Are the GCC FDI Location Determinants Favorable?

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Abstract:

Diversifying income sources is one of the main challenges the GCC countries currently face. FDI can be beneficial in this regard. FDI can help the GCC countries gain access to technology, adopt innovation in the production process, obtain new expertise and managerial know-how, and expand production, marketing, transport, and communication networks. Despite the FDI potential benefits to and the FDI potential of the GCC countries, FDI flows declined in absolute and relative terms. This paper examines the question of whether the location determinants are favorable to FDI in the GCC region. Using panel data for the period 1980-2002, panel data model estimates suggest that market size, as measured by real GDP per capita, and trade openness have positive influence on FDI flows, while institutional quality has a statistically significant positive influence when the period 1980-1982 was dropped from the sample period. Surprisingly human capital deters FDI flows.

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1.   Introduction

Diversifying income sources is one of the main challenges that the GCC countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) currently face. FDI can help the GCC countries meet this challenge through expanding output of the non-oil sector. In particular, FDI can enhance GCC access to technology, adoption of innovation in the production process, and therefore productivity. FDI can also bring new expertise and managerial know-how and expand production, marketing, transport, and communication networks.

Despite the FDI potential benefit to and the FDI potential of the GCC countries, they have attracted low levels of FDI flows. The global ranking of UNCTAD's inward FDI potential indices suggests that the GCC countries have significant FDI potential.[1] However, global ranking of the FDI performance indices suggests that their performance is modest.[2] UNCTAD's ranking of FDI potential index for the period 2000-2002 came towards the top of a list of 140 countries for almost all GCC countries (Table 1). In contrast, the ranking of the FDI performance index came towards the bottom of the list over the same period.

To be able to realize the immense FDI potential and attract FDI to the non-oil industries, it is necessary for the GCC policy makers to identify the determinants of FDI flows to the region. This paper specifically addresses this issue and empirically examines the influence of location factors on FDI flows to the GCC countries. From GCC policy makers perspective, they have more control over location factors compared to firm-specific ownership factors, for example, and in turn can foster and support if favorable or remedy if

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[1] The inward FDI potential index is an average of values of 12 variables that reflect the economy's potential and attractiveness to foreign investors. These variables are GDP per capita, the rate of GDP growth over the previous 10 years, the share of exports in GDP, the average number of telephone lines per 1,000 inhabitants and mobile telephones per 1,000 inhabitants, commercial energy use per capita, the share of R&D spending in GDP,   the share of tertiary students in the population, country risk, the world market share in exports of natural resources, the world market share of imports of parts and components for automobiles and electronic products, the world market share of exports of services, and the share of world FDI inward stock. The index ranges between of zero for the lowest scoring country to one for the highest.

[2] The inward FDI performance index is the ratio of a country´s share in global FDI inflows to its share in global GDP. A value greater (below) than one indicates that the country receives more (less) FDI than its relative economic size allows.

unfavorable. The paper theoretically builds on Dunning's (1981) ownership-location-internalization paradigm. Using panel data on the GCC countries for the period 1980-2002, the paper adopts panel data models.

The paper proceeds as follows. Section 2 discusses the performance of FDI flows to the GCC countries in the period 1980-2002. Section 3 provides the theoretical framework and discusses the GCC location advantages. Section 4 summarizes the empirical evidence on the type of location advantages the GCC countries have. Section 5 discusses the empirical model and data. Section 6 discusses the estimation methodology. Section 7 discusses the empirical results, while Section 8 discusses robustness of results. Section 9 concludes.

2.   FDI flows to the GCC countries

The level of FDI inflows to the GCC countries declined over time (Table 2). Following the 1979 oil price shock, FDI flows to the GCC countries reached a peak of about $11.5 billion in 1982, almost all of which went to Saudi Arabia. These flows declined significantly afterwards to reach about $150 million in 1990, likely due to military conflicts in the region, namely the Iraq-Iran and Gulf wars. In the 1990s the level of FDI flows was much lower compared to that in the 1980s.

FDI flows to the GCC countries also declined in relative terms. The share of GCC countries in world FDI inflows has declined not only over time but at a rate higher than their share of world GDP (Table 3). The share of world FDI inflows declined from about 4 percent, on average, in the 1980s to one tenth of its level in the 1990s and the early 2000s, largely due to the decline in Saudi Arabia's share from 3.7 percent in the 1980s to about 0.1 percent in the 1990s. In comparison, the share of world GDP declined from 1.3 percent in the 1980s, on average, to about 1 percent in the 1990s and early 2000s.

At the country level, the FDI flows performance was heterogeneous. Saudi Arabia and Oman had the highest average FDI inflows in the 1980s of about 1.6 percent and 1.5 percent of GDP, respectively, while Bahrain, Kuwait, and Qatar experienced disinvestments (Table 4). In the 1990s and early 2000s FDI flows pattern changed fundamentally for Bahrain and Qatar; both countries experienced the highest inflows, accounting for about 8 and 2 percent of GDP, respectively. At the same time, Saudi Arabia's inflows declined to about 13 percent of its 1980s level. In both periods FDI inflows were most volatile in Bahrain.

Using FDI inflows per capita gives a similar picture. Saudi Arabia and Oman attracted the highest FDI inflows per capita in the 1980s, receiving $195 and $81, respectively, while

Kuwait was the lowest receiving about one third of a dollar. Bahrain was the extreme with disinvestments of about $1.6. In the 1990s and early 2000s, Bahrain and Qatar were the most recipients with $777 and $395 of FDI inflows per capita, respectively, while Kuwait and Saudi Arabia were the lowest with $21 and $14, respectively.

In summary both the level of FDI inflows and the share of GCC in world FDI inflows declined over time. Some countries played musical chairs with each other over time. While Saudi Arabia and Oman managed to occupy the seats of the most two magnets of FDI inflows relative to GDP in the 1980s, Bahrain and Qatar took over in the 1990s and early 2000s.

3.   Theoretical framework and GCC location advantages

The theoretical framework for this paper builds on the location advantage of Dunning's (1981) ownership-location-internalization (OLI) paradigm. OLI advocates the presence of ownership (O), location (L), and internalization (I) advantages in order for a firm to produce abroad. A firm's ownership advantage derives from its ownership of firm-specific intangible assets, such as technology, patents, and skilled management. According to the location advantage hypothesis, the foreign market must provide location advantage in the form of large market size or cheap factors of production, such as labor, in order for a firm to produce abroad. The internalization advantage hypothesis advocates that a firm will engage in production abroad itself rather than relying on the market, in the form of licensing or subcontracting for example, because the transaction cost for doing the latter is higher than that for the former.

Despite the limited FDI inflows they attracted in the 1990s and early 2000s, the GCC countries provide a number of location advantages to foreign investment. From a factor endowment perspective, the GCC countries, in particular Saudi Arabia, Kuwait, and UAE, are known for their abundant oil reserves, which attract resource-seeking FDI. Oil reserves have accounted, on average, for about 44 percent of the world reserves over the period 1980-2002 (Table 5).

Oil endowments seem to have resulted in trade openness of the GCC countries, which is another location advantage. Trade openness has allowed the GCC countries to exchange oil for intermediate and final goods and services. Trade in goods has amounted on average for about 90 percent of GDP (Table 6).[3] In Bahrain and the UAE, trade in goods even exceeded

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[3] Trade in goods data are used because of the absence of trade data for Qatar in the period 1980-1990.

the size of GDP in 1991-2002, suggesting the importance of trade in the economic activity of these countries.

Most GCC countries are characterized by their high income levels as a result of oil production and the increasing international oil prices. According to the World Bank 2004 classification, Gross National Income per capita all GCC countries but Oman is more than $10,066. In addition, population size has grown at an annualized rate of about 4 percent in four of the six GCC countries during the period 1980-2002 (Table 7). The high per capita income and population growth rate provide favorable market size and potential, location advantages which attract market-seeking FDI. In addition, population growth, whether it is due to indigenous population growth, labor migration, or to both, provides the GCC countries with human capital needed in production.

Institutions seem not to be a GCC location advantage, however. The World Bank's Ease of Doing Business Index (EDBI) ranks the different aspects of starting, conducting, and closing a business in an economy in 175 countries. In 2005, Saudi Arabia, Kuwait, Oman, and the UAE, the four GCC countries included in EDBI's country list, are ranked at the 35th, 40th, 52nd, and 68th positions, respectively (Table 8). Although these rankings may seem relatively advanced, a more detailed look at EDBI's ranking of the different business aspects suggests that the GCC countries have lagged behind on the protection of property rights business aspects. The GCC countries have performed well on the tax payments, employment of workers, and trade costs aspects of doing business, as reflected in the average GCC indicator (column 3) and indicator ranking (column 4) of these aspects. However, they have lagged behind on foreign investment protection as reflected in the investor protection and contract enforcement aspects.

A more recent assessment of institutions points to the lagging improvements in the GCC countries. In its 2007 Global Competitiveness Index (GCI), the World Economic Forum assessment of foreign investment protection and contract enforcement suggests that the five GCC countries included in the index have made overall improvements.[4] GCI evaluates country competitiveness based on nine general areas or pillars. These nine pillars include institutions, infrastructure, the macroeconomy, health and primary education, higher education and training, market efficiency, technological readiness, business sophistication, and innovation. The evaluation for each of these pillars is based on a number of variables. The

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[4] Saudi Arabia is not included in the index.

2007 rank has shown improvement compared to the 2005-2006 rank for 3 out of 5 countries included in GCI.

The institutional performance, as suggested by the institutional rank, lagged behind their overall performance, however (Table 9). GCI contains three variables among its institutional pillar, which could be considered as close indicators of foreign investment protection and contract enforcement. These are property rights, judicial independence, and protection of minority shareholders' interests. According to GCI, for countries with an overall GCI ranked in the top 10, individual variables ranked between 1 and 10 are considered favorable, otherwise they are considered unfavorable. For those countries ranked 11-50 in the overall index, variables ranked higher than the country's overall rank are considered favorable. If the variables ranked equal or lower than the country's overall rank, these variables are considered unfavorable. For countries ranked lower than 50 in the overall index, any individual variables ranked higher than 51 are considered favorable. If variables are ranked lower than 50, they are considered unfavorable. In the table, we assign a "+" sign to the favorable variables, and a "-" sign to the unfavorable variables.

The GCI 2007 ranking suggests that the property rights variable, the closest measure to foreign investment protection, is ranked favorably only in Bahrain and Oman. Judicial independence and protection of minority shareholders' interest are ranked favorably only in Kuwait, Oman, and Qatar. Minority shareholders' interest protection is ranked favorably in Bahrain, Oman, and Qatar. It is interesting to note however that all three variables are ranked favorably in Oman but unfavorably in UAE.

The quality of education and degree of innovation, important aspects of human capital needed to conduct business and attract investments, are lagging behind in the GCC countries constituting another location disadvantage. Table 10 below shows the ranking of education, training and innovation variables. The education and training variables include primary education, which is one component of the health and primary education pillar, in addition to the eight variables of the higher education and training pillar. None of the GCC countries has an advantage in tertiary enrollment, which tends to be associated with the largely capital-intensive, oil-related FDI, however. Interestingly, the availability of research and training services locally is lagging behind in all GCC countries. As for innovation, all included GCC countries lag behind in scientists and engineers availability, quality of scientific research institutions, private spending on research and development, the university-industry linkages, and the capacity to innovate.

The geopolitics of the GCC region has created regional conflicts over the past two decades. The first is the Iran-Iraq war which lasted for eight years (1980-1988). The second is the Gulf war (1990-1991) which was sparked by the Iraqi invasion and occupation of Kuwait in August, 1990, and resulted in fighting between coalition forces and Iraq in January and February of 1991 until the coalition forces declared a cease fire in February, 1991. These wars may have worsened perceptions about political stability in the region, and may therefore be a location disadvantage.

4.   Empirical evidence on location factors

The influence of the type of location advantages the GCC countries possess has examined in the empirical literature. In this section the empirical evidence on market size, market potential, trade openness, and institutions is summarized. The section builds on Blonigen (2005), Chakrabarti (2001) and Moosa and Cardak (2006).

According to the market size hypothesis, multinationals tend to seek (large) markets in order to minimize costs, including fixed costs, and exploit economies of scale. Accessing markets, especially in the face of trade restrictions, motivates horizontal or market seeking FDI (Markusen 1984). In substituting exports to foreign markets, FDI substitutes fixed costs associated with the production of goods in the foreign market for variable costs associated with transportation and tariffs (Buckley and Casson 1981).

Empirical evidence supports the positive influence that market size plays in attracting FDI. Despite the differences in perspectives, methodologies, sample selection, and analytical tools, in reviewing the empirical literature, Chakrabarti (2001) finds a positive effect of market size, measured by GDP per capita, in FDI. Conducting extreme bound analysis using cross-section data on 135 countries for the year 1994, he reaches the same finding himself. Similar to Chakrabarti (2001), Moosa and Cardak (2006) using cross-section data on 138 countries over the period 1998-2000 and extreme bound analysis, find evidence in support of the positive influence of market size, as measured by real GDP, on FDI.

Earlier results, such as Schenider and Frey (1985), Culem (1988), Wheeler and Mody (1992), Tsai (1994), and Billington (1999), find supportive evidence. Using data on 54 developing countries over three years, 1976, 1979, and 1980, Schneider and Frey (1985) find a significantly positive effect of market size, measured by real GNP per capita, on FDI. Using bilateral flows data among six industrialized countries for the period 1969-1982, Culem (1988) finds similar results. Using sectoral data on US foreign investment in 42 countries for

the period 1982-1988, Wheeler and Mody (1992) find evidence that market size drives foreign investment, especially to developing countries. Using data on 62 countries for the period 1975-1978, and for 51 countries over the period 1983-1986, Tsai (1994) also reaches same result. Billington (1999) finds supportive evidence for the market-size hypothesis.

The degree of openness of the economy is important for FDI. FDI is more directed towards the tradable sector with potential foreign exchange earnings. As the size of the tradable sector increases, the more open the economy becomes. Culem (1988), and Moosa and Cardak (2006) find evidence in support of this hypothesis. However, Wheeler and Mody (1992) find evidence in support of the alternative hypothesis in the electronics sector, albeit weak.

Institutions play an important role in attracting FDI. Institutions, in particular rule of law, contract enforcement and protection of property rights, matter for economic exchange (Kaufmann *et al* 2000). Better institutions imply better contract enforcement and protection of property rights, and less corruption and cost of doing business. The empirical evidence seems to support the importance of institutions: an efficient, transparent and enforceable legal and institutional framework is a crucial determinant of foreign direct investment (Altomonte and Guagliano 2003; Globerman and Shapiro 2003; and Kahai 2004). Comparing FDI in Central and Eastern European countries and in Mediterranean countries, using panel data on more than 3500 European multinational firms, Altomonte and Guagliano (2003) find that the business environment and the legal framework have positive effect on FDI. Using data on FDI inflows and outflows for 144 developed and developing countries over the period 1995-1997, Globerman and Shapiro (2003) find that governance infrastructure, defined as the political, institutional, and legal environment, is an important determinant of FDI flows. Kahai (2004) finds that economic freedom and corruption matter for FDI.

5.   Empirical model and data

Building on Mina (2007), the following empirical model is estimated:

FDI = f (SIZE, OPENNESS, INSTITUTION, HCAPITAL, WAR)

where *FDI* is FDI inflows, *SIZE* is the market size, *OPENNESS* is the degree of trade openness of the economy, *INSTITUTION* is institutional quality, *HCAPITAL* is the level of human capital, and *WAR* is a war dummy. All the variables of the model are expressed in log

form to capture the non-linear relationship FDI flows and the explanatory variables, except for the war dummy. The Appendix to this paper provides a list of the variables used in the empirical model, definitions and data sources.

FDI is net FDI inflows expressed in millions of US dollars and normalized by population size. *SIZE,* the market size, is measured in terms of real GDP per capita as well as population size to reflect the absolute market size. *OPENNESS*, the degree of trade openness of the economy, is measured using trade in goods as a percentage of GDP, where trade in goods is the sum of merchandise exports and imports (valued in US dollars). This proxy has been selected, as opposed to other alternatives, such as trade, exports of goods and services, or imports of goods and services relative to GDP, because of widely missing data for Qatar.[5]

INSTITUTION, institutional quality, is proxied for using International Country Risk Guide's (ICRG) rule of law indicator. The rule of law indicator reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes. The indicator ranges from 0-6 with higher scores indicating sound political institutions, a strong court system, and provisions for an orderly succession of power. Lower scores, on the other hand, indicate a tradition of depending on physical force or illegal means to settle claims. In addition, lower scores indicate that upon changes in government, new leaders may be less likely to accept the obligations of the previous regime. *HCAPITAL*, the level of human capital, is measured by the percentage of secondary education enrollment in total school enrollment. *WAR*, the war dummy, takes the value of 1 in war periods (1980-1988, 1990-1991), and 0 otherwise.

Panel data on the GCC countries covering the period 1980-2002 are used. The source of FDI data is UNCTAD's World Investment Report annex tables. World Development Indicators is the source of all the variables except for the institutional quality variable, which is obtained from ICRG, provided by the Political Risk Services (PRS) Group. More details on variable definitions and data sources are provided in Appendix A.

6.   Estimation methodology

In estimating the empirical model for the GCC countries, endogeneity, defined as the nonorthogonality between the (composite) error term and the explanatory variables, results from variable omission, including the unobservable country-specific effects, measurement

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[5] Only four out of twenty three observations are available on these proxies for Qatar.

error, and simultaneity. In the presence of endogeneity, OLS estimates are inconsistent. How each of these factors is applicable to the empirical model and GCC data follows is discussed below.

Variable omission in principle arises when the empirical model does not take into account an important variable to model specification. As seen in section 3, the theoretical model, OLI paradigm, goes beyond the location advantage that this paper empirically adopts to include the firm ownership and internalization advantages. Therefore by not accounting for these advantages in the empirical model, due to data unavailability, the empirical model is subject to the variable omission problem. Being unobservable, excluding (unobservable) country-specific effects is part of the variable omission problem. One example of such effects is the favorable foreign relationships the GCC countries have with the developed countries, which may influence FDI flows to the region.

Measurement errors arise, for example, in the measurement of market size and human capital. In measuring market size, real GDP per capita is used. But because the GDP deflator is unavailable for Qatar, CPI is used instead to deflate the nominal GDP, and a measurement error problem therefore arises. Another example arises in measuring the level of human capital. Using secondary education enrollment to measure the level of human capital stems from the close association between secondary education and higher levels of education. Enrollment in secondary education may overestimate the level of human capital because of the temporary nature of employment in the GCC countries. In some GCC countries like the UAE where the population is largely expatriates, many of the secondary education-enrolled students are in turn expatriates, who reside in GCC countries on temporary basis, and may not therefore contribute to the human capital available. Thus the level of human capital may be biased upwards.

In estimating the empirical model, an unobservable effects model along the lines of Wooldridge (2002) will be adopted. The model takes the form

$$y_{it} = x_{it}\beta + \mu_i + v_{i,t} \quad i = 1,\ldots, N \qquad t = 1,\ldots, T \qquad (1)$$

where y_{it} is the dependent variable and x_{it} is $1 \times K$ vector of observable explanatory variables, and the subscripts i and t denote country and time periods. The error term is composite and comprises the effect of omission of country-specific variables, μ_i, in addition to a disturbance

term v_{it}. The disturbance term v_{it} can take into account the more general variable omission and measurement errors that we discussed above.[6]

In this model, it is assumed that the unobserved country-specific effects are orthogonal to the observable explanatory variables, $E(x_{it}'\mu_i) = 0$, and to the disturbance term, $E(x_{it}'v_{it}) = 0$. Under these assumptions, the random effects estimator yields consistent estimates. If, however, the orthogonoality assumptions do not hold, the fixed effects estimator will yield consistent estimates and is to be adopted.

Because orthogonality is likely to be violated, the fixed effects estimator is adopted. This will also be subject to the Hausman specification test. In the following section, the estimates of the fixed effects estimator will be presented as well as those of the random effects and the pooled OLS estimators for comparison purposes.

7.   Empirical results

The correlation coefficients matrix (Table 11) suggests that FDI flows are positively correlated to trade openness, institutional quality, and the market size as measured by real GDP per capita. This positive association is statistically significant (at the 5 percent level) only for the trade openness variable. On the other hand, FDI flows are negatively correlated to population size and to the level of human capital. The negative association is statistically significant (at the 5 percent level) only for the level of human capital. The correlation coefficients matrix also suggests that the correlation among the explanatory variables is not high and therefore concerns about the impact of multicollinearity on estimation should not be overstated.

The empirical estimates are shown in Table 12. The first column presents the OLS estimates, while allowing for heteroskedastic and contemporaneously correlated disturbances across panels.[7] The second and third columns present the random and fixed effects models estimates. Estimates of the fixed effects model are in bold fonts to reflect its appropriateness in light of the endogeneity issue considered above.

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[6] Discussion of these issues can be found in Wooldridge (2002) (chapter 4).

[7] Panel data serial correlation test along the lines of Wooldridge (2002) fails to reject the null hypothesis of no serial correlation. Thus within panel autocorrelation is not accounted for in estimation.

The OLS and random effects model coefficient estimates are the same. However they differ in the standard errors. The fixed effects model estimates are different from the other two models. In all three models coefficient signs are the same, but their statistical significance are different due to the difference in standard errors.

The fixed effects model estimates suggest that trade openness and market size, as measured by real GDP per capita, have positive influence on per capita FDI flows while the level of human capital has a surprisingly negative influence. An increase in real GDP per capita and relative merchandise trade by 1 percent results in an increase in per capita FDI flows by about 2.9 percent and 2.6 percent, respectively. On the other hand an increase in secondary education enrollment relative to total school education enrollment by 1 percent reduces per capita FDI flows by 2.5 percent. Absolute market size, institutional quality, and war are not statistically significant.

From an FDI promotion perspective, the empirical results suggest that FDI flows have been positively responsive to the economy openness orientation of the GCC countries, especially in trade Open trade policies seem to have rewarded the GCC countries from an FDI flows perspective. The negative human capital coefficient is consistent with our discussion above on the lagging quality of education and degree of innovation in the GCC countries.

8.   Robustness

The high FDI inflows until 1982 may bias the estimates. Therefore the model is re-estimated for the period 1983-2002. The resulting estimates are reported in Table 13. The reported R^2 has increased in all regressions. The institutional quality variable has become significant, emphasizing the important role that institutions play in attracting FDI.

The fixed effects regression model was also run for the periods 1980-1990 and 1991-2002 separately. The coefficients became insignificant during the former period. In the latter period, the coefficient of real GDP per capita became negative and insignificant while that of population size became positive and significant at the 10 percent level. The magnitude of the trade openness, institutional quality, and human capital coefficients increased significantly, and the institutional quality variable became significant at the 1 percent level. The coefficient of the institutional quality and human capital variables doubled and tripled, respectively. The 1991-2002 estimates emphasize the importance of trade openness, institutional quality, and human capital in attracting FDI to the GCC region in more recent times.

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9. Conclusion

Attracting more FDI to the GCC countries is the motivation for this paper. Despite the FDI potential benefits to and the FDI potential of the GCC countries, the level of FDI inflows the GCC countries have attracted is modest. Building on the location advantage hypothesis of the OLI paradigm, the paper empirically examines what location determinants are favorable to attracting FDI flows. Using a fixed effects model and panel data for the period 1980-2002, the paper finds that market size, as measured by real GDP per capita, and trade openness are favorable to FDI flows while human capital is unfavorable. Institutional quality is also favorable to FDI flows in the period 1991-2002.

The negative influence of human capital on FDI flows is an invitation to both GCC policy makers and international development organizations, such as the World Bank and UNDP, to re-visit the current education and labor policies. In addition, since the paper has implicitly assumed that FDI is potentially beneficial, examining such benefits for the GCC countries is the subject of future research.

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Variables, Definitions, and Data Sources[+]

Label	Definition (unit)	Source
DEPENDENT VARIABLE		
FDI	FDI net inflows per capita (US$ millions).	UNCTAD
SIZE		
Population	Population size (million).	World Bank (2005)
GDP	Real GDP per capita (US$).	World Bank (2005)
OPENNESS		
Trade	US$ sum of merchandise exports and imports relative to GDP (percentage).	World Bank (2005)
INSTITUTION		
Law	Rule of law indicator.	PRS Group
HCAPITAL		
Education	Secondary education enrollment relative to total school education enrollment (percentage).	World Bank (2005)
WAR		
War	War dummy (1 in war periods and 0 otherwise).	

Notes: [+] All variables are in log form except for the war dummy.

Table 1: Performance and Potential of GCC Countries, 2000-2002

Country	Inward FDI Potential Index		Inward FDI Performance Index	
	Rank	Index	Rank	Index
Bahrain	29	0.304	72	0.91
Kuwait	28	0.305	136	-0.039
Oman	53	0.221	130	0.068
Qatar	8	0.433	81	0.752
Saudi Arabia	31	0.298	138	-0.148
UAE	17	0.388	120	0.238

Source: UNCTAD website

Table 2: FDI Inflows to the GCC Countries (US$ Million)

Year	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE	Total
1980	-418	1	98	11	-3,192	98	-3,403
1981	4	1	63	8	6,498	-17	6,557
1982	28	0	182	8	11,128	95	11,442
1983	64	0	155	1	4,944	46	5,209
1984	141	-6	158	-15	4,850	170	5,298
1985	101	7	161	8	491	-221	548
1986	-32	-15	140	-1	967	110	1,169
1987	-36	-6	35	-3	-1,175	47	-1,139
1988	222	16	92	-21	-328	189	170
1989	181	4	112	-2	-654	39	-320
1990	-183	6	125	5	312	-116	149
1991	620	1	127	43	165	26	981
1992	869	35	96	40	250	130	1,419
1993	-275	13	140	72	180	401	532
1994	208	0	60	132	690	62	1,152
1995	431	7	29	94	578	400	1,538
1996	2,048	347	60	339	64	301	3,158
1997	329	20	65	418	57	232	1,122
1998	180	59	101	347	94	258	1,039
1999	454	72	39	113	123	-985	-184
2000	364	16	83	252	183	-515	383
2001	80	-147	390	296	504	1,184	2,307
2002	217	7	26	624	453	1,307	2,634
2003	517	-67	528	625	778	30	2,411
2004	865	-20	-18	679	1,867	840	4,214

Table 3: Share of World FDI Inflows and GDP in the GCC Countries, 1980-2004[+]

Region/economy	Share of FDI Inflows			Share of GDP		
	1980-1990	1991-2000	2001-2004	1980-1990	1991-2000	2001-2004
GCC	3.94	0.38	0.42	1.33	0.86	1.04
Bahrain	-0.01	0.17	0.06	0.03	0.02	0.03
Kuwait	0.00	0.01	-0.01	0.17	0.09	0.11
Oman	0.16	0.03	0.03	0.06	0.05	0.06
Qatar	0.00	0.04	0.08	0.05	0.03	0.06
Saudi Arabia	3.73	0.08	0.13	0.81	0.51	0.59
UAE	0.05	0.04	0.12	0.21	0.15	0.19

[+] Mean share over time period specified. Author's calculations based on UNCTAD data.

Table 4: FDI Inflows to GCC Countries[+]

Country		Percent of GDP				US$ Per Capita		
		1980-1990	1991-2002	1980-2002		1980-1990	1991-2002	1980-2002
Bahrain	Mean	-0.035	7.850	4.079		-1.576	777.212	404.748
	SD	5.368	10.039	8.928		468.688	983.170	861.035
Kuwait	Mean	-0.003	0.110	0.053		0.272	21.126	11.153
	SD	0.041	0.382	0.271		4.225	61.531	44.884
Oman	Mean	1.502	0.559	1.010		80.851	45.173	62.236
	SD	0.544	0.422	0.675		33.706	40.259	40.729
Qatar	Mean	-0.011	1.798	0.933		3.322	395.113	207.734
	SD	0.153	1.165	1.242		29.902	282.161	283.298
Saudi Arabia	Mean	1.592	0.204	0.868		194.963	14.258	100.682
	SD	2.812	1.215	2.199		389.192	11.374	278.269
UAE	Mean	0.168	0.200	0.185		31.344	79.013	56.215
	SD	0.451	0.787	0.635		84.103	187.333	146.133
Total	Mean	0.535	1.810	1.196		51.529	221.983	140.461
	SD	2.501	4.928	3.988		252.017	498.405	407.644

[+] Author's calculations based on UNCTAD data. SD stands for standard deviation.

Table 5: Share of GCC in World Proved Crude Oil Reserves, 1980-2002[+]

	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE	Middle East
1980	0.04	10.63	0.37	0.58	25.81	4.56	56.10
1985	0.02	13.25	0.50	0.48	24.54	4.64	56.93
1990	0.01	9.69	0.42	0.45	25.70	9.79	65.88
1995	0.02	9.66	0.48	0.37	26.14	9.82	66.08
2000	0.01	9.49	0.52	0.36	25.92	9.62	66.45
2001	0.01	9.39	0.54	1.28	25.45	9.51	66.48
2002	0.01	9.35	0.53	1.47	25.36	9.48	66.44

[+] Author's calculation based on Energy Information Administration data.

Table 6: Trade in Goods (percent of GDP), 1980-2002

Country	1980-1990	1991-2002
Bahrain	170.1	136.5
Kuwait	71.8	66.2
Oman	81.4	80.7
Qatar	64.5	78.8
Saudi Arabia	62.4	56.9
UAE	84.5	118.1
Total	**89.1**	**88.4**

Notes: [+] Author's calculations based on World Bank (2005) data.

Table 7: Population Size, 1980-2002 (in millions)

	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
1980	0.334	1.375	1.101	0.229	9.372	1.043
1985	0.425	1.712	1.397	0.358	12.379	1.379
1990	0.503	2.125	1.627	0.485	15.803	1.773
1995	0.577	1.802	2.135	0.505	18.205	2.411
2000	0.67	2.19	2.41	0.585	20.723	3.247
2001	0.684	2.275	2.478	0.598	21.285	3.488
2002	0.698	2.335	2.538	0.61	21.886	3.754
	Annualized Growth Rate between 1980-2002 (percent)[+]					
	3.3	2.3	3.7	4.4	3.8	5.7

Notes: [+] Author's calculations based on World Bank (2005) data.

Table 8: World Bank's 2005 Ease of Doing Business Index for the GCC Countries[+,++]

(1)	(2)				(3)	(4)
Index/Indicator	Country Index/Indicator				Average Indicator[+++]	Average Indicator Rank[++++]
	Kuwait	Oman	Saudi Arabia	UAE		
Ease of Doing Business	**40**	**52**	**35**	**68**	**48.75**	
Starting a Business	97	70	164	152	120.75	10
Dealing with License	108	123	50	80	90.25	7
Employing workers	19	50	20	55	36	3
Registering property	85	13	3	8	27.25	2
Getting Credit	76	143	59	117	98.75	9
Protecting Investors	18	58	96	114	71.5	5
Paying taxes	40	3	6	2	12.75	1
Trading across borders	51	108	32	7	49.5	4
Enforcing Contracts	75	96	92	109	93	8
Closing a business	49	60	77	131	79.25	6

Notes: [+] Data for the first four columns are obtained from www.doingbusiness.org.

[++] To differentiate between the overall ease of doing business and its individual business aspects, this paper assigns the term "index" for the overall ease of doing business, and the term "indicator" for each of the ten business aspects. Columns 3 and 4 are author's calculations.

[+++] Average country indicator is the simple average of the GCC country indicators (author's calculation).

[++++] The average indicator rank is an intra-GCC rank of column 3 average GCC country indicators (author's calculation). For the ten business aspects, the rank ranges from 1 (highest rank) to 10 (lowest rank).

Table 9: Global Competitiveness Index for GCC Countries

	Bahrain	Kuwait	Oman	Qatar	UAE
GCI (2007)	50	45	40	39	32
GCI (2005-2006)	50	49	n.a.	46	32
Institutions (overall)	44	40	17	22	28
Property rights	48	55	19	39	43
Judicial independence	76	31	39	20	41
Protection of minority shareholders' interests	40	66	23	27	54
Institutions (overall)	**Status**				
Property rights	+	-	+	-	-
Judicial independence	-	+	+	+	-
Protection of minority shareholders' interest	+	-	+	+	-

Notes: GCI (2005-2006) is not available (n.a.) for Oman. A "+" sign indicates a favorable ranking, while a "-" sign indicates an unfavorable ranking.

Table 10: Education, Training and Innovation in GCC Countries

	Bahrain	Kuwait	Oman	Qatar	UAE
Education and training	Status				
Primary enrollment	+	-	-	-	-
Secondary enrollment	+	-	-	+	-
Tertiary enrollment	-	-	-	-	-
Quality of the education system	-	-	+	+	-
Quality of math and science education	-	-	-	+	-
Quality of management schools	-	-	-	-	-
Local availability of research and training services	-	-	-	-	-
Extent of staff training	-	-	+	-	-
Innovation					
Quality of scientific research institutions	-	-	-	-	-
Company spending on R&D	-	-	-	-	-
University-industry research collaboration	-	-	-	-	-
Government procurement of advanced technological products	-	-	+	+	+
Availability of scientists and engineers	-	-	-	-	-
Utility patents	-	+	-	-	-
Intellectual property protection	+	-	+	+	+
Capacity for innovation	-	-	-	-	-

Notes: Data are adjusted from World Economic Forum (2007). A "+" sign indicates a favorable variable ranking, while a "-" sign indicates an unfavorable ranking.

Table 11: Correlation Matrix for FDI Determinants[+]

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1)	1						
(2)	-0.344[*]	1					
(3)	0.072	-0.348[*]	1				
(4)	0.455[*]	-0.405[*]	-0.09	1			
(5)	0.143	0.014	-0.159	0.060	1		
(6)	-0.275[*]	-0.028	0.288[*]	0.017	0.202[*]	1	
(7)	-0.111	-0.172[*]	0.075	-0.049	-0.664[*]	-0.396*	1

Notes: [+]Pairwise correlation. [*]Significant at the 5 percent level. (1) FDI; (2) Population; (3) GDP; (4) Trade; (5) Law; (6) Education; (7) War.

Table 12: Determinants of FDI Flows to the GCC Countries (1980-2002)

Dependent variable: FDI per capita (log)

	(1)	(2)	**(3)**
	OLS[1]	RE	**FE**
Population	-0.273[b]	-0.273[b]	**-1.157**
	(0.140)	(0.145)	**(1.645)**
GDP	0.834[a]	0.834[a]	**2.937[a]**
	(0.214)	(0.223)	**(1.018)**
Trade	2.309[a]	2.309[a]	**2.647[a]**
	(0.382)	(0.527)	**(0.521)**
Law	1.274[b]	1.274	**1.029**
	(0.569)	(0.862)	**(0.707)**
Education	-3.418[a]	-3.418[a]	**-2.513[b]**
	(0.749)	(0.740)	**(1.055)**
War	-0.020	-0.020	**-0.121**
	(0.312)	(0.401)	**(0.435)**
Constant	-3.059	-3.059	**-26.010**
	(2.402)	(3.311)	**(10.611)**
R^2	0.546	0.546	**0.351**
Observations	68	68	**68**
Wald Chi^2		92.57	
F test			**8.05**

Notes: [1] Correlated panels corrected standard errors in parentheses.

Table 13: Determinants of FDI Flows to the GCC Countries, (1983-2002)

Dependent variable: FDI per capita (log)

	(1)	(2)	**(3)**
	OLS[1]	RE	**FE**
Population	-1.157	-0.3763[a]	**-1.269**
	(1.645)	(0.138)	**(1.552)**
GDP	2.937[a]	0.833[a]	**2.336[b]**
	(1.018)	(0.198)	**(1.082)**
Trade	2.647[a]	1.991[a]	**2.222[a]**
	(0.521)	(0.430)	**(0.542)**
Law	1.029	2.786[a]	**1.870[b]**
	(0.707)	(0.771)	**(0.893)**
Education	-2.513[b]	-3.569[a]	**-2.666[b]**
	(1.055)	(0.586)	**(1.037)**
War	-0.121	0.38732	**0.051**
	(0.435)	(0.341)	**(0.415)**
Constant	-26.010	-3.3715	**-19.269**
	(10.611)	(3.030)	**(11.736)**
R^2	0.636	0.636	**0.435**
Observations	66	66	**66**
Wald Chi^2	128.24	139.04	
F test			**8.44**

Notes: [1] Correlated panels corrected standard errors in parentheses

Please note:

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