Determinants of International Foreign Portfolio Investment Flows to GCC Countries: An Empirical Evidence

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Abstract

The present study focuses on the roles of trade openness, market forces and domestic credit to private sector and infrastructures by documenting the determinants of Foreign Portfolio Investments (FPI) to Gulf Cooperation Council (GCC) economies. The determinants of foreign portfolio investment for the period between 2000 and 2018 were estimated by implementing random effects (RE), fixed effects (FE), and GMM methods. The dependent variable was foreign portfolio investment against different independent variables. The results of the study lead to the development of framework through the associated countries in GCC that are mainly focused on attracting additional foreign portfolio investment. The results have clearly showed that there is significant influence of macroeconomic factors on the decision of choosing an investment country by the foreign investor.

Keywords: foreign portfolio investment, GCC countries, GMM estimation, panel data

1. Introduction

Foreign Portfolio Investment (FPI) is known as an extremely volatile investment. In times of national or global crisis, FPI flow has underlined differential aspects regarding its high volatility. The financial risk became much more vulnerable due to financial crisis, as there is increase in the number of developing countries receiving more FPI flows. Between 1995 and 2008, the total portfolio inflows (both equity and debt) in all regions except for the Arab States witnessed a significant decline. During this period in Arab State, portfolio investment inflows were increased from $0.01 billion in 1995 to $1.4 billion in 2008 (Private Capital Flows, 2008). After the end of Asian crisis in 1998, foreign portfolio investments were increased. Moreover, FPIs were also increased dramatically in most regions (2.8 times in the Arab States) during the boom period of 2002 through 2007. Whereas, as the boom ended in 2007, FPI crashed in most regions to below zero (more than 100 percent decline). For instance, FPI fell from $185 billion in 2007 to -$55 billion in 2008 in the Asia and Pacific region (Private Capital Flows, 2008). Previously, the determinants of international foreign portfolio investment flow were not emphasized.

Some of the previous studies have examined FDI with respect to influence on economic performance. This investigation was based on the positive impact of foreign investment on the economy of host country, capital market development, and SMEs development (Kizilkaya, Ay & Akar, 2016; Salahuddin, Gow & Ozturk, 2015). On the contrary, performance of the capital market is improved by foreign portfolio investment and hence stimulates the domestic economy through different approaches. Firstly, it upsurges the capital market liquidity, which consequently provides the investors a better opportunity for managing their portfolios effectively, and assist companies for getting their required financial resources (Al Samman & Jamil, 2017). Secondly, it improves discipline and transparency in the capital market to achieve accounting standards and information disclosure of companies. Thirdly, it enhances corporate governance to achieve better performance, which further enhances the firm's value in the market. Lastly, it also assists investors to improve their risk management tools using the financial derivatives.

Thereby, two strands of research have emerged: one that examines the effects of FDI on economic development and the other identifies these impacts and correspondingly attempts to recognize the determinants of FDI flow to the receiving countries (Al-Iriani, 2007). The likelihood of a two-way causality between the two factors recognizes a third line of research in the FDI literature, but of a minimal extent. In contrast with more settled

theoretical evidence, existing empirical evidence reveals mixed outcomes regarding the relationship between economic growth and FDI of the host countries, and the determinants of FDI (Heshmati & Davis, 2007). Several factors might be advanced to demonstrate such disparity of empirical outcomes. Firstly, tests are conventionally conducted using data sets that often belong to heterogeneous groups of countries. Secondly, a variety of theoretical models has been used in previous studies. Thirdly, a number of different econometric techniques have been implemented in empirical studies to test and estimate FDI determinants (Alharthi, 2018). On the contrary, the disparity in outcomes does not prevent the requirement for additional investigation of the subject as long as it is apparently represented that the investigation and the obtained findings are not mandatorily generalized to other cases.

Therefore, the present study aims to investigate the role of trade openness, market forces, and domestic credit to private sector and infrastructures to highlight the foreign determinants of portfolio investments to Gulf Cooperation Council countries (GCC). There are several reasons to captivate the pattern of international portfolio allocation for the GCC. Firstly, common religion Islam, common culture, and common language are followed in all the GCC countries. Secondly, all GCC countries have double-digit growth rates and high income per capita, as compared to their counterparts. Thirdly, companies in all countries having new financial markets are at least 50% public in the stock markets. This mitigates default risks for cross-border investment inflows as the governments have lower debt to GDP ratios, as compared to other emerging markets. Fourthly, more than 50% of their total output is accounted for aggregate oil and gas output. Economies can be distinguished from these governments through planned strategy to reinvest oil revenues in infrastructure and industry. These attributes attract investors, who are searching for a high rate of return at lowest risk. Considering these factors, there is observation of a more diversified pattern of portfolio investment in GCC countries, as compared to biases. This study examines the determinants of foreign portfolio investment flows between 2000 and 2018 of 6 GCC countries, undertaking equity foreign portfolio investment as its dependent variable.

The study has contributed to assess the importance of evaluating foreign determinants of portfolio investments. The major determinants of foreign portfolio investment to GCC countries are trade openness, GDP constant and domestic credit to private sector. The remaining sections have been organized as follows; following introduction, section 2 presented a literature review of studies related to portfolio investment. Section 3 described the data set and the construction of some key variables of interest along with empirical model. Whereas, section 4 presents the results and discussion and section 5 concludes the major study findings.

2. Literature Review

Previously, many studies have focused on the discussion about determinants of foreign portfolio investment inflows for different countries. For instance, a study examined the association between globalization, measured by foreign portfolio investment, foreign direct investment, and privatization (Boubakri et al., 2013). Dynamic panel data system was used for 55 developing countries through GMM estimation that covered the period between 1984 and 2006. There is positive impact of trade openness on FPI flows. Asif and Majid (2015) investigated the effects of government stability, investment profile, and macroeconomic management indicators on portfolio investment between 1984 and 2013. The results depicted that there is positive and significant impact of GDP on the financial stability of a country. Jain et al. (2017) studied the adverse impact of corruption on foreign portfolio investment and showed that corruption has an influential impact on the financial market of a nation. The highly transparent nations attract most of the foreign investors, where there is 'level playing field' between the local and foreign investors because of limited information asymmetries associated with corruption.

Desai and Dharmapala (2009) analyzed the composition of US outbound capital flows by combining data on US outbound foreign portfolio investment and foreign direct investment to reflect incentives to bypass home and host country institutional regimes. The findings showed that the investor protections seemed to shape portfolio choices within-country variation. Balli et al. (2011) examined the determinants of foreign portfolio investments to Gulf Cooperation Council economies by focusing on the roles played by cultural affinities, market forces, and institutional quality between 2001 and 2006. It was concluded that trade, domestic credit, and GDP had positive and significant effect on portfolio investments. The relationship between opacity of recipient countries and international capital flows was investigated by Hooper et al. (2007), stating that GDP had positive and significant effect.

Liljeblom, and Loflund (2005) investigated the determinants of foreign portfolio investment flows from which restrictions for portfolio investments were removed in 1993. The results found that trade is negative and insignificant. Kinda (2012) used simultaneous equations to estimate the drivers of foreign direct investment and portfolio investment that control the correlation between the components of private capital flows. The results

showed that there is significant and positive impact of openness, domestic credit to private sector, and electric consumption per capita. Andrade and Chhaochharia (2010) examined the allocation of United States residents in their stock portfolios internationally. The results showed that large stock portfolio position is associated with large U.S. foreign direct investment position in the host country during 2001–2006. Furthermore, the change in U.S. FDI position between 1994 and 2006 was linked with change in U.S. FDI position between 1980 and 1990.

Biglaiser et al. (2007) used panel data over the period of 1987-2003 for 50 developing countries to determine if changes in credit rating agencies affected portfolio flows and used a two-stage Heckman model. The results demonstrated negative insignificant effect of GDP; whereas, trade has significant but negative effect. The relationship between foreign portfolio investment and Malaysia's economic performance was examined by Duasa and Kassim (2014) using quarterly data covering period from 1991 to 2006. The study explored that foreign portfolio investment and its volatility depends on economic growth. The results suggested that foreign portfolio investment is attracted on the basis of economic performance in the country.

Garg and Dua (2014) have investigated the impact of selected macroeconomic determinants on foreign portfolio based on the Indian net portfolio flows. The selected variables were analyzed based on the disaggregated aspect of foreign portfolio investment. Investment flows and global depository receipts are the main components of foreign portfolio investment in India. A significant and negative association between portfolio flows and currency risk has been reported. This result has shown that the volatility of exchange rate of the host country increases uncertainty of expected returns of foreign investor.

Additionally, the study has found that higher equity returns in the competitive emerging markets affected foreign portfolio flows, negatively. The difference in interest rate between source and host country is encourages foreign portfolio investment. Ahmad et al. (2015) reported similar result by examining the determinants of Chinese capital flows. They also revealed that are the most significant factor on foreign flows is Chinese external debts. Pala and Orgun (2015) explored the influence of 23 macroeconomic and financial determinants on foreign portfolio investment in Turkey from 1998 to 2012 using factor analysis method. Three determinants were chosen including current account balance, deposit interest rate, and gross national income. The study has revealed a positive and significant association between current account balance, deposit interest rate and gross national income, and foreign portfolio investment. Onuorah and Akujuobi (2013) examined the impact of macroeconomic variables on foreign portfolio investment in Nigeria. The results have reported that there is significant impact of money supply, gross domestic product exchange rate, interest rate, and inflation on foreign portfolio investment. In addition, Idowu (2015) used four governance determinants to investigate constructs stimulating the foreign investment inflows. The study has revealed there is significant but negative impact of corruption and internal conflicts on foreign portfolio inflows.

Waqas et al. (2015) have examined the association between macroeconomic variables and foreign portfolio investment volatility at the cross-country level in four South Asian countries including Sri Lanka, China, Pakistan, and India. The study revealed that there is significant but negative association between inflation and volatility of foreign portfolio investment in India and China. The study has also reported that there is a significant but negative impact of foreign direct investment on the foreign portfolio investment in China, Pakistan, and India. This result implies that a reduction in the foreign portfolio investment volatility is led by the increase in foreign direct investment. The study has revealed that there is decrease in return, which enhances the foreign portfolio investment volatility due to increase in value of currency by China. The growth rate of gross domestic product and volatility of foreign portfolio investment in China, Pakistan, and Sri Lanka. The study has concluded that stocks' return is positively affected by economic growth, which reduces the foreign portfolio investment volatility. Atobrah (2015) has investigated the determinants of portfolio investment in 17 Sub-Saharan African countries between 2005 and 2013. The study has categorized possible portfolio inflows determinants into external and internal factors. The study has found that market size and past portfolio inflows measured by GDP growth rate influences foreign portfolio investment positively. In contrast, there is negative impact of current account deficit and financial development on portfolio investment. The study has revealed a positive and significant association between portfolio inflows and the growth rate of developed countries, which shows that economic, cycle characteristics the portfolio inflows in Sub-Saharan African countries, internationally.

3. Material and Methods

3.1 Sample Description and Data

Panel data was generated of 6 GCC countries to examine the hypothesis of the determinants of foreign portfolio investment inflows between 2000 and 2018. The dependent variable was equity foreign portfolio investment,

which was divided by GDP constant to convert it in real terms (Biglaiser et al., 2007). The data was obtained from World Bank (2014) and World Development Indicators Database (WDI).

3.2 Variables

In the baseline model, the choice of variables was based on previous literature. The explanatory variables pertaining to GCC are the real GDP constant; domestic credit to private sectors as a percentage of GDP; trade % of GDP; and electric power consumption (per capita), inflation, interest rate differentiation, governance, and corruption. The variables, definitions, and data sources are provided in table 1.

Table 1. Variables, definitions, and data sources

Variables	Definitions
FPI	Foreign Portfolio investment, equity (% of GDP).
GDP	Real GDP (constant 2005US).
Trade	Trade (% of GDP).
Domestic	Domestic credit to private sectors as a percentage of GDP.
Electricity	Electric power consumption (kWh per capita).
Inf	Inflation
IDIF	Interest rate differentiation

Sources: All data from World Development Indicators (WDI), (2000-2018).

3.3 Foreign Portfolio investment, equity (% of GDP)

The equity foreign portfolio investment is dependent variable that is defined as foreign portfolio investment equity (% of GDP). Moreover, the data was taken from World Development Indicators (2018).

3.4 Real GDP (constant 2005 (US))

The variable GDP constant has reflected the relative wealth and market size and has positive effect on foreign portfolio investment. The data was available at World Bank (2018) and the WDI database.

3.5 Trade (% of GDP)

Trade openness was measured as a sum of exports and imports considering the real GDP percentage. This data was obtained from World Bank (2018) and it was expected to be positively related to FPI.

3.6 Domestic Credit to Private Sectors as a Percentage of GDP

The empirical evidence regarding the impact of financial sectors on foreign portfolio investment is lacking; such as, domestic credit to private sectors as a percentage of GDP (Liljeblom and Loflund, 2005). This data was obtained from World Bank (2018) and is expected to have positive impact on FPI flows.

3.7 Electric Power Consumption (kWh Per Capita)

This variable is used to reflect physical infrastructure, and the data was taken from World Bank (2018). It is expected that there is a positive relation between electric power consumption and FPI flows.

3.8 Inflation

Inflation is the upsurge in the prices of services and products over time.

3.9 Interest Rate Differentiation

An interest rate derivative is a derivative whose payments are indicated through calculation techniques where the underlying benchmark product is a set of different interest rates.

4. Methodology and Model Specification

The determinants of FPI flows to GCC countries were studied in this model along with the natural logarithm in the form of GDP constant (ln GDP_{it}). The natural logarithm was also studied along with the natural logarithm of domestic credit to private sector as a percentage of GDP (ln $Domestic_{it}$) in the form of trade as a percentage of GDP (ln $Trade_{it}$). The natural logarithm of the electric power consumption per capita (Ln $Electricity_{it}$) was also included. FPI_{it} represents foreign portfolio investment flows during period (2000-2018) as a baseline model.

It is suggested that the model was estimated by using fixed effects and random effects estimations to check the robustness of the outcomes. Decision was made to treat the effects, based on Hausman test specification.

Moreover, a dynamic panel approach was another methodology used in the study with the system GMM estimator, following the empirical work (Boubakri et al., 2013) as recommended by Arellano & Bover, (1995) and Arellano & Bond (1995). To illustrate the dynamic panel methodology for foreign portfolio investment, the lagged dependent variable (FPI) has been included in the model.

5. Results

The descriptive statistics including mean, standard deviation, maximum and minimum values are presented in table 1.

Table 2. Descriptive statistics

Variable	Mean	Std. Dev.	Max.	Min.	Obs.
Foreign portfolio investment equity	65.88	22.86	100.00	36.69	79
Real GDP	46.93	12.56	83.51	16.97	79
Trade	10.81	6.62	25.87	2.59	79
Domestic credit	3.65	2.07	9.40	1.40	79
Electric power consumption	73.44	37.70	135.09	17.69	79
Inflation	1.31	0.87	4.04	-2.07	79
Interest rate differentiation	11.89	6.78	29.00	-12.11	79

The results of panel unit root analysis to assess stationarity amongst the study variables using Levin, Lin, and Chu (2002) method is presented in table 3. The panel unit root in the above table was assessed on two different criteria including at individual effect (constant) and other, at individual effect and trend (constant & trend).

Table 3. Panel unit root analysis using levin, Lin & Chu (LLC) method

		Constant		Constant & Trend	
		Stats.	Prob.	Stats.	Prob.
Foreign portfolio investment equity	at Level	-0.28	0.39	0.42	0.66
	1st Difference	-2.73	0.00	-1.94	0.03
Real GDP	at Level	-0.71	0.24	-0.50	0.31
	1st Difference	-16.58	0.00	-3.77	0.00
Trade	at Level	-0.56	0.29	-0.17	0.43
	1st Difference	-6.39	0.00	-3.62	0.00
Domestic credit	at Level	-0.06	0.48	-1.01	0.16
	1st Difference	-6.27	0.00	-8.00	0.00
Electric power consumption	at Level	1.78	0.96	-0.89	0.19
	1st Difference	-2.50	0.01	-3.96	0.00
Inflation	at Level	-0.04	0.49	6.06	1.00
	1st Difference	-9.38	0.00	-7.79	0.00
Interest rate differentiation	at Level	-0.32	0.38	1.78	0.96
	1st Difference	-8.31	0.00	-10.56	0.00

The above table of panel unit root analysis clearly showed that all the variables of the study have been found non-stationary at level in both criteria i.e. constant, and constant with trend. These results were estimated and assessed at 90 percent confidence interval i.e. p-value should be less than 0.10.

Table 4 presents the results of Pedroni (1999) panel cointegration for both the dependent variable foreign portfolio investment equity. The analysis was assessed at the confidence interval of 90 percent meaning that p-value should be checked at 10 percent or less for statistical significance.

Table 4. Pedroni (1999) panel cointegration

	ROA	
	Statistics	Prob.
Panel v-Statistic	-1.514	0.935
Panel rho-Statistic	2.319	0.990
Panel PP-Statistic	-8.920	0.000
Panel ADF-Statistic	-5.341	0.000
Group rho-Statistic	3.739	1.000
Group PP-Statistic	-8.948	0.000
Group ADF-Statistic	-5.143	0.000

The above table of Pedroni (1999) panel cointegration clearly showed that among four panel statistics i.e. Panel v-Statistic, Panel PP-Statistic, Panel ADF-Statistic, and Panel rho-Statistic have been found statistically significant for ROA. These two panel statistics were Panel PP-Statistic (-8.920, $p < 0.10$) and Panel ADF-Statistic (-5.341, $p < 0.10$). By coincidence, the similar two panel statistics were also found statistically significant for ROE model providing that Panel PP-Statistic (-5.427, $p < 0.10$) and Panel ADF-Statistic (-3.552, $p < 0.10$).

In Table 5, the results of pooled OLS (Ordinary Least Square) analysis using fixed-effect method have been provided to understand the impact of independent variables on foreign portfolio investment equity.

Table 5. Pooled OLS using fixed-effect method

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Real GDP	5.762	1.070	5.383	0.000
Trade	-0.010	0.006	-1.757	0.084
Domestic credit	-0.061	0.009	-6.992	0.000
Electric power consumption	-0.092	0.038	-2.435	0.018
Inflation	-0.027	0.053	-0.521	0.605
Interest rate differentiation	0.003	0.011	0.242	0.810

Dependent Variable: Foreign portfolio investment equity

R-Square = 0.709; Adjusted R-Square = 0.602

F-Statistics (Prob.) = 6.606 (0.000)

The results of the above table showed that inflation (-0.027, $p > 0.10$) has negative but statistically insignificant impact on foreign portfolio investment equity. This showed that there is no effect of inflation do on foreign portfolio investment equity in regards to GCC countries. However, the results further showed that trade (-0.010, $p < 0.10$), domestic credit (-0.061, $p < 0.10$), and electric power consumption (-0.092, $p < 0.10$) have been found as statistically significant but negatively related to foreign portfolio investment equity. These results provided that increase in these variables leads to decrease foreign portfolio investment. While interest rate differentiation (0.003, $p > 0.10$) has been found as statistically insignificant but positively related to foreign portfolio investment equity. The results further showed that total 70.9 percent of the variance in foreign portfolio investment equity can be predicted by the combination of all independent variables. In addition, F-statistics (6.61, $p < 0.10$) showed that all independent variables significantly contribute to foreign portfolio investment equity in the overall perspective.

6. Discussion

The findings have shown that is significant and positive impact of real GDP on the foreign portfolio investment among the GCC countries. Better economic performance depends on higher growth rate of GDP, indicating more profit from investment in the local companies. In addition, a negative and insignificant effect of inflation is also shown on foreign portfolio investment that discourages investment because it alleviates the actual return of investors. A negative relationship has been confirmed from the coefficient value of trade, domestic credit, and electronic power consumption with foreign portfolio investment, but the result is statistically significant. An essential role is played by macroeconomic environment in attracting foreign portfolio investment within the host country. Foreign investors are also stimulated by a stable and effective macroeconomic environment in order to move their investments to another country and take advantage of these conditions. The risk diversification measurement and foreign portfolio investment are negatively associated, which shows an opportunity provided by the capital market for international diversification. The capital market for international diversification is preferred for the foreign investor. There is significant and positive impact of domestic credit on foreign portfolio investment, which shows that portfolio investment, is attracted through stronger domestic creditworthiness.

Electric power consumption was found statistically significant. The coefficient of electric power consumption was found to be negative. This shows that foreign investors invest in well-governed countries because of the mitigation to utilize and monitor information costs. It is positive and significant at 5% in the estimation; such finding supported the earlier evidence (Hooper, et al., 2007). Similarly, there are coefficients for domestic credit to private sectors as a percentage of GDP that are positive and significant at 10% and consistent with the empirical evidence (Balli et al., 2011). There is negative influence of the electricity on FPI flows at 5% significance level. These findings are in agreement with Balli, et al. (2011) and Boubakri et al. (2013). Whereas, coefficients on the Electricity is a proxy for infrastructure, which is negative and significant.

The study investigated determinants of foreign portfolio investment flows to GCC economies by employing panel data analysis approach between 2000 and 2018. Previous studies have not focused on the determinants of international foreign portfolio investment flows. However, this study has highlighted the foreign determinants of portfolio investments to Gulf Cooperation Council countries by applying three methodologies; Random effects (RE), GMM estimations, and Fixed effects (FE). It has been concluded that GDP constant, trade openness, and domestic credit to private sector were significant and correctly signed; whereas, infrastructures discouraged foreign portfolio investment flows.

7. Conclusion

GCC countries have implemented a set of reforms in its capital market for aligning financial liberalization requirements in the respective countries to increase the flow of foreign portfolio investment in GCC countries. There is significant change in the net of foreign portfolio investment; although, the foreign investors ownership has increased in the last years. This modification inquires about the determinants affecting the portfolio investment flow to GCC countries. In theoretical perspective, the foreign direct investment determinants were emphasized by GCC countries; whereas, foreign portfolio investment was not considered. Therefore, the present study provides empirical evidence regarding the factors contributing towards attracting portfolio investment in GCC countries.

A series of macroeconomic and financial data between 2000 and 2018 was used to show significant impact of determinants of foreign portfolio investment on the flow of portfolio investment. The study results would be helpful in the development of framework by the associated countries in GCC seeking seek to attract additional foreign portfolio investment. The findings have shown that the decision of the foreign investor in choosing an investment country is influenced by the macroeconomic factors.

The competition for FDI among developing countries has been intensified from the new wave of globalization. Therefore, concentrated efforts are required for attracting significant FDI flows to the GCC countries at both regional and national levels, and enhance prospects for sustained group and development. GCC countries must work mutually for designing and formulating appropriate policies for attracting stable investment flows. They must take policy measures that would significantly intensify and diversify their economic base and policies that would enhance local abilities and develop a stock of human capital resources abilities, liberalize their market, and improve economic stability for benefiting from long-term FDI inflows. The recent trend of FDI inflows to GCC countries has been toward the oil sector. Attracting FDI to the extractive sector proved not to be growth improving as much as other productive sectors.

Oil sector is usually an enclave sector with minimal inward and backward linkages with other sectors. The GCC countries could advantage from elevated FDI into the oil sector if the sector is integrated and liberalized into the

economy. Growth improving policies linked with sound macroeconomic policies improve a healthy rate of returns to investment and; therefore, attract FDI. GCC countries should develop investment agencies to improve transparency in macroeconomic policies, maximize the benefit of FDI, enhance the local regulatory environment, and develop the local financial market. A transparent and sound legal system controlling financial transaction should be imposed. A central institution or body should be developed to stimulate market investment opportunity, and attract accurate FDI.

Lastly, these outcomes may offer beneficial information for the development of a general strategy that consider GCC countries when negotiating business deals and attract FDI. It will be very difficult for an individual GCC country, with restricted domestic market, to ascertain a viable capital market and attract large-scale investment. Monetary cooperation is needed and regional capital market must be encouraged, and investment opportunity should be promoted at the regional level.

Acknowledgements

Conflict of Interest

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