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Do Bilateral Investment Treaties Encourage FDI in the GCC Countries?

Wasseem Mina[1]

Abstract

This paper empirically examines the short and long term FDI impact of Gulf Cooperation Countries (GCC) countries contracting of bilateral investment treaties and distinguishes it by the income level of the contracting partner. Using panel data for the period 1984-2002 and adopting a GMM estimation methodology, the paper finds that domestic property rights protection institutions, as opposed to investment treaties, matter more for OECD investors. It also finds that while ratified BITs with upper middle income countries have a surprisingly negative, though relatively weak, impact, ratified BITs with high income non-OECD countries have a strong positive short and long term impact.

1. Introduction

Bilateral investment treaties (BITs) are legal instruments under international law between two contracting countries, the aim of which is to establish clear, simple, and enforceable rules for the reciprocal protection of foreign investment from expropriation in each contracting country. A BIT identifies the circumstances under which government expropriation of foreign investment can take place and the associated compensation standards, and establishes an investment dispute settlement mechanism. BITs therefore externally commit contracting countries to honouring the property rights of the partner country's investors and reduce host country political risks. As a result, BITs increase foreign investors' confidence and promote foreign investment (Hallward-Driemeier, 2003; Neumayer and Spess, 2005; UNCTAD, 1998).

The GCC countries have contracted, i.e. signed or ratified, an increasing

1 * *Department of Economics and Finance, College of Business and Economics, UAE University, Al Ain 17555, UAE. Email: wmina@uaeu.ac.ae*

number of bilateral investment treaties since 1990 to promote FDI. The rationale behind this increase is controversial, however. On the one hand, the GCC countries may have contracted BITs out of recognition of the positive influence of commitment to property rights protection for foreign investment. The GCC countries greatly desire such positive influence in light of their plans for economic diversification, and the lagging performance of their domestic institutions. In pursuing economic diversification, the GCC countries need to attract foreign investors into non-oil industries. These foreign investors are new to the GCC countries and are not the traditional foreign oil companies with which the GCC countries have historically established trusted business relationships. Contracting BITs would therefore reduce the risk of government expropriation risk for new investors.

On the other hand, BITs may not be beneficial in promoting foreign investment in the GCC countries for two important reasons. The first reason is that FDI in GCC countries has historically been associated with oil exploration and extraction, despite the absence of BITs. Contracting BITs may therefore be unnecessary for the GCC countries, with a likely inelastic response of FDI to BIT contracting.

The second reason is associated with the institutional copying hypothesis, which Ginsburg (2005) raises. He argues that institutional copying is one possible explanation for why states contract BITs, given the minimal effect on investment flows found in the early empirical literature. Because of their "desire to seem modern," states get involved in institutional copying. In light of the strong competition among the GCC countries to promote their global image as modern, competitive economies, and the sharp increase in the number of BITs contracted by GCC countries since 1990, it is possible that GCC countries may have been involved in institutional copying. This view may be further supported by the fact that in the 1990s the GCC countries signed 43 BITs with lower middle income and low income countries, despite their limited investment potential, as opposed to 37 BITs with high income and upper middle income countries with more investment potential.

Given the controversy surrounding the FDI benefits of BITs, the purpose of this paper is to examine empirically the impact of BITs on FDI in GCC countries, in both the short and long terms. This distinction is important, as the response of investors to BIT contracting may be sluggish in the short term. Foreign investors in the non-oil sector may take a long time to observe the actual commitment of

the GCC governments to the protection of property rights. In addition, foreign investment in oil exploration and extraction takes place over a long period of time. In examining BITs impact, the paper distinguishes BITs by the income level of the contracting partner in order to account for GCC countries different BITs contracting motives.

Using panel data for the period 1984–2002, the paper adopts a generalized method of moments (GMM) estimation methodology to deal with endogeneity resulting from reverse causal relationship between FDI and BITs. Although from a host country perspective, contracting BITs may encourage FDI, FDI may encourage home countries to contract BITs in order to protect investments. Endogeneity also results from the omission of time-invariant unobservable country effects, such as the degree of strength of foreign relations between the GCC and OECD countries such as France, Germany, and Italy. The paper finds that while ratified BITs, reflecting *actual* commitment to property rights protection, with high income non-OECD countries have a strong positive short and long term impact on FDI, ratified BITs with upper middle income countries have a surprisingly negative, though relatively weak, impact. The paper also finds that investors from OECD countries seem to weigh the strength of domestic institutional function of property rights protection in their foreign investment decisions as opposed to the intended strengthening through BITs.

This paper contributes to the international law and FDI literature(s), in which the impact of BITs was examined, in one main respect. It examines for the first time in the literature the short and long term FDI impact of BITs contracted by GCC countries. Characteristic of the GCC countries are the oil resources which lure resource-seeking FDI, the desire to diversify their economies and attract non-oil FDI, and the lagging performance of property rights protection compared to other GCC domestic institutions. These characteristics enrich and flavour the context in which the impact of BITs is examined.

The paper proceeds as follows. Section 2 discusses the FDI and BITs experience of the GCC countries. Section 3 briefly presents the findings of the empirical literature on the FDI impact of BITs. Section 4 discusses the empirical model and its underlying theoretical framework, conceptual issues, and data. Section 5 discusses empirical issues and the estimation methodology. Section 6 discusses the empirical results; section 7 explores the robustness of the results, while section 8 presents the conclusion.

2. FDI and BITS in GCC countries

The accumulated FDI in GCC countries started to accelerate significantly after 1990. Parallel to the acceleration of FDI was a significant increase in the number of BITs contracted in the 1990s and 2000s. As shown in Table 1, the GCC countries signed 80 BITs in the 1990s–more than seven times the number signed in the 1980s (eleven BITs). The increase in the number of BITs ratified in the 1990s and 2000s is even more pronounced. The 57 BITs ratified in the 1990s were more than 11 times those ratified in the 1980s (five BITs). In the first four years of the present century alone, GCC countries ratified forty BITs (about 70 percent of those ratified during the whole decade of the 1990s).

The breakdown of BITs by income level of the GCC contracting partner reveals that about half the BITs were contracted with lower middle and low income countries with limited investment potential. [1] Since 1990, GCC countries signed most BITs (46) with lower middle income countries, followed by 41 with high income OECD countries, 25 with low income countries, 14 with upper middle income countries, and four with high income non-OECD countries. [2] A similar pattern is observed for BITs ratified, where the largest number (39) was with lower middle income countries, followed by high income OECD (36), upper middle (11), low income (10), and high income, non-OECD countries (1).

These statistics raise two important research questions, which this paper examines. First, have BITs contracted by the GCC countries had a positive impact on inward FDI? If so, has the impact on FDI differed by the income level of contracting partners?

Table 1. BITs and FDI: Data and Statistics

BITs Data: Number of Signed and Ratified BITs				
	1980–1990	1991–2000	2001–2004	
Signed BITs	11	80	50	
Ratified BITs	5	57	40	
Number of Signed BITs by Income Level of Contracting Partner				
High income OECD	3	26	15	
High income non-OECD	0	3	1	
Upper middle income	3	8	6	
Lower middle income	4	29	17	
Low income	1	14	11	
Number of Ratified BITs by Income Level of Contracting Partner				
High income OECD	3	22	14	
High income non-OECD	0	1	0	
Upper middle income	0	8	3	
Low middle income	1	20	19	
Low income	1	6	4	
Ramsey RESET Test and Variance Inflation Factor				
	Signed		Ratified	
	RESET F-test (p value)	Mean VIF	RESET F-test (p value)	Mean VIF
All*	0.456	2.74	0.597	2.67
High income OECD	0.437	2.69	0.487	2.64
High income non-OECD	0.578	2.65	0.065	2.76
Upper middle income	0.508	2.64	0.533	2.63
Lower middle income	0.614	2.7	0.509	2.69
Low income	0.347	2.72	0.612	2.62

*. "All" refers to non-income-distinguished BITs.

3. Impact of BITS on FDI in empirical literature

The impact of BITs on FDI has been examined in the FDI and international law literature(s). The findings in both have been mixed. Earlier studies, namely

UNCTAD (1998) and Hallward-Driemeier (2003) found insignificant impact on FDI, while the more recent studies, namely Egger and Merlo (2007), Egger and Pfaffermayr (2004), Neumayer and Spess (2005), and Tobin and Rose-Ackerman (2006), found a significant positive impact on FDI.

UNCTAD's (1998) landmark study has examined the impact of BITs on FDI using both time series and cross section analyses. Time series analysis has been conducted using data over eleven years and two hundred BITs signed between fourteen home and seventy two host countries. The study finds that BITs have a positive, albeit not a strong effect on FDI. However, the impact of BITs was most statistically significant for the share of a home country partner to a BIT in a host country's total inflows, and for the share of a particular host country in a home country's total FDI outflows. The cross section analysis of the study finds a positive impact of BITs on the absolute level of FDI flows and on FDI flows relative to GDP. The overall conclusion of the cross section analysis is that BITs play a minor and secondary role in attracting FDI, while the leading determinant appears to be market size. Similar to the conclusion of the UNCTAD study, Hallward-Driemeier (2003) finds little evidence of a beneficial impact of BITs on FDI in countries with reasonably strong institutions in examining the impact of ratified BITs on bilateral FDI flows from twenty OECD countries to thirty one developing countries over the period 1980–2000.

In contrast to the above two studies, Egger and Pfaffermayr (2004) find that signed and ratified BITs exert a significant positive impact on the stock of outward FDI of nineteen OECD home countries into fifty four host countries (both OECD and non-OECD) for the period 1982–1997. They find that the impact is higher for ratified BITs as opposed to signed BITs. Similarly Neumayer and Spess (2005) find that BITs have a significant positive impact on FDI flows to 119 developing countries for a longer time period (1970–2001). Also Tobin and Rose-Ackerman (2006), in studying the impact of BITs contracted between home OECD countries and host developing countries during the period 1980–2003, find that the number of BITs contracted has a positive impact on FDI in subsequent periods but their marginal impact diminishes as the number of globally contracted BITs increases.

One drawback of the above studies is the failure to take into account the dynamic effect of BITs. Egger and Merlo (2007) overcome this drawback by addressing the dynamic adjustment of FDI in the long run. Using bilateral FDI stocks covering twenty four home and twenty eight host OECD and transition

countries in the period 1980–2001, and adopting the first-differenced GMM estimator, they find that the long run impact of BITs on FDI is nearly twice the short run effect, with the former amounting to 8.9 percent, while the latter amounts to 4.8 percent.

4. Theoretical framework, empirical model, conceptual issues, and data

The theoretical framework for this paper builds on the location advantage hypothesis of Dunning's (1981) ownership-location-internalization (OLI) paradigm. The OLI paradigm asserts that in order to produce abroad a firm utilizes ownership, location, and internalization advantages it has. The ownership advantage stems from the firm's ownership of intangible assets, such as technology, patents, and skilled management. The location advantage arises from the assets that foreign markets supply, such as abundant natural resources, large market size, cheap factors of production, and friendly business environment. These assets attract firms to produce abroad. The internalization advantage emanates from the firm's engagement in production abroad itself rather than relying on the market, in the form of licensing or subcontracting for example, because of the higher transaction costs of the latter. While both ownership and internalization advantages are firm specific, location advantages are host country-specific.

The GCC countries location factors can be thought of along the World Bank's MENA countries classification according to the abundance of their natural and human resources. From a natural resources perspective, the proven oil reserves of the GCC countries account for nearly 40 percent of world reserves, respectively, which lure resource-seeking FDI in particular from OECD countries. [3] From a human resources perspective and of relevance to FDI is the skilled labor force. The GCC countries are characterized by a largely imported labor force from Middle Eastern and Asian labor markets. [4] In addition to these two location factors, bilateral investment treaties and property rights protection institutions are two other location factors, which encourage FDI in the GCC region. [5]

The empirical model therefore explains FDI in terms of location-related variables, lagged FDI to capture the dynamic adjustment of FDI similar to Egger and Merlo (2007), and a time trend. The empirical model is provided in equation (1) as:

$$FDI_{i,t} = \beta_0 + \beta_1 FDI_{i,t-1} + \beta_2 BIT_{i,t} + \beta_3 OIL_{i,t} + \beta_4 EDUC_{i,t} + \beta_5 INST_{i,t} + \beta_6 YEAR_{i,t} + \varepsilon_{i,t} \quad \textbf{(1)}$$

where *FDI* is the stock of real inward FDI relative to real GDP. [6] Using

the stock rather than the flows of FDI, as the dependent variable, accounts for the accumulation of FDI over time. The stock of FDI is normalized by GDP to account for differences in the size of GCC economies. *BIT* is the number of annual BITs contracted. *OIL* is oil resources measured by relative oil production, i.e. oil production in millions of barrels per day as a percentage of oil reserves in millions of barrels. The construction of oil resources in such way takes into account the fact FDI is needed in the oil extraction and exploration processes and the relative utilization of oil resources which affects FDI. *EDUC* is the percentage of secondary education enrollment to total school enrollment to proxy for the quality of human capital. *INST* is institutional quality – the quality of property rights protection - proxied by ICRG's law and order indicator, a component of the political risk index. *YEAR* is a time trend to account for FDI accumulation over time. The subscripts *i* and *t* are country and time indicators. ε is an error term. The empirical model is double logarithmic, except for *BIT*, which has zero values for most of the 1980s, and for *YEAR*.

Modeling BITs in the empirical model takes into account two considerations. The first is the distinction between a government's willingness to commit to property rights protection, and its actual commitment. Signing a BIT indicates willingness to commit to property rights protection and investment dispute settlement, while ratifying a BIT indicates actual commitment. The paper estimates separate empirical models using signed and ratified BITs. This distinction helps separate the FDI responses of foreign investors to these two degrees of government commitment to property rights protection.

The second consideration is that each GCC country has contracted BITs with different countries for different motives, and depending on the nature of the economic, political, and historical relations it has with them. As these differences are most likely to be associated with the income level of the contracting partner, this paper distinguishes the impact of contracted BITs by the income level of the contracting partner, and separately estimates the empirical model for each income-distinguished contracted BIT. The paper distinguishes the impact of BITs contracted with a) high income OECD countries, b) high income non-OECD countries, c) upper middle income countries, and d) lower middle income countries. Low income countries are omitted for their low investment potential.

We should note a number of points regarding data availability and model specification. First, there is neither bilateral nor sectoral FDI data available for the GCC countries. Thus the aggregate FDI data are used in this paper. Second,

in selecting a measure of human capital, it would have been better if a measure of the composition (domestic versus expatriate) of the labour force and the degree of skills had been available. Even the used measure of education, which is relative school enrolment, does not provide an indication on whether such enrolment is for indigenous as opposed to foreign students. Third, from a model specification perspective, because oil drives economic activity in the GCC countries, it is highly correlated with market size and trade both exports and imports.[7] Consequently, GDP, merchandise exports, and merchandise imports were excluded from the empirical model to avoid serious multicollinearity. Fourth, population size and education, as measured by school enrolment, are correlated to each other, and thus population size has been excluded.[8]

FDI and *BIT* are obtained from UNCTAD's FDI and bilateral investment treaties online databases.[9] *INST* is obtained from ICRG's political risk index. *OIL* is obtained from Energy Information Administration.[10] *EDUC* is obtained from the United Nations Common Database.[11]

Panel data covering the period 1984–2002 is used. The panel dataset is unbalanced, however, due to two missing observations on *INST* for Oman and Qatar for the year 1984, and twenty two sporadically missing observations on *EDUC* for the six GCC countries. The sample period could have been lengthened had data on *EDUC* been available beyond 2002. STATA 9.0 is the econometric package used in estimation.

5. Empirical issues and estimation methodology

In estimating the empirical model, endogeneity is an important econometric issue which is taken into account. Endogeneity in the empirical model of equation 1 results from a) reversed causality between BITs and FDI, as well as between relative oil production and FDI; b) the correlation between the lagged dependent variable and the country effect; and c) the presence of time-invariant unobservable country effect, such as the degree of strength of international relationships a GCC country has with the rest of the world–including those countries with which BITs are contracted. Endogeneity results in inconsistent OLS estimates.

In the presence of endogeneity, this paper adopts a difference GMM estimator for dynamic panel models proposed by Arellano and Bond (1991). This approach has been recently adopted by Egger and Merlo (2007) in examining the dynamic impact of BITs on FDI stocks.

6. Empirical results

Before estimating the empirical model, a Ramsey model specification RESET test was conducted on the ordinary least squares regressions of the empirical model for different income classifications of BITs contracting partners, and the *p* values for these tests are presented in Table 1. All results lend support to the null hypothesis of no variable omission, except for the ratified BITs with high income non-OECD countries, which is statistically significant at the 10 percent level only. [12] In addition, multicollinearity is explored and the mean variance inflation factor (VIF) is also reported. Bowerman *et al.* (2005) consider multicollinearity as "severe" if the largest VIF is greater than 10 and the mean VIF is substantially greater than 1. The highest VIF did not exceed 10, and the mean VIF did not exceed 3 in any of the specifications, suggesting that correlation among the explanatory variables is reasonable. [13]

The results of the one-step difference GMM estimator are presented in Table 2. [14] In all specifications the Wald test indicates joint significance of the explanatory variables. The results of the Sargan test indicate that the instruments are not correlated with the residuals of the first difference regression.

Table 2. Impact of BITs on FDI in GCC Countries (1984–2002)

	All	OECD	Non-OECD	UM	LM
	Signed				
	(1A)	(2A)	(3A)	(4A)	(5A)
FDI-1	0.443a	0.447a	0.428b	0.439a	0.438a
	[0.161]	[0.160]	[0.172]	[0.168]	[0.168]
BIT	0.01	0.041	-0.396	0.054	0.008
	[0.025]	[0.044]	[0.254]	[0.059]	[0.048]
OIL	-0.253a	-0.261b	-0.249b	-0.256b	-0.254a
	[0.095]	[0.108]	[0.105]	[0.105]	[0.086]
INST	0.824a	0.849a	0.814a	0.835a	0.831a
	[0.256]	[0.281]	[0.287]	[0.270]	[0.263]
EDUC	-0.927a	-0.939a	-1.002a	-0.903a	-0.931a
	[0.340]	[0.353]	[0.364]	[0.336]	[0.342]
YEAR	0.012	0.01	0.019	0.011	0.013
	[0.018]	[0.020]	[0.017]	[0.019]	[0.018]
Wald test $\chi 2$	255.8	348.1	97.5	224.9	253.01

Sargan test $\chi 2$	82.6	83.13	86.35	82.14	82.95
Serial correlation test	0.105	0.107	0.092	0.112	0.095
Short-term impact (%)	-	-	-	-	-
Long-term impact (%)	-	-	-	-	-

	Ratified				
	(1B)	(2B)	(3B)	(4B)	(5B)
FDI_{-1}	0.420a	0.425b	0.476a	0.460a	0.441a
	[0.163]	[0.171]	[0.158]	[0.160]	[0.168]
BIT	**-0.069c**	-0.09	**1.427a**	**-0.419a**	0.038
	[0.037]	[0.083]	[0.047]	[0.088]	[0.052]
OIL	-0.273a	-0.279a	-0.234a	-0.287a	-0.266b
	[0.105]	[0.100]	[0.080]	[0.084]	[0.109]
INST	0.875a	0.849a	0.655a	0.854a	0.807a
	[0.254]	[0.258]	[0.178]	[0.235]	[0.263]
EDUC	-0.815b	-0.835b	-0.725b	-0.840a	-0.957a
	[0.336]	[0.388]	[0.298]	[0.295]	[0.320]
YEAR	0.01	0.012	0.01	0.011	0.014
	[0.017]	[0.018]	[0.018]	[0.018]	[0.016]
Observations	72	72	72	72	72
Wald test χ^2	268.6	1792.8	53027	193.4	692.5
Sargan test χ^2	79.2	80.85	82.17	72.6	82.3
Serial Correlation test	0.104	0.1	0.1	0.132	0.082
Short-term impact (%)	**-6.6**	-	**316.6**	**-34.2**	-
Long-term impact (%)	**-11. 5**	-	**604.2**	**-63.4**	-

Robust standard errors in brackets. Coefficients of the difference of lagged FDI, OIL, INST, EDUC, and BIT reported. Letters a, b, c significant at 1, 5, 10% level, respectively. H_0 for Sargan over-identification test: instruments not correlated with residuals. H_0 for serial correlation test: errors in first-difference regression exhibit no second-order serial correlation (*p* values reported).

The results of the serial correlation test indicate that the errors in the first difference regression exhibit no second-order serial correlation for almost all specifications. Only in specifications (3A) and (5A), serial correlation is marginally significant (at the 10 percent level). The results of these three tests suggest that the model specification is satisfactory, in particular for ratified BITs. Since the coefficients of explanatory variables other than *BIT* do not vary much in the different specifications, we will examine them first. These coefficients

are interpreted as elasticities since the explanatory variables are expressed in logarithmic form. In all specifications the coefficients of lagged *FDI* are positive, statistically significant at the 5 percent level at least, and range between 0.4 and 0.5. The coefficients of *OIL* and *EDUC* are negative and statistically significant at the 5 percent level at least. The sign of *OIL* coefficient seems surprising, however. Since the oil variable by construction indicates the degree of utilization of oil resources, the interpretation of its coefficient suggests that a 1 percent increase in the degree of utilization results in the reduction of relative FDI, i.e. relative to GDP, by about 0.3 percent in specification (1B) for example. This is interpreted as indicating that increased oil production results in a higher rate of increase in GDP than in FDI, resulting in a decline of the share of FDI in GDP. The negative coefficient of *EDUC* on FDI lends support to the lagging quality of education in the GCC countries. [15] The positive and statistically significant coefficient (at the 1 percent level) of *INST* highlights the importance of institutional quality to FDI in GCC countries: an improvement in the quality of domestic institutions by 1 percent results in an increase in relative FDI by nearly 1 percent.

None of the signed *BIT* coefficients in the upper panel of Table 2 are statistically insignificant, suggesting no FDI response to GCC *willingness* to commit to property rights protection. Interestingly not all ratified *BIT* coefficients are both positive and statistically significant, as the lower panel of Table 2 shows. Some coefficients are rather negative in the first place.

The ratified *BIT* coefficient is positive and statistically significant only for BITs ratified with high income non-OECD countries, as shown in specification 3B, but negative and statistically significant for *all* (non-income distinguished) ratified BITs and those ratified with upper middle income countries, as shown in specifications 1B and 4B respectively. The coefficient of *all* ratified *BIT* in specification (1B) is negative and marginally statistically significant: an increase in the number of ratified BITs by one, results in a decrease in relative FDI by 6.6 percent in the short term and by 11.5 percent in the long term. [16]

But could *all* BITs ratified discourage FDI? To understand this result, we should first point out that the majority of *all* ratified BITs are composed of BITs ratified with OECD and upper middle income countries, whose coefficients are negative, as shown in specifications 2B and 4B. The composition of *all* ratified BITs therefore helps understand the negative coefficient. The negative coefficient of ratified BITs with upper middle income countries *may* suggest that although BITs are contracted to boost investors' confidence about property rights

protection in the GCC countries, they still send a negative signal about property rights protection to foreign investors. BITs therefore seem to lack credibility among foreign investors in upper middle income countries, and thus generate an opposite FDI impact to what is initially intended.

The coefficient of ratified BITs with high income non-OECD countries in specification (3B) is positive and statistically significant at the 1 percent level. The corresponding short term and long term impacts suggest that an increase in the number of ratified BITs with high income non-OECD countries, whether outside the region (e.g. Brunei Darussalam) or inside the region (e.g. Kuwait and UAE), by one results in an increase in relative FDI by more than threefold in the short term and more than sixfold in the long term. This result suggests that the signaling of property rights protection is believed and responded to favorably by investors from within the GCC region (and from Brunei Darussalam) either on their own or in response to political directives from their governments.

7. Robustness

The robustness of the results is checked in three respects. First, the second lag of the dependent variable (FDI_{-2}) is included in the empirical model (Table 3). [17] Second, a recent sample period (1990–2002) is used, since the number of BITs increased significantly starting 1990 (Table 4), and FDI_{-2} is added to the empirical mode using this recent sample (Table 5). Third, outward FDI (*FDIOUT*) is added to the empirical model, since BITs provide property rights protection not only to foreign investments in the GCC countries but to GCC investments in partner countries as well (Table 6). [18] With *FDIOUT* included in the empirical model, which is discovered to be highly correlated with *EDUC*, three further robustness checks are conducted: *EDUC* is excluded from the empirical model (Table 7), a recent sample period 1990–2002 is adopted (Table 8), and BITs contracted by other GCC countries (*BITOTHERS*) are included (Table 9).

When FDI_{-2} is included in the empirical model (Table 3), most *BIT* coefficients slightly decrease in absolute terms but their statistical significance remains the same, compared to Table 2. The modelling of FDI_{-2} in the empirical model has absorbed some of BITs (negative) impact on FDI. Thus the negative short term impact of *all* ratified BITs and BITs ratified with upper middle income countries in specifications (1B) and (4B) improves slightly. The positive short term impact of BITs ratified with high income non-OECD countries declines slightly, while the long term impact increases significantly. For ratified BITs with upper middle income countries, the short term negative impact improves slightly,

while negative long term impact worsens significantly.

When the sample period is restricted to the 1990s and early 2000s during which GCC inward FDI increased significantly (Table 4), the coefficients of FDI_{-1} and *BIT* improve significantly. The negative coefficient of *all* ratified BITs drops by nearly half compared to Table 2, but becomes statistically insignificant. The positive coefficient of BITs ratified with high income non-OECD countries in specification (3B), improves and so does the negative coefficient of ratified BITs with upper middle income countries in specification (4B).

Table 3. Impact of BITs on FDI in GCC Countries (1984–2002): + FDI-

	All	OECD	Non-OECD	UM	LM
	Signed				
	(1A)	(2A)	(3A)	(4A)	(5A)
FDI_{-1}	0.587a	0.576a	0.562a	0.569a	0.582a
	[0.187]	[0.188]	[0.196]	[0.194]	[0.190]
BIT	0.019	0.038	-0.405	0.048	0.037
	[0.016]	[0.039]	[0.248]	[0.053]	[0.044]
OIL	-0.256b	-0.266b	-0.255b	-0.262b	-0.249a
	[0.105]	[0.113]	[0.110]	[0.111]	[0.092]
INST	0.854a	0.884a	0.851a	0.871a	0.858a
	[0.284]	[0.304]	[0.316]	[0.296]	[0.290]
EDUC	-1.009a	-1.020a	-1.088a	-0.989a	-1.017a
	[0.346]	[0.363]	[0.351]	[0.352]	[0.346]
YEAR	0.011	0.009	0.018	0.011	0.013
	[0.019]	[0.021]	[0.017]	[0.020]	[0.018]
FDI_{-2}	-0.237b	-0.224b	-0.232b	-0.225b	-0.238b
	[0.108]	[0.106]	[0.104]	[0.108]	[0.106]
Wald test χ^2	139.1	200.1	47.4	125	119.5
Sargan test χ^2	73.92	74.86	77.16	74.11	74.96
Serial correlation test	0.215	0.215	0.184	0.217	0.185
Short-term impact (%)	-	-	-	-	-
Long-term impact (%)	-	-	-	-	-

	Ratified				
	(1B)	(2B)	(3B)	(4B)	(5B)
FDI_{-1}	0.546a	0.550a	0.587a	0.585a	0.568a

	[0.182]	[0.193]	[0.187]	[0.184]	[0.195]
BIT	**-0.062c**	-0.079	**1.393a**	**-0.407a**	0.021
	[0.032]	[0.075]	[0.054]	[0.083]	[0.045]
OIL	-0.278b	-0.282b	-0.240a	-0.292a	-0.268b
	[0.114]	[0.110]	[0.081]	[0.094]	[0.114]
INST	0.905a	0.881a	0.690a	0.888a	0.855a
	[0.290]	[0.289]	[0.191]	[0.266]	[0.293]
EDUC	-0.904a	-0.925b	-0.800b	-0.921a	-1.026a
	[0.337]	[0.363]	[0.328]	[0.299]	[0.331]
YEAR	0.01	0.011	0.01	0.01	0.013
	[0.018]	[0.018]	[0.018]	[0.018]	[0.017]
FDI_{-2}	-0.214b	-0.213b	-0.192c	-0.215b	-0.222b
	[0.094]	[0.091]	[0.108]	[0.106]	[0.103]
Observations	72	72	72	72	72
Wald test χ^2	49.6	46.2	41.6	81.4	1093
Sargan test χ^2	72.45	73.44	73.04	66.49	74.3
Serial correlation test	0.224	0.206	0.194	0.3	0.172
Short-term impact (%)	**-6**	-	**302.7**	**-33.4**	-
Long-term impact (%)	**-13.2**	-	**732.9**	**-80.6**	-

Robust standard errors in brackets. Coefficients of the difference of lagged FDI, OIL, INST, EDUC, and BIT reported. Letters a, b, c significant at 1, 5, 10% level, respectively. H_0 for Sargan over-identification test: instruments not correlated with residuals. H_0 for serial correlation test: errors in first-difference regression exhibit no second-order serial correlation (*p* values reported).

Table 4. Impact of BITs on FDI in GCC Countries (1990–2002)

	All	OECD	non-OECD	UM	LM
	Signed				
	(1A)	(2A)	(3A)	(4A)	(5A)
FDI-1	0.678a	0.675a	0.625a	0.647a	0.633a
	[0.174]	[0.174]	[0.202]	[0.210]	[0.199]
BIT	0.039	0.099	-0.401	0.276	-0.073
	[0.046]	[0.086]	[0.260]	[0.228]	[0.065]
OIL	-0.287a	-0.312a	-0.287a	-0.282a	-0.338a
	[0.064]	[0.084]	[0.075]	[0.077]	[0.105]
INST	0.537b	0.609b	0.567b	0.574b	0.631b
	[0.221]	[0.292]	[0.284]	[0.275]	[0.286]

EDUC	-0.734	-0.838	-0.913	-0.703c	-0.725c
	[0.510]	[0.637]	[0.597]	[0.381]	[0.419]
YEAR	0.02	0.015	0.034	0.019	0.019
	[0.025]	[0.028]	[0.028]	[0.027]	[0.023]
Wald test $\chi 2$	633.8	243.2	1061.9	972.2	1132.5
Sargan test $\chi 2$	52.92	54.71	56.6	53.58	51.02
Serial correlation test	0.196	0.183	0.163	0.181	0.173
Short-term impact (%)	-	-	-	-	-
Long-term impact (%)	-	-	-	-	-

	Ratified				
	(1B)	(2B)	(3B)	(4B)	(5B)
FDI-1	0.611a	0.613a	0.708a	0.659a	0.666a
	[0.210]	[0.211]	[0.194]	[0.196]	[0.193]
BIT	-0.034	-0.088	1.476a	-0.399a	0.094
	[0.049]	[0.090]	[0.035]	[0.120]	[0.065]
OIL	-0.313a	-0.332a	-0.269a	-0.321a	-0.331a
	[0.081]	[0.102]	[0.035]	[0.077]	[0.121]
INST	0.653b	0.653b	0.379b	0.647b	0.509b
	[0.285]	[0.310]	[0.159]	[0.312]	[0.231]
EDUC	-0.667	-0.581	-0.327	-0.412	-0.864c
	[0.532]	[0.572]	[0.285]	[0.374]	[0.464]
YEAR	0.019	0.018	0.013	0.01	0.029
	[0.025]	[0.025]	[0.020]	[0.021]	[0.025]
Observations	47	47	47	47	47
Wald test $\chi 2$	1203.9	4457.1	20834.1	510.6	3882.7
Sargan test $\chi 2$	51.58	51.08	51.34	45.0	50.2
Serial correlation test	0.173	0.160	0.172	0.221	0.181
Short-term impact (%)	-	-	337.5	-32.9	-
Long-term impact (%)	-	-	1156.0	-112.7	-

Robust standard errors in brackets. Coefficients of the difference of lagged FDI, OIL, INST, EDUC, and BIT reported. Letters a, b, c significant at 1, 5, 10% level, respectively. H_0 for Sargan over-identification test: instruments not correlated with residuals. H_0 for serial correlation test: errors in first-difference regression exhibit no second-order serial correlation (*p* values reported).

When FDI_{-2} is included in the model (Table 5), the coefficient of FDI_{-1} improves further compared to Tables 3 and 4. Compared to Table 3, the coefficients of BITs ratified with high income non-OECD countries and upper middle income countries improve. Thus the absolute value of the long term impact more than doubles for BITs ratified with high income non-OECD and upper middle income countries.

Table 5. Impact of BITs on FDI in GCC Countries (1990–2002): + FDI_{-2}

	All	OECD	non-OECD	UM	LM
	Signed				
	(1A)	(2A)	(3A)	(4A)	(5A)
FDI_{-1}	0.935a	0.862a	0.811a	0.849a	0.803a
	[0.228]	[0.194]	[0.210]	[0.225]	[0.216]
BIT	0.062	0.103	-0.414	0.302	-0.033
	[0.048]	[0.086]	[0.265]	[0.214]	[0.046]
OIL	-0.243a	-0.284a	-0.258a	-0.249a	-0.292a
	[0.071]	[0.090]	[0.080]	[0.083]	[0.102]
INST	0.561a	0.660b	0.617b	0.627b	0.664b
	[0.177]	[0.260]	[0.270]	[0.251]	[0.271]
EDUC	-1.290c	-1.293	-1.372c	-1.186	-1.145c
	[0.692]	[0.853]	[0.762]	[0.745]	[0.613]
YEAR	0.026	0.02	0.04	0.025	0.026
	[0.030]	[0.032]	[0.032]	[0.033]	[0.027]
FDI_{-2}	-0.465	-0.373c	-0.375c	-0.403	-0.339
	[0.298]	[0.220]	[0.227]	[0.266]	[0.216]
Wald test χ^2	6241.9	1578	35.9	79.2	2181.7
Sargan test χ^2	42.87	46.35	47.76	44.69	44.79
Serial correlation test	0.378	0.278	0.23	0.409	0.245
Short-term impact (%)	-	-	-	-	-
Long-term impact (%)	-	-	-	-	-
	Ratified				
	(1B)	(2B)	(3B)	(4B)	(5B)
FDI_{-1}	0.797a	0.781a	0.833a	0.828a	0.818a
	[0.212]	[0.217]	[0.197]	[0.209]	[0.213]

BIT	-0.016	-0.068	**1.425a**	**-0.384a**	0.069
	[0.043]	[0.074]	[0.071]	[0.105]	[0.055]
OIL	-0.280a	-0.300a	-0.250a	-0.294a	-0.298b
	[0.074]	[0.090]	[0.046]	[0.076]	[0.117]
INST	0.676b	0.687b	0.422b	0.692b	0.579a
	[0.266]	[0.292]	[0.170]	[0.311]	[0.224]
EDUC	-1.130c	-1.013c	-0.651c	-0.836b	-1.224b
	[0.680]	[0.584]	[0.395]	[0.378]	[0.597]
YEAR	0.026	0.024	0.018	0.015	0.032
	[0.028]	[0.026]	[0.022]	[0.021]	[0.027]
FDI_{-2}	-0.35	-0.327c	-0.256	-0.341	-0.323c
	[0.213]	[0.189]	[0.212]	[0.221]	[0.193]
Observations	47	47	47	47	47
Wald test χ^2	1545.3	16.63	868.2	17158.9	2232.2
Sargan test χ^2	44.85	44.58	43.46	39.61	44.2
Serial correlation test	0.271	0.296	0.182	0.517	0.229
Short-term impact (%)	-	-	**315.8**	**-31.9**	-
Long-term impact (%)	-	-	**1890.9**	**-185.4**	-

Robust standard errors in brackets. Coefficients of the difference of lagged FDI, OIL, INST, EDUC, and BIT reported. Letters a, b, c significant at 1, 5, 10% level, respectively. H_0 for Sargan over-identification test: instruments not correlated with residuals. H_0 for serial correlation test: errors in first-difference regression exhibit no second-order serial correlation (*p* values reported).

When *FDIOUT* is included in the empirical model (Table 6), the coefficients of FDI_{-1} drop by nearly half, which reduces the absolute value of *BIT* long term impact. The absolute values of the coefficients of *all* ratified BITs and BITs ratified with high income non-OECD and upper middle income countries change slightly compared to the coefficients in Table 2. The coefficient of *all* ratified BITs worsens, while those of ratified BITs with high income non-OECD countries and upper middle income countries improve. The resulting negative long term impact of *all* ratified BITs and of ratified BITs with upper middle income countries improves by about 20 and 30 percent, respectively, while the positive impact of ratified BITs with high income non-OECD countries worsens by about 20 percent.

Table 6. Impact of BITs on FDI in GCC Countries (1984–2002): + FDIOUT

	All	OECD	non-OECD	UM	LM
	Signed				
	(1A)	(2A)	(3A)	(4A)	(5A)
FDI_{-1}	0.261a	0.263a	0.249a	0.250a	0.246a
	[0.062]	[0.071]	[0.071]	[0.073]	[0.073]
BIT	0.016	0.055	-0.372	0.084	-0.018
	[0.028]	[0.045]	[0.271]	[0.054]	[0.044]
OIL	-0.204a	-0.216a	-0.206a	-0.206a	-0.217a
	[0.052]	[0.068]	[0.065]	[0.067]	[0.057]
INST	0.597	0.649	0.591	0.61	0.622
	[0.417]	[0.468]	[0.459]	[0.432]	[0.430]
EDUC	-0.595	-0.622	-0.669	-0.568	-0.613
	[0.509]	[0.534]	[0.534]	[0.499]	[0.538]
YEAR	-0.007	-0.012	0.001	-0.009	-0.007
	[0.013]	[0.016]	[0.013]	[0.015]	[0.014]
FDIOUT	0.008	0.013	-0.001	0.014	0.01
	[0.033]	[0.032]	[0.044]	[0.030]	[0.037]
Wald test χ^2	**10.17**	**11.77**	**15.24**	**11.06**	1598.9
Sargan test χ^2	62.45	62.74	66	61.65	62.24
Serial correlation test	0.111	0.111	0.102	0.115	0.103
Short-term impact (%)	-	-	-	-	-
Long-term impact (%)	-	-	-	-	-

	Ratified				
	(1B)	(2B)	(3B)	(4B)	(5B)
FDI_{-1}	0.230a	0.236a	0.270a	0.283a	0.258a
	[0.054]	[0.061]	[0.075]	[0.060]	[0.071]
BIT	**-0.073b**	-0.096	**1.509a**	**-0.380a**	0.064
	[0.035]	[0.073]	[0.061]	[0.121]	[0.067]
OIL	-0.213a	-0.217a	-0.196a	-0.244a	-0.212a
	[0.063]	[0.063]	[0.046]	[0.061]	[0.060]
INST	0.687	0.651	0.281	0.662c	0.579
	[0.426]	[0.426]	[0.267]	[0.363]	[0.413]
EDUC	-0.543	-0.562	-0.255	-0.552	-0.658

	[0.493]	[0.529]	[0.489]	[0.450]	[0.531]
YEAR	-0.009	-0.007	-0.01	-0.008	-0.004
	[0.014]	[0.014]	[0.015]	[0.013]	[0.013]
FDIOUT	0.021	0.021	0.003	0.01	0.005
	[0.031]	[0.036]	[0.029]	[0.041]	[0.045]
Observations	61	61	61	61	61
Wald test χ^2	188.8	**12.72**	47.06	14.59	**11.43**
Sargan test χ^2	58.85	60.6	60.3	54.4	62
Serial correlation test	0.101	0.107	0.1	0.115	0.082
Short-term impact (%)	**-7.0**	-	**352.2**	**-31.6**	-
Long-term impact (%)	**-9.1**	-	**482.5**	**-44.1**	-

Robust standard errors in brackets. Coefficients of the difference of lagged FDI, FDIOUT, OIL, INST, EDUC, and BIT reported. Letters a, b, c significant at 1, 5, 10% level, respectively. $\chi^2(7)$ at 1 and 5% level is 18.48 and 14.07, respectively. H_0 for Sargan over-identification test: instruments not correlated with residuals. H_0 for serial correlation test: errors in first-difference regression exhibit no second-order serial correlation (*p* values reported).

The inclusion of *FDIOUT* results in two additional major changes in coefficient estimates. First, the absolute value of the coefficient of *OIL* decreases. In other words, the negative influence of oil on FDI improves as a result. Second, the coefficients of *INST* and *EDUC* become statistically insignificant. The latter result is attributed to the high positive correlation between *EDUC* and *FDIOUT*, which amounts to about 0.67 and is statistically significant at the 5 percent level.

When *EDUC* is excluded from the empirical model (Table 7), FDI_{-1} coefficients increase significantly in both the upper and lower panels of the table, compared to those of Tables 2 and 6. Also the *OIL* coefficient worsens and the statistical significance of *INST* coefficient improves compared to Table 6.

Table 7. Impact of BITs on FDI in GCC Countries (1984–2002): + FDIOUT - EDUC

	All	OECD	non-OECD	UM	LM
	Signed				
	(1A)	(2A)	(3A)	(4A)	(5A)
FDI_{-1}	0.727a	0.744a	0.727a	0.735a	0.731a
	[0.065]	[0.062]	[0.069]	[0.063]	[0.063]
BIT	**0.019a**	**0.055c**	**-0.153c**	0.01	**0.011a**
	[0.004]	[0.030]	[0.091]	[0.009]	[0.003]
OIL	-0.240a	-0.236a	-0.239a	-0.238a	-0.239a
	[0.064]	[0.067]	[0.067]	[0.065]	[0.063]

INST	0.541c	0.542c	0.588c	0.565c	0.565c
	[0.313]	[0.311]	[0.356]	[0.333]	[0.332]
YEAR	-0.007	-0.007	-0.005	-0.006	-0.006
	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]
FDIOUT	-0.054b	-0.049c	-0.053c	-0.050c	-0.051b
	[0.025]	[0.026]	[0.029]	[0.027]	[0.026]
Wald test χ^2	1624.8	648.7	806.7	1843.2	1770
Sargan test χ^2	94.1	94.8	94.6	93.7	94
Serial correlation test	0.117	0.125	0.117	0.117	0.12
Short-term impact (%)	**1.9**	**5.7**	**-14.2**	-	**1.1**
Long-term impact (%)	7	22.1	**-52**	-	**4.1**

	Ratified				
	(1B)	**(2B)**	**(3B)**	**(4B)**	**(5B)**
FDI_{-1}	0.748a	0.740a	0.785a	0.745a	0.734a
	[0.056]	[0.055]	[0.045]	[0.057]	[0.064]
BIT	**-0.033b**	-0.044	**1.361a**	**-0.234a**	0.019
	[0.013]	[0.038]	[0.036]	[0.021]	[0.029]
OIL	-0.237a	-0.232a	-0.220a	-0.251a	-0.235a
	[0.066]	[0.069]	[0.052]	[0.054]	[0.064]
INST	0.596c	0.579c	0.247a	0.649b	0.580c
	[0.343]	[0.337]	[0.078]	[0.311]	[0.340]
YEAR	-0.004	-0.005	0.001	-0.007	-0.007
	[0.008]	[0.008]	[0.006]	[0.007]	[0.008]
FDIOUT	-0.051c	-0.052c	-0.060a	-0.050c	-0.052c
	[0.030]	[0.027]	[0.022]	[0.027]	[0.027]
Observations	98	98	98	98	98
Wald test χ^2	3,542.7	2,378.6	137,860	2,455.8	3,525
Sargan test χ^2	92.6	93.5	95	91.5	94
Serial correlation test	0.12	0.116	0.126	0.138	0.12
Short-term impact (%)	**-3.2**	-	**290**	**-20.9**	-
Long-term impact (%)	**-12.9**	-	**1348.9**	**-81.8**	-

Robust standard errors in brackets. Coefficients of the difference of lagged FDI, FDIOUT, OIL, INST, and BIT reported. Letters a, b, c significant at 1, 5, 10% level, respectively. H_0 for Sargan over-identification test: instruments not correlated with residuals. H_0 for serial correlation test: errors in first-difference regression exhibit no second-order serial correlation (*p* values reported).

Interestingly, the positive coefficients of *all* signed BITs and those signed with OECD countries, which were statistically insignificant in previous tables, have become statistically significant, as one would normally expect from signing BITs. Hence the short term and long term impact of those signed BITs becomes positive. The negative coefficient of BITs signed with high income non-OECD countries has also become statistically significant.

For ratified BITs, the positive long term impact of BITs ratified with high income non-OECD countries nearly triples compared to Table 6, while the short term impact worsens by nearly 20 percent. The tripling long term impact is supported by the anecdotal evidence on the increase in intra-GCC FDI, especially in the second half of the 1990s and early 2000s, with FDI flowing intra-regionally. Such impact is emphasized when the sample period is reduced to the 1990-2002 period, as shown in Table 8.

Table 8. Impact of BITs on FDI in GCC Countries (1990–2002): + FDIOUT - EDUC

	All	OECD	non-OECD	UM	LM
	Signed				
	(1A)	(2A)	(3A)	(4A)	(5A)
FDI_{-1}	0.705a	0.732a	0.708a	0.712a	0.727a
	[0.048]	[0.045]	[0.050]	[0.051]	[0.064]
BIT	**0.021a**	0.079	**-0.154c**	**0.049a**	-0.009
	[0.008]	[0.052]	[0.081]	[0.015]	[0.021]
OIL	-0.253a	-0.243a	-0.247a	-0.238a	-0.244a
	[0.082]	[0.082]	[0.083]	[0.084]	[0.079]
INST	0.742c	0.730b	0.807c	0.761c	0.785c
	[0.391]	[0.368]	[0.447]	[0.404]	[0.432]
YEAR	-0.008	-0.009	-0.006	-0.007	-0.007
	[0.006]	[0.007]	[0.006]	[0.007]	[0.007]
FDIOUT	0.001	0.013	0.005	0.011	0.01
	[0.028]	[0.027]	[0.030]	[0.028]	[0.028]
Wald test χ^2	554.4	617	35917.3	997.1	4778
Sargan test χ^2	69.3	71.4	69.2	68.5	64.5
Serial correlation test	0.381	0.066	0.153	0.414	0.224
Short-term impact (%)	**2.1**	-	**-14.3**	**5**	-
Long-term impact (%)	**7.2**	-	**-48.9**	**17.4**	-
	Ratified				

	(1B)	(2B)	(3B)	(4B)	(5B)
FDI_{-1}	0.729a	0.728a	0.801a	0.734a	0.717a
	[0.054]	[0.053]	[0.090]	[0.051]	[0.053]
BIT	-0.018	-0.04	**1.325a**	**-0.221a**	0.032
	[0.018]	[0.038]	[0.102]	[0.029]	[0.033]
OIL	-0.239a	-0.231a	-0.198a	-0.243a	-0.240a
	[0.083]	[0.087]	[0.053]	[0.076]	[0.081]
INST	0.792c	0.791c	0.362a	0.846b	0.804c
	[0.427]	[0.437]	[0.119]	[0.418]	[0.458]
YEAR	-0.005	-0.006	0	-0.008	-0.009
	[0.007]	[0.007]	[0.004]	[0.006]	[0.008]
FDIOUT	0.007	0.006	-0.02	0.004	0.001
	[0.029]	[0.027]	[0.024]	[0.027]	[0.031]
Observations	74	74	74	74	74
Wald test χ^2	8929.1	1689.9	227615.9	2494.3	499.6
Sargan test χ^2	68.1	68.5	74.5	66.8	68.6
Serial correlation test	0.458	0.325	0.186	0.855	0.229
Short-term impact (%)	-	-	**276.2**	**-19.8**	-
Long-term impact (%)	-	-	**1388**	**-74.5**	-

Robust standard errors in brackets. Coefficients of the difference of lagged FDI, FDIOUT, OIL, INST, and BIT reported. Letters a, b, c significant at 1, 5, 10% level, respectively. H_0 for Sargan over-identification test: instruments not correlated with residuals. H_0 for serial correlation test: errors in first-difference regression exhibit no second-order serial correlation (*p* values reported).

Tables 7 and 8 show the coefficients and thus the impact of BITs for some contracting partners may differ by the degree of commitment to property rights protection. In Tables 7 and 8 the coefficient and impact of signed BITs with high income non-OECD countries is negative, but turns positive when BITs are ratified. This result suggests that this group of largely GCC countries need a high degree of commitment as reflected in ratified as opposed to signed BITs in order to be FDI fruitful. The negative impact of signed treaties may suggest that signing a treaty signals to investors from other (GCC) countries the imperfect domestic institutional function of property rights protection.

The coefficient and impact of signed BITs with OECD countries is positive but turns negative and statistically insignificant when BITs are ratified (Table 7). When the sample period is reduced to 1990-2002 (Table 8), the coefficients and impact of signed and ratified BITs become statistically

significant. These results suggest first that OECD FDI may have taken place largely during the 1980s, possibly in association to oil; the response of OECD FDI to signed and ratified BITs is statistically insignificant in 1990-2002. In addition when considering FDI in the GCC region OECD foreign investors seem to weigh more domestic institutions in their investment decisions, as reflected in the positive *INST* coefficient in specifications (2A) and (2B) of Tables 7 and 8, than investment treaties. The negative coefficient of ratified BITs, though statistically insignificant, may lend initial support to the negative response of OECD investors to those BITs, reflecting an inadequate commitment by GCC countries to the improvement and strengthening of the imperfect property rights protection function.

The positive coefficient and impact of signed BITs with upper middle income countries is statistically significant only in 1990-2002, as shown by specification (4A) of Table 8. This suggests some relatively recent positive response to those BITs. But a negative coefficient and impact is observed in the case of ratified BITs regardless of the sample period, as specification 4B shows in Tables 7 and 8. An interpretation similar to the one obtained for ratified BITs with OECD countries, as discussed above, may hold.

Can a negative *BIT* coefficient possibly result from competition among GCC countries to contract BITs? To address this point, *BITOTHERS* is introduced into the model (Table 9). The coefficients of *BITOTHERS* for OECD countries in specifications (2A) and (2B) and for high income non-OECD countries in specification (3B) are positive, suggesting that FDI flows into one GCC country when another GCC country contracts BITs with partner countries of the same income level. [19] In other words, FDI geographically spills over when GCC countries, as a group, contract BITs with the same group of OECD and high income non-OECD contracting partners.

Table 9. Impact of BITs on FDI in GCC Countries (1990–2002):
+ FDIOUT + BITOTHERS - EDUC

	All	OECD	non-OECD	UM	LM
	Signed				
	(1A)	(2A)	(3A)	(4A)	(5A)
FDI_{-1}	0.705a	0.744a	0.711a	0.712a	0.727a
	[0.048]	[0.042]	[0.051]	[0.050]	[0.063]
BIT	**0.020a**	0.073	**-0.161b**	**0.050a**	-0.009

	[0.007]	[0.047]	[0.078]	[0.018]	[0.021]
OIL	-0.248a	-0.185a	-0.249a	-0.239a	-0.243a
	[0.079]	[0.070]	[0.086]	[0.084]	[0.078]
INST	0.735c	0.606c	0.816c	0.763c	0.784c
	[0.385]	[0.324]	[0.440]	[0.402]	[0.427]
YEAR	-0.009	-0.012c	-0.005	-0.007	-0.007
	[0.007]	[0.007]	[0.007]	[0.006]	[0.009]
FDIOUT	0	0.007	0.006	0.01	0.008
	[0.028]	[0.027]	[0.030]	[0.028]	[0.030]
BITOTHERS	0.001	**0.028a**	-0.026	0.002	0.002
	[0.002]	[0.009]	[0.016]	[0.015]	[0.010]
Wald test	516.2	2446.3	709.5	946.2	551.5
Sargan test	68.4	71.2	67.9	67.5	67.5
Serial correlation test	0.392	0.103	0.224	0.415	0.27
Short-term impact (%)	**2.0**	-	**-14.9**	**5.1**	-
Long-term impact (%)	**6.8**	-	**-51.5**	**17.8**	-

	Ratified				
	(1B)	(2B)	(3B)	(4B)	(5B)
FDI_{-1}	0.712a	0.716a	0.806a	0.733a	0.722a
	[0.055]	[0.054]	[0.089]	[0.043]	[0.047]
BIT	-0.004	-0.043	**1.344a**	**-0.237a**	0.03
	[0.028]	[0.041]	[0.099]	[0.045]	[0.033]
OIL	-0.235a	-0.242a	-0.174a	-0.243a	-0.223a
	[0.076]	[0.073]	[0.038]	[0.073]	[0.085]
INST	0.811c	0.850c	0.290b	0.947b	0.802c
	[0.417]	[0.435]	[0.125]	[0.478]	[0.453]
YEAR	-0.02	-0.011	0.001	-0.009	-0.014
	[0.016]	[0.010]	[0.004]	[0.007]	[0.009]
FDIOUT	0.001	0.006	-0.014	0.005	-0.001
	[0.030]	[0.028]	[0.026]	[0.027]	[0.031]
BITOTHERS	0.022	**0.025c**	**0.134c**	-0.054	**0.015c**
	[0.018]	[0.014]	[0.075]	[0.065]	[0.008]
Observations	74	74	74	74	74
Wald test	1548.4	2578	1550.1	67832.9	488
Sargan test	65.8	66.3	74.2	66.1	66.6

Serial correlation test	0.995	0.878	0.134	0.72	0.29
Short-term impact (%)	-	-	**283.4**	**-21.1**	-
Long-term impact (%)	-	-	**1461.0**	**-79.0**	-

Robust standard errors in brackets. Coefficients of the difference of lagged FDI, FDIOUT, OIL, INST, BIT, BITOTHERS reported. Letters a, b, c significant at 1, 5, 10% level, respectively. H_0 for Sargan over-identification test: instruments not correlated with residuals. H_0 for serial correlation test: errors in first-difference regression exhibit no second-order serial correlation (*p* values reported).

8. Conclusion

This paper has empirically examined the short term and long term impact of BITs contracting by GCC countries, and distinguished BITs contracting by the degree of commitment to property rights protection, and by the income level of the contracting partner, to account for the different motives and natures of international relationships. The paper has adopted a GMM estimation methodology to account for endogeneity.

Empirical evidence suggests three main results. First, the build-up of FDI, relative to GDP, in response to GCC countries willingness to commit to protect property rights is lacking. Second, there is positive short and long term (relative) FDI impact of GCC actual commitment to property rights protection with high income non-OECD countries. The commitment to property rights protection is responded to favourably by investors largely from within the GCC region and Brunei Darussalam. On the other hand there is negative short and long term (relative) FDI impact of GCC countries actual commitment to property rights protection with upper middle income countries, suggesting that such commitment may lack credibility among foreign investors in those countries. Third, investors from OECD countries seem to weigh the strength of domestic institutional function of property rights protection in their foreign investment decisions as opposed to the intended strengthening through bilateral investment treaties.

This paper has a number of policy implications. First, to improve property rights protection, the GCC countries may have to consider strengthening domestic institutions together with contracting bilateral investment treaties. Domestic institutions seem to matter for OECD investors. Second, with the negative impact of overall ratified BITs, there is not much support to the presence of positive association between external commitment to property rights protection and (relative) FDI impact. Third, with the negative impact of BITs ratified with upper middle income countries, there is not much support to the presence of positive association between the income level of the contracting partner and

BITs impact on relative FDI either. The empirical evidence of this paper lends some justification to the GCC approach of purchasing technology and relying on expatriate human capital directly.

Notes:

1. Country income level classification follows World Bank (2005).
2. High income OECD countries with which BITs were signed are Austria, Belgium and Luxembourg, Denmark, Finland, France, Germany, Italy, Korea, Netherlands, Spain, Switzerland, Sweden, UK, and US. High income non-OECD countries are Brunei Darussalam, Kuwait, Malta, Slovenia, Taiwan, and UAE. Upper middle income countries are Croatia, Czech Republic, Hungary, Latvia, Lebanon, Lithuania, Malaysia, and Poland. Lower middle income countries are Algeria, Belarus, Bosnia and Herzegovina, Bulgaria, China, Egypt, Iran, Iraq, Jordan, Kazakhstan, Morocco, Philippines, Romania, Russia, Serbia and Montenegro, Syria, Thailand, Tunisia, Turkey, Turkmenistan, and Ukraine. Low income countries are Cuba, Ethiopia, India, Mauritania, Moldova, Mongolia, Mozambique, Pakistan, Senegal, Sudan, Tajikistan, and Yemen. The list of countries with which GCC BITs are ratified is available from the author.
3. Author's calculation based on Energy Information Administration (2007) estimates.
4. According to the World Bank's 2005 classification, the GCC countries are considered high-income countries with the exception of Saudi Arabia and Oman, which are considered upper-middle-income countries.
5. For a discussion of institutional performance in the GCC countries, see Mina (2009; 2007).
6. The stock of FDI is measured in constant 2000 US dollars using the US implicit GDP deflator.
7. The correlation coefficient between relative oil production and real GDP (in logarithmic form) is -0.7. Similarly the coefficients between relative oil production and exports and imports (in logarithmic forms)are -0.6 and -0.55, respectively.
8. The correlation coefficients between population size and school enrollment in primary, secondary and tertiary education are 0.99, 0.95, and 0.92, respectively.
9. FDI and BITs data are available at http://www.unctad.org/Templates/Page.asp?intItemID=3277&lang=1, and http://www.unctad.org/Templates/Page.asp?intItemID=2344&lang=1, respectively.
10. Oil data are available at http://www.eia.doe.gov/emeu/international/contents.html.
11. Education data are available at http://unstats.un.org/unsd/cdb/cdb_help/

cdb_quick_start.asp

12. The null hypothesis of no variable omission failed to be rejected under the different robustness checks conducted, as mentioned in the following section.
13. Results are available from the author.
14. STATA 9.0 upheld the use of the one-step as opposed to the two-step estimator.
15. World Bank (2008) describes the quality of education in the Middle East as disappointing and proclaims the presence of education gaps, in absolute terms, compared to other world regions, despite the progress on educational attainment.
16. In the empirical model above, short-term impact is calculated as $[(\exp(\beta_2)-1)*100]$ while long-term impact is calculated as $\beta_2/(1-\beta_1)$.
17. An inclusion/exclusion of a variable in empirical model is noted by +/- sign in the table title.
18. The measurement of *FDIOUT* is similar to *FDI* but with outward FDI instead
19. *BITOTHERS* is the number of annual BITs the other five GCC countries contract. The variable is constructed in such a way that partner countries are of the same income level to capture the influence of the income level on FDI.

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References

Arellano, M. & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence with an application for employment equations, *Review of Economic Studies* 58, 277-97.

Bowerman, B. L., O'Connell, R. T., & Koehler, A. B. (2005), *Forecasting, time series, and regression*. California: Thomson Brooks/Cole.

Dunning, J. (1981). *International Production and the Multinational Enterprise*.

London: Allen & Unwin.
Egger, P., & Merlo, V. (2007). The impact of bilateral investment treaties on FDI dynamics, *World Economy* 30, 1536-1549.
Egger, P., & Pfaffermayr, M. (2004). The impact of bilateral investment treaties on foreign direct investment, *Journal of Comparative Economics* 32, 788-804.
Energy Information Administration (2007). International Energy Data and Analysis. http://www.eia.doe.gov/emeu/international/contents.html (accessed January 30, 2007)
Ginsburg, T. (2005). International substitutes for domestic institutions: Bilateral investment treaties and governance, *International Review of Law and Economics* 25: 107-203.
Hallward-Driemeier, M. (2003). Do bilateral investment treaties attract FDI? Only a bit…and they could bite, World Bank Policy Research Working Paper 3121.
Mina, W. (2009). External commitment mechanisms, institutions, and FDI in GCC countries, *Journal of International Financial Markets, Institutions, & Money* 19: 371-386.
Mina, W. (2007). The location determinants of FDI in the GCC countries, *Journal of Multinational Financial Management* 17, 336-348.
Neumayer, E. & Spess, L. (2005). Do bilateral investment treaties increase foreign direct investment to developing countries? *World Development* 33, 1567-85.
Tobin, J., & Rose-Ackerman, S. (2006). When BITs have similar bite: The political economic environment for bilateral investment treaties. www.law.yale.edu/documents/pdf/When_BITs_Have_Some_Bite.doc.
UNCTAD (1998). *Bilateral Investment Treaties in the Mid-1990s*. Geneva: United Nations.
World Bank (2005). *Global Development Finance*. Washington, DC: The World Bank.
World Bank (2008). *The Road Not Traveled: Education Reform in the Middle East and Africa*. Washington, DC: The World Bank.