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GCC States' Import Demand:

The Effects of Geopolitics

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This equation proves very practical for the estimation of the import share equation. The relative exchange rates can be used as substitutes for export prices, and data regarding the nominal level of aggregate imports and price levels are readily available for the Arab (importing) countries. We can add appropriate dummy variables to this equation representing the noneconomic factors that we anticipate having an impact on the market share of each exporter.

Conversion to real values. All import values were converted to real values before calculating the trade shares for the purpose of regression analysis. This conversion helps us prevent the results of my analysis from being distorted by differences in inflation rates in exporting countries across the time span of my data. For each of the nine exporting countries, an appropriate export price index was used to calculate the real value of their exports to Arab countries after adjustment for price changes. For some countries a direct export price index was not available, so close proxies were used, as described in Table 3. In order to convert the total imports of each importing country from nominal to real values, I constructed a weighted export price index based on the export price indexes of the nine exporting countries in my sample. The weight assigned to each exporting country's index is equal to its share of the combined exports of the nine exporting countries in my sample to each importing country. Consequently, the lack of historical export index data for some countries reduced the data range for real values to twenty-eight annual observations after 1980.

Table A1. Sources of Data for Export Price Indexes

U.S.	Bureau of Economic Analysis (Export-Goods Price Index, Table 1.1.4)
Italy, UK, Germany	IMF
Japan	Bank of Japan (Export Price Index)
China	National Bureau of Statistics (Producer Price Index of Manufactured Goods)
France	National Income Accounts (Ratio of Nominal to Real Values of Exports of Goods)
India	IMF (Export Prices, L74&D)
Korea	IMF (Export Prices, L76)

The Estimation Method

The market shares of the trade partners of any given importing country are interconnected, because the market shares for all partners add up to one, so an increase in one partner's share reduces the market shares of all the others. Because of this property, using the Seemingly Unrelated Regression (SUR) method is more efficient than running independent Ordinary Least Squares (OLS) regressions. To take advantage of this additional efficiency, I have used the SUR model in this analysis.

I estimated an SUR model for each importing country. The model will then have one equation for each trade partner under consideration. As was explained earlier, the nine exporting countries in my sample accounted for nearly 50% of the total imports of each importing country; we consider the rest of the world as the residual trade share that will not be directly estimated.

The unit-root test

To make sure that the trade share time series are stationary, I used the Multivariate Dickey-Fuller test for seemingly unrelated equations (Table A2)³⁶. The results in Table A2 suggest that, with the exception of Bahrain and Qatar, the market share variables were nonstationary at the level but became stationary after conversion to first difference. In light of this result, I used the first difference of all the dependent and independent variables in my regression estimates rather than their levels.

Table A2. Multivariate Dickey-Fuller Test for Seemingly Unrelated Equations
(Four Equations for Market Shares of USA, EU4, Japan, & China)

	Level		First Difference	
	Test value	5% Critical value (no. of observations)	Test value	5% Critical value (no. of observations)
Bahrain	33.226	28.15 (28)	79.953	28.894 (27)
Kuwait	17.937	28.15 (28)	79.491	28.894 (27)
Oman	22.287	28.15 (28)	75.384	28.894 (27)
Qatar	30.921	28.15 (28)	164.745	28.894 (27)
Saudi Arabia	8.329	28.15 (28)	46.156	28.894 (27)
UAE	11.818	28.15 (28)	93.898	28.894 (27)
GCC	14.919	28.15 (28)	56.128	28.894 (27)
Arab13	19.631	31.844(24)	53.232	33.168 (23)

Data range: (1980–2007); (Arab13 = GCC countries + Algeria, Egypt, Jordan, Libya, Morocco, Tunisia, Syria.) Market shares are based on import values in constant prices. Statistics that are significant appear in boldface font.

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- 1 For a survey of the economic performance of Arab countries after 2000, see International Monetary Fund, "Regional Economic Outlook: Middle East and Central Asia" (Washington, DC, October 2009).
- 2 Economists have generally been more interested in studying the volume of bilateral trade among nations than the relative market shares. The most common analytical model for analysis of bilateral trade is the gravity model, which assumes that the volume of trade between two nations is a function of the size of their respective economies (GDP) and the geographical distance between them. (The gravity model was first introduced by Jan Tinbergen in *Shaping the World Economy: Suggestions for an International Economic Policy* [New York: Twentieth Century Fund, 1962].) Economists and political scientists have inserted additional variables into the simple gravity model to study the impact of other factors—such as political institutions, diplomatic relations between the two countries, and relative prices—on the volume of bilateral trade.
- 3 Nicholas Blanford, "Arab Citizens Seize Boycott Banner," *Christian Science Monitor*, May 7, 2002.*
- 4 Currently ten Arab countries enjoy WTO membership, while six other states have observer status, which will eventually pave the way for accession negotiations.
- 5 For more detail on U.S. trade agreements with Arab countries, see Robert Z. Lawrence, *A US-Middle East Trade Agreement: A Circle of Opportunity?* (Washington, DC: Peterson Institute for International Economics [Policy Analyses in International Economics 81], 2006).
- 6 For a recent analysis of the Euro-Mediterranean Free Trade Agreement, see ENPI Info Centre, "The EuroMed Partnership,"* See also: Luc De Wulf, et al., "Economic Integration in the Euro-Mediterranean Region," *Center for Social and Economic Research*, September 2009.*
- 7 A major point of disagreement in EU-GCC trade negotiations is the refusal of the European Union to open its petrochemical market to GCC exports. GCC countries have a significant cost advantage in the production of petrochemicals, but European countries want to protect their domestic petrochemical industries.

- 8 The first round of trade talks between China and GCC countries was held in Riyadh in September 2009. This was followed by a GCC-China economic forum in February 2010 in Bahrain. The third round of talks between the two parties was concluded in June of that year. The first round of free trade talks between India and the GCC was held in March 2006, but progress has been slow. The GCC countries also initiated free trade talks with South Korea in 2008. The 2008–9 financial crisis resulted in a significant slowdown in GCC trade negotiations with potential Asian trade partners.
- 9 These statistics were calculated by the author based on United Nations Comtrade data. The figures reported reflect the sum of SITC categories 6 (manufactured goods) and 7 (machinery and transport equipment). If we add SITC category 8, which covers miscellaneous manufactured articles, the aggregate shares of categories 6, 7, and 8 will increase to 61% for the entire Arab world and 66.5% for GCC countries.
- 10 Data calculated by the Author based on the United Nations Comtrade data.
- 11 The European currencies, which were closely linked to one another before they were replaced with the euro in 1997, depreciated sharply against the dollar in the first half of the 1980s before reversing course and gradually appreciating during 1986–95. When the euro was introduced, it initially depreciated against the dollar between 1997 and 2001, but subsequently experienced a round of steady appreciation which lasted through 2009.
- 12 P. S. Armington, "A Theory of Demand for Products Distinguished by Place of Production," *International Monetary Fund Staff Papers* 16 (1969), pp. 159–76.
- 13 Ashok Parikh, "An Econometric Study on Estimation of Trade Shares Using the Almost Ideal Demand System in the World Link," *Applied Economics* 20 (1988), pp. 1017–39.
- 14 For a detailed analysis of the AIDS model, see A. S. Deaton and J. Muellbauer, "An Almost Ideal Demand System," *American Economic Review* 70, no. 2 (1980): 312–26.
- 15 See K. Konimoto, "A Typology of Trade Intensity Indices," *Hitotsubashi Journal of Economics* 17 (1977), pp. 15–32, and Andras Nagy, "The Treatment of International Trade in Global Models" (Laxenburg, Austria: International Institute of Applied Systems Analysis A-2361, February 1983) (Working Paper 83-25).
- 16 Solomon W. Polachek, "Conflict and Trade," *Journal of Conflict Resolution* 24 (1980), pp. 55–78.
- 17 Mark Gasiorowski, and Solomon W. Polachek. "Conflict and Interdependence: East-West Trade and Linkages in the Era of Detente," *Journal of Conflict Resolution* 26 (1982), pp. 709–29.

- 18 Ruth Arad, Seev Hirsch, and Alfred Tovias, *The Economics of Peacemaking: Focus on the Egyptian-Israeli Situation* (New York: St. Martin's, 1983).
- 19 Brian M. Pollins, "Does Trade Still Follow the Flag?" *American Political Science Review* 83, no.2 (June 1989), pp. 465-80.
- 20 A more recent study offers more recent empirical evidence that political tension and conflict have an adverse effect on bilateral trade. See Omar M. G. Keshk, Rafael Reuveny, and Brian M. Pollins, "Trade and Conflict: Proximity, Country Size, and Measures," *Conflict Management and Peace Science* 27, no. 1 (February 2010), pp. 3-27.
- 21 Rebecca M. Summary, "A Political-Economic Model of U.S. Bilateral Trade," *Review of Economics and Statistics* 71, no. 1 (February 1989), pp. 179-82.
- 22 William J. Dixon and Bruce E. Moon, "Political Similarity and American Foreign Trade Patterns," *Political Research Quarterly* 46, no. 1 (March 1993), pp. 5-25.
- 23 James D. Morrow, Randolph M. Siverson, and Tressa E. Tabares, "The Political Determinants of International Trade: The Major Powers, 1907-1990," *American Political Science Review* 92, no. 3 (September 1998), pp. 649-61.
- 24 James M. Lutz, "East European Trade with the Developing World: Soviet Diplomatic Partner or Economic Self-Interest," *International Trade Journal* 9, no. 3 (1995), pp. 333-62.
- 25 Kang-Taeg Lim and Jae-Young Kim, "Economic and Political Changes and Import Demand Behavior of North Korea," *Journal of Economic Development* 27, no. 1 (June 2002), pp. 137-150.
- 26 Ayla Ogus and Can Erbil, "The Effect of Instability on Turkey's Bilateral Trade with Iraq," *Turkish Policy Quarterly* 4, no. 4 (2005), pp. 169-77.
- 27 For more information about this data base, see: <http://www2.imfstatistics.org/DOT/help/DOThelp.htm>.*
- 28 For an analysis of this issue, see Anton Dobranogov and Ahmad Jalali-Naini, "Explaining Large Inventories: The Case of Iran," *Middle Eastern Finance and Economics*, Issue 1 (2007).*
- 29 The first Palestinian Intifada began in December 1987 and lasted until 1993. The second Palestinian Intifada began in September 2000, but there are disagreements as to when it ended. Some argue that it ended in 2004, while others believe it lasted until 2005. As far as the impact of the Second Intifada on the image of the United States in the Arab world is concerned (and the resulting possible surge in anti-American sentiment), I believe that the impact of the Second Intifada was strongest in 2001 and lasted through 2002. After 2002, it was overshadowed by the

U.S. invasion of Iraq, which had a significantly greater impact on Arab sentiment toward the United States. Even in the last quarter of 2001, the impact of the Second Intifada on the image of the U.S. in the Arab world was largely overshadowed by the September 11 attacks. This is why I chose to flag 2001 and 2002 as the time period during which the Second Intifada and the September 11 attacks were the dominant contributors to Arab sentiment toward the United States.

- 30 I use a SUR model with the first-difference log equation of the import share equation that is described in the appendix. The SUR does allow for differences in right-hand-side equations, and instead of using the same exchange rate in all equations, I have used the appropriate exchange rate for each exporting country.
- 31 In some cases the coefficient was significant, but it came from an equation with a p-value of greater than or equal to 0.1, which lessens the significance of the result.
- 32 These estimations were performed with first difference-log values and simple first difference values.
- 33 The results were very similar in terms of the sign and significance of the coefficients, but the coefficient t-statistics were larger in the first-difference model.
- 34 The improved image of the United States in GCC countries and its impact on U.S. exports to these countries was remarked on by Edward P. Djerejian, Assistant Secretary for Near East Affairs in the Clinton administration, who observed in 1993 that “[i]n the wake of Desert Storm, the end of the Cold War, and our role in the Arab-Israeli peace process, many U.S. firms are finding Near East markets more receptive to American products. This is particularly true in the Gulf, where both the public and private sectors are increasingly inclined to ‘buy American.’” (“U.S. Economic Policy in the Middle East: Challenges and Opportunities” [speech, October 4, 1993], U.S. Department of State dispatch).*
- 35 Parikh, “An Econometric Study.”
- 36 This test was conducted in Stata (econometric software) using the MADFULLER command. Multivariate Augmented Dickey-Fuller is a panel unit root test that is suitable for Seemingly Unrelated Regression (SUR) models. The null hypothesis of this test is that all the time series in the panel are nonstationary. Therefore the null hypothesis will be rejected even if one time series *is* stationary. For more details, see Mark P. Taylor and Lucio Sarno, “The Behavior of Real Exchange Rates during the post-Bretton Woods Period,” *Journal of International Economics* 46, no. 2 (1998), pp. 281–312 .

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