imports figures could run from $0.013 billion up to $11 billion; thus, suggesting that countries differed significantly in their exports and imports activities between each other. Data also pointed out that some income disparities existed in the sample, though not substantially — reflected by a standard deviation of 2 and a mean of 17 — and various sizes of economies were also included. It also seemed natural that oil-exporting countries comprised a significant share of the sample under study, which was mainly due to the existing cluster of ME and Gulf States as reflected by an approximate mean of 0..39 (expected value of both means).

Table 6. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Log Import	512	.02	11.19	5.4404	2.5180
Log Export	520	.013	11.70	5.5543	2.4331
Log Trade	509	1.56	12.17	6.4608	2.2228
Log GDP	496	3.11	17.34	9.8360	2.7485
Log PCI	494	11.67	20.68	17.2944	1.9965
Log DIST	528	3.97	11.09	7.8259	.9015
Border	528	00	1.00	4.924E-02	.2166
Oil (i)	528	00	1.00	.3845	.4869
Oil (j)	528	00	1.00	.4034	.4910
ME	528	00	1.00	.1383	.3455
GCC	528	00	1.00	2.462E-02	.1551
EU	528	00	1.00	3.977E-02	.1956
ASEAN	528	00	1.00	1.705E-02	.1296
Valid N	482				

The cross-sectional nature of this study raised suspicion of some heteroskedasticity in the error term. This specification problem was detected and accounted for following White's approach (1980), which gave robust-heteroskedasticity estimates for the variance-covariance matrix of the estimated regression coefficients. Tables 7 and 8 report the regression estimates of the gravity model. Table 7 reveals the gravity regression including the ME dummy variable, while Table 8 adds GCC, EU and ASEAN blocs to the equations. There was no serious sign of first-order serial correlation as expected from the cross-sectional nature of this study. Among all three regressions with imports, exports and trade as their dependent variables, the imports' equation seemed to shield mostly any oil bias (since oil export figures are not included in this equation).

All signs of estimated coefficients in all six models as presented in Tables 7 and 8, showed consistency with the standard gravity model and the expectations. The size of the economy correlated positively with imports, exports and total trade and proved to be statistically significant at less than 1%. This explains the pattern in international trade models that large economies trade more than smaller ones.

Per capita income generated a positive link with imports, exports and trade, and registered highly significant in all reported equations. It becomes clear in this study that per capita income results indicated consistency with the intra-industry model of trade, and thus supports the previous argument. Subsequently, it postulated that the richer a country's citizens are, the more they trade among each other. More precisely, since per capita income was used as a proxy for the level of economic development, developed countries exhibited greater trade volumes among them due to their substantial demand for raw materials, fuel, intermediate goods, machinery and then consumer goods.

Both proximity variables — distance and border — were found as expected. Distance correlated negatively with trade, while border correlated positively. The proximity finding was found to support the standard gravity theory because countries with shorter distances and common geographic borders tend to trade more with each other.

Table 7 reports regression results of the ME dummy variable, which was the core of this study. Testing the ME dummy was an attempt to answer this study's main question: Is intra-ME trade too low than the gravity model predicts? Interestingly, the ME result supported the expectation and showed a statistically significant negative relationship with imports, exports, and total trade, and remained significant even when other regional trade arrangements were added (Table 8). The econometric results showed that when two countries are ME, their bilateral trade and exports tend to be less by 0.52 to 0.74% (and imports less by 0.40 to 0.46%) than the model predicts.

Table 8 offers the tests for the GCC, EU and ASEAN. Findings revealed that the estimated coefficients of all previous explanatory variables did not change significantly and kept their initial signs. Further, the GCC came out positive but not significant, implying a tendency for above average intra-trade activities. This result was somehow expected as previously noted (unlike its significance in a strict ME framework). The EU turned out insignificant, while ASEAN was found positively and highly significant under all scenarios. All individual models overall explanatory powers proved very satisfactory, with an R-square pivoting between 0.72 and 0.81. In addition, the joint significance of all included explanatory variables proved highly significant with p-values of F at less than 1%.

Table 7. Gravity Model Regression Results, Testing for Intra-Middle East Trade

Dependent Variable	Log Imports		Log Exports		Log Trade	
	Coefficient	*t-statistic*	*Coeff.*	*t-stat.*	*Coeff.*	*t-stat.*
Log GDPij	0.737	25.57***	0.679	22.68***	0.666	28.06***
Log PCIij	0.164	4.78***	0.195	6.14***	0.18	7.17***
Log DIST	- 0.638	7.09***	- 0.606	- 7.18***	- 0.579	- 8.7***
BORDER	0.789	2.41**	0.733	2.41**	0.753	3.13***
OILi	--	--	- 0.107	- 0.77	- 0.062	- 0.57
OILj	--	--	0.285	1.99**	0.184	1.63*
ME	- 0.463	1.84*	- 0.694	- 2.95**	- 0.744	- 3.9***
R^2		0.71		0.72		0.8
F-value		231.22		178.05		265.31
p-value of F		0.000		0.000		0.000
DW		1.96		1.81		1.9
N		484		490		482

N.B. p-values $* < 0.1$; $** < 0.5$; $*** < 0.01$

Table 8. Gravity Model Regression Results, Testing for Regional Trade Arrangements

Dependent Variable	Log Imports		Log Exports		Log Trade	
	Coefficient	t-statistic	Coeff.	t-stat.	Coeff.	t-stat.
Log GDPij	0.745	24.89***	0.672	22.08***	0.663	27.65***
Log PCIij	0.16	4.52***	0.194	5.92***	0.18	6.98***
Log DIST	- 0.577	- 5.38***	- 0.511	- 5.08***	- 0.513	- 6.5***
BORDER	0.659	2.0**	0.661	2.17**	0.684	2.86***
OILi	--	--	- 0.197	- 1.42	- 0.151	- 1.37
OILj	--	--	0.298	2.09**	0.187	1.67*
ME	- 0.398	- 1.54	- 0.519	- 2.17**	- 0.616	- 3.19***
GCC	0.649	1.47	0.179	0.43	0.273	0.84
EU	- 0.052	- 0.13	0.216	0.585	0.032	0.11
ASEAN	1.774	3.77***	1.951	4.42***	1.677	4.85***
R^2		0.72		0.73		0.8
F-value		150.69		130.88		196.48
p-value of F		0.000		0.000		0.000
DW		1.97		1.83		1.92
N		484		490		482

N.B. p-values * < 0.1; ** < 0.5; *** < 0.01

Conclusion and Policy Implications

This paper explored the intra-trade effects in the ME, a region well known for its lack of political reforms, extensive trade barriers, intense government intervention, and diverse socio-economic structural impediments. The framework of this study put more emphasis on the geographic and cultural commonalities of the ME rather than merely religious (Islamic countries) or cultural/linguistic (Arab countries) factors.

Most ME countries were seen to be faced with several trade impediments. They have similar factor endowments, small market size, inadequate infrastructure, weak financial and legal systems, and their comparative advantage fell in similar sectors. They also lacked product complementarity among each other, and were found to have similar cost and production structures coupled with a narrow export base focused mainly on agriculture or oil — both non-sustainable sources of revenue subject to international volatile prices. ME countries are located in a region full of political conflicts and upheavals. Furthermore, the large role of government in many states (e.g., Saudi Arabia, Libya, Yemen, and Syria) accompanied with certain restrictions on foreign ownership, places a burden on the private sector and hampers entrepreneurial initiatives as well as foreign capital inflows. All of these fundamental constraints hinder trade.

The econometric results of this study indicated that intra-ME trade was significantly lower than what the gravity model predicts. Additionally, the GCC finding showed a tendency for above average intra-trade than the rest of the sample, albeit not significant. The other two pertinent (within proximity) major regional blocs reported mixed results. The EU was found to be insignificant, while ASEAN showed a strong positive correlation with trade, exports, and

imports; thus, implying that members of ASEAN tend to trade, export and import more than the model predicts.

These findings suggest several policy implications. ME countries should embark on trade liberalization policies by cutting their trade barriers while initiating crucial internal reforms, which would spur economic, financial, and political stabilities. Furthermore, the positive but insignificant result of intra-GCC trade (imports and exports) differs from the study of Al-Atrash and Yousef (2000) that reported a negative and significant result.

A possible explanation could be that Al-Atrash and Yousef's results must have included some selection bias, where their study handled a sample of Arab countries regardless of their natural trading patterns, i.e. excluding Turkey and Iran which are two main trading partners with GCC countries. On the other hand, this study estimated GCC trade flows in a more global framework, thus encompassing the aforementioned pertinent countries.

In order to liberalize such a cluster of regional economies, ME countries should direct their economies toward horizontal and vertical integration linkages. For example, Gulf nations should diversify their export base to include different petrochemical products and other oil, energy and gas complementary bi-products, thereby enabling an export bundling marketing strategy. ME countries should specialize in production that would foster their comparative advantages which would subsequently widen their export industrial base.

Different (potential) comparative advantages could be located in the ME region. Examples are Lebanon's banking, insurance, tourism and potential hi-tech sectors (due to an open market, sound financial system and relatively well educated labor force); Egypt's manufacturing and tourism sectors (due to cheap labor, large market size, and historic touristic hub); Syria's and Yemen's inexpensive labors and fertile soils could provide agricultural products; and GCC countries could specialize in energy, petrochemical production, and venture capital hubs for the region.

Equally important, rich GCC countries should finance public-good type projects such as highways, railroads, airports, seaports, and communications networks within the ME region. This type of financing will strengthen the weak infrastructure linkages in poorer neighboring countries, which will consequently widen the regional market for goods, capital and labor. In the long term, these initiatives will spur intra-trade activities, converge per capita incomes, equalize the wage rate and the cost of capital, and enhance technological spillovers across member countries.

Finally, ME countries should build alliances with other regional blocs, especially with the EU, to reduce the concern of a "Hub and Spoke" phenomenon (where FDI is directed to Southern Europe to build factories and distribution centers, and then sell their goods to ME markets). In this regard, the Euro-Med framework initiative is to be encouraged and expanded along with the appropriate reforms aforementioned. Additionally, ME countries should integrate with larger markets such as North America to benefit from greater economies of scale that their market size cannot provide. These efforts would allow ME countries to benefit from economies of scale, attract FDI, deepen their capital markets, and lock in reforms.

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