An Examination of Trade Flows Between Saudi Arabia and other GCC countries: Elements Towards Free Trade

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ARTICLES

An Examination of Trade Flows Between Saudi Arabia and other GCC countries: Elements Towards Free Trade

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Abstract:

The reaction of trade flows to change in price and income was analyzed for Saudi import and export demands. To assess the magnitude and the time path of the trade flows to change in the price level, a distributed lag structure is imposed on the relative prices as the determinants of trade flows. The results show that import and export usually have relatively large response to income and relative price.

Trade flows among the GCC countries were evaluated through investigating the Saudi Arabia market, as an example among these markets. The import and export behavior for Saudi Arabia is considered in a two-stage budgeting procedure presuming that consumers differentiate products by place of production. The second-stage import and export models were specified in the first difference of the absolute version of Rotterdam model (RM). The models were estimated under the assumption of separability in demand system. The estimated second-stage RM equations and estimated elasticities were obtained using the bootstrap procedure.

The magnitude of own-price elasticities varies with the source of imports and so does that of expenditure elasticities. The calculated own-price elasticities in both demand equations are less than one, while expenditure elasticities are greater than one (at the mean) in five of the ten cases. The large elasticities promise suppliers that they benefit from market growth and that they increase their earning if the GCC market expands.

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Given the nature of import and export demands, economic growth, and economical and political situations in the GCC countries, they could expect as a group, to experience only small welfare gains if they chose not to actively participate in trade liberalization and relied solely on the benefit of partial liberalization among themselves. More comprehensive participation in trade liberalization involving reductions of both positive and negative production would stimulate demands and increase welfare gains or greatly reduce the magnitude of the GCC countries losses, expand trade, boost economic growth, and lead to more job opportunities.

1. Introduction

Research in the area of international trade and trade flows is of eminent practical importance. There is a general agreement among academics and policy makers that the new trade and market systems have shaped most of trade policies in the world markets. The drastic change that happened in the European Community (EC) and North American Free Trade Agreement (NAFTA) are examples of such market and trade systems. NAFTA, for instance, has become the world's largest free trade area serving 360 million people producing $6.2 trillion of goods and services and exporting more than $1 trillion worth of goods. The agreement reduces most of trade barriers especially in manufacturing products from 40% to 5% [1].

The developing countries had varying experience in trade and economic growth in the 1980s, attributable in part to their differing stages of economic development and structural characteristics. Other important influences relate to the external economic environment and the policy choices made by their governments not only during the period but also in the preceding decade. On the other hand, there is agreement, not only among academics and international institutions but also among those responsible for policy-making in the developing countries, that it would be desirable to achieve a considerable measure of trade liberalization. A great deal of empirical evidence has convinced most of those whose minds are

not entirely closed on the subject of the positive relation between trade policy and economic growth [2].

At the level of both theory and at that of empirical research, there is, unfortunately, much less agreement on how to achieve the goal of trade liberalization and how best to convey and suggest the transition from one set of policies to another. Moreover, the responsiveness of import demand to international price changes is an important topic in applied international trade research. Elasticities of import demand, for example are used commonly to estimate the effects of trade barriers and to examine trade policy options. Accordingly, the present paper aims at examination and evaluation of trade direction and magnitude among the Cooperation Council for the Arab Gulf (the GCC countries: Saudi Arabia, United Arab Emirates, Bahrain, Qatar, Kuwait and Oman), and analyzing the trade flows among these countries through investigating external sectors (import and export demands) to determine the factors that affect trade flows and the possibility of forming free trade region. The paper discussed this issue theoretically and empirically. The empirical application focuses specifically on the Saudi market although application to other markets would be possible(1).

The plan of the paper is as follows: the determinants and factors affecting trade liberalization between countries are overviewed in section 2. Model specification and assumptions are discussed in section 3. The data on which this study is based, data indicators, and estimation procedure are discussed in section 4, and empirical findings and their implications are discussed in section 5. Summary and policy implications appear in the final section.

2. Trade and liberalization

(Theoretical Background)

Trade policy was a focal point of international economic attention in 1997 and for the foreseeable future. The existing policies in the area of international trade aimed to achieve complete liberalization and free trade or partial liberalization, or aimed to

protect the domestic industries. The latter policies, followed by most developing countries, were intended to protect the infant industries and generate more revenue. These policies and measures such as tariffs, quantitative restrictions, state trading, voluntary restraint agreements, variable levies, etc. have slowed trade flow and caused market inefficiency and trade distortion. Moreover, protectionist policies can be effective or not effective depending on the type of trade barriers, elasticities of demand, supply, prices, and income that would shape the outcome of such policies.

The long-run free trade effects between countries, on the other hand, depend crucially on several factors.

(1) Underlying comparative advantage,

(2) Economic growth,

(3) Foreign investment,

(4) Industries structure,

(5) Labor market and costs,

(6) Availability of new production inputs.

To measure accurately the costs and benefits of trade liberalization between countries, a general equilibrium model is needed. While individual models give somewhat different results, depending upon the specific model and its supply and demand assumptions, they demonstrate the general direction of shifts and market situation that would occur if the government interventions were removed.

A dynamic demand model for the GCC countries is presented to analyze the direction and magnitude of trade flows. Moreover, in the area of international trade, there have been a number of studies designed to explain the determinants of trade flows. Some studies such as Bahmani-Oskooee[3], Tegne [4], Mah [5], and Young [6] have already looked into this issue in developing countries emphasizing import demand as a key for trade flow and liberalization. Other studies, such as Honma [7] explored possibilities of expansion of specific commodities exports from developing countries to Japan. Al-Kheraiji [8] explored possibilities and opportunities of trade flow among the six GCC countries through an investigation of their rapidly growing markets using a static model. However, these studies ignore the dynamic elements in the determination of trade flows among countries.

3. Model Specification

A Two-Stage Budgeting Procedure:

Recent research concerning demand, as it is distinguished by place of production, has proved catalytical for empirical studies on trade (Armington [9]; Figueroa [10]; and Sarris [11]). Armington used a two-stage budgeting process in which a country first allocates total expenditures among competing goods (from all over the world), and second allocates the given expenditure for a specific product (say from the GCC) among the competing supply countries. Products, in this framework, are distinguished by their place of production. Based on this two-stage budgeting hypothesis, the demand for imports by source can be expressed as a function of the import prices by supplying countries and the total expenditure on the imports by a specific country. Moreover, this process is used to allocate total import expenditures (first stage) and then total import expenditures among the competing supply countries. Estimated demand relationships in the second step are called conditional because they depend on the level of expenditures allocated to imports from each market.

First-Stage Demand Functions:

In connection with the second-stage import system, the simplest formulation of an aggregate import demand equation relates the quantity of imports demanded by a country to the ratio of import to domestic prices (assuming imperfect of substitutability between imports and domestic goods) and to domestic real income:

$$LnM_{td} = a + bLnY_t + \sum_{i}^{n} c_i Ln(\frac{PM_i}{PD_i})_{t-1} \quad \text{..... (1)}$$

where

M = quantity of imports,

PM = import price level.

PD = domestic price level.

Y = real gross national product, the superscripts d and t refer to demand and the time period respectively and Ln refers to natural logarithms.

Since equation 1 is specified in logarithms, b and c are the income and relative price elasticities of import demand respectively. It is expected that b will be positive and c negative[2].

The world demand for a country's aggregate exports is specified in log-linear terms and a lag structure is specified to assess the relative speed with which trade flows respond to price and income changes.

$$LnX_{td} = \alpha + BLnYG_t + \sum_{K=o}^{m} y_k Ln(\frac{PX}{PXG})_{t-k} \quad \text{..... (2)}$$

where

X = quantity of exports,

YG = weighted average of real GNP of a country's trading partners,

PX = export price,

PXG = weighted average of the export prices of a country's trading partners, β and γ are the income and price elasticities, respectively, with the expected signs[3].

Second-Stage Import Demand:

In specifying the second-stage demand equations for imports by source, a dynamic and complete demand system is designed. We employ the absolute price version of the Rotterdam model. This specification is chosen because it is based on consumer demand theory (i.e., the model is developed by totally differentiating ordinary demand equations). In addition, the model is linear in parameters. A detailed development of the Rotterdam model is provided by Theil [13]. The dynamic estimable log differential form for discrete time periods of each of the n demand equations in the system is given by:

$$\bar{W}i\Delta LnQ_i = \phi_i + \gamma_i \Delta Ln\bar{X} + \sum_{j=1}^{J} \delta_{ij} \Delta LnP_j \quad \text{.....(3)}$$

where

$$\bar{W}i = \frac{1}{2}(W_i + W_{i-1}),$$

$$\Delta \text{Ln}\bar{X} = \Delta \text{LnX} - \sum_{i=1}^{n} \bar{W}_i \Delta \text{LnP}_i,$$

i and j are supply regions (countries) and W_i is the average expenditure share of supplier i in total imports, P_j is the price of imports from source j[4], Q_{it} are constant SR expenditures on imports from country i during time t, X is total expenditure on imports from all sources.

The parameters γ_i and δ_{ij} are the conditional marginal budget share of a country's imports and the conditional Slutsky price coefficient between the ith and the jth supply regions, respectively.

One of the n equations is redundant and can be deleted from the system for purposes of estimation because of the singularity resulting from the adding up condition. Moreover, restrictions resulting from demand theory imply that $\Sigma\gamma_i = 1$ (budget shares for the market's supply region sum to one) and $\Sigma_i\ \delta_{ij} = 0$. Symmetry requires that $\delta_{ij} = \delta_{ji}$.

Three measures of price elasticities are possible using the Rotterdam model: Cournot, Slutsky, and Frisch [13]. All three measures are calculated from the estimated price coefficients of the model. However the Cournot price elasticities are reported in this study because they are the most consistent with the assumption of holding total expenditure constant in the two-stage budgeting procedure used. Moreover, the Cournot price elasticity reflects both the substitution and income effects; nominal expenditure on imports are held constant.

The Cournot price elasticity is calculated as follows:

Defining the slutcky price elasticity as

$\delta_{ij} = \delta_{ij}/W_i$, the .....(4)

Cournot price elasticity is defined as $C_{ij} = S_{ij} - \gamma_i\ (W_j/W_i)$, and .. (5)

is calculated from the estimated Slutsky price coefficients. The coefficients on expenditure provide a measure of how the quantity of

imports from each alternative supplier would be expected to change in response to a change in imports into a market. This measure is called the "conditional income elasticity" and is calculated as:

$$CD_i = \gamma_i w_i \qquad .....(6)$$

The demand model in the second-stage is estimated under the assumption of weak separability of preferences which permits estimation in stages [15]. The separability condition allows the partitioning of the commodity (imports) space into groups such that the consumer's preference in consuming those commodities included in a given group (such as import demand from the GCC countries) are separable from quantities or imports from other countries. In other words, preferences are weakly separable in this model if the marginal rate of substitution between any two GCC countries, i and j, is independent of the quantity consumed by a non-GCC country in any other sub-group thus, we have

$$\frac{(U_i/U_j)}{q_k} = o \qquad \text{for i, j in the GCC and k not in the GCC.}$$

where U_i and U_j are marginal utilities of i and j and q_k is the quantity of group k, which is not included in the GCC group.

4. Trade Flows, Data Indicators, and Estimation Procedure

The economic growth and uprising demand increased trade flow among the GCC countries especially in the 1990s. Forward contracting and highly competitive products opened new windows for the GCC products not only in local markets, but also in the world market. Besides the local demand, the GCC countries exports to the world market increased from $47 billion in 1986 to more than $90 billion in 1993. Japan and the EC markets imported most of these exports. On the other hand, the United States and the EC shares in the GCC markets reached 50% for the period from 1985 to 1990. However, exports and imports among the GCC countries increased at a slow rate averaging 5-7% for exports and 7-9% for imports of GCC total exports and imports, respectively between 1985 and 1993.

Table 1 shows direction and magnitude of trade flows among the GCC countries. During the period of 1974 to 1997, Saudi Arabia imported from the GCC countries about 14.7 million tons worth of national goods and services at a value of SR 53 billion. The maximum values of imports and exports from the GCC countries were in 1984 (SR 4.5 billion) and in 1995 (SR 17.1 billion), respectively. Moreover, during the period of 1974 and 1997, Saudi Arabian total imports and exports from the GCC were 2.4% and 3% from total Saudi imports from and exports to the world market[5].

Table 1: Trade Direction and Indicators for Saudi Arabia (1974-1994)[a]

Trade Flows	St. Dev.	Mean	Min	Max
Total imports (SR/Million)	36422.4	87457.3	10149	139335
Total exports (SR/Million)	106282.7	195778.2	74377	405481
Imports from the GCC (SR/Million)*	1048.5	2201.1	735	4531
Exports to the GCC (SR/Million)	3198.8	7353.5	1063	17089
Trade flows within the GCC				
Imports share from UAE (%)	0.167	28.2	2.7	48.6
Imports share from BAH (%)	0.068	24.9	14.4	39
Imports share from KUW (%)	0.193	31	7.5	73.4
Imports share from QAT (%)	0.466	12.4	0.9	21.1
Imports share from OMA (%)	0.028	3.5	0.01	8.7

(a) Abreviations denote; SR: Saudi Riyals; UAE: United Arab Emirates; BAH: Bahrain; KUW: Kuwait; QAT: Qatar; and OMA: Oman.

The unstable and low trade growths among the GCC countries are due to several reasons. Exchange rate, decreasing demand, and economic stagnation are external factors that negatively affected growth in trade flows. However, internal factors such as, internal policies, marketing policy and strategies, production cost, advertising, and protection policies also affected trade flows among the GCC countries.

The demand equations are estimated using annual time series data for the period 1974 to 1997 (complete data available during this period only). The sources of the data were Foreign Trade Statistics published by Central Department of Statistics (CDS) (1974 - 1997) [16]. World Bank [17], and Economic Bulletin [18].

The parameters as well as elasticities from the second-stage demand functions were estimated using Iterative Seemingly Unrelated Regression (ITSUR) and bootstrap methods [19]. Bootstrapping allows the calculation of standard error on measures which combine several parameter estimates such as elasticities and/or allows the construction of percentile ordered confidence intervals(6). The system was estimated, first, using Iterative Seemingly Unrelated Regression (ITSUR), then the bootstrap method was applied to estimate the parameters of the system and the resulting elasticities. However, there is no definition to how many times one should repeat the estimation; it depends on many factors. In this study, the procedure is repeated 1,000 times using different variable matrices for each estimation. This yields 1,000 estimated values for the coefficients, which are used to construct 1,000 sets of elasticities. Confidence intervals are constructed by sequentially ordering the 1,000 estimates of each elasticity and then choosing the critical values of the confidence intervals [21]. With 1,000 values, the endpoints of a 90% confidence interval are the ordered observations 51 and 950. In case where first - order autocorrelation in errors was found in the preliminary individual regressions, the first stage regressions in ITSUR procedure were corrected for that and the variables in the system were replaced by their first - order transforms for the second-stage ITSUR procedure.

5. EMPIRICAL EVIDENCE

Results and Discussion

The parameters estimates for Saudi Arabian import and export demand functions are reported in table 2 (short-run) and table 3 (long-run). The short-run estimates follow equation 1 and 2 without the distributed lag. The import results show that price elasticity near unity indicating that the relative prices have a significant effect on the imports (most developing countries have low price effects). Income elasticity is large and significantly different from zero at the 5 percent level. With regard to export results, table 2 shows that the estimated price and income elasticities are significant and have the expected sign. However, they are less than corresponding elasticities in import demand in absolute values.

Table 2. OLS estimates of the first-stage total demand equations for Saudi Arabia (1974-1997)[a]

Type	Intercept	Price	Income	R^2	F	DW
Import	1.86 (2.52)	-0.724 (-10.55)	1.18 (12.2)	0.74	66	1.86
Export	15.44 (3.55)	-0.78 (-5.6)	1.07 (4.13)	0.86	408	2.21

[a]Numbers in parentheses beneth the coefficients are t-statistics; R^2 is adjusted for degree of freedom.

A major question of interest is to find out the relative speed with which trade flows respond to changes in prices and changes in income. An assessment could be reached by estimating the long-run effect (table 3). In the absence of undisputed econometric standards for choosing among alternative results from different distributed lag and with the same functional forms, we omitted all lags that are not significant to the model.

Table 3: Long-run Estimates of the Total Import and Export Demand Functions for Saudi Arabia[a]

Imports	Constant	Income	Price	R^2	F	DW
	5.02 (5.4)	1.23 (3.32)	-0.80 (-6.44)	0.66	49	1.92
Lag year	0	1	2	3	4	5
Price	-	-0.50 (-1.9)	0.07 (1.76)	-	-	-

Export	Constant	Income	Price	R^2	F	DW
	9.28 (17.4)	1.28 (3.02)	-0.91 (-10.5)	0.77	322	1.87
Lag year	0	1	2	3	4	5
Price	-	-0.43 (-1.01)	-1.02 (-1.96)	-	-	-

[a] R^2 is adjusted for degree of freedom; numbers in parentheses are t-statistics.

In general, the long-run coefficients estimates obtained in the final equations had the expected sign. All the estimated price elasticities (import and export) are less than unity. Income elasticities are greater than one indicating that economic growth in Saudi Arabia has positive and relatively large effects on trade flows with the rest of the world. On the other hand, lags in price coefficients have small effect on trade flows in imports or exports.

Besides the relative speed of adjustment of trade flows to price and income changes, some other features of the results deserve mention. First, imports response to price changes in the long-run is larger than price changes in the short-run in absolute value. Second,

exports response to price changes in the long-run is greater than price changes in the short-run in absolute value. Finally, all income elasticities are greater than one and significant in the long-run.

The second-stage import demand for Saudi Arabia (Eq. 3) was estimated using ITSUR. The Saudi Arabian import from the GCC was evaluated using annual data. The parameters estimates (1,000 times) from the second stage Rotterdam model for import and export demand equations were stored then used to construct 1,000 sets of elasticities for each demand equations. The system R^2 for the import demand equations and export demand equations for the ITSUR model before bootstrapping were 0.88 and 0.92, respectively. The estimated models are highly statistically significant for all equations. The 90% confidence interval indicates that the estimated parameters of the model are capturing the structure of Saudi Arabian import and export demands at the second stage. However, due to the limited economic interpretation of the bootstrapped parameters, they will not be reported. Instead, the discussion focuses on the estimated elasticities and their interpretation.

It is noteworthy that the expenditure coefficients are significantly different from zero in 8 of the 10 equations. This means that demands for the imports from, and export to, different sources (the GCC countries) are mostly not homothetic and the shares in the demand models are affected by the total demand expenditure. However, all expenditure coefficients are positive at the mean (in import demand equations) indicating that the GCC countries will gain market shares as the Saudi Arabian import market expands, despite no change in relative prices. On the other hand, Saudi Arabia can not well take advantage of market growth in Qatar and Oman as indicated in export demand expenditure coefficients.

From the demand theory viewpoint, unless the second-stage demand equations satisfy the homotheticity condition, they are not consistent with our assumption of weak separability in import and

export demands. However, even if the imports and exports are weakly separable in the consumer's utility function, the empirically estimated import expenditure coefficients can be different from zero by trader's behavior [7]. For example, if traders benefit from an exporter for non-price factors, they may import from this source more than the proportional increases to the previous market share, which is a consequence of the weak separability, and sell the imports at lower prices to clear the difference as long as the net benefits are positive.

To determine the characteristics of import and export demands for Saudi Arabia at the second-stage, 1,000 sets of elasticities are estimated and summarized in tables 4 and 5. All the own-price elasticities, represented by the diagonal elements for import in table 4 are of the expected sign and are significantly different from zero for all countries. This indicates that as the price of import from UAE, BAH, QAT, KUW, and OMA increases, the quantity demanded from these sources by Saudi's market will decline. However, all of these elasticities are inelastic except that of Oman, which is highly elastic. The own-price elasticities for exporters (other GCC countries) (table 4) indicate that the percentage response in quantity will be less than that in price, except that of Oman, in which the price changes have large effects on trade flows.

The expenditure elasticities are based on the second-stage import demand system where the expenditure on imports is given. Moreover, all expenditure elasticities are positive and significantly different from zero at the 90 percent confidence level, except that of Qatar. The expenditure elasticities indicate that for a 1-percent increase in imports, those from BAH and KUW will increase their shares (at the mean) by 1.17 and 1.35 percent, respectively (table 4). As the Saudi Arabian market grows, Bahrain and Kuwait will increase their import shares, while UAE, Oman, and Qatar will decline. However, Qatar expenditure elasticity in the Saudi Arabian market is statistically insignificant. The expenditure elasticities for Bahrain, at

1.17, and Kuwait, at 1.35, indicate that these countries are the strongest competitors.

Table 5 reports estimated elasticities for Saudi Arabian export demand to the GCC countries. As mentioned before, these elasticities are second-stage export demand system as expenditure on imports in importing countries is given, and indicate the percentage response in quantities demanded for each of the suppliers which would result from a 1-percent increase in total imports into the country. The expenditure elasticities indicate that as the UAE, Bahrain and Oman markets expand their imports, the absolute amount and market share of those from Saudi Arabia should increase. At the mean, the expenditure elasticities for Saudi Arabia in UAE, Bahrain, and Oman are 1.08, 1.11, and 1.43, respectively, and are significant at the 90% confidence level. Kuwaiti, expenditure elasticity of 0.906, will not quite maintain its share (as the Kuwaiti market expands) from the Saudi import market. However, export demand expansion in Qatar would have no impact on its demand for imports from Saudi Arabia.

Conditional Cournot price elasticities are predicted by holding nominal expenditure on imports constant. Except for Qatar, all Cournot own-price elasticities are significant at 90% confidence level. The Saudi Arabian Cournot own-price elasticities, in case of export demand, indicate that, in each market, a fall in the price of Saudi Arabian exported goods will result in an increase in demand from this market. The relative sizes of the elasticities indicate that demand is not responding to any price changes. The Saudi Arabian inelastic export demand that would eliminate the effects of any policy which is intended to decrease import demand from the Saudi market[7]. These own-price elasticities indicate that, increasing trade barriers costs would result in no effect on demand for Saudi Arabian export demand in each market considered. However, there is a low degree of substitutionality and complementarity among the GCC products in both cases as it is indicated in cross-price elasticities in table (4) and (5).

Table 4: Mean and Lower and Upper Bounds of the 90% Confidence Interval of Uncompensated Price and Expenditure Elasticities for Saudi Arabia Import Demand Equations (second-stage)[a]

	Type	UAE	BAH	QAT	KUW	OMA	Expenditure
UAE	L	-0.963	-0.96	0.01	-0.701	0.01	0.235
	M	-0.613	0.083	0.02	-0.354	0.440	0.739
	U	-0.203	0.031	0.06	-0.003	0.835	1.244
BAH	L		-0.911	-0.984	-0.322	-1.89	0.992
	M		-0.698	0.031	-0.187	0.132	1.17
	U		-0.350	1.242	0.01	1.866	1.321
QAT	L			-0.388	-0.311	-0.304	-0.157
	M			-0.260	-0.266	0.25	0.011
	U			-0.117	-0.201	0.422	0.213
KUW	L				-0.080	-0.174	0.552
	M				-0.040	-0.001	1.35
	U				-0.015	0.301	2.15
OMA	L					-2.10	0.282
	M					-1.47	0.705
	U					-1.02	1.08

[a]Notes: ***(1) These conditional elasticities are drawn from 1,000 estimates of each elasticity, estimated from 1,000 estimated values for coefficients.***

(2) The symbols refer to the variables as follows: UAE is the United Arab Emirates, BAH is Bahrain, QAT is Qatar, KUW is Kuwait, OMA is Oman, M is the mean values, and L and U lower and upper bounds of the 90% confidence interval.

Table 5: Mean and Lower and Upper Bounds of the 90% Confidence Interval of Uncompensated Price and Expenditure Elasticities for Saudi Arabia Export Demand Equations (second-stage)[a]

	Type	UAE	BAH	QAT	KUW	OMA	Expenditure
UAE	L	-0.322	-0.801	-0.333	-0.200	-0.302	0.815
	M	-0.255	-0.515	-0.01	-0.121	-0.050	1.080
	U	-0.106	-0.288	0.432	-0.035	0.401	1.225
BAH	L		-0.190	-0.278	-0.125	-0.092	0.985
	M		-0.125	-0.020	-0.079	-0.004	1.11
	U		-0.060	0.345	-0.032	0.126	1.27
QAT	L			-0.960	0.352	0.533	0.190
	M			-0.692	0.600	-0.200	0.550
	U			2.68	0.695	0.966	0.780
KUW	L				-0.188	-0.201	0.664
	M				-0.106	-0.100	0.906
	U				-0.026	0.436	1.150
OMA	L					-0.501	1.11
	M					-0.401	1.43
	U					-0.159	1.85

[a]*see footnote to table 4.*

Summary and Policy Implications

The cornerstones of the Havana Charter of 1948 were the removal of quantitative restrictions, nondiscriminations, and recipro-

cal bargaining over tariffs. Representatives of the developing countries rejected these ideas and demanded that they should be free of obligations which would limit their autonomy in trade policy; they also tabled some 800 amendments to the draft charter. To assess the above demand, econometric models for Saudi Arabian first and second-stages import and export demands were set and estimated.

The estimated first-stage import and export demand equations for Saudi Arabia indicate that Saudi Arabia import demand is price near-elastic and the income effect is large (1.18). However, export demand was price inelastic while income elasticity is large (1.07). The high income elasticities in import and export demands promise great response in Saudi Arabia to import demand and in world export markets.

The second-stage dynamic Rotterdam model for Saudi Arabia import and export demand with the GCC countries were estimated assuming that the demand for imports and exports in the GCC were separable from the demand in the rest of the world. On the import demand side, the high expenditure elasticities suggest a continued growth in demand for imports from the GCC even for modest growth in income. Indeed, the continued growth in imports, despite the recent decline in oil prices, suggests that expenditure elasticities may be downward inelastic. On the export demand side, the high expenditure elasticities and low own-price elasticities would open a big window for Saudi Arabian products in the GCC countries.

Results derived from import and export demands have great clues for policy implications[8]. The results derived in both stages indicate the benefits from the Saudi Arabian market growth especially for the GCC exports. Moreover, the results suggest that if Saudi goods in UAE, Bahrain, and Oman, for example, through advertising or other sales promotions, that imports from Saudi Arabia would increase more than proportionally. On the other hand, policies by either the Saudi government or the GCC countries governments to increase the overall demand for national products in the GCC

markets will result in larger increases and more trade flows among these countries.

Increasing trade barriers among the GCC countries could lead to partial effects on trade flows given the nature of their import and export demands. Strictly speaking from the trade theory viewpoint, the magnitude of the effect of tariffs, for example, on trade flows between countries varies with elasticity of demand and supply of the products. These effects will be small if the country has inelastic demand, which is the case in the GCC countries. Moreover, increasing trade barriers will have small or no effect on prices and therefore a reduction in production, transportation or trade barriers costs would raise the rate of trade flows among the GCC countries. Efforts to lower these costs by production and exporting firms, as well as efforts by government policymakers to lower trade barriers costs, would result in higher demand in each market considered and increase the ability of the GCC products to compete with products and services from world markets in the GCC markets.

The GCC countries as a group could expect to experience only small welfare gains if they chose not to actively participate in trade liberalization and relied solely on the benefits of partial liberalization among themselves. Differential and more favorable treatment to the GCC products would enhance the demand for national products in the GCC markets. Moreover, trade barriers[(9)] effectiveness as a policy tool depends on tariff rate and price elasticity of demand for the product. However, one needs to estimate the responsiveness of supply to price changes to determine where the revenue burden finally falls.

As in the other GCC countries, producers in Saudi Arabia may benefit in the short-run from an increase in import prices as the result of an import tariff. This is true for each market considered. However, the magnitude of producers welfare depends on elasticity of demand and the availability of substitution for the products in the importing market. Assuming domestic supply is inelastic with respect to price, a country with price elastic demand will be hurt more by such policy[(10)].

The reduction of imports flow into Saudi Arabia is measured by the total elasticity which adjusted own-price elasticity for each country for the cross-price effects multiplied by the percentage change in the producer price in Saudi Arabia, given a one percent change in the price of imported goods from each country [24]. The net percentage change in the quantity of imports that importers would be willing to purchase in response to a 1% change in the real price of imports is -0.43 for UAE, 0.64 for Bahrain, - 0.44 for Qatar, - 0.84 for Kuwait, and - 0.89 percent for Oman. In other words, after taking into account the cross effects of the domestic price, a 15% proposed tariff would reduce the import flows into the Saudi market from UAE, Bahrain, Qatar, Kuwait, and Oman by 6.5%, 9.7%, 6.6%, 12.6%, and 13.3%, respectively.

Nevertheless, an import tariff and other trade barriers in the GCC market will result in a higher price for consumers. However, inelastic demand and consumer preferences will not change consumers buying habits, especially in the short-run. Moreover, barriers to trade may create inefficiency in protected industries, raising costs to consumers, and may create artificial resistance to industry modernization. The GCC needs to strengthen demand for their products. As domestic consumption is staying relatively stable, the GCC markets may be an avenue through which the GCC countries can market their goods and services. Overall, long-run determinants of trade flows among the GCC countries which were mentioned earlier call for the GCC countries to strengthen and enhance demands for the GCC national products in their markets.

There are important changes in global trade relations and in trade liberalization efforts. As exports have diversified and a greater burden has been placed on the external sector, market access has become a central policy priority. Hence the heart of the GCC trade should consist of freezing trade barriers, agreeing on the terms of reference as to which sector programs should be brought under the GCC discipline, and deciding how to bring the various programs under international trade rules. The trade liberalization among the

GCC countries will be a moderate exercise to introduce their external sectors to the New World trade order. Moreover, such agreement could be a successful agglomeration for free trade serving more than 20 million people producing more than $205 billion of goods and services, investing more than $28 billion, exporting more than $100 billion, and importing about $80 billion worth of goods and services [25]. Trade policies that restrict the flow of goods and services, on the other hand, should not be undertaken without careful consideration of the implications for society as a whole.

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Footnotes

(1) The Saudi market is the largest among the GCC countries. It exports and imports more than 60% of the trade flows among the GCC countries.

(2) The sign of b could be negative, since imports are the difference between consumption and production.

(3) Exchange rate was excluded in this study to eliminate its negative effects on the model (since 1985 exchange rate has not been floating in Saudi Arabia). In previous studies, e.g. Khan [12], exchange rate was excluded from the export demand function for developing countries for the same reason.

(4) The Rotterdam model can be estimated using either quantities or constant (Saudi Riyal) SR expenditures as dependent variables. In this study, constant SRs for each country are used to facilitate the calculation of expenditure share weights since our prices data are converted to indices.

(5) The Saudi Arabian share in the GCC markets is the biggest. During the period from 1974 to 1997, Saudi Arabia export share to the GCC was 40-60% and imports 10-25% from total imports.

(6) For more details on the bootstrap methods, see Eakin [20].

(7) Strictly speaking from the demand theory viewpoint, unless demand is elastic, tariffs policies, for example; will not hinder trade flows effectively.

(8) Interest in the topic was high in applied international trade research and renewed during the 1985 debate over the U.S. Food Security act. In fact, the price responsiveness of import demand became the most important issue in policy debate. [22].

(9) Tariffs can be used to protect new industries or riase revenue, as is the case in most developing countries. It is determined as a percentage of the price (international) or: $P_D = P_w (1+T)$; where T is a constant percentage and P_D and P_w are domestic price and world price, respectively.

(10) This is consistent with the main goal of tariffs, which is to elevate international prices of the goods relative to international prices . [23].