

## **Role of Geopolitics in Import Shares of Leading Trade Partners in GCC Import Markets**

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This study focuses on how the market shares of leading exporters in the GCC (Gulf Cooperation Council) countries have been impacted by major geopolitical events. The SUR regression model is used to investigate the impact of important events on relative markets. The main hypothesis is that GCC imports from the US are sensitive to the US involvement in the Arab-Israeli conflict and US military interventions in the Middle East. To investigate this theory, four important geopolitical events are considered: Gulf War I (1991), Second Palestinian Intifada (2000-2001), The September 11 terror attacks (2001) and the US invasion of Iraq (2003-2004). The statistical results suggest an association between both, the Gulf War I and the US invasion of Iraq, and changes in US market share in GCC imports. We observe a positive association between Gulf War I and the US market share in the aggregate imports of the GCC countries. On the other hand, the statistical results suggest a negative association between the invasion of Iraq and the US market share in aggregate imports of the GCC occurs. Among GCC countries, this negative association is only significant for the US market share in Saudi Arabia. Finally, the results for the second intifada/September 11<sup>th</sup> attacks are mixed.

### **1. Introduction**

In recent years, the high prices of crude oil and natural gas have increased the purchasing power of oil-exporting countries of the GCC.

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As a result, competition among major industrial countries for export of goods and services to the GCC nations has intensified. For industrial countries, which have had to pay considerably more for crude oil and oil products since 2000, the GCC import market has become more significant than before.

The available import data for the GCC shows that as the total volume of imports for these countries has sharply increased in the past 10 years, the relative market shares of their trade partners have not remained stable. The market shares fluctuated over time and some countries even gained market share at the expense of others. In this article the market shares of the United States, Western Europe, Japan and China in the import markets of GCC countries will be analyzed. First, each exporter's market share will be tabulated and observed to see if any noticeable time trends stand out. Then, statistical analysis will be used to identify the economic and non-economic factors that had a significant influence on each exporting country or region's market share. The six member states of the GCC, namely Saudi Arabia, the UAE, Kuwait, Oman, Bahrain, and Qatar benefited significantly from the 2002-2008 oil boom and their import markets experienced the sharpest growth among Arab countries in recent years.

Economic factors such as the size of the domestic economy (GDP), exchange rate policy, and import tariff rates affect mainly the value of the total imports of a given country. However, both economic and geopolitical factors influence the relative market shares of each trade partner in total imports and in some occasions the non-economic factors, can play a more dominant role. For example, if a specific commodity (i.e. rice) can be purchased from several countries and all producers are selling at competitive prices, a buyer might take geopolitical factors into account when deciding which country to buy from<sup>1</sup>. While the empirical analysis in this article will pay attention to both economic and non-economic factors, the primary goal of this study is to shed light on the role of geopolitical factors.

The geopolitical factors are particularly important for the US trade relations with GCC countries because of the complex strategic and security relations between the US and some Arab countries as well as the unique role of the US in the Arab-Israeli conflict. These two dimensions of the US' Middle East policy generate mixed feelings in

some Arab countries. On one hand, the US plays a crucial role in providing external security to several Arab countries (particularly in GCC) and strengthening moderate Arab regimes against their domestic opponents. The ruling elites in these countries are appreciative of the US' role and might be encouraged to favor American products to show this appreciation.

On the other hand, they are frustrated by the continuous US support for Israel in its ongoing conflict with the Palestinians and neighboring Arab countries<sup>2</sup>. This frustration could reduce the popularity of US goods in the GCC countries as the GCC governments and private importers might decide to purchase their imports from countries that show more sympathy for the Arab positions in this conflict. For example, during the second Palestinian Intifada (2000-2001), a large number of Arab non-governmental organizations (NGOs) launched a grassroots campaign to boycott American products to protest the US support for Israel (Blanford, 2002).

Another important factor in bilateral trade relations is trade agreements. Bilateral trade agreements between two nations will lower the barriers to trade between them and hence give each country a trade advantage over other competitors. Multilateral trade agreements such as membership in World Trade Organization (WTO) limit the ability of a member nation to favor a specific trade partner imposing discriminatory tariffs or quotas. In recent years, the WTO admitted all of the GCC countries, Saudi Arabia being the last to gain admission in 2005<sup>3</sup>.

Both, the United States and European Union, have had some success in signing free trade agreements with the Arab countries. The United States signed bilateral trade agreements with Bahrain (2005), Morocco (2004), Jordan (2000), and Oman (2008). The Bush administration initiated trade negotiations with several Arab countries including the UAE with the long-term goal of replacing these bilateral trade agreements with a comprehensive US-Arab Free Trade Agreement<sup>4</sup>. These negotiations were pursued less vigorously by the Obama administration; furthermore, no new FTAs with Arab countries have been signed after 2008.

The European Union is also negotiating a free trade agreement with the GCC although these negotiations have been underway for more than two decades and some fundamental differences are yet to be resolved<sup>5</sup>. In

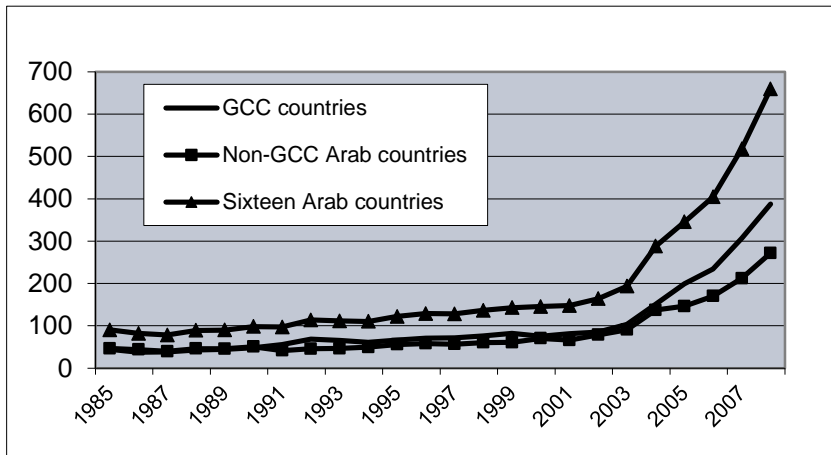
more recent years, Japan, China, and India have also expressed interests in signing free trade agreements with GCC countries. Several rounds of trade talks between these countries and the GCC have already occurred<sup>6</sup>.

The rest of this article is organized into four sections. Section two analyzes the recent trends in aggregate imports of GCC countries and the relative market shares of their trade partners. Section three reviews the academic literature on the impact of political and diplomatic factors on bilateral trade among nations. Section four describes the theoretical foundations of the statistical model. The statistical analysis and its results will be discussed in section five followed by the conclusion.

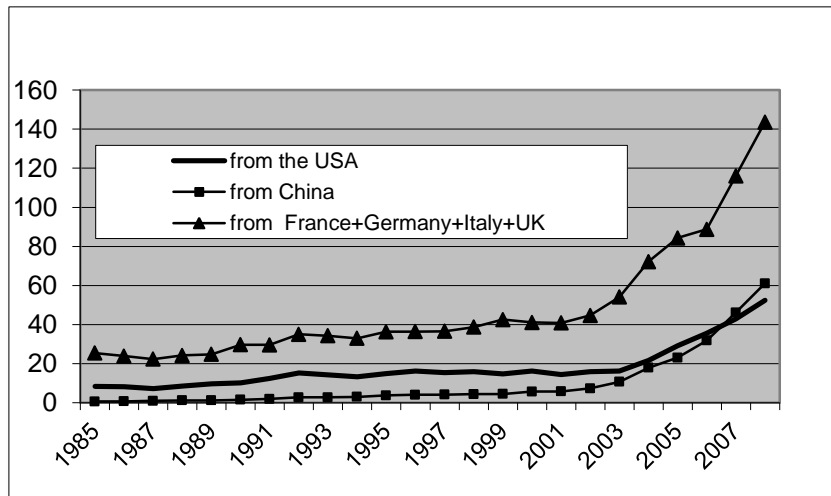
## **2. Recent Trends in GCC Import Markets**

As shown in Graph 1-a, the total merchandise imports of Arab countries<sup>7</sup> has increased sharply since 2001. It increased by 347% from \$147.6 billion in 2001 to \$659.5 billion in 2008. The six GCC countries generated most of this growth. The merchandise imports of GCC rose by 375% during 2001-2008 as their oil export revenues reached record high levels. Merchandise imports include all imported manufactured goods and raw materials. The manufactured goods, machinery, and transport equipment accounted for 67% of the total merchandise imports of GCC countries in 2008 (United Nations Comtrade Database). Although GCC accounts for less than 12% of the total population in Arab world, its share of Arab imports has exceeded 50% since 1991. As a result, the GCC import market is very important for industrial countries. Arab imports from all of their major trade partners have increased sharply after 2000 as demonstrated in Graph 1-b.

**Graph 1-a: Merchandise Imports of Arab Countries (billion \$)**



**Graph 1-b: Merchandise Imports of Arab Countries (billions \$)**



Along with the sharp increase of imports in Arab countries, the relative market shares of leading exporters to these countries have changed. This study focuses on relative market shares of China, Japan, the United States, and aggregate imports from the four largest European economies, namely Germany, France, the UK, and Italy (henceforth known as EU4). In order to highlight the longer-term trends and ignore the volatile year-on-year fluctuations, the three-year average of annual market share data will be used instead of the annual data.

The most visible trend in import market shares during 1988-2008 is a gradual loss of market share in Arab countries for Europe, Japan, and the United States. During the same time, the market share of China increased visibly. This trend is a reflection of the emergence of China as the dominant global center for manufacturing since 1980. China has enjoyed a clear cost advantage in production and export of low and medium technology manufactured products. The United States, Western Europe, and Japan still dominate the global market in high-tech products but the range of products that can be produced in China at much lower cost than other industrial countries has steadily expanded over the past three decades.

The EU4's market share in GCC countries fell from 25% to 21% during 1988-2008 interval but it was not consistent among the member countries. While the EU4 market share declined sharply in Saudi Arabia, it enjoyed a moderate growth in the UAE and remained stable within a narrow range in Kuwait. Table 1 also allows the comparison of the EU4's market share performance in the Arab world with other developing regions. We notice that the EU4's loss of market share was not limited to the Arab world. The downtrend is visible in Africa and Latin America as well, and the relative decline in both markets is larger than in Arab countries. In Africa, for example, EU4's market share fell by 35% from 0.42 in 1988-90 to 0.27 in 2005-07.

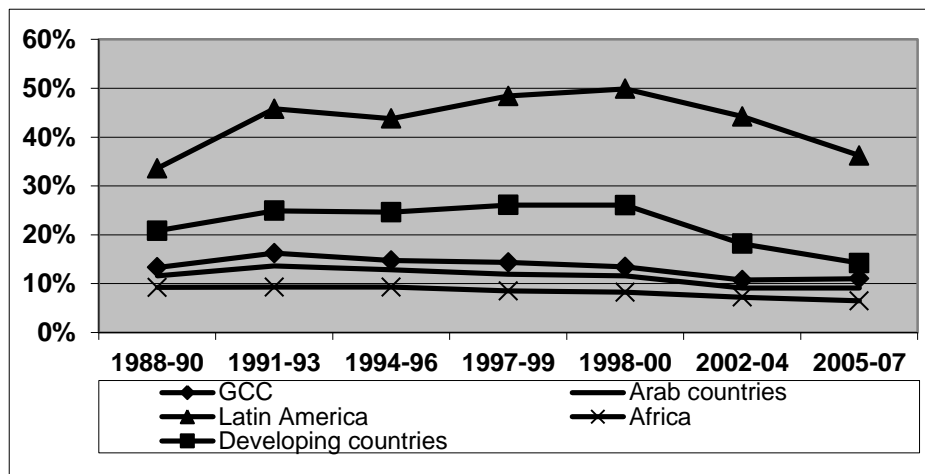
**Table 1:** Combined Market Shares of Germany, France, Italy and the UK in Arab Countries (3-year averages of the annual market rates)

|                             | 1988-90 | 1991-93 | 1994-96 | 1997-99 | 1998-00 | 2002-04 | 2005-07 |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>Saudi Arabia</b>         | 0.27    | 0.28    | 0.26    | 0.24    | 0.23    | 0.22    | 0.21    |
| <b>UAE</b>                  | 0.25    | 0.25    | 0.26    | 0.24    | 0.28    | 0.32    | 0.28    |
| <b>Kuwait</b>               | 0.23    | 0.27    | 0.27    | 0.23    | 0.23    | 0.26    | 0.22    |
| <b>GCC</b>                  | 0.25    | 0.26    | 0.25    | 0.24    | 0.24    | 0.23    | 0.21    |
| <b>Arab Countries (a)</b>   | 0.32    | 0.32    | 0.31    | 0.30    | 0.30    | 0.29    | 0.24    |
|                             |         |         |         |         |         |         |         |
| <b>Middle East</b>          | 0.33    | 0.36    | 0.34    | 0.32    | 0.31    | 0.28    | 0.26    |
| <b>Latin America</b>        | 0.14    | 0.13    | 0.13    | 0.12    | 0.11    | 0.10    | 0.09    |
| <b>Africa</b>               | 0.42    | 0.40    | 0.37    | 0.35    | 0.35    | 0.33    | 0.27    |
| <b>Developing Countries</b> | 0.26    | 0.26    | 0.24    | 0.23    | 0.22    | 0.21    | 0.19    |

Source: Nominal import data from IMF Direction of Trade Statistics, market shares calculated by the Author a) Arab countries are: GCC countries, Algeria, Morocco, Libya, Egypt, Tunisia, Syria and Jordan

In the GCC market, the US market loss was moderately smaller than in the entire Arab region. The US share in GCC market fell from an average of 14.2% in 1988-2000 to 11.6% in 2002-2007. Among GCC countries, US has traditionally maintained strong economic ties with Saudi Arabia. However, the US market share in that country's import has also declined from 20% in 2000 to under 13% in 2008. The US market share in Kuwait's imports rose considerably after the first Gulf war (1990-91) in which a US led international coalition liberated Kuwait from Iraqi occupation. As demonstrated in Table 2 and Graph 2, the US market share in the Arab region (and in the Middle East) is larger than in Africa but smaller than in developing countries as a group. As we saw in Table 1, the opposite is true for EU4 countries.

**Graph 2: USA: 3-year average market shares in Developing Countries**



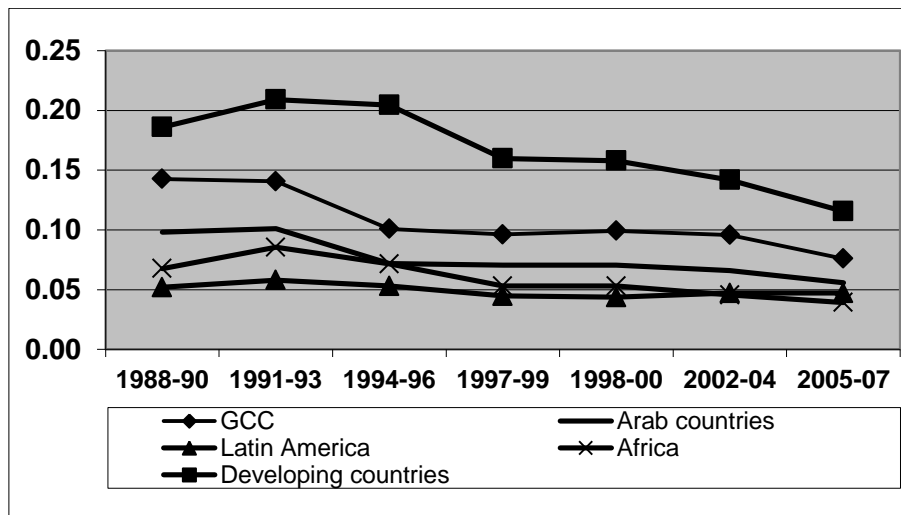
**Table 2: Market Share of the United States in Arab Countries**  
(3-year averages of the annual market rates)

|                             | 1988-90 | 1991-93 | 1994-96 | 1997-99 | 1998-00 | 2002-04 | 2005-07 |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>Saudi Arabia</b>         | 0.17    | 0.21    | 0.22    | 0.21    | 0.20    | 0.16    | 0.13    |
| <b>UAE</b>                  | 0.09    | 0.09    | 0.09    | 0.10    | 0.09    | 0.07    | 0.10    |
| <b>Kuwait</b>               | 0.12    | 0.22    | 0.16    | 0.14    | 0.13    | 0.13    | 0.14    |
| <b>GCC</b>                  | 0.13    | 0.16    | 0.15    | 0.14    | 0.13    | 0.11    | 0.11    |
| <b>Arab Countries (a)</b>   | 0.12    | 0.14    | 0.13    | 0.12    | 0.12    | 0.09    | 0.09    |
| <b>Middle East</b>          | 0.13    | 0.15    | 0.17    | 0.16    | 0.15    | 0.11    | 0.12    |
| <b>Latin America</b>        | 0.34    | 0.46    | 0.44    | 0.48    | 0.50    | 0.44    | 0.36    |
| <b>Africa</b>               | 0.09    | 0.09    | 0.09    | 0.08    | 0.08    | 0.07    | 0.06    |
| <b>Developing Countries</b> | 0.21    | 0.25    | 0.25    | 0.26    | 0.26    | 0.18    | 0.14    |

Source: Nominal import data from IMF Direction of Trade Statistics, market shares calculated by the Author. a) Arab countries are: GCC countries, Algeria, Morocco, Libya, Egypt, Tunisia, Syria and Jordan.

Another industrial country that has lost market share in the Arab world is Japan (Graph 3). On average, Japan’s market share in Arab countries has been smaller than in other developing countries. In the GCC market, Japan’s share fell from 14% to 8% between 1988 and 2007 in a pattern similar to the Arab world in general. Unlike the EU4 and the US, which experienced the largest decline in their market shares during 2000-2007, Japan’s market share dropped mostly in the early 1990s when the Japanese currency, the yen, appreciated against the US dollar.

**Graph 3:**Japan: 3-year Average Market Shares in Developing Countries



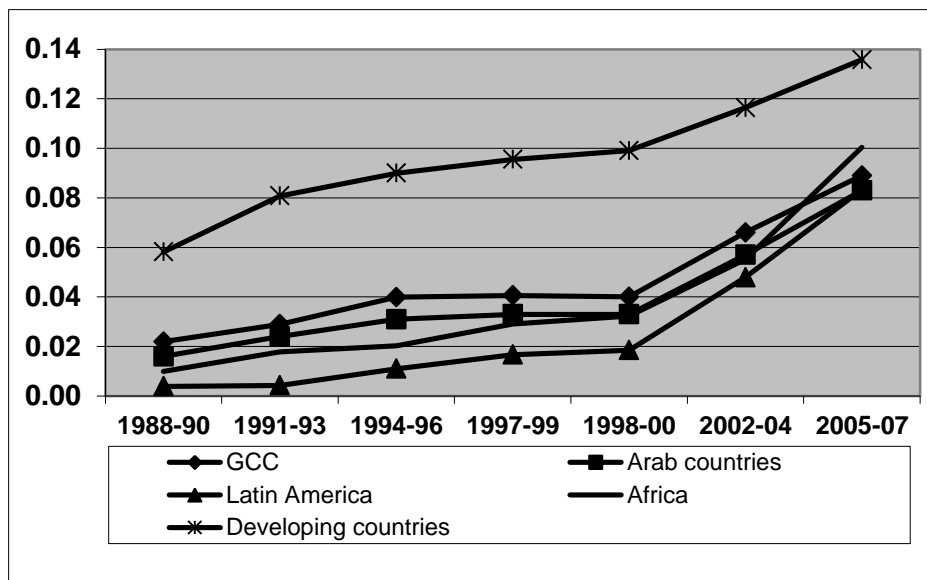
In contrast to the United States and the European countries, China has seen its market share increase in the Arab world during the past two decades (Graph 4). While China’s market share in the Arab countries is significantly smaller than those of Europe (the EU4) and the United States, it has enjoyed a considerable growth in recent years. Starting from a negligible share of fewer than 2% in 1988-1990, China’s share grew slowly to 3% by 1998-2000. This, however, was followed by much faster growth during 2000-2007, which increased China’s share to an average of 8% during 2005-07.

The rapid increase in China’s exports to the GCC countries caused most of this growth, particularly the UAE, which has emerged as a major processing and re-export center for the Middle East and Central Asia. China’s exports were mostly dominated by consumer electronics,



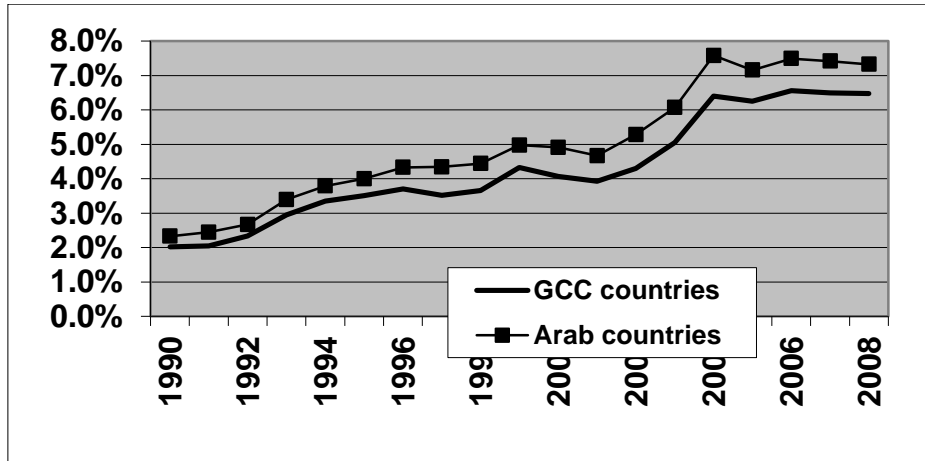
textiles, steel and machinery. China enjoys an advantage in exports of these products because of its low labor costs. However, in more recent years, China has diversified the range of its export products and has moved into more sophisticated hi-tech export markets. Accordingly the composition of its exports to GCC countries is moving in this direction and posing a more direct competition to export products of the United States, Japan, and Western Europe.

**Graph 4:** China: 3-year Average Market Shares in Developing Countries



The market share changes discussed above also reveal that the Arab import market has become more diversified over time. The combined exports of the EU4, Japan, China, and the US accounted for 56% of total imports of Arab countries in 1988-90 but it declined to 47% during 2005-07, indicating an increase in the market shares of other countries such as India. The market share of India in GCC imports grew from 2% in 1990 to 7% in 2002 as shown in Graph 5.

**Graph 5: India's Share in Merchandise Imports of Arab Countries**



### 3. Review of Literature on Determinants of Import Share

Bilateral trade relations among nations attract the attention of economists and political scientists alike. Most economic analysis of international trade concerns itself with total volume of imports and exports and how they affect the domestic macroeconomic conditions. The earliest economic model of international trade to differentiate between products based on their countries of origin, and thus pave the way for analysis of country import shares, was Armington (1969). According to the Armington model an importing country first allocates its total expenditure between domestic goods and imports. Once it decides on the aggregate level of imports, if there are several national suppliers for an import product, it decides on how much to buy from each national supplier and hence the market share of each supplier is determined.

In another empirical study, Parikh (1988) focused on import shares of leading trade partners for the United States, Japan, and the European Economic Community (EEC). He derived his import share model from an Almost Ideal Demand System (AIDS)<sup>8</sup>. In his model, the import share of country *i* in country *j* is a function of the real value of aggregate imports of *j* and the export price indexes of all the countries that export to *j*.

In empirical trade studies, economists consider the income level of the importing country and the relative price of exports from various countries as the key determinants of the volume of imports by a country from its trade partners. Political scientists have generally tried to investigate the impact of diplomatic relations on trade by adding appropriate dummy variables to these standard models of trade. Using this approach, two early empirical works by Kunimoto (1977) and Nagy (1983) showed that warmer diplomatic relations between two nations led to expansion of bilateral trade. Three other empirical studies in the early 1980s considered the impact of bilateral conflict on trade and vice versa. Polachek (1980), Gasiorowski and Polachek (1982), and Arad and Hirsch (1983) use a rational choice model as the basis for a number of empirical studies, which demonstrated that rational actors (nations) will avoid conflict with their trade partners.

Building on these earlier empirical works, Pollins (1989) used a pooled cross-section time-series econometric model to investigate the impact of bilateral diplomatic relations on imports. Pollins' empirical results showed that diplomatic relations have a significant correlation with volume of trade and warmer diplomatic relations is associated with larger volumes of bilateral trade. In a more recent study, Pollins et al. (2010) offered more recent empirical evidence that political tension and conflict has an adverse effect on bilateral trade.

Several more recent studies also demonstrated the impact of non-economic factors on trade relations among nations. Summary (1989) demonstrated that the United States traded more with countries that were regarded as politically friendly. In another extension of Pollins' analysis, Morrow et al. (1998) focused on the direct and indirect impact of conflict on trade. Using long-term international trade data among major powers, they showed that when nations are locked in a conflict short of war, their bilateral trade declines. Finally, several marketing studies in the past two decades used interview survey analysis to corroborate that when consumers in one country harbor feelings of animosity and resentment toward another country, they avoided the products of that country, Klein et al. (1998).

While the empirical studies listed above concentrated on advanced economies, there is also a small body of literature dealing with the role of non-economic factors in trade behavior of developing and (former)

communist countries. An investigation on trade behavior of communist countries was conducted by Lim and Kim (2002) with focus on North Korea's trade with China and the (former) Soviet Union. This study revealed that while the aggregate imports of North Korea from these two communist rivals was not sensitive to diplomatic relations, its purchases of some basic commodities from one or the other was highly sensitive to these factors.

#### 4. Theory and Statistical Model

This section will present the theoretical argument for the estimation model that will be used to investigate the determinants of import market shares. This model was initially developed by Parikh (1988). In his analysis of import demand shares, Parikh derived his import share equations from an Almost Ideal Demand System (AIDS). The AIDS model is suitable for our analysis because it allows us to formulate each exporting country's market share as a function of the real value of the importing country's aggregate imports and the export prices of major competitors. The import demand equations in AIDS are derived from an indirect utility function as described in equation one.

$$(1) \quad \text{Log } c(\mu, \mathbf{P}) = \alpha_0 + \sum_k \alpha_k \log P_k + \frac{1}{2} \sum_k \sum_i \gamma_{ki}^* \log P_k \log P_i + \mu \beta_0 \prod_k P_k^{\beta_k}$$

Where  $c(\mu, \mathbf{P})$  = the cost of achieving the utility level ( $\mu$ ) for the given level of export prices ( $P_1, P_2, \dots, P_n$ ). Here  $\mathbf{P}_i$  represents the price level of exporting country  $i$  (i.e. relative exchange rate). By taking the derivative of equation 1 with respect to  $\log P_i$  we can derive the market share demand for each exporter:

$$(2) \quad \frac{\partial \log c(\mu, \mathbf{P})}{\partial \log P_i} = a_i$$

$$(3) \quad a_i = \alpha_i + \sum_k \gamma_{ik} \log P_k + \beta_i \mu \beta_0 \prod_k P_k^{\beta_k}$$

Equation 3 gives the import share as a function of the importing country's utility level and all export prices. To introduce the import level into equation 3, Parikh notes that for a utility maximizing importer, the cost of imports ( $M$ ) needed to achieve the utility level  $\mu$  at a given

price level  $\mathbf{P}$  is  $\mathbf{M} = \mathbf{c}(\boldsymbol{\mu}, \mathbf{P})$ . This equation can be solved for  $\boldsymbol{\mu}$  as a function of  $\mathbf{M}$  and  $\mathbf{P}$ . After substituting for  $\boldsymbol{\mu}$  in equation 3 and simplifying the result, we get the import share demand function for each importing country  $\mathbf{j}$  from country  $\mathbf{i}$  in equation 4.

$$(4) \alpha_i^j = \alpha_i^j + \sum_k \gamma_{ik}^j \log P_k^j + \beta_i^j \log \left(\frac{M}{P}\right)^j$$

This equation proves very practical for estimating the import share equation. The relative exchange rates can be used as substitutes for the export prices. The data for 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 for the non-economic factors that we anticipate to have an impact on the market share of each exporter.

The empirical investigation in this study will focus on import shares in six Arab countries of the GCC (Bahrain, Kuwait, Oman, Qatar, UAE and Saudi Arabia), plus two regional import aggregates, one for GCC as a bloc and another for the combined imports of 13 Arab countries. The dependent variable for each importing country is the import share of one of its partners. For sake of consistency, the four exporters that were discussed in the trend analysis section will also be included in this section: the United States, the EU4, Japan and China. In addition, some regression models will be repeated for the aggregate market share of Japan, China, India, and South Korea as a single exporting block labeled Asia4.

The annual bilateral import-export data for this analysis is obtained from the IMF Direction of Trade (DOT) Statistics<sup>9</sup> with the maximum data range of (1969-2008). The DOT data is ideal for multi country analysis because all trade data is reported in the US dollar. In some cases, the volume of bilateral trade reported by an exporting country differs from what the importing trade partner reports. In these cases, the data reported by the export partner will be used in order to maintain consistency.

Independent variables: The right hand side variables of each regression model include two economic variables, an appropriate exchange rate and the real value of aggregate imports. A number of dummy variables for major political and geopolitical events are also added to the right hand

side. Since all six GCC countries pegged their currencies to the US dollar for the entire time interval under consideration, the dollar/euro exchange rate and the dollar/yen exchange rate are used as proxies for the national currency exchange rates. For example, the dollar/euro exchange rate will reflect the relative price competitiveness of the US (and Chinese) exports versus the European exports (the Chinese currency is also closely pegged to the US dollar.)

Several dummy variables for specific time intervals that are associated with important geopolitical events in the Arab world are introduced in the statistical analysis. The US-Arab relations primarily motivate the choice of events, with a focus on events that have had a lasting and significant impact on bilateral relations (Table 5). Two major events that highlight this significant impact on bilateral relations are the Gulf War I (the liberation of Kuwait) and Gulf War II (the occupation of Iraq). First, the GCC and other moderate Arab countries generally perceived the role of the United States in the first Gulf War, which led to the liberation of Kuwait from Iraqi occupation, as a positive intervention. On the contrary, the US invasion of Iraq in 2003 faced strong public opposition by most Arab governments and subsequently contributed to the rise of anti-American sentiments throughout the region. For the purposes of this study the time span of this variable ranges from 2003 to 2004. The US market share in GCC countries rose by 3.7% in 1991 but declined by 0.8% and 1.6% in 2003 and 2004 respectively.

I have also included a dummy variable for years 2001 and 2002 to capture the impact of the second Palestinian Intifada<sup>10</sup> (uprising) and the September 11<sup>th</sup> terrorist attacks. The second Intifada, which began in September 2000, led to a surge in anti-American sentiments in the Arab World. Soon after the second intifada, the September 2001 attacks on the World Trade Center occurred, ; and this event even precipitated further tensions between the United States and Arab countries. Since a short time interval exists between these two events, they are combined into a single dummy variable entitled Intifada-September11, which covers the years 2001 and 2002.

**Table 5:** Important Events in US-Arab Relations

| Change in the market share of | Gulf War I (Kuwait) 1990-91 |       |      | Second Intifada & September 11 2001-02 |       |       | Gulf War II (Iraq) 2003-04 |       |       |
|-------------------------------|-----------------------------|-------|------|--|-------|-------|----------------------------|-------|-------|
|                               | 1990                        | 1991  | 1992 | 2000                                   | 2001  | 2002  | 2003                       | 2004  | 2005  |
| USA in Saudi Arabia           | -1.5%                       | 3.5%  | 2.3% | 0.1%                                   | -1.2% | -1.5% | -1.3%                      | 0.3%  | -0.5% |
| EU4 in Saudi Arabia           | 0.9%                        | 0.4%  | 0.3% | -1.2%                                  | 0.1%  | -0.3% | 0.1%                       | -1.8% | -0.5% |
| EU2 in Saudi Arabia           | 0.8%                        | 0.0%  | 0.3% | -1.8%                                  | 0.3%  | -1.1% | 0.0%                       | -0.3% | -1.0% |
|                               |                             |       |      |  |       |       |                            |       |       |
| USA in GCC                    | -1.0%                       | 3.7%  | 0.2% | 0.6%                                   | -0.5% | -0.6% | -0.8%                      | -1.6% | 1.8%  |
| EU4 in GCC                    | 0.8%                        | -0.6% | 0.7% | 0.2%                                   | -0.3% | 0.1%  | -0.5%                      | -0.1% | -0.4% |
| EU2 in GCC                    | 0.8%                        | -0.3% | 0.0% | -1.8%                                  | 0.3%  | -1.1% | 0.0%                       | -0.3% | -1.0% |
|                               |                             |       |      |  |       |       |                            |       |       |
| USA in Arab (total)           | -1.1%                       | 2.1%  | 0.5% | 1.0%                                   | -1.3% | -0.1% | -1.4%                      | -0.9% | 1.0%  |
| EU4 in Arab (total)           | 1.7%                        | -1.6% | 0.2% | -1.3%                                  | -0.2% | -0.5% | 0.5%                       | -2.9% | -0.5% |
| EU2 in Arab (total)           | 1.9%                        | -1.7% | 0.6% | -0.9%                                  | 0.1%  | -0.5% | 1.1%                       | -1.7% | -1.1% |

*Notes:* EU4: Aggregate market share of France, Germany, Italy, and the UK.

EU2: Aggregate market share of France and Germany. These two countries were the leaders of European opposition to the US occupation of Iraq in 2003.

All import values were converted to real values before calculating the trade shares for regression analysis. This conversion helps prevent the results of the analysis from being distorted by the differences in inflation rates in exporting countries during the time span of the data. For each of the nine exporting countries, an appropriate export price index was used for calculating the real value of their exports to GCC countries after adjustment for price changes. For some countries, a direct export price index was not available, and therefore, 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, it was necessary to construct a weighted export price index based on the export price indexes of the nine exporting countries in the sample. The lack of an historical export index data for some countries reduced the data range for real values to only 28 annual observations after 1980.

**Table 6:** Source of data for Export Price Indexes

|   |
|---|
| US: Bureau of Economic Analysis (Export-Goods Price Index, Table 1.1.4)                   |
| Italy, UK, Germany (IMF: Export unit value Index)   |
| Japan: Bank of Japan (Export Price Index)   |
| China: National Bureau of Statistics (Producer Price Index of Manufactured Goods)         |
| France: National Income Accounts<br>(Ratio of nominal to real values of Exports of Goods) |
| India: IMF (Export Prices, L74&D)   |
| Korea: IMF (Export Prices, L76)   |

For an importing country, the market shares of its trade partners are interconnected because the market shares for all partners add up to one and an increase in one partner's share reduces the market shares of all others. Because of this property using the Seemingly Unrelated Regression (SUR) method is more efficient than running independent OLS regressions. To take advantage of this additional efficiency, this analysis uses the SUR model.

A separate SUR model is estimated for each importing country, and each SUR model will have one equation for each export partner under consideration. The nine exporting countries in the 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.



To ensure that the trade share time series are stationary, the Multivariate Dickey-Fuller test for seemingly unrelated equations<sup>11</sup> was performed (Table 7). The results in Table 7 suggest that, with the exception of Bahrain and Qatar, the market share variables were non-stationary at the level but became stationary after conversion to first difference. In light of this result, the first difference of all the dependent and independent variables are used in the regression estimates instead of the level values.

**Table 7:** 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) |
| <b>Bahrain</b>      | <b>33.226</b> | 28.15 (28)                              | <b>79.953</b>    | 28.894 (27)                             |
| <b>Kuwait</b>       | 17.937        | 28.15 (28)                              | <b>79.491</b>    | 28.894 (27)                             |
| <b>Oman</b>         | 22.287        | 28.15 (28)                              | <b>75.384</b>    | 28.894 (27)                             |
| <b>Qatar</b>        | <b>30.921</b> | 28.15 (28)                              | <b>164.745</b>   | 28.894 (27)                             |
| <b>Saudi Arabia</b> | 8.329         | 28.15 (28)                              | <b>46.156</b>    | 28.894 (27)                             |
| <b>UAE</b>          | 11.818        | 28.15 (28)                              | <b>93.898</b>    | 28.894 (27)                             |
| <b>GCC</b>          | 14.919        | 28.15 (28)                              | <b>56.128</b>    | 28.894 (27)                             |
| <b>Arab13</b>       | 19.631        | 31.844(24)                              | <b>53.232</b>    | 33.168 (23)                             |

Data range: (1980-2007);

(Arab13: GCC countries, Morocco, Libya, Egypt, Tunisia, Algeria, Syria, Jordan)

Market shares are based on import values in constant prices.

## 5. Estimation Results

For each importing country, the SUR model is estimated using the first-difference log equation of the import share model that was described above. The SUR model does not require all equations to have the same set of right hand side variables. As a result and instead of using the same exchange rate in all equations, the equation of each exporting country includes its own appropriate exchange rate. In this section, the results are grouped by exporting country. Hence each equation that appears in the table below originates from the SUR model of the corresponding importing country. Table 8 shows the results for the

United States and only a handful of the variables have significant coefficients. Even the dollar/euro exchange rate does not have a significant coefficient in any of the equations.

Nevertheless, Table 8 reveals that in several GCC countries the coefficient of dummy variables is significant and shows the expected signs. The dummy for the Gulf war I (liberation of Kuwait) has a positive and significant coefficient for US market share in Kuwait, Saudi Arabia, the GCC block, and the aggregate imports of Arab countries. As mentioned earlier, the ruling regimes in GCC countries were generally supportive of the US-led war that liberated Kuwait from Iraqi occupation, and this positive image might have contributed to the growth of the US market share in GCC. The dummy variable for the 2003-04 Iraq war has a negative coefficient in all countries except Kuwait, but its coefficient is only significant in Oman, the GCC bloc, and the aggregate Arab market. The dummy variable for the second Intifada/September 11 does not have a significant coefficient in any of the equations.

Tables similar to Table 8 were constructed for China, Japan, and the EU4. Rather than presenting all of these tables here, the results for coefficients of the dummy variables are summarized in Table 9. This table only reports the coefficients that were statistically significant for each trade partner of an importing country. In some cases, the coefficient was significant; however, it appears from an equation with a p-value of larger or equal to 0.1, which weakens the significance of the result.

**Table 8:** Model specification: (First-Difference log equations)  
 Dependent variable: Market share of the United States in each country.  
 Equations extracted from each importing country's SUR model estimations.

| <b>USA</b>                      | <b>Bahrain</b> | <b>Kuwait</b>  | <b>Oman</b>   | <b>Qatar</b>  | <b>Saudi Arabia</b> | <b>UAE</b>     | <b>GCC</b>     | <b>Arab 13</b> |
|---------------------------------|----------------|----------------|---------------|---------------|---------------------|----------------|----------------|----------------|
| <b>Total Imports</b>            | <b>0.532</b>   | <b>-0.5</b>    | <b>0.391</b>  | <b>0.0887</b> | <b>0.516</b>        | <b>0.273</b>   | <b>0.267</b>   | <b>0.229</b>   |
|                                 | 0.228          | 0.021**        | 0.139         | 0.634         | 0.595               | 0.133          | 0.053*         | 0.137          |
| <b>Exchange Rate \$/euro</b>    | <b>-0.199</b>  | <b>0.297</b>   | <b>0.0656</b> | <b>0.446</b>  | <b>-0.047</b>       | <b>-0.32</b>   | <b>-0.051</b>  | <b>0.00772</b> |
|                                 | 0.642          | 0.379          | 0.814         | 0.19          | 0.671               | 0.164          | 0.679          | 0.954          |
| <b>Dummy 2001-02</b>            | <b>-0.012</b>  | <b>0.0996</b>  | <b>0.0688</b> | <b>0.0924</b> | <b>-0.0495</b>      | <b>-0.0142</b> | <b>-0.0366</b> | <b>-0.0679</b> |
| <b>(Intifada, September 11)</b> | 0.949          | 0.504          | 0.544         | 0.524         | 0.292               | 0.88           | 0.486          | 0.164          |
| <b>Dummy 2003-04</b>            | <b>-0.298</b>  | <b>0.0864</b>  | <b>-0.223</b> | <b>-0.23</b>  | <b>-0.00578</b>     | <b>-0.184</b>  | <b>-0.15</b>   | <b>-0.16</b>   |
| <b>(Iraq war II)</b>            | 0.13           | 0.59           | 0.068*        | 0.134         | 0.91                | 0.11           | 0.018**        | 0.008**        |
| <b>Dummy 1991-92</b>            | <b>0.215</b>   | <b>0.489</b>   | <b>-0.202</b> | <b>0.0673</b> | <b>0.152</b>        | <b>-0.0601</b> | <b>0.0963</b>  | <b>0.091</b>   |
| <b>(Gulf War 1, Kuwait)</b>     | 0.247          | 0.002**        | 0.082*        | 0.642         | 0.002**             | 0.541          | 0.091*         | 0.07*          |
| <b>Dummy 1998-99</b>            | <b>0.114</b>   | <b>-0.0286</b> | <b>-0.11</b>  | <b>0.0219</b> | <b>-0.0666</b>      | <b>-0.232</b>  | <b>-0.129</b>  | <b>-0.0867</b> |
| <b>(Asian Financial Crisis)</b> | 0.548          | 0.846          | 0.343         | 0.881         | 0.155               | 0.022**        | 0.015**        | 0.08           |
| <b>Observations</b>             | <b>28</b>      | <b>28</b>      | <b>28</b>     | <b>28</b>     | <b>28</b>           | <b>28</b>      | <b>28</b>      | <b>25</b>      |
| <b>"R-squared"</b>              | <b>0.197</b>   | <b>0.295</b>   | <b>0.251</b>  | <b>0.13</b>   | <b>0.373</b>        | <b>0.23</b>    | <b>0.423</b>   | <b>0.411</b>   |
| <b>p-value</b>                  | <b>0.33</b>    | <b>0.0611</b>  | <b>0.156</b>  | <b>0.604</b>  | <b>0.011</b>        | <b>0.217</b>   | <b>0.0022</b>  | <b>0.0079</b>  |

Data range: (1980-2007); (Arab13: GCC countries, Morocco, Libya, Egypt, Tunisia, Algeria, Syria, Jordan)

Market shares are based on import values in constant prices.

**Table 9:** Direction of Change for Significant Coefficients in the SUR Model with Difference-Log Equations

| Four European Count. (EU4)<br>United States (USA)China (CH)<br>Japan (JAP) | Bahrain   | Kuwait          | Oman      | Qatar | Saudi Arabia | UAE             | GCC        | Arab (13 countries) |
|--|-----------|-----------------|-----------|-------|--------------|-----------------|------------|---------------------|
| <b>Dummy 2001-02</b><br>(Intifada, September 11)                           |           |                 |           |       |              |                 |            |                     |
| <b>Dummy 2003-04 (Iraq war II)</b>   | JA<br>EU4 |                 | EU4<br>US |       |              | JAP             | US         |                     |
| <b>Dummy 1991-92 (Gulf War I, Kuwait)</b>                                  | EU4<br>CH | <u>EU4</u> , US | JA<br>US  | EU4   | US           | JAP             | US,<br>JAP |                     |
| <b>Dummy 1998-99</b><br>(Asian Financial Crisis)                           |           |                 |           |       | JAP          | <u>US</u><br>CH |            |                     |

Upper: A Positive and Significant Coefficient, ( $\alpha < 0.1$ )

Lower: A Negative and Significant Coefficient ( $\alpha < 0.1$ )

Underlined abbreviations: The Coefficient is significant but it comes from an equation that is not statistically significant.

EU4: France, Germany, Italy, UK

The numbers in Table 9 offer some consistent but weak results regarding the impact of the geopolitical developments on the US market shares. The 2003-04 Iraq war shows a negative correlation with the US market share in the GCC, which is particularly significant in Oman. The Gulf war I dummy has a positive correlation with the US market share in Kuwait, Saudi Arabia, and the GCC. At the same time, the Intifada/September 11 dummy has no significance for any exporting country in any of the models. Similarly, no dummy variable proves significant for the aggregate imports of the 13 Arab countries.

In order to examine the robustness of results that have been reported in Table 9, the statistical analysis is repeated with several other groupings of the exporting countries in the sample. One grouping that offered more significant results was the aggregation of four Asian exporters (China, Japan, India and South Korea) into a single export bloc that's entitled ASIA4. Each importing country's SUR model now had three equations for the US, the EU4, and the Asia4. These models were estimated with the same set of independent variables that were reported in Table 5 with first difference-log values and simple first difference values. Furthermore, annual market share data was converted into three-year moving averages. The estimated equations based on moving average data generated better results. The results were very similar to estimations based on annual data in terms of the sign and significance of the coefficients, but the coefficient t-statistics were larger in the first-difference model. The summary of the coefficients of the dummy variables with the first-difference model appear in Table 10.

**Table 10:** Direction of Change for Significant Coefficients in the SUR models with First-difference Equations based on 3-year Averages of the Market Shares ( the three-equation SUR model)

| 1) Four European Count. (EU4)<br>2) United States (USA)<br>3) Asia (ASIA4) | Bahrain      | Kuwait              | Oman | Qatar | Saudi Arabia | UAE          | GCC   | Arab 13    |
|--|--------------|---------------------|------|-------|--------------|--------------|-------|------------|
| <b>Dummy 2001-02</b><br><b>(Intifada, September 11)</b>                    | USA          |                     |      |       | ASIA4<br>USA | ASIA4<br>USA | ASIA4 | USA        |
| <b>Dummy 2003-04</b><br><b>(Iraq war II)</b>                               | ASIA4        | ASIA4               | EU4  |       | ASIA4        | ASIA4        | ASIA4 | ASIA4, EU4 |
| <b>Dummy 1991-92</b><br><b>(Gulf War I, Kuwait)</b>                        | USA<br>ASIA4 | <u>USA</u><br>ASIA4 |      | USA   | USA<br>ASIA4 |              | USA   | USA        |
| <b>Dummy 1998-99</b><br><b>(Asian Financial Crisis)</b>                    | USA          | ASIA4               |      |       |              | <u>ASIA4</u> |       |            |

Upper: A Positive and Significant Coefficient,

Lower: A Negative and Significant Coefficient (significance level: 0.1)

Underlined abbreviations: The Coefficient is significant but it comes from an equation that is not statistically significant.

Asia4: China, Japan, India, Korea, EU4: France, Germany, Italy, UK

The coefficient signs in Table 10 point to more consistent and stronger results regarding the impact of each dummy variable on relative market shares of the three exporting regions. The results for the Intifada/September 11 dummy variable show that this event was associated with lower market shares for the United States in three GCC countries as well as the aggregate imports of the Arab world. Asian exporters, on the other hand, gained market share during the two years associated with this period. This result is consistent with the deteriorating diplomatic relations between the US and the Arab countries during this period. While Table 10 does not show a significant market share loss for the United States in association with the 2003-04 dummy variable (the Iraq war), it does show positive and significant correlations (market share gains) for the European and Asian countries. The market share gain of Asian countries is primarily driven by the growth of China's market share and can be part of a longer trend that began in 2001. The European market gain, however, can be attributed to geopolitical concerns of the Arab importers. Three members of the EU4—namely France, Germany and Italy—expressed strong opposition to the US invasion of Iraq, while the UK was supportive.

The dummy variable for Gulf War I shows a significant positive association with the US market share for both the GCC countries and the aggregate imports of the Arab countries. Within the GCC countries, the US market share has a significant positive association with this dummy variable in the Kuwait, Qatar, Saudi Arabia, and Bahrain models. The GCC countries rely on the United States for their external security, and the swift US response to the Iraqi occupation of Kuwait was a welcomed development that might have encouraged more imports from the U.S.<sup>12</sup>.

As a final experiment, a new dummy variable for the 2005-08 interval was added to the first-difference SUR models of Table 10. . This variable covers an interval that is associated with the record high price of oil and the corresponding record high oil revenues for GCC countries. These high revenues led to a sharp increase in Arab imports of merchandise goods (Graph 1). The results were consistent with the earlier results in Table 10. The dummy variable for 2005-08 time interval was positively associated with the market share of the Asia4 countries in GCC and the entire Arab world (Arab13). Furthermore, the inclusion of this additional variable increased the explanatory power of

the model and increased the number of variables with significant coefficients.

## **6. Conclusion**

In light of the growing significance of the Arab import market for the global economy, this study focused on how major geopolitical events influenced the market shares of leading exporters to the GCC markets. Empirical studies in several social science disciplines have found that while economic factors are the main determinants of bilateral trade relations between two nations, diplomatic relations and sentiments of each country's population toward the other, also have an influence. As the statistical analysis of this study has demonstrated, the ups and downs of the US –Arab relations had a visible impact on trade relations between the two sides.

With regard to the GCC countries, two important geopolitical factors are expected to influence trade relations: the US role in the Arab-Israeli conflict and the special security arrangement that each GCC government has developed with the United States to protect itself and its oil assets against internal and international threats. On the one hand, the United States expects favorable trade and investment relations with GCC countries in return for the security and protection that it extends to the countries and the ruling regimes.

On the other hand, the US support for Israel adversely impacts US relations with GCC countries. The GCC ruling regimes that maintain close ties with the US face domestic political pressure to cut back their economic and diplomatic ties as a show of solidarity with the Palestinians. While they have not resorted to an oil embargo for this purpose, ever since 1973, their purchase of American products is expectantly impacted by this factor.

The empirical analysis in this study offers a number of insights into the sensitivity of GCC imports in relation to the Middle East policies of the exporting countries. The strongest results obtained are first, the United States' lost market share in several GCC and other Arab countries in the years immediately following the second Palestinian Intifada and the September 11 terrorist attacks. Second, the United States' gained market share in GCC countries after it drove Iraq out of Kuwait. Both of these



findings indicate that US foreign policy in the Middle East has an impact on its trade relations with the GCC. In other words, the identity and foreign policy of trade partners matter to Arab importers and consumers.

The findings also lead to two more specific results on this issue. The reaction of GCC countries to geopolitical events is not fully coordinated and depends on each country's unique diplomatic and strategic relation with its trade partners. For example, after the liberation of Kuwait in 1991, the US gained market share in four GCC countries but not in Oman and the UAE. Similarly, after the second Intifada and September 11 attacks, the US lost market shares in Bahrain, Saudi Arabia, and the UAE but not in Kuwait, Oman, and Qatar. These findings are not surprising. While GCC countries have been successful in internal economic cooperation, they remain weak in coordination of their foreign trade policies, particularly towards the United States. Bahrain, for example, signed a free trade agreement with the United States despite Saudi objections to some aspects of this agreement. As a result of this weak coordination, the GCC countries cannot use their collective economic power as a diplomatic weapon.

Statistical analysis also reveals that in cases such as the intifada and September 11, where a significant adverse impact on US market share occurred; the relative magnitude of this market share loss was rather small. This observation suggests that although people and governments of GCC countries express strong sympathy for Palestinians, the amount of trade and economic sacrifice that they are willing to make for this cause is rather limited. This limited sacrifice, perhaps, results from the importance of the United States for their security and/or a realization that they cannot influence the US policy through economic and trade incentives. Overall, since US engagement in the Arab world in general and the GCC countries in particular, is likely to continue for the foreseeable future; these questions deserve further empirical and institutional analysis.

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<sup>1</sup> 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 distance between them. Tinbergen (1962) first introduced the gravity model.

<sup>2</sup> This frustration is best exemplified by a letter that (then) Prince Abdullah of Saudi Arabia wrote to the US president Bush in August 2001. In this letter, Prince Abdullah acknowledged the long history of US-Saudi relations but warned that if the United States continues its one-sided support for Israel, the special relations between two countries might come to an end. See: <http://www.pbs.org/wgbh/pages/frontline/shows/saud/cron/> (cited September 2012) .

<sup>3</sup> Currently ten Arab countries enjoy WTO membership, whereas six other states have observer status, which will eventually pave the way for access to negotiations.

<sup>4</sup> For more detail on US trade agreements with Arab countries see Lawrence (2006).

<sup>5</sup> 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.

<sup>6</sup> The first round of trade talks between China and GCC countries was held in Riyadh in September 2009. Then, a GCC-China economic forum followed this first round of talks -in February 2010 in Bahrain. The GCC countries also initiated free trade talks with South Korea in 2008. The first round of free trade talks between India and GCC was held in March 2006, but the progress has been slow.

<sup>7</sup> Arab countries included in this aggregate are: Algeria, Bahrain, Egypt, Iraq, Kuwait, Jordan, Libya, Lebanon, Morocco, Qatar, Yemen, Oman, Sudan, Syria, Saudi Arabia and, the UAE.

<sup>8</sup> For a detailed analysis of AIDS model see Deaton and Muellbauer (1980).

<sup>9</sup> For more information about this data base visit <http://www2.imfstatistics.org/DOT/help/DOThelp.htm> .

<sup>10</sup> The first Palestinian Intifada began in December 1987 and continued until 1993. The second Palestinian Intifada began in September 2000, but there are disagreements about when it ended. Some argue that it ended in 2004, while others believe it lasted till 2005.

<sup>11</sup> 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 non-stationary. Therefore, the null hypothesis will be rejected even if one time series is stationary. For more details see Taylor M.P. and Sarno L. (1998).

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<sup>12</sup> The improved image of the United States in GCC countries and its impact on US exports to these countries was noticed by a Clinton Administration official in 1993 who said: "In the wake of Desert Storm, the end of the Cold War, and our role in the Arab-Israeli peace process, many US 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.""

Source: US economic policy in the Middle East: challenges and opportunities - Assistant Secretary for Near East Affairs Edward P. Djerejian speech October 4, 1993, US Department of State Dispatch , [http://findarticles.com/p/articles/mi\\_m1584/is\\_n40\\_v4/ai\\_14642129/pg\\_5/?tag=content;coll](http://findarticles.com/p/articles/mi_m1584/is_n40_v4/ai_14642129/pg_5/?tag=content;coll) , date cited December 2010.