An Article Submitted to

Review of Middle East Economics and Finance

Manuscript 1156

International Portfolio Inflows to GCC Markets: Are There Any General Patterns?

Faruk Balli* Rosmy J. Louis†

Mohamed A. Osman‡

*Massey University, f.balli@massey.ac.nz

†Vancouver Island University, rosmy.jeanlouis@viu.ca

‡University of Dubai, mosman@ud.ac.ae

International Portfolio Inflows to GCC Markets: Are There Any General Patterns?

Faruk Balli, Rosmy J. Louis, and Mohamed A. Osman

Abstract

In this paper, we document the main factors underlying foreign portfolio inflows to Gulf Corporation Council countries (hereafter GCC). We find that bilateral factors, in particular, export volumes from GCC (host) countries to source countries, play a truly significant role in determining the volume of cross border portfolio inflows to GCC markets. This connection becomes even stronger over time. Moreover, GCC members' stable fiscal position is practically one of the important determinants of the volume of portfolio inflows to GCC markets. We have also found that the extent of openness in capital account transactions and the income levels of source countries are additional factors that can help explain the volume of foreign portfolio inflows to GCC members. Last but not least there exists to some extent a "GCC bias;" a large share of the portfolio inflows to GCC markets comes from other GCC countries.

KEYWORDS: capital market integration, GCC portfolio bias, economic integration, bilateral linkages

1 Introduction

Capital and goods markets integration are the two pillars of globalization. However, although goods market integration has been broadly researched by macroeconomists, there has been little attention given to capital markets integration despite the remarkable increase in the sheer size of financial assets traded across borders.[1] In particular, issues related to international asset flows as well as the impact of economic and financial integration on the patterns of international asset allocation remain an area deserving further research as the world economy becomes more globalized. This paper contributes to the existing literature by uncovering the main factors underlying the foreign portfolio inflows to GCC countries,[2] and it is, to our knowledge, the first of its kind for this part of the Middle-East if not the whole region altogether.

In terms of economic opportunities and socio-political stability, the GCC countries are the rising star of the Middle East and North Africa. These countries have been experiencing rapid economic growth in both the oil and the non-oil sectors. Governments have taken a proactive role by using part of their proceeds from record oil prices to boost the non-oil sectors of their economies through massive investments in infrastructure, housing, services, and education, thereby creating a growth engine capable of making their economies eventually less reliant on oil output. Consequently, these countries have enjoyed large fiscal and current account surpluses despite fiscal expansion and rising import growth. Before the mortgage crisis in the United States that has now spread around the globe, oil prices had reached their highest levels in the last 20 years while interest rates had oscillated between 3 and 4 percent in some cases. What makes the GCC markets even more appealing, at least in the eyes of the overly risk-averse investors, is the fact that governments are majority shareholders and exercise control in most of the major companies, thereby inspires further confidence since governments are less likely to go bankrupt. With the changes in ownership and immigration laws of some of these countries and the concerted efforts by their governments to show the rest of the world that the GCC countries are a model of economic success and political stability, contrary to the stereotypes usually held by westerners, GCC governments seem to have sent a strong signal to investors that their investments are relatively safer in the GCC countries for similar returns elsewhere. Evidently, investors seem to have responded quite positively to the

[1] The internet has played a key role in the integration of financial markets by making access to information readily available.

[2] The GCC countries comprise Bahrain, Kuwait, Qatar, Oman, Saudi Arabia, and the United Arab Emirates (UAE), which plan to enter a monetary union in 2010.

message. Initial public offerings (IPOs) by companies are usually oversubscribed by far beyond expectations, reflecting investors' appetite for both a piece of previously wholly-owned private companies and newly-formed corporations. It is undeniable, however, that the share prices are at a bargain for most investors since the GCC stock markets on average are relatively at their infancy. As reported by Bley and Chen (2006), in 2004 alone, foreign portfolio holders amassed between 150 and 170 billion US dollars in profits in the GCC countries.

Whilst the GCC countries offer various opportunities to investors to maximize their returns in both the stock markets and the real sectors of their respective economies as a result of mega projects of infrastructure, roads and housing construction, these countries also benefit in return from technology transfers and massive capital inflows. Bley and Chen (2006), Guetat and Serranito (2007), and Alkulaib et al. (2008) associate the strong economic growth of the GCC countries to the ongoing economic and financial integration of the region with the rest of the world. However, we cannot negate the economic stimulus that the unfortunate events of September-11 have brought to these countries. A sizable group of investors of Arab descent who had stakes in the U.S. and other western countries felt the need to repatriate their capital to the Middle-East due to the growing concerns that their assets might be frozen by the U.S. government on the pretext that they have connections with terrorist groups. The GCC countries were at that point in time the natural choice for these investors within the Middle-East region. All these events create an interesting dynamic when we factor in the coexistence of the Islamic and the neoclassical views of profits. It is therefore without doubt that the GCC region is a case begging for in-depth understanding of portfolio allocation.

A number of studies have previously attempted to shed lights on the determinants of capital inflows to North African countries in general and to GCC countries in particular. Lagoarde-Segot and Lucey (2007) have shown that investors can and do benefit from portfolio diversification in these two regions due to higher returns and opportunities to diversify risks. Sadik and Bolbol (2001) find that foreign direct investment (FDI) is as good as other types of capital formation in terms of contributions to technology and productivity. Mina (2007) has investigated the location determinants of FDI inflows to the GCC region. He found that oil production, oil reserves, and oil prices surprisingly discourage foreign direct investment inflows, while relative oil utilization encourages the FDI inflows. Although these studies have helped in understanding capital inflows to GCC countries, factors such as investors' preferences, regional and home biasness in portfolio allocation have not received much attention. Our paper in this respect is a natural complement to

the existing literature. Our contention is that economic fundamentals, countries' specific characteristics, economic ties between source and host countries, the level of real income of source countries and the financial openness of the host country all can potentially explain international portfolio inflows to GCC countries. More fundamentally, economic ties are exceedingly important when considering trade volume, distance, the relative easiness of securing loans and transferring money across borders to settle financial transactions. Therefore, the interesting question that we raise is whether the general patterns of investment portfolio holdings to the GCC region observed can be explained by the economic linkages between hosts and source countries and/or socio-cultural affinities.

We carry out a panel data analysis to elucidate the patterns of portfolio allocation to GCC's financial markets. We use both the recently published database of cross-country portfolio holdings by the International Monetary Fund (IMF), namely, the Coordinated Portfolio Investment Survey Database (CPIS) and data from other reliable sources for the period 2001-2005. Our results show that: (a) religion; (b) degree of openness in capital accounts; (c) the real GDP per capita level of the source country; (d) the default risk rate differences between host and source countries and (e) bilateral factors such as trade volumes between source and GCC (host) countries play a significant role in the determination of the volume of cross- border portfolio inflows to GCC markets. As well, our paper shows that while there is a remarkable increase in the volume of the international portfolio inflows to the GCC countries, similar to the European markets, there is also –to some extent–a "GCC bias". That is, a remarkable share of the portfolio inflows to the GCC markets originates from the GCC members themselves. This bias is the notable consequence of not only the high level of financial and economic integration that characterizes the GCC countries as they are heading towards monetary union but also the post-September-11 reactions by both Arab investors in fear of their capital being mistakenly expropriated by the western world and foreign investors' lack of proper information about this part of the world at that point in time.

The remainder of the paper is organized as follows. Section 2 presents a multi-market portfolio model relating international portfolio allocations with bilateral linkages. Section 3 describes the data set and the construction of some of the key variables of interest. Section 4 presents the empirical findings and analyzes the determinants of cross border asset holdings. Section 5 concludes the paper.

2 Bilateral Linkage Model

The underlying framework of this paper is the original Obstfeld and Rogoff (2001) model where trading costs play a crucial role in explaining empirical macroeconomic puzzles. This framework has proven to be useful in addressing home bias puzzles in French and Poterba (1991). Lane and Milesi-Ferretti (2008) have extended the Obstfeld and Rogoff's model to N countries in order to show that existing trading costs in the goods market and individual preferences affect bilateral equity positions in both industrial and developing nations. The N-country model of Lane and Milesi-Ferreti (2008) postulates that the home country's share of equity that is held by the foreign country is a decreasing function of the trading costs between the home and the foreign country and an increasing function of the real time importance of the good that is being traded. We use the same framework to shed lights on the international portfolio inflows to GCC countries.

Theoretically, there are N countries in the world and each country is endowed with a stock of perishable goods that is random. Output is unevenly produced across countries and there is a complete set of Arrow-Debreu (AD) securities in the capital markets. The model assumes that individuals hold cross-border portfolio in only one period as they attempt to maximize their expected utilities. We partition the N countries into two: h home country and j foreign countries. The expected utility of the representative consumer in the home country is given by:

$$EU_h = E\{\frac{1}{1-\rho}([\sum_{j=1}^{j=N} \varpi_{ij} C_{ij}^{\frac{\alpha-1}{\alpha}}]^{\frac{\alpha}{\alpha-1}})^{1-\rho} = E\frac{C_h^{1-\rho}}{1-\rho}, \quad (1)$$

where ϖ_{ij} is the relative preference by consumers in country j for good i, C_h is the index of total real consumption, α is the elasticity of substitution between any two goods and ρ is the coefficient of relative risk aversion.

There are some iceberg shipping costs η, only a fraction of a unit of a good shipped from country h to country j reaches to the destination. Accordingly, η_{hj} is greater than zero while assuming there are no shipping costs for good i within the foreign country η_{jj}=0, or within home country, η_{hh}=0. In addition, we normalize ϖ_{jj} =1.

Perfect competition in product markets requires that

$$P_{ih} = (1-\eta_{hj})P_{ij}, \quad (2)$$

where P_{ih} and P_{ij} denotes the price of good i in countries h and j respec-

tively. In the model, we have free traded Arrow-Debreu securities where the marginal utility per dollar for good i across countries must be the same for the last units consumed. Put differently, the ratio of marginal utility derived from the consumption of good i must be equal to the relative price of good i across the two countries.

In other words,

$$\frac{1}{P_{ih}}\frac{\partial U}{\partial C_{ih}} = \frac{1}{P_{ij}}\frac{\partial U}{\partial C_{ij}} \tag{3}$$

$$C_{ih}^{-1/\alpha}C_h^{1/\alpha-\rho} = (1-\eta_{hj})\varpi_{hj}C_{hj}^{-1/\alpha}C_j^{1/\alpha-\rho} \tag{4}$$

under the simplifying assumption where $1/\alpha{=}\rho$

$$C_{ij} = (1-\eta_{hj})^{\alpha}\varpi_{ij}^{\alpha}C_{ih}. \tag{5}$$

The goods market equilibrium is

$$Y_i = C_{ih} + \frac{P_{ij}}{P_{ih}} * C_{ij}. \tag{6}$$

If we generalize the output clearing condition to N markets,

$$Y_i = \sum_{j=1}^{j=N} \frac{C_{ij}}{(1-\eta_{ij})}. \tag{7}$$

In line with AD securities, the ratio of home to foreign consumption of goods must be equal to net asset inflows to the home country from the foreign country.

$$\theta_{hj} = \frac{P_{hj} * C_{hj}}{\sum_{j=1}^{N} P_{hj} * C_{hj}} \tag{8}$$

After appropriate substitution of equations 5 and 7 into equation 8, we get;

$$\theta_{hj} = \frac{(1-\eta_{hj})^{\alpha-1}\varpi_{ij}^{\alpha}}{\sum_{j=1}^{j=N}[(1-\eta_{hj})^{\alpha-1}\varpi_{ij}^{\alpha}]}Y_h. \tag{9}$$

Under the simplifying assumption that $1/\alpha{=}\rho$, this allocation can be achieved by foreign asset trading. The allocation means that country j holds a larger share in country h's equity, the lower is the transportation cost between countries h and j relative to the average transport cost between country h and all other countries; and the greater is the relevant importance attached to good i in country j's consumption preferences.

By taking the logarithm of Equation (9), we obtain

$$log(\theta_{hj}) = (\alpha - 1)log(1 - \eta_{hj}) + \alpha log(\varpi_{hj}) - log(\sum_{j=1}^{j=N}[(1 - \eta_{hj})^{\alpha-1}\varpi_{hj}^{\alpha}] + logY_h. \tag{10}$$

The very last two terms are fixed terms for both home and foreign country. Therefore we can represent those terms as constant terms. This allows us to further simplify the expression to[3]

$$log(\theta_{hj}) = A_h + (\alpha - 1)^* log(1 - \eta_{hj}) + \alpha^* log(\varpi_{hj}). \tag{12}$$

This reduced form will help us to test the model empirically. In the reduced form, directly, transportation costs and consumer preferences are not observable, but may be captured by a host of proxy variables. The linear model can be set up as follows;

$$log(1 - \eta_{hj}) = \lambda\chi_{hj}^{\tau} + \upsilon_{hj}^{\tau}, \tag{13}$$

and

$$log(\varpi_{hj}) = \lambda\chi_{hj}^{\varpi} + \upsilon_{hj}^{\varpi}. \tag{14}$$

Obviously, the vectors could be overlapping sets in that the parameters may not be individually identifiable. In the end, we obtain a reduced form equation or model, with the vectors χ_{hj} embedding the proxy estimates for bilateral factors, such as distance between the source and host country, trade competition in third markets, cultural linkages, lending from foreign to home country and bilateral trade volumes between home and foreign country.[4]

3 Data

We use a broad sample of countries to capture the patterns of international portfolio inflows to GCC markets. We classify GCC as host countries to 35 countries, which are listed in the Table 1, as source countries. The data set

[3]When we changed the order of the countries, the equation will be as follows;

$$log(\theta_{j^*h}) = (\alpha - 1)log(1 - \eta_{j^*h}) + \alpha log(\varpi_{j^*h}) - log(\sum_{j=1}^{j^*=N, j\neq j^*}[(1 - \eta_{jh})^{\alpha-1}\varpi_{j^*i}^{\alpha}]) + logY_{j^*}. \tag{11}$$

the very last two terms will be the fixed effect of the foreign country pair. In the empirical model, the constant effects for both host(home) and source(foreign) country have been used accordingly.

[4]We use bilateral factors which are available for the GCC markets.

for this paper originates from various sources as detailed in Table 2. We obtain a pair-wise volume of cross border portfolio holdings in US dollars from the International Monetary Fund's Coordinated Portfolio Investment Surveys (CPIS) for the period 2001 to 2005. These are reliable surveys that use consistent guidelines in measuring holdings of equity and bonds across countries. We could not use the survey data collected for the years 1994 and 1997 due to the unavailability of data for the GCC countries, which by and large have fairly new financial markets and have recently opened the non-oil sector of their economies to the rest of the world.

We construct two variants of portfolio holdings from the data set by looking at portfolio flows from source to host country. The first variable is the total foreign portfolio, which is the sum of debt and equity securities while the second one is just composed of pure debt securities. We discarded a third variable that could have purely embraced financial inflows originating from equity securities transactions because the volume as well as the allocations of equities to GCC markets are very limited and most of the times biased towards certain markets. The CPIS dataset also reveals that the majority of foreign portfolio inflows to the GCC market are debt securities. This perceptible feature of the data supports our approach in focusing on both total portfolio inflows and total debt securities, not on equities alone as a dependent variable.

Following Sørensen *et al.* (2007), we construct a variable on total market capitalization by taking the weighted average of bond and equity markets capitalization for each country. We measure the size of a country's total bond market capitalization as outstanding domestic debt securities minus outstanding short term domestic securities plus outstanding international bonds and notes.[5] We create the variable on total market capitalization of equity markets by taking the weighted average of the bond market and the equity market capitalization of each country .

3.1 Capital Controls

Measuring capital control has always been a dilemma for researchers since it is difficult to distinguish between pure capital inflows and capital inflows that originate from the relaxation of rules and policies. We follow Chinn and Ito (2007) in constructing a variable that measures the level of financial openness of GCC markets. Chinn and Ito broadly define capital openness (KAOPEN), as a set of dummy variables while taking into consideration the set of restrictions on cross border financial transactions reported in the

[5]Short-term securities are defined as securities with maturity of less than a year.

IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). These include variables indicating:

- the presence of multiple exchange rates(k1)
- restrictions on current account transactions(k2)
- restrictions on capital account transactions (k3);
- the requirement of the surrender of export proceeds (k4).

Among the binary variables on capital openness, the one related to restrictions on capital account transactions is key in the determination of international portfolio allocation. Accordingly, we trace this variable, (k3), over time and take its average over a five-year period to build our own dummy variable. Our objective is to be able to observe the effects of the changes in capital restrictions in a broader scope. Analogous to Mody and Murshid (2005) and Chinn and Ito (2007), we create the binary variable on capital restriction by considering financial openness rather than the existence of capital restrictions or not. Our dummy variable takes the value of 1 when the country does not have capital control restrictions and 0 otherwise.

The capital control variable is constructed as follows:

$$CapitalControl = \frac{k_{3,t} + k_{3,t-1} + k_{3,t-2} + k_{3,t-3} + k_{3,t-4}}{5}, \tag{15}$$

where $k_{3,t-n}$ is the dummy variable for the capital restriction decision by IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) n years ago.

Other variables used in the panel estimation include: total debt, government deficit, the sum of external and internal debts, and cross-border bond holdings (distance and trade volume between hosts and source countries).

4 Empirical Model

In this section, we scrutinize the main determinants of the international financial asset inflows to the GCC markets by estimating the reduced form of Lane and Milesi-Feretti's (2008) N-country portfolio model. The regression equation is given by;

$$\theta_t^{hj} = \alpha_t^h + \alpha_t^j + \beta_{0,t}^* \mathrm{DEBT}_t^{j-h} + \beta_{1,t}^* \mathrm{GCC} + \beta_{2,t}^* \mathrm{REL} + \beta_{3,t}^* X_t + \epsilon_t \ , \tag{16}$$

where the dependent variable, θ^{hj}, is the log volume of source country (j)'s foreign portfolio allocated in host country (h); α^h and α^j are the corresponding fixed effect variables of host and source country respectively. We used several variables to test these fixed effects. Considering the source country, we employed factor market capitalization rate, Purchasing Power Parity (PPP) adjusted real GDP per capita, as well as the log linearized population. The host country fixed effect is controlled by the financial openness variable, PPP adjusted real GDP per capita, and the log linearized population of the host country. DEBT^{j-h} is the debt to GDP ratio differential between source and host country. Since investors are particularly interested in the ability of borrowers to pay back their debts, we could not overlook the effect of fiscal indebtedness on the bonds markets. To this effect, we use the external debt differentials in such a way that we can test the significance of both fixed effects. In order to test for bilateral linkages between source and host countries, we incorporate two dummy variables. One we label GCC that takes the value of 1 when the source country is a member of GCC countries, and zero otherwise, and the other we describe as REL, which takes the value of 1 when the dominant religion in the source country is Islam and 0 otherwise. We create the second binary variable in order to test whether the effect of sharing the same culture and religion is statistically significant in explaining portfolio allocations to GCC countries. X_t contains the bilateral factors that can help in the determination of the volume of financial asset flows to GCC markets. To account for bilateral factors in international portfolio inflows to GCC, we use export volume from source country to host countries in U.S Dollars and distance in kilometers between the capital city of the source country and the host country in logarithmic forms.

5 Empirical Results

Tables 1-7 summarize the results of the estimated panel regressions model. Unless otherwise specified, the significance level considered is 5 percent. We ran panel regressions to account for fixed effects and for bilateral linkages for the period for years 2001–2005. The only explanatory variables included in the regression are those for which there are variations over the sample dimensions. Table 1 contains the estimated coefficients of the reduced form model of Equation 16 for different sub-samples. Since in the CPIS, the number of countries that invest in GCC countries is much less in 2001 in comparison to 2005, we divide the sample into different sub samples to effectively capture

the main determinants of the portfolio inflows.[6]

Table 1: **The Determinants of Foreign Portfolio Holdings**

	2001-2005	2003-2005	2005
IMPORT(h)	0.1	0.20	0.42
	(2.01)	(2.26)	(3.15)
DISTANCE	−0.08	−0.16	−0.24
	(−1.21)	(−1.70)	(−1.66)
FMC(j)	0.20	0.20	0.21
	(4.11)	(3.88)	(3.11)
CAPITALCONTROL(h)	0.17	0.14	0.43
	(1.94)	(1.99)	(2.15)
GDP(j)	0.11	0.10	0.29
	(2.18)	(2.06)	(1.91)
DEBT^{j-h}	0.55	0.40	0.66
	(1.81)	(1.21)	(3.10)
GCC	2.58	2.45	2.23
	(6.99)	(5.50)	(5.88)
REL	0.92	1.11	1.10
	(3.22)	(3.12)	(1.89)

Notes: Pooled panel regressions for determinants of cross border portfolio holdings.Heteroskedasticity consistent t-statistics are given in parenthesis. Dataset is employed annual for years 2001-2005. The dependent variable is log linearized volume of source country's (j) portfolio holding in the host country, (h). Similarly, IMPORT(h) is the log linearized import volume of host country shipped from source country. FMC(j) is defined as the source country's share of world market capitalization. DEBT^{j-h} is the debt to GDP ratio differential between source and host country. DISTANCE is the financial center distance between host and source countries in kilometers, this variable is also log linearized. GCC is a dummy variable equal to 1 if source country is a member of GCC, zero elsewhere. GDP(j) is the log linearized PPP adjusted GDP per capita of source country. CAPITALCONTROL(h) is the capital control adjustments of host country. Details of the variable is explained in the text. REL refers a dummy variable equal to 1 when the recognized religion of the the source country is Islam, 0 elsewhere.

There have been considerable changes in the decomposition of financial asset inflows to GCC markets. The sub-samples are selected in consideration of the higher volatility in the portfolio inflows and to provide robust estimations. We find the main bilateral linkage variable, the import volume of the host country from the source country is positive and significant at the 5 percent level for all sub-samples and the magnitude of the coefficient has increased

[6]The volume of the foreign asset inflows as well as the number of the investors with stakes in GCC markets are quite limited in 2001, however, both the number and the volume have increased gradually in the years after. We believe that it is a better estimation approach to have different sub samples.

over time. Such increase is likely the result of trade agreements between the GCC countries and the source countries manifested through portfolio inflows. Our panel regression consequently corroborates the view that trade in goods is an important determinant of the volume of portfolio inflows to GCC markets. This finding rejoins Lane and Milesi-Ferretti 's (2008) who also report a strong positive relationship between bilateral trade volume and portfolio inflows using the 2001 survey data.

Although distance between capital cities of host and source countries has an intuitive—negative—coefficient in the regressions, this variable is statistically significant only at the 10 % level, indicating that physical distance between financial centers matters for portfolio inflows, though not overwhelmingly. One of the source-country-fixed-effect variable, PPP adjusted real GDP per capita level has the expected positive sign and is significant in explaining portfolio inflows to GCC markets. This finding suggests that as income levels increase in the source countries, individuals who have accumulated enough wealth tend to diversify their portfolio by investing abroad. The GCC markets have been proven attractive enough to capture a share of that portfolio.

Our study further reveals that factor market capitalization of the source country play a significant role in international portfolio inflows to GCC markets. Its coefficient is positive and statistically significant, suggesting that the more the source country is investing abroad, the higher the possibility that a portion of their portfolio will be invested in GCC countries' financial assets. This can be justified by the relatively higher returns these markets offer, the easiness of capital investing and repatriation that are in place, without negating the stability of the individual currencies.[7] The financial openness variable is found to have the expected positive sign and is statistically significant. This is in line with the view that the lesser the barriers for capital account transactions, the greater the capital inflows. In a similar study, Alfaro, Kalemli-Ozcan, and Volosovych (2004) have indeed shown that, for emerging markets, capital inflows are enhanced with less financial market restrictions thereby giving rise to higher economic growth. Among the GCC countries, Sultanate of Oman has erected more barriers than any other member towards capital transactions; therefore, financial asset flows to Oman are lower in terms of the volume.

Since the total portfolio inflows include a significant share of debt inflows and investors are usually concerned about default risk, the debt to GDP ratio

[7]All GCC countries except Kuwait, have pegged their currencies to US dollars. Kuwait, currently have been using a basket of currencies for its exchange rate regime but there is no major fluctuation with respect to the US dollar in the foreign exchange market.

Table 2: **The Determinants of Foreign Bond Holdings**

	Host: OECD Source: OECD	Host:OECD Source: OECD
FMC(j)	0.38	0.42
	(3.18)	(3.15)
DEBT^{j-h}		0.33
		(1.89)
EMU	1.55	2.11
	(6.23)	(6.66)
CAPITALCONTROL(h)	0.24	0.44
	(3.12)	(2.65)
DISTANCE	−0.13	−0.21
	(−0.2)	(−1.81)
IMPORT(h)	0.62	0.59
	(2.62)	(3.21)

Panel regressions are done for country by country total portfolio holdings. Host refers to the classification of the domestic country. Source refers to the classification of the country issuing the foreign asset. For example, when we have "Host: OECD, Source: OECD" this limits the sample to country pairs in which the host country is an OECD member while the source country is taken from the sample of OECD. OECD includes Australia,Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Iceland, Japan, Korea Republic, Netherlands, Norway, New Zealand, Portugal, Spain,Sweden, Switzerland, UK, and US. EMU is a dummy variable equal to 1 if both host and source countries are the member of EMU, zero elsewhere. For the explanations of other variables see Table 1.

is a good indicator of how likely a nation is to meet its financial commitments. It is also the case that fiscally stable countries tend to make investors feel confident about investing in their markets, particularly in the bond markets leading to higher bond portfolio inflows. We control for the fiscal position of the host country relative to the foreign country with the debt to GDP ratio differences, namely, DEBT^{j-h}. The coefficient for GCC countries is found to be positive and significant over different sub-samples, indicating that foreign portfolio holders do consider the fiscal position of the member countries when making investment decisions.

For comparison purposes, we ran a separate set of panel regression with similar variables considering OECD countries as both source and host countries over different samples. Table 2 contains the regression results for the sample of OECD members. We observe the coefficient of DEBT^{j-h} is also positive and significant but of a lesser magnitude than that of GCC countries as in Table 1. This finding substantiates the presumption that investors located in OECD markets also consider the fiscal vulnerability of the host countries they want

to hold assets from. [8]

Debt securities as a share of total portfolio is considerably large in the GCC region. In Table 3, we present the results obtained from concentrating solely on total debt securities as our measure of international portfolio inflows to the GCC countries and there are no significant changes in the results. For instance, all the key variables, such as bilateral trade, capital control, and income levels had the expected signs and were statistically significant. These variables are found to be the principal determinants of portfolio inflows to the GCC, irrespective of the measures used as the dependent variable. We further observe that our dummy variable, GCC, is positive and significant, indicating that there is a "GCC bias" in the debt inflows as well. The GCC countries, –to some extent–are allocating an important share of their portfolios in GCC markets, instead of investing elsewhere.[9] When we compare these results with Table 4 where source countries are listed as members of the European Monetary Union (EMU) and host countries are listed as members of OECD, we note a similar bias, namely, a "Euro" portfolio bias, irrespective of which variable used in the regression total debt or equity securities.[10] Similar to the GCC portfolio bias, euro portfolio bias exists, since European investors tend to allocate most of their portfolio within the Euro region. [11]

Although, it is conventional that investors allocate their portfolio where

[8]In our study, in order to have a basis for comparisons, we extracted the pairwise panel regressions performed for samples of both the Euro region and the OECD countries.

[9]Due to data restrictions, we have only Bahrain and Kuwait listed as both source and host countries. Although the other GCC member countries do possess external assets, e.g., the UAE's Abu Dhabi Investment Authority (ADIA), Qatar Investment Authority have external assets around 875 billion USD, the geographic distribution of those assets has not been published.

[10]The regional bias contends that investors tend to hold a large share of their assets portfolio—both debt and equity–within their geographical boundaries even when they have the opportunities to spread their investments equally in various markets. These patterns are consistently observed lately, despite the overall increase in the volume of international assets holdings that take place due to financial market integration and economic booms that have occurred in other parts of the world. Lane (2007) and Maela (2008) have also found the euro portfolio bias in their studies.

[11]This is an important finding that appears to suggest that in GCC and European regions where economic integration has reached or is near its highest stage—monetary union—, investors prefer to allocate their portfolio mostly within their respective regions. Although this pattern may further enhance relationships among member countries, it carries the drawback of limiting income smoothing via portfolio diversification. In fact, this is a more serious issue for GCC countries where output diversification is quite limited. With 50 % or less of their total output coming from the non-oil sector, GCC investors bear higher risks due to the impediment of further diversifying their portfolio across industries within member countries.

Table 3: **The Determinants of Foreign Debt Holdings**

	2001-2005	2003-2005	2005
IMPORT(h)	0.11	0.11	0.06
	(1.42)	(1.99)	(2.08)
FMC(j)	0.16	0.20	0.18
	(2.03)	(1.99)	(2.55)
DISTANCE	–0.11	–0.11	–0.30
	(–0.39)	(–1.04)	(–1.88)
DEBT^{j-h}	0.89	0.94	0.79
	(2.16)	(2.00)	(2.19)
CAPITALCONTROL(h)	0.12	0.18	1.82
	(1.75)	(1.99)	(2.08)
GDP(j)	0.92	1.15	1.75
	(2.31)	(2.06)	(2.46)
GCC	2.18	2.01	2.07
	(7.09)	(1.82)	(6.03)
REL	1.96	1.97	2.98
	(1.35)	(0.99)	(2.11)

For the explanations of the variables see Table 1.

they can get higher returns for similar levels of risks, however, in the case of GCC countries where Islam is the official religion, investments to securities may be governed by strict rules. We test whether such cultural similarities play an important role in international portfolio inflows to the GCC countries given the verity that it is prohibited by the Qu'ran to earn income through interest-earning-based activities. Our dummy variable, REL, is positive and significant in both Tables 1 and 3, where total portfolio and total debt equities are respectively used as response variables. We therefore conjecture that for the debt inflows to the host countries, GCC investors' priority is to allocate their wealth to Sharia'a-compliant debt instruments from Islamic markets. This also partly explains the GCC bias observed because investors adhere to religious norms.

5.1 Robustness Checks

One of the characteristics of the GCC markets is that Bahrain is classified as an offshore center for financial business. This may be seen as a weakness

Table 4: **The Determinants of Foreign Bond Holdings**

	Host: OECD Source: EMU	Host: OECD Source: EMU
FMC(j)	0.33	0.36
	(3.19)	(3.03)
DEBT^{j-h}		0.31
		(3.44)
EMU	1.33	1.77
	(6.11)	(6.21)
IMPORT(h)	0.58	0.55
	(5.77)	(4.67)
CAPITALCONTROL(h)	0.21	0.30
	(3.12)	(2.54)
DISTANCE	−0.07	−0.11
	(−0.66)	(−0.44)

Panel regressions are done for country by country bond holdings. Host refers to the classification of portfolio issuing country. Source refers to the classification of the country buying the financial asset from the host country. For example, when we have "Host: EMU, Source: non-EMU" this limits the sample to country pairs in which the host country is an EMU member while the source country is taken from the sample of non-EMU. For the explanations of the variables see Table 1.

of our approach, hence, our findings because international income inflows to Bahrain may have little to do with portfolio diversification but rather to its offshore status. Moreover, although Bahrain is the smallest of all the GCC countries, it is also the most open in terms of capital markets. Therefore, our total portfolio and debt equity measures of international portfolio inflows to GCC markets might be influenced by Bahrain's weight. We address this issue by excluding Bahrain when re-estimating the panel regressions. Tables 5 and 6 present those estimation results. Similar to the previous results, the coefficients of import level of host country from source country is positive and significant and gradually increasing through 2005. Other variables such as factor market capitalization of the source country, PPP adjusted Real GDP of the host country, and financial openness are statistically significant, indicating that our results are quite robust. It is worth noting, however, that variables such as distance and religion are no longer significant when Bahrain is excluded from our sample.

One noteworthy feature of the data is that for the GCC and other emerging markets, IMF's portfolio survey data set contains a large number of observations for portfolio inflows from other countries to the GCC markets that have

Table 5: **The Determinants of Foreign Portfolio Holdings without Bahrain**

	2001-2005	2003-2005	2005
IMPORT(h)	0.12	0.15	0.31
	(1.81)	(2.69)	(4.16)
FMC(j)	0.25	0.31	0.32
	(2.01)	(3.01)	(3.46)
DISTANCE	–0.15	–0.07	–0.07
	(−1.26)	(-1.78)	(-0.88)
DEBT^{j-h}	0.44	0.48	0.61
	(2.11)	(2.19)	(2.08))
CAPITALCONTROL(h)	0.30	0.32	0.50
	(2.59)	(2.75)	(2.97)
GCC	2.58	2.63	2.01
	(5.14)	(4.58)	(6.61)
GDP(j)	0.08	0.28	1.21
	(0.96)	(2.29)	(2.99)
REL	0.26	0.18	0.34
	(0.99)	(1.01)	(0.68)

For the explanations of the variables see Table 1.

a value of zero. This implies that a significant portion of portfolio inflows to the GCC markets from our source countries sample is negligible. In search for further robustness of the results, we re-run the regressions using the Tobit model and the results are documented in Table 7.[12] By and large, these findings are similar to earlier results and are even stronger for the regressions performed for year 2005. All variables had the expected signs and were statistically significant for this sub-sample period. The volume of imports for the host country explains a large share of the portfolio inflows to the GCC countries, but its coefficient is relatively smaller when compared across samples and with OECD and euro markets in Tables 2 and 4, respectively[13]. The GCC

[12]Tobit is an econometric, biometric model proposed by James Tobin (1958) to describe the relationship between a non-negative and non-zero dependent variable with the independent variables.

[13]In Table 2 and 4, we performed the regressions, the trade variable is the bilateral linkage variable between source and host country. The coefficients is between %50 and %60, indicating that bilateral trade volume between source and host country is roughly explaining %50 to %60 of the portfolio inflows from source country to host country

Table 6: **The Determinants of Foreign Debt Holdings without Bahrain**

	2001-2005	2003-2005	2005
IMPORT(h)	0.08	0.07	0.03
	(1.88)	(2.16)	(1.75)
FMC(j)	0.44	0.55	0.76
	(2.46)	(2.15)	(2.19)
DISTANCE	–0.13	–0.26	–0.24
	(−0.50)	(–0.66)	(–0.46)
DEBT^{j-h}	0.41	0.15	0.65
	(1.65)	(2.13)	(2.51)
CAPITALCONTROL(h)	0.30	0.32	0.50
	(2.59)	(2.75)	(2.97)
GCC	2.58	2.63	2.01
	(5.14)	(4.58)	(6.61)
GDP(j)	0.08	0.28	1.21
	(0.96)	(2.29)	(2.99)
REL	0.26	0.18	0.34
	(0.99)	(1.01)	(0.68)

For the explanations of the variables see Table 1.

bias is again present, providing convincing evidence that when GCC investors make the decision to diversify their portfolio, they–at least the two members, Bahrain and Kuwait, —primarily choose other GCC countries to allocate their wealth.

6 Concluding Remarks

This paper has contributed to the literature by elucidating on the patterns of financial asset inflows to GCC markets. Following along the lines of Obstfeld and Rogoff (2001) and its extended version by Lane and Milesi-Feretti (2008), we investigate the cross-country portfolio investment patterns of the GCC countries. We estimate a panel regression model using data from various sources and conduct a comparative analysis with the European region to shed light on the determinants of portfolio inflows to GCC markets. We consider the GCC countries as host countries to 35 source countries as per the IMF survey on international portfolio inflows. Our results show that international

Table 7: **The Determinants of Foreign Portfolio Holdings Tobit Estimation**

	2001-2005	2003-2005	2005
IMPORT(h)	0.09	0.19	0.28
	(1.88)	(1.97)	(2.59)
FMC(j)	0.41	0.32	0.41
	(2.03)	(2.41)	(2.35)
DISTANCE	–0.18	–0.27	–0.52
	(−1.90)	(-2.32)	(-2.37)
DEBT^{j-h}	0.12	0.32	0.47
	(1.46)	(1.55)	(2.45))
CAPITALCONTROL(h)	0.46	0.36	0.72
	(2.47)	(2.12)	(2.01)
GCC	2.70	2.30	2.01
	(4.40)	(3.42)	(6.61)
GDP(j)	0.03	0.18	0.38
	(0.40)	(1.90)	(2.06)
REL	1.95	2.16	1.80
	(4.53)	(4.13)	(2.25)

Estimation Method: Cencored Normal TOBIT.For the explanations of the variables see Table 1.

portfolio inflows to GCC markets are primarily explained by bilateral linkages; mainly, the volume of import of host countries from the source countries, strong fiscal position of the GCC markets, regional affinities, religion, world market capitalization, capital market liberalization, and income levels of the source countries. We also found similar patterns for Europe and OECD members, regardless of whether we use OECD members as both source and host countries or EMU as source and other OECD countries as host. In the main, our finding of the determinants of the international portfolio inflows to the GCC is very similar to those of the European and the OECD countries.

One noteworthy feature of the results is that international portfolio inflows to the GCC countries are characterized by a GCC bias. This implies that the GCC markets are getting international portfolio investment mostly from other GCC markets—at least we were able to observe the behavior of investors located in Kuwait and Bahrain. This bias can be explained in part by regional affinities, religion, further economic integration, and post-September-11 strategies to mitigate risks in investing in other countries where foreign

capital might be frozen for political reasons. In contrast, a similar bias in portfolio allocation exists in the European region but with different explanations. Another important feature of our findings is that the results are still valid even when we exclude Bahrain from the panel regression to account for its status as an offshore financial center and use the Tobit model to differentiate between non-negative and non-zero relationships of the dependent variable with the independent variables. Needless to say that Oman has recently decided to pull out of the GCC monetary union initiative that was scheduled to materialize in 2010, we expect further economic and financial integration among the remaining member countries to bring about more investment flows to these markets, ceteris paribus.

References

Adjaout, K., Laura, B., Danthine, J., Fischer, A., Hamaui, R., Portes, R. (2002). EMU and portfolio adjustment. CEPR Policy Paper No:5.

Alfaro, L., Kalemli-Ozcan, S., Volosovych, V. (2005). Why doesn't capital flow from rich to poor countries? An empirical investigation. Review of Economics and Statistics 90, 347–368.

Alkulaib, Y.A., Najand, M., Mashayekh, A. (2008). Dynamic linkages among equity markets in the Middle East and North African countries. Journal of Multinational Financial Management 19, 43–53.

Anderton, F., Moneta, F. (2004). Understanding impact of the external dimension on the Euro area: Trade, capital flows and other international macroeconomic linkages. European Central Bank, Occasional Paper No:12.

Bernoth, K., Hagen, J., Schuknecht, L. (2004). Sovereign risk premia in the European government bond market. European Central Bank, Working Paper No:369.

Bley, J., Chen, K.H. (2006). Gulf Cooperation Council (GCC) stock markets: The dawn of a new era. Global Finance Journal 17, 75–91.

Chinn, M., Hiro I. (2005). What matters for financial development? Capital controls, institutions, and interactions. Journal of Development Economics 81, 163–192.

Chinn, M., Hiro I. (2007). A new measure of financial openness. Journal of Comparative Policy Analysis 10, 309–322.

Forbes, K. J., Chinn, M. (2004). A Decomposition of global Linkages in financial markets over time. Review of Economics and Statistics 86, 705–722.

French, K., Poterba, J. (1991). International diversification and international equity markets. American Economic Review 81, 222–226.

Guetat, I., Serranito, F. (2007). Income convergence within the MENA countries: A panel unit root approach. The Quarterly Review of Economics and Finance 46, 685–706.

Lane, P. (2006). Global bond portfolios and EMU. International Journal of Central Banking 2, 1–23. Also ECB Working Paper No:553.

Lane, P., Milesi-Ferretti, G.M. (2001). The external wealth of nations: Measures of foreign assets and liabilities for industrial and developing nations. Journal of International Economics 55, 263–294.

Lane, P., Milesi-Ferretti, G.M. (2008). International investment patterns. IMF Working Paper No:134. Also Review of Economics and Statistics 90, 538–549.

Lagoarde-Segot, T., Lucey, B.M. (2007). International portfolio diversification: Is there a role for the Middle East and North Africa? Journal of Multinational Financial Management 17, 401–416.

Maela, G. (2008). EMU effects on stock markets: From home bias to Euro bias. International Research Journal of Finance and Economics 15, 136–158.

Mina, W. (2007). The location determinants of FDI in the GCC countries. Journal of Multinational Financial Management 17, 336–348.

Mody, A., Murshid, A. P. (2005). Growing up with capital flows. Journal of International Economics 65, 249–266.

Obstfeld, M., Rogoff K. (2001). The six major puzzles in international macroeconomics: Is there a common cause? Center for International and Development Economics Research (CIDER) Working Papers C:00-112, University of California at Berkeley.

Sadik, A.T., Bolbol, A.A. (2001). Capital flows, FDI and technology spillovers: Evidence from Arab Countries. World Development 29, 2111–2125.

Sørensen, B. E., Wu, Y.T., Yosha, O., Zhu,Y. (2007). Home bias and international risk sharing: Twin puzzles separated at birth. Journal of International Money and Finance 26, 587–613.