

On the Significance of Trade Relations between GCC Countries and Japan

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Abstract

Trade relations between Japan and the Gulf Cooperation Council Countries (GCC Countries) is very strong and has been growing at very high rates during the last twenty years. In 1996, Japan imported more than 65% of its crude oil from the GCC Countries. The GCC countries' imports from Japan were 25% of their total imports in 1996. The aim of this paper is to analyze the impact of trade relations on the economies of the GCC countries and Japan.

- **JEL Classifications:** F10, F15, F14
- **Key Words:** Economic Integration, Trade Relations, Oil Production

I. Introduction

The Gulf Cooperation Council Countries (GCC Countries) are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE). Table 1 illustrates the shares of GCC countries of world oil production and reserves in 1996. The oil production of GCC countries is nearly 19% of the world oil production, which amounted to 70 million barrel per day in 1996.¹ The oil reserves

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¹See Oil Market Report, International Energy Agency, April 10, 1998, Table 4, p. 483.

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Table 1. GCC Countries Oil Production and Reserves In 1996

	Oil production (1000 barrel per day)	% of the world production	Oil Reserves (Billion b/year end)	Oil reserves % of the world reserves
Bahrain	40	0.056	0.2	
Oman	900	1.28	5.0	.45
Qatar	470	0.67	4.9	.44
Kuwait	2000	2.8	97.7	8.79
Saudi Arabia	8000	11.39	262.5	23.6
United Arab Emirates	2190	3.11	98.1	8.8
GCC Coun- tries	13600	19.4	468.4	42
The World	70202	100	1111.3	100

Sources: 1. International Energy Agency "Oil marker Report" 10 April 1998, Table 4. Page 483.
 2. Opec bulletin, March 1998 page 27.
 3. World Alamank Books "The World Almanac and book of facts 1997. An imprint of k-111 references corporation. A K-111 communications company.

Table 2. GCC Countries Directions of Trade in 1996

In million US dallar

Exports to					
	Japan	USA	EU	Rest of the World	Total
GCC Countries %	27547	11361.2	13059.3	49288	101165.5
	27.1	11.2	12.9	48.7	100
UAE	10460	489	1045	11666	23660
Bahrain	392	113	113.9	1940.9	2559.8
Saudi Arabia	9702	8584	10234	26853.8	55373.8
Oman	1773.6	406.8	192.4	3537.5	5910.3
Qatar	2246	148	36.0	37189	39619
Kuwait	2884	1620	1438	3757	9699
Import form					
	Japan	USA	EU	Rest of the World	Total
GCC Countries %	7952	13714	29135.4	32927	83728.4
	9.5	16.4	34.8	39.3	100
UAE	2539	2779	9162	12997.2	3575.8
Bahrain	1548	268.1	877.6	882.1	27477.2
Saudi Arabia	3311	8025	13555	8420.7	33311.7
Oman	721	236.8	1587.7	1733.5	4279
Qatar	282.7	227.9	1508	576.9	2595.5
Kuwait	944	2177	2445	1923.7	7489.7

Source: The Secretariat General Cooperation Council for the Arab states of Gulf "Economic Bulletin" vol. 12, 1997 (Tables 3/14-3/25).

of the *GCC* Countries were 42% of the world oil reserves in 1996. The natural gas reserves of *GCC* were nearly 13.3% of total reserves in 1996.²

Table 2 illustrates the directions of trade for *GCC* countries in 1996. The *GCC* Countries imported 60% from industrial countries, especially Japan (9.5%) and the United States (16%). Japan's exports to *GCC* countries were 1.31% of its total exports in 1996.³ Exports of petroleum (crude oil and petroleum products) and liquefied gas amounted to 99% of total exports for *GCC* countries. These products require high technology in manufacturing.⁴ In 1996, the shares of industrial countries of oil exports from *GCC* countries were as follows: 60% for Saudi Arabia, 80% for Kuwait, 51% for UAE and 73% for Qatar (see Table 2). In 1996, the shares of Japan of oil exports from *GCC* countries were as follows: 42% for UAE, 70% for Kuwait, 33% for Qatar, 20% for Saudi Arabia and 70% for Oman.⁵ In 1996, Japan imported 6.7% of its total imports from the *GCC* countries; these imports were mainly oil and liquefied gas. The aim of this paper is to analyze the impact of trade relations on the economies of the *GCC* countries and Japan. The analysis is divided into four sections. Section II will provide evidence for the growth in trade between the *GCC* countries and Japan between 1975-1995. Section III develops and tests a simultaneous-equation model to analyze the effects of trade on the economies of Japan and the *GCC* Countries, collectively and individually. Section IV summarizes major findings. All variables in the paper are measured in real terms. The data under investigation are from International Financial Statistics issued by the International Monetary Fund and from Japan External Trade Relation Organization (JETRO) Statistics.

II. The Growth of Trade between *GCC* and Japan: 1975-95

Trade statistics indicate that the economies of *GCC* are more foreign trade-oriented than that of Japan. To illustrate, Japan's exports (mainly manufactured

²See The World Almanac and Book of Facts 1997, World Almanac Books, an imprint of k-111 references corporation, a K-111 communication company, p. 256.

³See JETRO, Japan External Trade Relations Organization, Statistics.

⁴For example, petrochemicals, which usually depend on oil and gas, pass through three stages. In the first stage, the inputs produce the basic petrochemicals which need industries with high investment and low technology. The second and third stages of processing require very complicated ways of manufacturing and high sophisticated technicians. Such technology is not available in developing countries.

⁵Although the United States accounted for 24% of the world's total energy consumption and consumed 27% more energy than it produced, its imports from the *GCC* countries were only 5.5% of their oil exports.

products) were approximately 8.7% of its *GDP* in 1995. In contrast, the *GCC* countries' exports (mainly oil) were more than 37.6% of its *GDP* in the same year. The highest export share of *GDP* was in Bahrain (98.7%) and the lowest share was in Oman (37.26%). For other *GCC* countries, these shares in 1995 were as follows: 71.6%, 54.7%, 39.9% and 43% for UAE, Kuwait, Saudi Arabia, and Qatar, respectively. Similarly, Japan spent 6.5% of its *GDP* on imports in 1995.

The share of imports of *GDP* is the highest in Bahrain (77.7% in 1995).⁶ Also the ratio of imports to *GDP* was 67.5% in the United Arab Emirates.⁷ In 1995, the shares of imports of *GDP* were 32.9% in Kuwait, 27.7% in Oman, 30.03% in Saudi Arabia, and 26.3% in Qatar.

To illustrate other differences between Japan and *GCC* countries concerning the significance of trade, we estimate the marginal propensity to import for these countries using time-series data from 1975-1995.⁸ The marginal propensity to import is 0.05 for Japan. The marginal propensity to import is 0.29 for *GCC* countries, 0.97 for Bahrain, 0.64 for UAE, 0.266 for Oman, 0.278 for Saudi Arabia, 0.20 for Qatar and 0.03 for Kuwait.⁹ In another direction, we measure the elasticity of imports with respect to *GDP* using time-series data between 1975-95 for the sample of countries under investigation.¹⁰ The elasticity of imports with respect to *GDP* is 0.659 for Japan and 1.2989 for *GCC* countries. The corresponding elasticity figures for members of *GCC* are as follows: 1.14 for Saudi Arabia, 1.1657 for Bahrain, 0.9485 for Qatar, 0.928 for Oman and 0.2 for Kuwait.

Given the sharp differences between trade figures for Japan and *GCC*, we draw the reader's attention to several important differences in structure and economic performance. Japan is a developed economy with a strong industrial base and a large market (roughly 7 times that of *GCC* countries). The difference in size relates to the difference in structure. *GCC* countries are less industrialized

⁶Bahrain is dependent on refining oil imports from Saudi Arabia to generate most of its national income.

⁷Two factors can be used for explanation: (i) the marginal propensity to consume is high while the productive capacity is limited, and (ii) some of the Emirates (mainly Dubai) depend on reexporting imported goods to generate income. Accordingly, Dubai exports most of the imported goods from South Asia and Western Countries to Iran, Japan and Oman.

⁸The marginal propensity to import is the regression coefficient measuring the response of imports to domestic income (*GDP*).

⁹As indicated before, Bahrain is dependent on refining oil imports from Saudi Arabia, as evident by the considerably higher marginal propensity to import in Bahrain compared to other countries.

¹⁰Kuwait directed most of its income to investing outside the country, producing many manufacturing food stuff and decreasing imports of investment and consumer goods.

Table 3. Nominal and Real Output Growth Rates

obs	Japan nominal GDP Growth Rates	Japan Real GDP Growth Rates	GCC Countries Nominal GDP Growth Rates	GCC Countries Real GDP Growth Rates	Bahrain nomin- al GDP Growth Rates	Bahrain Real GDP Growth Rates
1975	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1976	12.39590	4.265132	23.05018	7.028109	39.38504	21.23605
1977	23.07287	15.68850	12.36818	1.767320	29.75424	17.51317
1978	40.50577	33.73011	10.76971	4.369778	15.43134	8.762080
1979	4.083301	1.381509	44.55867	30.62524	10.48646	-0.162891
1980	4.774853	0.192501	40.22552	33.35447	12.07207	6.580536
1981	10.16845	6.153197	28.59235	23.76549	12.58959	8.363413
1982	-7.227368	-8.785699	-35.34022	-37.62163	5.130762	1.421413
1983	8.987776	7.542634	-8.972223	-9.643396	2.451123	1.695723
1984	6.312408	3.901436	-3.319465	-1.039263	5.632298	8.123626
1985	5.706897	4.021877	-8.161353	-6.214869	-7.441860	-5.480127
1986	47.69027	45.06946	-16.79062	-14.90509	-16.41541	-14.52138
1987	21.17457	21.17457	6.203424	7.474053	3.637153	4.877079
1988	19.83536	19.46126	1.101368	0.004608	6.636520	5.479714
1989	-1.846996	-3.651648	11.52913	9.366948	10.98906	8.837347
1990	5.030078	2.824447	16.24458	12.96573	9.620843	6.528825
1991	14.28482	12.04394	3.129788	-0.838763	5.875324	1.801121
1992	9.093907	7.409059	8.036068	5.562043	4.514673	2.121288
1993	14.65236	13.77380	3.671971	2.059407	4.847612	3.216761
1994	9.530077	9.320651	-1.599144	-1.994675	4.566259	4.145946
1995	11.40313	11.40313	5.920414	5.920414	3.983805	3.983805

Table 3. Continued

obs	Oman Nominal GDP Growth Rates	Oman Real GDP Growth Rates	Qatar Nominal GDP Growth Rates	Qatar Real GDP Growth Rates	Kuwait Nomin- al GDP Growth Rates	Kuwait Real GDP Growth Rates
1975	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1976	22.10948	6.209893	32.76140	15.47486	9.209453	-5.010448
1977	7.065387	-3.035207	9.983275	-0.392593	7.749339	-2.415779
1978	0.010932	-5.767388	12.02997	5.557229	9.645916	3.310916
1979	36.22386	23.09379	42.47390	28.74141	60.20304	44.76171
1980	58.71938	50.94213	35.76885	29.11618	15.49579	9.836499
1981	21.69627	17.12827	10.64967	6.496316	215.8401	203.9847
1982	4.942050	1.239359	-12.23638	-15.33296	-76.17699	-77.01754
1983	4.829388	4.056452	-14.79905	-15.42726	-3.315173	-4.028057
1984	11.19377	13.81626	5.943037	8.441693	4.010062	6.463130
1985	13.32481	15.72668	-10.43768	-8.539443	-1.168292	0.926407
1986	-18.91819	-17.08087	-17.88013	-16.01928	-16.54151	-14.65033
1987	7.220559	8.503357	7.785474	9.075031	24.96174	26.45680
1988	-2.554233	-3.611337	10.86589	9.663206	-7.503833	-8.507243
1989	10.41399	8.273429	7.447584	5.364533	17.52211	15.24374
1990	25.38418	21.84753	13.44811	10.24814	-25.70350	-27.79914
1991	-3.290152	-7.011656	-6.479267	-10.07805	-41.02148	-43.29104
1992	12.76377	10.18148	8.565410	6.079264	76.49123	72.44958
1993	8.741731	7.050309	-4.235190	-5.724763	19.23580	17.38115
1994	3.407932	2.992275	3.030070	2.615932	-2.064511	-2.458171
1995	6.460734	6.460734	1.921082	1.921082	7.615153	7.615153

Table 3. Continued

obs	Saudi Nominal GDP Growth Rates	Saudi Real GDP Growth Rates	Emirates Nomi- nal GDP Growth Rates	Emirates Real GDP Growth Rates
1975	0.000000	0.000000	0.000000	0.000000
1976	24.19580	8.024566	29.38227	12.53571
1977	10.07185	-0.312372	25.90296	14.02522
1978	14.79683	8.164227	-3.441271	-9.020133
1979	45.67829	31.63694	33.49060	20.62397
1980	46.34412	39.17326	41.46528	34.53348
1981	-0.869394	-4.590369	11.37070	7.190275
1982	-21.92127	-24.67613	-7.184431	-10.45926
1983	-11.09609	-11.75161	-8.449278	-9.124307
1984	-7.393058	-5.208932	-1.070244	1.263005
1985	-13.08409	-11.24194	-2.358371	-0.288896
1986	-15.54247	-13.62865	-20.02068	-18.20834
1987	0.476898	1.679014	9.812523	11.12633
1988	3.521483	2.398469	-0.227072	-1.309421
1989	9.002318	6.889126	15.95651	13.70849
1990	26.11475	22.55750	22.37488	18.92311
1991	12.76820	8.428751	0.727672	-3.148443
1992	2.961248	0.603437	3.134399	0.772623
1993	1.377232	-0.199639	2.893330	1.292877
1994	-3.804957	-4.191622	2.231237	1.820310
1995	5.695481	5.695481	6.593825	6.593825

developing countries whose economies revolve around the production and exportation of one natural resource, i.e., oil (M. M. Metwally, 1988). The rise in oil prices played a vital role in the growth of the *GCC* countries during the last 20 years. In contrast, the Japanese growth was due to the expansion in the productive capacity of its different sectors, particularly, the industrial sector.¹¹

To provide further evidence of the difference in economic performance, consider the time-series movement in real *GDP* growth, real import growth, and real export growth for Japan and *GCC* countries. Growth rates are calculated to highlight difference in economic data over time across countries. Toward highlighting random movement in these data over time, Table 3 summarizes the data for real *GDP* growth. We note the following: (i) the highest growth rate of real *GDP* for *GCC* countries was in 1980. The increase is attributed to the increased oil production due to supply shortage in Iran. Following the revolution, the price of oil increased from 17 dollars per barrel in 1978 to 30 dollars in 1979. (ii) The highest growth rate of real *GDP* in Japan was in 1986. (iii) Most of the *GCC* countries faced a big decline in real *GDP* growth due to the decline of oil prices which

¹¹The elasticity of imports is measured by the regression coefficient measuring the response of the log of imports to the log of domestic income (*GDP*).

Table 4. Rates of Growth of Imports (in real terms)

obs	Japan Imports Growth Rates	GCC Countries Imports Growth Rates	Bahrain Imports Growth Rates	Oman Imports Growth Rates	Qatar Imports Growth Rates	Kuwait imports Growth Rates
1975	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1976	4.075828	39.09859	20.81983	-13.34541	76.97535	21.07160
1977	3.337134	40.28318	10.57199	18.70071	33.19610	31.95275
1978	6.628603	12.85691	-5.211900	2.054420	-8.946376	-10.42752
1979	33.85385	8.869554	9.862556	18.85391	8.778670	2.019669
1980	23.01686	19.38924	33.32369	32.19358	-3.925779	19.52449
1981	-2.569864	10.41419	13.93309	27.15415	1.460461	3.686224
1982	-9.502492	8.507806	-15.45628	13.09557	23.75808	13.56463
1983	-5.124383	-8.339409	-8.210660	-7.775448	-25.78878	-11.66401
1984	5.260150	-9.367152	7.920520	12.86828	-18.30025	-4.180347
1985	-5.704414	-17.42955	-16.06358	17.17244	0.115567	-5.455904
1986	-3.983866	-12.12191	-15.37507	-9.127149	-1.352040	-6.072111
1987	18.40803	5.407551	14.59862	-13.50271	4.788202	-3.303890
1988	23.73110	6.107476	-1.084813	-9.097149	10.14725	10.50350
1989	9.753188	5.506158	13.23663	0.556305	2.627725	0.080473
1990	9.900395	5.996079	15.07102	17.37302	24.21515	-37.47328
1991	-1.409522	18.70505	61.61083	12.65925	-2.418514	19.05632
1992	-3.126851	14.85999	4.825127	15.30025	14.48333	19.02053
1993	2.982543	4.132012	-10.62666	7.453520	-7.646626	-2.872274
1994	13.24269	6.125223	-2.807067	-5.218764	1.530286	8.692341
1995	22.54937	7.189276	-4.001484	8.496646	2.575544	16.50950

obs	Saudi Imports Growth Rates	Emirates Imports Growth Rates
1975	0.000000	0.000000
1976	79.49146	8.013435
1977	52.65166	37.33189
1978	30.84003	-2.162139
1979	7.715194	16.97480
1980	18.26634	20.70647
1981	12.52462	4.981229
1982	11.20175	1.729592
1983	-4.331518	-18.49868
1984	-11.97081	-13.72537
1985	-28.41091	6.295295
1986	-17.25900	-2.518773
1987	6.480736	14.31661
1988	7.149102	6.834417
1989	-4.779133	9.942327
1990	10.63093	16.62742
1991	15.79273	15.37053
1992	12.10706	23.61220
1993	5.489196	10.35016
1994	0.144626	21.85963
1995	4.936794	10.89897

reached 7 dollars per barrel in 1986. This decline in price resulted from the huge supply of oil from the *GCC* countries and from new discoveries in many areas. (iv) Real *GDP* growth rates in *GCC* countries increased in 1990 due to the increase of oil prices during the second Gulf war and the shortage of the Kuwaiti supply of oil.

Table 5. Rates of Growth of Exports (in real terms)

year	Japan Exports Growth Rates	GCC Countries Exports Growth Rates	Bahrain Exports Growth Rates	Oman Exports Growth Rates	Qatar Exports Growth Rates	Kuwait Exports Growth Rates
1975	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1976	12.06022	8.357480	9.642437	-5.522550	5.839033	-6.751133
1977	13.21750	-1.270930	10.22382	-8.954857	-4.732351	-10.28028
1978	15.44971	-9.794160	-16.98551	-9.414339	-6.024991	0.723400
1979	1.312136	42.62473	38.49894	29.44106	32.78214	59.88084
1980	21.92822	47.61989	37.77078	44.52777	24.65856	1.357868
1981	11.91644	2.395381	15.90625	29.20251	16.16865	-21.46788
1982	-10.19168	-32.67947	-15.91515	7.073626	-18.07667	-34.67537
1983	4.791916	-30.51840	-16.16951	17.88664	-21.32559	5.110253
1984	12.85103	-7.554673	0.397747	-4.817756	30.22826	3.417310
1985	2.734189	-14.70816	-13.94610	22.38208	-26.68102	-7.861414
1986	16.85052	-23.28960	0.510669	-49.55167	-34.04702	-28.00325
1987	9.740602	14.76241	-7.079615	39.43392	-0.465885	13.27199
1988	14.20054	-1.461626	0.199800	-18.80789	-1.324841	-8.302366
1989	1.730227	23.34400	10.14664	51.96705	20.06737	46.89360
1990	2.561294	27.40433	37.25331	31.57912	22.50103	-40.36799
1991	7.302815	-5.009296	32.99841	-14.96808	-10.04926	-85.14438
1992	6.279323	8.854852	3.068767	8.827538	8.800134	498.1145
1993	5.867225	-3.071653	13.25433	-3.867901	8.960996	51.48044
1994	8.787604	1.880935	4.435793	4.243023	-15.21753	12.87000
1995	12.09587	10.43742	7.038757	3.001868	1.857683	11.34446

year	Saudi Exports Growth Rates	Emirates Exports Growth Rates
1975	0.000000	0.000000
1976	12.19214	14.20367
1977	2.812209	-8.474717
1978	-11.84557	-10.76455
1979	40.95303	35.17574
1980	63.54453	44.02927
1981	5.769298	-1.137510
1982	-36.36181	-23.51946
1983	-42.43224	-13.50110
1984	-16.20223	-0.990206
1985	-25.25383	1.047321
1986	-24.88485	-9.793558
1987	16.30694	15.72190
1988	3.937908	-2.697902
1989	14.17224	23.83287
1990	52.08284	30.02902
1991	3.468756	-0.205254
1992	2.785925	0.210296
1993	-16.99370	5.270535
1994	0.112535	1.775900
1995	17.42620	2.515976

The only exception was Kuwait which experienced a decline in real *GDP* growth in 1990 (-27.7%) and 1991 (-43.29%). This is in contrast to high growth rates of *GDP* for other *GCC* countries which reached 18.9% in the UAE and 6.88% in

Saudi Arabia.

Table 4 summarizes the growth rates of imports for Japan and *GCC* countries. We note the following: (i) The imports of *GCC* countries accelerated in 1976 and 1977 as a result of the huge increase in oil revenues after the increase in oil price from \$2 per barrel in 1972 to \$13 per barrel in 1973. The highest increase was in Saudi Arabia which produced 60% of *GCC* oil. (ii) Oman alone reduced its imports because it was not affected by the increase of oil prices due to the small quantity of oil produced in the seventies. Also, the end of the war between the government and the revolution in South of Oman in 1976 reduced the imported weapons. (iii) Due to the increase of oil prices from \$17 per barrel to \$30 per barrel in 1979, as a result of the Iranian revolution, the oil revenues increased and, therefore, the *GCC* countries' imports in 1979. In 1980, the war between Iran and Iraq started and many of the *GCC* countries provided Iraq with imported weapons in order to protect themselves from the Iranian revolution. Accordingly, imports of the *GCC* countries increased, on average, by 19%. (iv) The increase of oil supply in 1986 led to the decrease of oil prices (seven dollars per barrel). The reduction in oil revenues led to the reduction in the growth of imports for the *GCC* countries in mid eighties. Some political analysts pointed to the increasing shares of Kuwait, Saudi Arabia, and the UAE of oil supply as the main cause of the second Gulf war. Following the war, the price of oil barrel soared to \$40 per barrel. Subsequent increase in oil revenues increased the growth of imports for the *GCC* countries in 1991 and 1992, 18% and 14% respectively. We also expect that imported weapons occupied a big part of these imports after the second Gulf war. In general, fluctuation in oil prices determined fluctuations in import growth for the *GCC* countries. (v) Japan imports nearly 60% of its oil imports from the *GCC* countries with oil representing approximately 11% of its imports in the seventies and eighties (Japan year book 1997). Accordingly, the increase of oil prices increased the real value of Japan's imports by 33.8% in 1979. The decrease in the growth of real imports for Japan in the early eighties can be explained by the reduction in oil prices.

Table 5 summarizes the rate of growth of exports (measured in constant prices) for Japan and *GCC* countries. We note the following. (i) The growth of Japan's exports between 1976 and 1978 appears in sharp contrast to the reduction in exports for the *GCC* countries. The increase of Japan's exports was due to the

¹²Japan is an export-led economy. The development of the country's industrial base has focused on strong desire to compete internationally with Japanese exports.

Table 6. Trade Figures between Japan & GCC Countries

	GXJ=	GMJ=	G1=	G2=
Year	GCC Countries Exports to Japan (Millions of US dollar)	GCC Countries Imports from Japan (Millions of US dollar)	GXJ/GCC Countries Total Exports	GMJ/GCC Countries Total Imports
1975	17364.60	2758.831	20.73839	14.21657
1976	19238.38	4064.841	21.20410	15.05881
1977	19107.39	5595.702	21.33082	14.77733
1978	17678.76	6895.849	21.87879	16.13619
1979	23032.93	7371.889	19.98600	15.84476
1980	35038.01	9736.895	20.59545	17.52920
1981	36644.63	11250.67	21.03594	18.34405
1982	28579.94	12643.74	24.37055	18.99903
1983	26624.75	12190.01	32.67530	19.98376
1984	25426.62	10711.77	33.75498	19.37532
1985	23112.14	8740.670	35.97344	19.14730
1986	14098.64	6574.634	28.60650	16.38905
1987	13728.92	6884.352	24.27304	16.28072
1988	12329.88	6897.082	22.12285	15.37199
1989	14727.10	6318.318	21.42307	14.01114
1990	20662.80	6746.800	23.59225	14.11497
1991	20117.57	7604.076	24.18102	13.40168
1992	21896.55	9372.171	24.17837	14.38084
1993	19915.12	9027.541	22.68733	13.30238
1994	21191.86	6907.662	23.69609	9.591186
1995	24076.23	6183.255	24.37697	8.009530

	GJ1=	GJ2=	XMGJ=
Year	GXJ/Japan Total Imports	GMJ/Japan Total Exports	GCC Countries Current Account with Japan
1975	19.63357	3.237588	14605.77
1976	20.90033	4.256852	15173.54
1977	20.08767	5.175902	13511.69
1978	17.43036	5.524924	10782.91
1979	16.96574	5.829830	15661.04
1980	20.97966	6.315291	25301.12
1981	22.52040	6.520147	25393.96
1982	19.40843	8.159021	15936.20
1983	19.05723	7.506521	14434.74
1984	17.29016	5.845080	14714.85
1985	16.66707	4.642574	14371.47
1986	10.58893	2.988512	7524.006
1987	8.708234	2.851539	6844.569
1988	6.320821	2.501574	5432.793
1989	6.878834	2.252680	8408.782
1990	8.781881	2.345375	13916.00
1991	8.672393	2.463484	12513.50
1992	9.743966	2.856898	12524.38
1993	8.605564	2.599337	10887.58
1994	8.086402	1.828289	14284.20
1995	7.496586	1.459961	17892.97

with a minimum of \$5432.793 millions in 1988 and a maximum of \$25393.96 millions in 1981.

To draw more specific evidence, consider trade relations between each of the *GCC* countries and Japan. Details of the trade figures for each of the *GCC* countries are provided in the data appendix. The value of Bahrain's exports to Japan has been fairly stable over time. Accordingly, Bahrain's exports to Japan in 1995 equals 1.2 times its value in 1975. The low value of exports is due to the low production of oil in Bahrain. Nonetheless, the value of imports from Japan to Bahrain grew over time; it doubled in 1977 compared to 1975 and reached nearly four folds in 1983. Subsequently, the value of imports decreased where its value was lower in 1995 compared to 1975. Most of these imports were manufactured consumer goods.

The evidence for Kuwait indicates the reduction in trade relations with Japan over the last two decades. Consistently, Kuwait's exports to Japan decreased nearly 30% in 1995 compared to their level in 1982. The reduction started in 1982 and reached its highest level in 1991, i.e., during the second Gulf war. The decrease in Kuwaiti exports to Japan can be primarily explained by the reduction in oil revenues in real terms. In contrast, Japan's exports to Kuwait increased by 119% between 1975-86. In 1990, Kuwait's imports from Japan decreased by 67% compared to 1986. Kuwait's trade contracts with the U.S. shifted the direction of imports from Japan, decreasing these imports. Consistent with the reduction in the value of exports, Kuwaiti exports to Japan represented approximately 25% of total Kuwaiti exports in the seventies. This ratio dropped starting 1981 to an average of approximately 15%. Also, the ratio of Kuwaiti imports from Japan to total Kuwaiti imports dropped significantly between 1987-1995 compared to the earlier period. Consistently, Kuwaiti exports to Japan represented 4% of Japan's total imports in 1975 and diminished to 0.79% in 1995. Also Kuwaiti imports to Japan's total exports diminished from 0.75% to 0.13% over the same period. While Kuwaiti trade balance with Japan was mostly in surplus over time, it switched to deficit with the marked drop in oil revenue in 1982, 1984-86, and in 1991.

In contrast to the previous countries of *GCC*, trade relations between Japan and Oman were increasing over time. As evident in the Data Appendix, Omani exports to Japan increased by 90% between 1975-1995. These exports are primarily in the form of mineral resources like copper and iron. Since Omani oil production is low compared with other *GCC* countries, the increased exports were coupled with an increase in Omani imports from Japan by 614% between 1975-95. Consistently,

the ratio of Omani imports from Japan to total Japanese exports increased from 0.10% in 1975 to 0.14% in 1995. Given the parallel increase in exports and imports, Oman has continuously run a surplus with Japan, except for the period 1987-1990.

Trade relations were also increasing between Japan and Qatar between 1975-1995. Evidence of this increase is as follows. In 1995, Japanese imports from Qatar were 48 times their level in 1975. Qatar's imports from Japan more than doubled over the same period. Consistently, Qatar's exports to Japan reached 67.1% of its total exports in 1995 compared to 1.3% in 1975. In contrast, Japan exported to Qatar nearly 15% of its total imports in 1975. This ratio did not change much between 1975-95. Trade with Qatar (both exports and imports) represents, however, a share that is less than 1% of Japan's total trade, on average, over time.

There is some evidence that trade relations between Japan and Saudi Arabia were increasing slightly in real terms in the last two decades. Exports have increased by 0.9% in 1995 compared to 1975. The sharpest increase was between 1978 and 1984 (26%). Japan's exports to Saudi Arabia more than doubled between 1975-1995. The sharpest increase was between 1979 and 1984 (56%). On average, 20% of Saudi's exports were directed to Japan between 1975-1995. Saudi's imports from Japan averaged 15% of its total imports over the same period. In 1975, Saudi's exports to Japan were 11% of Japan's total imports. These exports were primarily crude oil. This ratio decreased, however, over time. Between 1985-95, Saudi's exports to Japan amounted to only 3%, on average, of Japan's total imports. Further, Saudi's imports from Japan amounted to less than 3% of Japan's total exports between 1975-95.

The evidence for the United Arab Emirates also indicates an increase in trade relations with Japan over time. In 1995, Japanese exports to the UAE were three times their level in 1975. The ratio of the Emirates' exports to Japan out of total exports indicates that Japan is the main importer of the Emirates' oil exports. Indeed, the Emirates' exports to Japan were approximately 20% of its total exports in the seventies, peaked in mid-eighties to approximately 60%, and remained around one-third in the nineties. The ratio of the Emirates' imports from Japan was, on average, 15% of its total imports in 1975, peaked in 1983 to 19.4% and declined to 10.36% in 1994. It is interesting to note that these imports represented 0.9% of Japan's total exports, on average, indicating the small size of the Emirates' market which is largely invaded by Japanese products. Further the Emirates has continuously run a trade surplus with Japan since 1975 due to the

increasing oil exports from the Emirates to Japan.

Time-Series Empirical Models

Given trade figures discussed above, we expect that economic conditions in Japan would exert significant influence on the national income of the *GCC* countries. Towards the investigation of this hypothesis, we build a simultaneous-equation model to test the interaction between Japan's economy and the economies of the *GCC* countries, collectively and individually.

In an open economy macro model, see, e.g., Kandil and Metwally (1990), aggregate demand combines domestic demand as well as foreign demand for goods and services, i.e., exports. The increased demand increases national income, resulting further increase in domestic demand as well as the demand for foreign goods and services, i.e., imports.

Assume, for example, an increase in autonomous demand in Japan, resulting an increase in domestic national income and, therefore, imports. This indicates an increase in the exports of Japan's trading partners, including the *GCC* countries.

Table 7. Exports to Japan and *GDP* in *GCC* Countries

Country	a_1	a_2	a_3	a_4	R^2
<i>GCC</i>	5622.73 (0.36)	5.057* (7.11)	0.62* (5.54)	-0.01 (-0.099)	0.90
Bahrain	-589.02 (-1.39)	3.40* (3.70)	0.69* (5.94)	0.31* (2.87)	0.97
Kuwait	2604.09* (2.24)	3.14* (7.94)	0.99* (31.75)	0.047** (1.73)	0.99
Oman	1486.7* (2.15)	0.65* (1.95)	-0.25 (3.79)	0.011 (0.043)	0.95
Qatar	4094.04* (2.91)	1.27* (2.00)	-0.25 (-0.93)	0.24 (0.97)	0.60
Saudi Arabia	10462.02 (0.90)	4.46* (5.20)	0.63* (5.17)	0.11 (0.72)	0.87
UAE	10516.1* (3.72)	2.19* (4.17)	0.22 (1.021)	0.12 (0.057)	0.84

Notes: • Empirical Model: $GGDP_t = a_1 + a_2 GXJ_t + a_3 GNOGDP_t + a_4 GGDP_{t-1} + e_{1t}$.

- $GGDP_t$: *GDP* of *GCC* countries in period t .
- GXJ_t : Exports of *GCC* countries to Japan in period t .
- $GNOGDP_t$: *GCC* Countries' non-oil *GDP* in period t .
- e_{1t} is a random *iid* error term.
- t -ratios are in parantheses.
- * and ** denote statistical significance at the five and ten percent levels, respectively.

An increase in the *GCC* countries' exports acts as an increase in any element of domestic demand, raising national income in the *GCC* countries. This, in turn, will raise imports in the *GCC* countries, including imports from Japan. Subsequently, Japan's exports increase and, therefore, its national income.

Given the simultaneous interaction between national incomes in Japan and the *GCC* countries, we build a simultaneous-equation model that incorporates the mutual interaction between relevant variables.

The structural equations of the model take the following form:

$$GGDP_t = a_1 + a_1GXJ_t + a_3GNOGDP_t + a_4GGDP_{t-1} + e_{1t} \tag{1}$$

$$GMJ_t = a_5 + a_6GGDP_t + a_7GMJ_{t-1} + e_{2t} \tag{2}$$

$$JGDP_t = a_8 + a_9GMJ_t + a_{10}JXMG_t + a_{11}JGDP_{t-1} + e_{3t} \tag{3}$$

$$GXJ_t = a_{12} + a_{13}JGDP_t + a_{14}GCCOIL_t + a_{15}GXJ_{t-1} + e_{4t} \tag{4}$$

The endogenous variables in the model are defined as follows:

- *GGDP_t*: *GDP* of *GCC* countries in period *t*.
- *GMJ_t*: *GCC* countries' imports from Japan in period *t*.

Table 8. *GDP* in *GCC* Countries and Imports from Japan

Gcountry	<i>a</i> ₅	<i>a</i> ₆	<i>a</i> ₇	<i>R</i> ²
<i>GCC</i>	-240.59 (-0.20)	0.017* (2.61)	0.67* (6.41)	0.90
Bahrain	226.65* (2.75)	-0.027** (-1.75)	0.64* (3.26)	0.97
Kuwait	55.85 (0.36)	0.10* (2.073)	0.80* (6.59)	0.99
Oman	32.24 (0.48)	0.024** (1.86)	0.52* (2.69)	0.95
Qatar	212.66* (2.0065)	-0.0033 (-0.23)	0.31 (1.55)	0.60
Saudi Arabia	-1095.41 (-1.33)	0.022* (2.90)	0.72* (7.02)	0.87
UAE	-146.81 (-0.46)	0.029** (1.80)	0.62** (3.99)	0.84

Notes: • Empirical Model: $GMJ_t = a_5 + a_6GGDP_t + a_7GMJ_{t-1} + e_{2t}$.

- *GMJ_t*: *GCC* countries' imports from Japan in period *t*.
- *GGDP_t*: *GDP* of *GCC* countries in period *t*.
- *e_{2t}* is a random *iid* error term.
- *t*-ratios are in parantheses.
- * and ** denote statistical significane at the five and ten percent levels, respectively.

- $JGDP_t$: Japan's *GDP* in period t .
- GXJ_t : Exports of *GCC* countries to Japan in period t .

The exogenous variables in the model are defined as follows:

- $GNOGDP_t$: *GCC* Countries' non-oil *GDP* in period t .
- $JXNG_t$: Japan's exports to countries other than *GCC* in period t .
- $GCCOIL_t$: *GCC* countries' oil production value in period t .

All lagged variables, GXJ_{t-1} , $GGDP_{t-1}$, GMJ_{t-1} , $JGDP_{t-1}$.

All variables are measured in real values.¹³

The first equation of the model attempts to identify the relative significance of the oil and non-oil components of *GDP* in *GCC* countries. Hence, the model establishes the dependency of *GDP* of the *GCC* countries on exports to Japan. Given that exports to Japan are dominated by oil, we account for other components of aggregate demand that are not related to oil production. Since other demand components are likely to be stimulated by oil exports, it is necessary to account for

Table 9. Exports to *GCC* Countries and *GDP* in Japan

Country	a_8	a_9	a_{10}	a_{11}	R^2
<i>GCC</i>	-46330.87 (-0.28)	-42.89* (-2.78)	7.83* (4.28)	0.43* (2.73)	0.90
Bahrain	-19487.39 (-0.084)	-1378.32** (-1.77)	7.87* (3.94)	0.40* (2.30)	0.97
Kuwait	3022.97 (0.014)	-255.62* (-2.068)	8.46* (4.14)	0.31 (1.64)	0.99
Oman	-342415.3* (-2.70)	-832.6755* (-3.11)	2.088* (4.65)	0.38* (2.33)	0.95
Qatar	-134626.9 (-0.26)	-515.05 (-0.46)	5.71** (1.88)	0.60* (2.59)	0.60
Saudi Arabia	-61277.64 (-0.40)	-61.26* (-2.91)	7.81* (4.33)	0.41* (2.66)	0.87
UAE	-272761.5 (-1.39)	-88.88 (-0.65)	6.67* (3.12)	0.57* (3.051)	0.98

Notes: • Empirical Model: $JGDP_t = a_8 + a_9 GMJ_t + a_{10} JXNG_t + a_{11} JGDP_t + e_{3t}$.

- $JGDP_t$: Japan's *GDP* in period t .
- GMJ_t : *GCC* countries' imports from Japan in period t .
- $JXNG_t$: Japan's exports to countries other than *GCC* in period t .
- e_{3t} is a random *iid* error term.
- t -ratios are in parantheses.
- * and ** denote statistical significance at the five and ten percent levels, respectively.

¹³In 1977, the Japan-ASEAN Committee was formed to promote and negotiate the issues related to trade relationship between Japan and the Association of South East Asian Nations (ASEAN). For more details, see the Four Tigers (1995).

these components explicitly to avoid the omitted variable bias in the coefficient measuring the effect of exports to Japan on *GDP*. The second equation tests the relationship between the imports of the *GCC* countries from Japan and their income. That is, to what extent does the increase in income of the *GCC* countries raise their demand for Japanese goods? The third equation seeks to identify the significance of exports to Japan's *GDP* and to distinguish between the relative importance of exports to *GCC* as well as non-*GCC* countries. Finally, equation four establishes variation in the *GCC* countries' exports to Japan with *GDP* in Japan. In this equation, we introduce the *GCC* oil production since oil dominates the *GCC* countries exports to Japan.¹⁴ All lagged dependent variables are introduced into the right-hand side of the system to account for possible persistence in variables' adjustments and introduce dynamics into the model specification.

The system contains four equations and ten variables, four endogenous and

Table 10. Japan's *GDP* and *GCC* Country's Exports to Japan

Country	a_{12}	a_{13}	a_{14}	a_{15}	R^2
<i>GCC</i>	5932.43* (2.13)	0.001 (0.19)	0.19* (5.91)	0.088 (0.60)	0.86
Bahrain	359.40 (4.91)	-0.00002** (01.88)	0.15* (3.17)	-0.25 (-1.22)	0.41
Kuwait	-362.73 (-0.46)	-0.00002 (-0.14)	0.17* (2.91)	0.42* (2.12)	0.71
Oman	246.8 (0.49)	-0.00021 (-1.34)	0.25 (1.57)	0.49* (2.51)	0.46
Qatar	-247.28 (-0.90)	0.00015* (2.073)	0.21* (2.86)	0.57* (4.36)	0.79
Saudi Arabia	2694.86 (1.20)	-0.00017 (-0.35)	0.11* (3.37)	0.30 (1.49)	0.81
UAE	-806.20 (0.91)	0.00044* (2.19)	0.31* (4.89)	0.38* (3.016)	0.82

- Notes: • Empirical Model: $GXJ_t = a_{12} + a_{13}JGDP_t + a_{14}GCCOIL_t + a_{15}GXJ_{t-1} + e_{4t}$.
- GXJ_t : Exports of *GCC* countries to Japan in period t .
 - $JGDP_t$: Japan's *GDP* in period t .
 - $GCCOIL_t$: *GCC* countries' oil production value in period t .
 - e_{4t} is a random *iid* error term.
 - t -ratios are in parantheses.
 - * and ** denote statistical significance at the five and ten percent levels, respectively.

¹⁴Hence, the model seeks to identify the quantity effects in trade relations between Japan and *GCC* countries. The effects of prices are embedded in the measurement of realized exports and imports between Japan and *GCC* countries.

seven exogenous. The first equation contains four variables. The second equation contains three variables and the last two equations contain four variables. Thus, the number of excluded variables from each equation is greater than the total number of equations minus one. Hence, every equation is over identified.

We estimate the system of equations using 2SLS over the sample period 1975-1995.¹⁵ To formalize the effects of trade interaction between Japan and individual GCC countries, we estimate the empirical models in (1) through (4), replacing variables for GCC countries with their equivalent for each country.

The results of estimating model (1) are summarized in Table 7. Upon reviewing these results, we note the following. Exports to Japan are essential in increasing GDP of the GCC countries. This is evident, by the positive and statistically significant effect a_2 of exports to Japan on GDP in GCC countries, collectively and individually.¹⁶ Non-oil sources of domestic demand have positive effect a_3 on GDP in GCC countries, collectively and individually, except for Qatar and UAE due the small size of this sector. Nonetheless, the positive effect a_4 does not persist over time on GDP in GCC countries, except for Kuwait and Bahrain. This is consistent with the nature of exports to Japan, which are primarily in the form of crude oil. Accordingly, the positive effect of these exports is limited to the period of production.

The results of estimating model (2) are summarized in Table 8. Imports from Japan vary positively with GDP with a coefficient a_6 that is statistically significant in GCC countries and in Kuwait, Oman, Saudi Arabia, and UAE. In all these cases, the lagged dependent variable has a positive and statistically significant effect a_7 on the GCC countries' imports from Japan. This indicates that the increase in GDP has persistent positive effect on imports from Japan in the GCC countries. In two cases, however, Bahrain and Qatar, imports from Japan do not vary positively and significantly with GDP indicating no systematic dependency, in contrast to theory's predictions. That is, as GDP grows in these countries, their imports from Japan do not grow and may be even declining. In the case of Bahrain, the relation between imports from Japan and GDP is negative and statistically significant. That is because the value of imports from Japan to Bahrain (see Table 6) grew over time despite Bahrain's low production of oil. Despite the evidence of the increased imports from Japan in Qatar over time (see Table 6), this

¹⁵While other exogenous factors may improve the goodness of fit, analyzing these factors is beyond the scope of this paper and is not likely to affect the relationship under investigation.

¹⁶The estimation procedure accounts for instrumental variables and corrects for serial correlation.

increase does not vary significantly with the increase in *GDP*.

The results of estimating model (3) are summarized in Table 9. The results highlight the effects of exports to *GCC* countries and non-*GCC* countries on *GDP* in Japan. Japan's *GDP* is not dependent on exports to *GCC* countries. This is evident by the negative response a_9 of *GDP* to the increased exports to *GCC* countries. That is, *GDP* growth in Japan may be increasing despite a decrease in exports to *GCC* countries. In contrast, exports to non-*GCC* countries have a positive effect a_{10} on *GDP* in Japan with a coefficient that is statistically significant.¹⁷ That is, Japan's *GDP* is not dependent on exports to *GCC* countries, in contrast to its dependency on exports to non-*GCC* countries. Further, the response of *GDP* in Japan to its lag a_{11} is positive and statistically significant in many *GCC* countries. That is, exports have persistent effect on *GDP* in Japan over time. Since exports in Japan are predominantly manufactured, they are likely to result an increase in the productive base that carries its positive effect on *GDP* over time.

The results of estimating model (4) test the dependency of *GCC* countries' exports to Japan on income in Japan and oil production. In general, exports from *GCC* countries to Japan do not vary positively and significantly a_{13} with income in Japan.¹⁸ The only exceptions are in Qatar and UAE where Japan's imports increase with *GDP* in Japan, indicating an increase in the marginal propensity to import from Qatar and UAE with income in Japan. On the other hand, exports from *GCC* countries to Japan are highly dependent on supply-side conditions. This is evident by the positive and statistically significant effect a_{14} of oil production on the *GCC* countries' exports to Japan. Where the lagged dependent variable is statistically significant, the positive effect a_{15} of oil production persists on *GCC* countries' exports to Japan over time.

III. Conclusions

The main findings of this study are as follows:

- Economies of the *GCC* countries are dependent, to a large extent, on oil

¹⁷Where the coefficient in Table 7 is larger than one, a one Dinar in exports of *GCC* to Japan may cause an increase in *GDP* of *GCC* countries by more than one. That is because the marginal propensity to spend domestically allows for an additional spending that accumulates over time following an increase in exports.

¹⁸The R^2 measure indicates the goodness of fit, as identified by the explanatory power of the model compared to the residual, capturing the effect of other endogenous and exogenous factors, other than exports, explaining Japan's *GDP*.

exports. Subsequently, political events determining fluctuations in the oil price produce large economic results in *GCC* countries.

- Japan is the main importer of the *GCC* countries' oil exports.
- Japan's exports occupies a big segment of the *GCC* markets.
- While Japan's oil imports from *GCC* countries have a large impact on their economies, the effect of *GCC* countries' imports from Japan is minor in the huge Japanese market.

- The trade relationship between Japan and *GCC* countries combined is stronger than trade relationships between Japan and individual countries of *GCC*. The trade relationship between Japan and *GCC* countries captures the combined effects of relationships with individual countries. Hence, weak effects are reinforced upon aggregating over *GCC* countries. The implication is that *GCC* countries can maximize their benefits by establishing a united front in negotiations with major trading partners, including Japan.

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References

- Al Ahram Center for Strategic and Political Studies, *The Asian Tigers*, Cairo 1995, 197 (in Arabic).
- American Statistics Index, 1996.
- International Energy Agency (1998), *Oil Market Report*, April 10.
- International Monetary Fund (1997), *International Financial Statistics*.
- Japan External Trade Organization Statistics, *JETRO*, 1975-1997.
- Kandil, Magda and Mohammady Metwally (1990), The Impact of Migrants, "Remittances on the Egyptian Economy, *International Migration*, 159-180.
- Metwally, M. M. and Tamaschke, H. U., "Oil Exports and Economic Growth in the Middle East," *Kyklos*, Geneva, 33(3), 499-522.
- Metwally, M. M. (1988), "Trade Relationship between Saudi Arabia and Japan," *Journal of Administrative and Science*, King Saud University, 13(1), 3-16.
- OPEC Bulletin, March, 1998, 5-23.
- The Secretariat General Cooperation Council for the Arab States of Gulf (1997), *Economic Bulletin*, 12.
- United Nations, *Direction of Trade Statistics*, Yearbook, 1975-1996.
- World Almanac Books, *The World Almanac and Book of Facts*, 1997, an imprint of K-111, References Corporation, K.111 Communication Company.

¹⁹In these cases, it may be argued that the adverse effects of the oil price on the Japanese economy slow down growth in Japan and, hence, the country's imports from *GCC* countries.

Appendix 1. Trade Figures between Bahrain & Japan

	BRXJ=	BRMJ=	B1=	B2=
Year	Bahrain Real Exports to Japan (Millions US dollar)	Bahrain Real Imports from Japan (Millions US dollar)	BRXJ/Bahrain Total Real Exports	BRMJ/Bahrain Total Real Imports
1975	283.4404	115.4448	14.12537	5.776294
1976	335.6291	197.0533	15.25524	8.160567
1977	333.4029	229.0585	13.74844	8.579022
1978	410.4745	208.5186	20.38996	8.239151
1979	339.0223	189.9868	12.15940	6.832998
1980	460.3124	277.9325	11.98338	7.497560
1981	376.6711	263.3011	8.460229	6.234239
1982	288.5905	279.2046	7.708751	7.819374
1983	456.2219	414.6402	14.53705	12.65111
1984	372.4210	350.9391	11.81980	9.921671
1985	273.2933	217.5275	10.07940	7.326842
1986	290.4937	249.9231	10.65933	9.947426
1987	297.1518	279.8595	11.73439	9.719971
1988	293.4036	277.6630	11.56328	9.749447
1989	330.3171	300.5783	11.81885	9.320357
1990	365.7000	255.5000	9.533368	6.884937
1991	393.4535	175.1887	7.712024	2.921089
1992	260.5234	220.2188	4.954440	3.502899
1993	321.3056	235.4761	5.395248	4.190947
1994	362.2037	162.8627	5.823667	2.982305
1995	343.5039	107.5004	5.159817	2.050577

	BJ1=	BJ2=	XMBJ=
Year	BRXJ/Japan Total Real Imports	BRMJ/Japan Total Real Exports	Bahrain Current Account with Japan
1975	0.320476	0.135479	167.9956
1976	0.364623	0.206362	138.5758
1977	0.350508	0.211874	104.3445
1978	0.404707	0.167064	201.9560
1979	0.249719	0.150245	149.0355
1980	0.275621	0.180265	182.3799
1981	0.231488	0.152592	113.3700
1982	0.195980	0.180171	9.385860
1983	0.326551	0.255332	41.58170
1984	0.253247	0.191497	21.48197
1985	0.197082	0.115539	55.76577
1986	0.218178	0.113603	40.57057
1987	0.188483	0.115919	17.29230
1988	0.150411	0.100708	15.74053
1989	0.154287	0.107166	29.73883
1990	0.155426	0.088819	110.2000
1991	0.169612	0.056756	218.2648
1992	0.115933	0.067129	40.30455
1993	0.138840	0.067802	85.82948
1994	0.138210	0.043106	199.3410
1995	0.106956	0.025382	236.0035

Appendix 2. Trade Figures between Kuwait & Japan

	KXJ=	KMJ=	K1=	K2=
Years	Kuwait Exports to Japan (Millions US dollar)	Kuwait Imports from Japan (Millions US dollar)	KXJ/Kuwait Total Exports	KMJ/Kuwait Total Imports
1975	3681.889	645.6235	24.03092	16.20603
1976	3174.909	999.7771	22.22222	20.72804
1977	3232.839	1262.910	25.22042	19.84307
1978	3214.455	1110.696	24.89690	19.48306
1979	4960.019	1061.822	24.02840	18.25702
1980	4352.006	1459.890	20.80049	21.00107
1981	3955.149	1851.608	24.07130	25.68912
1982	1525.449	1974.983	14.21208	24.12794
1983	2054.568	1856.466	18.21106	25.67476
1984	1445.516	1578.021	12.38923	22.77601
1985	1091.738	1745.756	10.15543	26.65102
1986	1115.429	1416.301	14.41149	23.01925
1987	1749.387	1116.043	19.95402	18.75892
1988	1516.653	873.0750	18.86568	13.28013
1989	2178.961	833.5104	18.45155	12.66813
1990	1557.100	460.0000	22.11162	11.18133
1991	49.99898	462.4906	4.779412	9.442481
1992	1021.518	791.0591	16.32583	13.56970
1993	1421.551	990.5536	14.99805	17.49428
1994	1929.020	626.6713	18.03145	10.18261
1995	2548.230	574.3489	21.39261	8.010021

	KJ1=	KJ2=	XMKJ=
Years	KXJ/Japan Total Imports	KMJ/Japan Total Exports	Kuwait Current Account with Japan
1975	4.162988	0.757663	3036.265
1976	3.449180	1.047004	2175.132
1977	3.398695	1.168164	1969.929
1978	3.169289	0.889885	2103.759
1979	3.653482	0.839709	3898.197
1980	2.605844	0.946876	2892.115
1981	2.430684	1.073070	2103.541
1982	1.035921	1.274459	-449.5333
1983	1.470601	1.143199	198.1015
1984	0.982954	0.861077	-132.5056
1985	0.787295	0.927252	-654.0177
1986	0.837754	0.643782	-300.8722
1987	1.109633	0.462272	633.3439
1988	0.777501	0.316665	643.5780
1989	1.017764	0.297173	1345.450
1990	0.661782	0.159909	1097.100
1991	0.021554	0.149833	-412.4916
1992	0.454576	0.241137	230.4594
1993	0.614269	0.285214	430.9972
1994	0.736076	0.165864	1302.349
1995	0.793439	0.135613	1973.881

Appendix 3. Trade Figures between Japan & Oman

obs	OXJ=	OMJ=	O1=	O2=
	Oman Exports to Japan (Millions US dollar)	Oman Imports from Japan (Millions US dollar)	OXJ/Oman Total Exports	OMJ/Oman Total Imports
1975	902.0378	88.25189	51.79119	7.897880
1976	988.0235	127.5478	60.04409	13.17249
1977	1060.660	156.2539	70.79825	13.59479
1978	1062.033	181.8966	78.25730	15.50723
1979	1536.789	214.9379	87.48408	15.41734
1980	1764.531	362.4189	69.50126	19.66513
1981	2367.355	528.6505	72.16984	22.55922
1982	1569.415	548.0354	44.68354	20.67847
1983	1794.584	537.8162	43.34202	22.00377
1984	2202.504	587.4415	55.88640	21.29394
1985	2881.471	651.6599	59.74283	20.15983
1986	1557.826	359.3693	64.02413	12.23412
1987	129.4271	294.2874	3.814884	11.58246
1988	38.82665	388.1616	1.409524	16.80600
1989	47.33516	364.6865	1.130777	15.70226
1990	96.00000	463.0000	1.742919	16.98459
1991	1890.346	628.8333	40.36132	20.47589
1992	1679.826	823.8476	32.95715	23.26612
1993	1309.640	795.1251	26.72813	20.89738
1994	1711.348	645.1868	33.50488	17.89038
1995	1716.783	630.4481	32.63173	16.11265

obs	OJ1=	OJ2=	XMOJ=
	OXJ/Japan Total Imports	OMJ/Japan Total Exports	Oman Current Account with Japan
1975	1.019904	0.103567	813.7859
1976	1.073376	0.133573	860.4758
1977	1.115076	0.144531	904.4064
1978	1.047111	0.145735	880.1367
1979	1.131978	0.169977	1321.851
1980	1.056546	0.235063	1402.112
1981	1.454886	0.306371	1838.704
1982	1.065778	0.353648	1021.379
1983	1.284512	0.331183	1256.768
1984	1.497708	0.320549	1615.063
1985	2.077941	0.346127	2229.811
1986	1.170021	0.163352	1198.457
1987	0.082095	0.121896	-164.8604
1988	0.019904	0.140786	-349.3349
1989	0.022110	0.130022	-317.3514
1990	0.040801	0.160952	-367.0000
1991	0.814901	0.203722	1261.513
1992	0.747523	0.251132	855.9786
1993	0.565911	0.228944	514.5145
1994	0.653017	0.170765	1066.161
1995	0.534553	0.148858	1086.335

Appendix 4. Trade Figures between Qatar & Japan

	QRXJ=	QRMJ=	Q1=	Q2
Year	Qatar real Exports to Japan (Millions US dollar)	Qatar real Imports from Japan (Millions US dollar)	QRXJ/Qatar Total Exports	QRTM/Qatar Total Imports
1975	41.87377	102.7659	1.382387	15.04641
1976	26.11900	341.8686	0.814701	28.28331
1977	237.6005	429.4682	7.779355	26.67537
1978	684.9910	289.4991	23.86540	19.74829
1979	983.6123	296.1690	25.80882	18.57283
1980	1556.401	280.8055	32.75997	18.32893
1981	1837.475	317.8867	33.29313	20.45065
1982	1599.449	423.0553	35.37497	21.99168
1983	1517.732	311.5686	42.66652	21.82455
1984	2362.515	223.9545	50.99896	19.20131
1985	2054.928	211.8894	60.50161	18.14590
1986	1089.744	195.3048	48.64751	16.95486
1987	857.1890	196.3684	38.44507	16.26824
1988	1087.041	234.1142	49.40857	17.60852
1989	1437.754	238.3222	54.42717	17.46606
1990	1960.000	248.3000	60.56860	14.64983
1991	1886.981	225.1877	64.82674	13.61549
1992	1865.847	301.9553	58.91602	15.94736
1993	1791.598	235.2912	51.91906	13.45548
1994	1810.097	202.4729	61.87028	11.40420
1995	2000.779	249.0841	67.14065	13.67729

	QJ1=	QJ2=	XMQJ=
Year	QRXJ/Japan Total Imports	QRTM/Japan Total Exports	Qatar Current Account with Japan
1975	0.047345	0.120600	-60.89214
1976	0.028375	0.358017	-315.7496
1977	0.249790	0.397249	-191.8677
1978	0.675366	0.231945	395.4919
1979	0.724515	0.234216	687.4433
1980	0.931924	0.182129	1275.595
1981	1.129242	0.184226	1519.588
1982	1.086174	0.272998	1176.394
1983	1.086349	0.191862	1206.164
1984	1.606515	0.122205	2138.560
1985	1.481889	0.112544	1843.038
1986	0.818464	0.088776	894.4395
1987	0.543714	0.081337	660.8206
1988	0.557264	0.084913	852.9271
1989	0.671556	0.084969	1199.432
1990	0.833018	0.086316	1711.700
1991	0.813450	0.072954	1661.793
1992	0.830302	0.092044	1563.892
1993	0.774171	0.067748	1556.307
1994	0.690698	0.053590	1607.624
1995	0.622980	0.058813	1751.695

Appendix 5. Trade Figures between Saudi Arabia & Japan

	SXJ=	SMJ=	S1=	S2=
Year	Saudi Exports to Japan (Millions US dollar)	Saudi Imports to Japan (Millions US dollar)	SXJ/Saudi Total Exports	SMJ/Saudi Total Imports
1975	9764.430	1076.039	19.71902	15.30976
1976	11318.23	1533.765	20.37298	12.15781
1977	10990.34	2232.761	19.24165	11.59410
1978	9468.775	3884.340	18.80533	15.41599
1979	11403.68	4299.877	16.06785	15.84285
1980	18945.59	5757.629	16.32243	17.93741
1981	19904.79	6611.715	16.21342	18.30555
1982	17809.42	7684.549	22.79550	19.13266
1983	13848.47	7479.803	30.79087	19.46607
1984	12012.84	6713.617	31.87375	19.84805
1985	8439.698	4590.425	29.95888	18.95690
1986	4306.561	3151.295	20.35175	15.72834
1987	5440.180	3681.245	22.10440	17.25510
1988	4308.709	3654.952	16.84375	15.98880
1989	5098.820	3101.482	17.45825	14.24857
1990	8427.000	3689.000	18.97247	15.31913
1991	6707.556	3829.730	14.59506	13.73448
1992	8755.202	4412.832	18.53421	14.11655
1993	7504.530	4178.638	19.13905	12.67179
1994	8949.802	2990.575	22.79931	9.055872
1995	9854.205	2489.367	21.37790	7.183510

	SJ1=	SJ2=	XMSJ=
Year	SXJ/Japan Total Imports	EMJ/Japan Total Exports	Saudi Current Account with Japan
1975	11.04031	1.262771	8688.390
1976	12.29598	1.606216	9784.466
1977	11.55418	2.065255	8757.576
1978	9.335729	3.112116	5584.435
1979	8.399794	3.400425	7103.804
1980	11.34402	3.734364	13187.96
1981	12.23272	3.831715	13293.07
1982	12.09425	4.958849	10124.87
1983	9.912342	4.606010	6368.670
1984	8.168758	3.663412	5299.220
1985	6.086197	2.438187	3849.273
1986	3.234487	1.432427	1155.265
1987	3.450698	1.524793	1758.935
1988	2.208828	1.325652	653.7569
1989	2.381592	1.105776	1997.338
1990	3.581553	1.282399	4738.000
1991	2.891530	1.240713	2877.826
1992	3.896064	1.345154	4342.370
1993	3.242798	1.203172	3325.892
1994	3.415070	0.791532	5959.226
1995	3.068292	0.587778	7364.838

Appendix 6. Trade Figures between Emirates & Japan

obs	EXJ=	ERMJ=	E1=	E2=
	Emirates Exports to Japan (Millions US dollar)	Emirates Imports from Japan (Millions US dollar)	EXJ/Emirates Total Exports	EMJ/Emirates Total Imports
1975	2690.932	730.7056	22.21151	15.90414
1976	3395.469	864.8289	24.54116	17.42690
1977	3252.551	1285.251	25.68493	18.85847
1978	2838.032	1220.899	25.11506	18.31012
1979	3809.805	1309.096	24.94140	16.78382
1980	7959.170	1598.218	36.17721	16.97559
1981	8203.197	1677.508	37.71542	16.97233
1982	5787.618	1733.914	34.79242	17.24477
1983	6953.167	1589.716	48.32334	19.39923
1984	7030.827	1257.799	49.35175	17.79071
1985	8371.016	1323.412	58.14997	17.61015
1986	5738.586	1202.440	44.19149	16.41385
1987	5255.587	1316.549	34.97353	15.72080
1988	5085.242	1469.117	34.77824	16.42036
1989	5633.913	1479.738	31.11503	15.04341
1990	8257.000	1631.000	35.07051	14.21722
1991	9189.236	2282.646	39.11033	17.24664
1992	8313.636	2822.258	35.30943	17.25049
1993	7566.498	2592.457	30.52726	14.35963
1994	7655.836	2279.893	30.34873	10.36302
1995	8517.129	2132.506	32.93439	8.740467

obs	EJ1=	EJ2=	XMEJ=
	EXJ/Japan Total Imports	EMJ/Japan Total Exports	Emirates Current Account with Japan
1975	3.042546	0.857510	1960.226
1976	3.688794	0.905681	2530.640
1977	3.419419	1.188829	1967.301
1978	2.798155	0.978179	1617.134
1979	2.806250	1.035258	2500.709
1980	4.765700	1.036595	6360.951
1981	5.041372	0.972173	6525.689
1982	3.930328	1.118897	4053.704
1983	4.976879	0.978936	5363.451
1984	4.780979	0.686342	5773.028
1985	6.036667	0.702925	7047.604
1986	4.310025	0.546572	4536.146
1987	3.333611	0.545322	3939.038
1988	2.606912	0.532849	3616.125
1989	2.631527	0.527573	4154.175
1990	3.509301	0.566981	6626.000
1991	3.961346	0.739506	6906.590
1992	3.699568	0.860303	5491.378
1993	3.269575	0.746457	4974.040
1994	2.921318	0.603432	5375.942
1995	2.651968	0.503517	6384.622