Analysing the relationship between Bilateral Investment Treaties and FDI Flows and Outflows
- Evidence from the UAE

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by

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Certification

I, Rashed Salem Ahmed Kharaitan Al Marri, declare that this thesis submitted in fulfilment of the requirements for the conferral of the degree Doctor of Business Administration, from the University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.

Rashed Salem Ahmed Kharaitan Al Marri

(5th August 2020)

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Abstract

This thesis examines the relationship between bilateral investment treaties (BITs) and the attractiveness for FDI into the United Arab Emirates (UAE) and FDI flows from the UAE, and the focus of the thesis rests on whether BITs play an important role in sustaining FDI, were the global interests of most countries have increased to reach a large share of FDI flows and outflow, among many countries UAE adopt policies aims to diversify the economy to create a favorable market environment. Among these policies is signing BITs, however, the BITs effectiveness has not been tested. This study aims to fill this gap uses panel data from a number of different sources including the OECD bilateral FDI data and World Bank data and uses gravity equation modelling to examine the conditions that lead to changes in FDI flows and outflow. The data provide details on inward and outward FDI for each partner country with a total of 792 observations for the time period 2001 to 2012, including the variables GDP, geographical distance, language and colonial relationships. Four gravity models are used at two points of time. The first set of results is based on the announcement date of a BIT with the UAE and the second set of results shows the impact when the BITs are in force. This research finds that the UAE's BITs are highly significant to outward FDI only for the time the BITs are signed, and host countries have some important characteristics including the level of GDP, distance and common colony relation but, more interestingly, the relationship is not sustained over the long term. In the case when the BITs are in force, this research finds no statistically significant relationship between BITs and inflow FDI. The thesis contributes to the literature by showing that under better economic conditions, well developed government institutions and a stable political system, BITs will not only have a positive impact on FDI outflows but will also contribute towards improving the growth opportunities and welfare in the country and the ability for local companies to compete internationally.

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CHAPTER1

1- Introduction

Foreign Direct Investment (FDI) is considered an invaluable source of capital and an essential component for a country's sustained economic growth (Alfaro et al., 2004, Albu, 2013). Over the past few decades, the importance of FDI for the growth of a country has, prompted a strong competition between countries in attracting foreign investments. This competition is reflected in persistent increases in the total amount of FDI around the world. According to the United Nations Conference on Trade and Development (UNCTAD), as recently as 2017, the total global FDI stock inflow accounted for US$31.5 trillion, which represents almost a 10% increase on the previous year's figure (measured in 2012 constant US dollars) (UNCTAD, 2018)[1]. This increase was partially a result of sustained efforts made by the governments of both home countries and host countries to remove obstacles to trade and investment and to develop policies aimed at encouraging foreign investment, so as to benefit their countries and people (Porter, 1990a, Buckley, 2009, Meyer et al., 2011).

The rapid increase in FDI flows and the increasing reliance of governments on FDI as a channel for generating economic growth has rekindled researchers' interest in estimating the effect that government policies can have on FDI flows and hence economic growth (Dunning, 1992, Grosse, 1996, Dunning, 1997, Katz, 2007, Tobin and Rose-Ackerman, 2011). One of the most prominent and significant government policies related to attracting FDI is focused towards improving economic relations with other countries, and one of the tools has been the signing of Bilateral Investment Treaties (BITs) (Busse et al., 2010). BITs are defined as legal international

[1] World Investment Report 2019 provides global flow statistics of FDI.

instruments that provide protection and governance for foreign investors from partner countries (Mina, 2009). Policy makers in both developed and developing countries believe that signing of BITs increases FDI flows and hence has a positive impact on the economic growth of the country (Neumayer and Spess, 2005, Desbordes and Vicard, 2009, Kerner, 2018). This global trend towards attention in the BIT did not differ from the direction of the government of the United Arab Emirates, where the number of BITs concluded with the partner country recorded a significant increase in the past decade (see Investment Policy Hub, UNCTAD, 2019).

The objective of this thesis is to explore the relationship between BITs and FDI flows, by examining the role of BITs in attracting, but more importantly, sustaining[2] inward and outward FDI. In order to better understand the prominent role that BITs have in determining FDI flows, this thesis examines panel data to test whether there is a strong correlation between BITS and FDI, which can be linked to sustained FDI and economic growth in the UAE.

1.2 BITs and FDI

One of the performance indicators of government institutions, such as the Ministry of Finance and Economy, is the extent to which it can effectively formulate economic relations with other countries. This is in part represented by improving relationships and an increasing number of BITs (Allee and Peinhardt, 2011). Given a positive correlation between BITs and FDI, it is the connection of FDI with economic growth and welfare that drives government economic policy. It is the prospect of growth that has led to an increasing trend in the signing of BITs over the past couple of decades.

[2] The sustainable FDI refers to generating a continuous FDI inflow into a specific country in which the total amount of foreign investment recorded in a period of time does not show any withdrawn to the next calendar years, to represent sustainable investments for a long period of time without largely FDI withdrawal.

Worldwide BITs increased significantly during the 1990s from 385 in 1989 to a total of 2,857 by the end of 2012 (UNCTAD report)[3]. This increase was accompanied by a respective increase of global FDI from US$7.5 trillion in 2000 to US$22.8 trillion in 2012[4] (in constant 2005 US dollars). Figure 1 shows the relationship between the total number of global BITs and aggregate global FDI inflow. The increasing global trend in the number of BITs signed since the late 1980s is noted as well as the concurrent rise in Global Inward FDI stock.

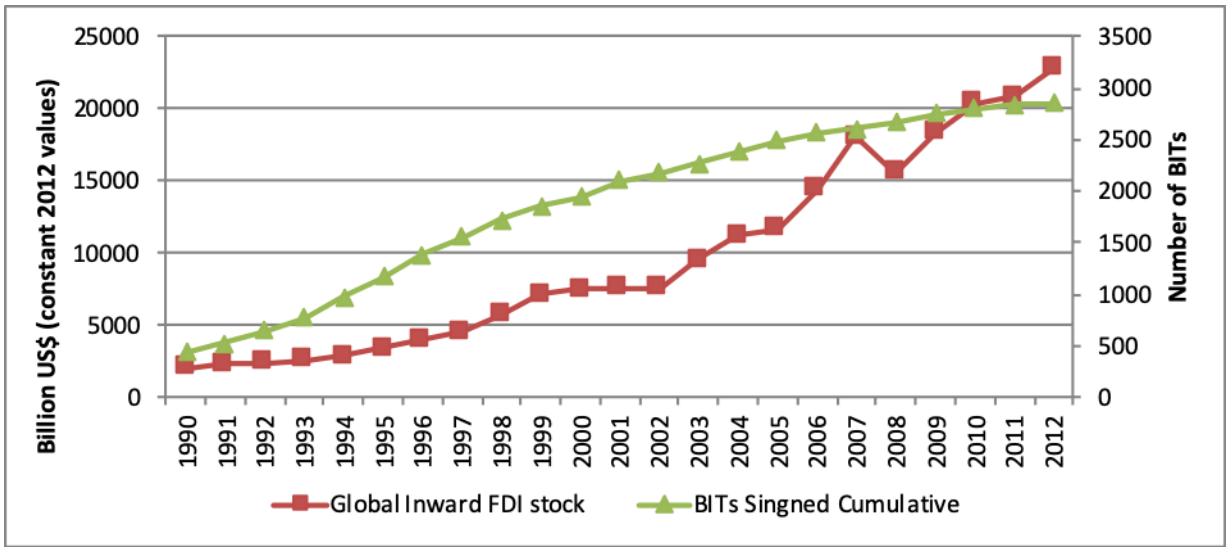

Figure 1 Global FDI flows compared to the number of BITS
Source: United Nations Conference on Trade and Development (UNCTAD, 2013)

One of the possible reasons behind the global growth in the number of BITs is the suspected connection between BITs, FDI and economic growth. Policy makers in both host and home countries believe that by relying on BITs and by providing greater protection to foreign investors, a more attractive investment environment will be created (Allee and Peinhardt, 2011).

[3] The UNCTAD data provide us with the total number of worldwide BITs concluded per year, and BITs are collected in aggregate form starting from 1959 to 2012, now encompassing 176 countries. Moreover, the BITs' agreements are valid for more than 10 years and subject to renewal for the same period.
http://unctad.org/en/Pages/DIAE/International%20Investment%20Agreements%20(IIA)/Quantitative-data-on-bilateral-investment-treaties-and-double-taxation-treaties.aspx

[4] The global FDI flows data are presented in constant dollars; these data were used in Königer et al.'s (2010) study and Egger and Merlo's (2007) study.

The literature cites a number of factors that encourage FDI; these are the level of stability of the country, removing investment obstacles, privatisation, the efficiency of government institutions, protection of intellectual property, and investor rights (Dunning, 1998, Vijayakumar et al., 2009, Grosse, 2010).

The growth in FDI has not been evenly distributed between developed and developing countries. Global FDI inflows data provided by the World Bank[5] show that by the end of 2001 the FDI inflows to developing countries are much higher than those to developed countries: almost 80% of FDI comes from developed countries targeting developing countries (Banga, 2003). This trend began to decline in the last decade and it accounts for only 52% of global FDI inflows (end of 2012 data). This may indicate that there was a contribution of FDI from developing countries to developed countries. Among these, within the Gulf Cooperation Council (GCC) countries and, more specifically the United Arab Emirates (UAE), recorded fast growth in accumulated FDI inflow within a short time period.

Figure 2 illustrates the rapid FDI flow to a few of the GCC countries from 1980 to 2012. Saudi Arabia, the largest of the GCC countries, recorded the highest FDI flow estimated at US$199 billion in 2012[6], followed by the United Arab Emirates with a total FDI flow equal to US$95 billion in 2012. What is important to note, however, is that both countries have employed policies and strategies that aim to attract foreign investors (UNCTAD, 2013). These policies are reflected in the building of relations with other countries, which in turn successfully led to a boom in the volume of foreign investments flows compared to other GCC members. This might

[5] I used World Bank data for FDI inflow rather than UN data because World Bank provides global FDI inflow for all countries.
[6] The data presented in constant US dollars have been used in Mina's 2012 study.

partly explain why the UAE and Saudi Arabia are successful in in attracting additional FDI flows from many countries around the world.

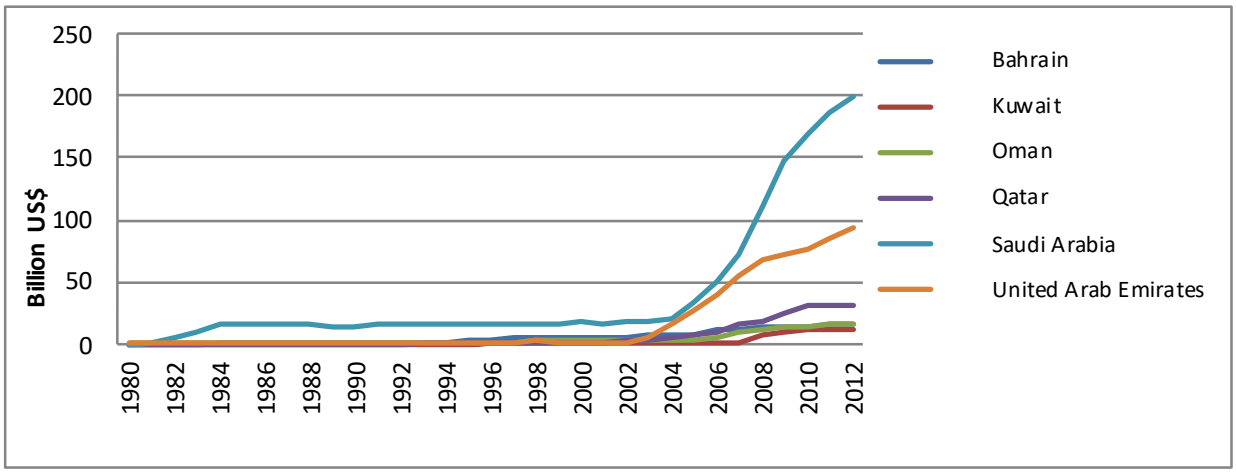

Figure 2 FDI inflow to GCC Countries (1980-2012)

Source: United Nations Conference on Trade and Development (UNCTAD, 2013) the data presented in constant US dollars

Moreover, the boom of FDI inflow to GCC countries was accompanied by a growing number of BITs. In the period 1980-1990, the total number of BITs signed by GCC countries was only 11; this number increased during the 1990s when the GCC countries singed 80 BITs distributed between high- and low-income countries (Mina, 2010). The UAE alone has entered into several BITs and International Investment Agreements (IIAs)[7] with many countries around the world; 39 BITs have been issued between 1991 and 2012 (UNCTAD, 2018). The most important IIA was signed in 2002 with the GCC. In 1996 a treaty was signed with the World Trade Organization (WTO), and more recently with the European Free Trade Association (EFTA) in 2006. By 2018 a total of 76 BITs had been signed by the UAE government, with no record of termination; Table 1 shows all BITs that the UAE signed with partner countries.

[7] International Investment Agreements (IIAs) normally one agreement, signed by a group of countries (for example EFTA, WTO, etc.)

Table 1 UAE Bilateral Investment Treaties (concluded as at 27 June 2018)							
N	**Country partner**	**Dated Signed**	**Date start**	**N**	**Country partner**	**Dated Signed**	**Date start**
1	Argentina	16/04/2018		39	Mozambique	24/09/2003	
2	Paraguay	16/01/2018		40	Ukraine	21/01/2003	28/02/2004
3	Colombia	13/11/2017		41	Korea Republic of	09/06/2002	15/06/2004
4	Rwanda	01/11/2017		42	Armenia	02/04/2002	
5	Maldives	17/10/2017		43	Austria	17/06/2001	01/12/2003
6	Angola	05/04/2017		44	Algeria	24/04/2001	03/06/2002
7	Burundi	06/02/2017		45	Mongolia	21/02/2001	
8	Ethiopia	03/12/2016		46	Sudan	18/02/2001	
9	Slovakia	22/09/2016	05/02/2018	47	Yemen	13/02/2001	25/08/2001
10	Mexico	19/01/2016		48	Belarus	27/03/2000	16/02/2001
11	Nigeria	18/01/2016		49	Sweden	10/11/1999	06/05/2000
12	Mauritius	20/09/2015		50	Morocco	09/02/1999	01/04/2002
13	Kyrgyzstan	07/12/2014		51	Switzerland	03/11/1998	16/08/1999
14	Kenya	23/11/2014		52	Turkmenistan	09/06/1998	24/11/1999
15	Greece	06/05/2014	06/03/2016	53	Lebanon	17/05/1998	14/07/1999
16	India	12/12/2013	21/08/2014	54	Syrian Arab Republic	26/11/1997	10/01/2001
17	Netherlands	26/11/2013		55	Germany	21/06/1997	02/07/1999
18	Benin	04/03/2013		56	Egypt	11/05/1997	11/01/1999
19	Serbia	17/02/2013	25/12/2014	57	Tunisia	10/04/1996	24/02/1997
20	GCC (Gulf Cooperation Council) Peru	01/10/2012		58	Finland	12/03/1996	15/05/1997
21	GCC (Gulf Cooperation Council) United States of America	25/09/2012		59	Tajikistan	17/12/1995	
22	Montenegro	26/03/2012	01/03/2013	60	Pakistan	05/11/1995	02/12/1997
23	Portugal	19/11/2011	04/07/2012	61	Italy	22/01/1995	29/04/1997
24	Singapore	24/06/2011		62	Czech Republic	23/11/1994	25/12/1995
25	Sudan	04/04/2011		63	China	01/07/1993	28/09/1994
26	Bangladesh	17/01/2011		64	Romania	11/04/1993	07/04/1996
27	Russian Federation	28/06/2010	19/08/2013	65	Poland	31/01/1993	09/04/1994
28	EFTA (European Free Trade Association) GCC (Gulf Cooperation Council)	22/06/2009		66	United Kingdom	8/12/1992	15/12/1993
29	Jordan	15/04/2009	12/2/2010	67	Malaysia	11/10/1991	22/05/1992
30	Viet Nam	16/02/2009		68	France	09/9/1991	10/01/1995
31	GCC (Gulf Cooperation Council) Singapore	15/12/2008	01/09/2013	69	Egypt	19/06/1988	02/03/1998
32	Uzbekistan	26/10/2007	22/04/2008	70	EU (European Union) GCC (Gulf Cooperation Council)	15/06/1988	01/01/1990
33	Azerbaijan	01/11/2006	24/08/2007	71	Morocco	16/06/1982	
34	Turkey	28/09/2005	24/07/2011	72	GCC (Gulf Cooperation Council)	11/11/1981	1/12/1981
35	GCC (Gulf Cooperation Council) India	25/08/2004		73	OIC (Organisation of the Islamic	05/06/1981	Feb-88

					Conference)		
36	GCC (Gulf Cooperation Council) Lebanon	11/05/2004		74	League of Arab States	26/11/1980	07/09/1981
37	United States of America	15/03/2004		75	League of Arab States	29/08/1970	29/08/1970
38	BLEU (Belgium-Luxembourg Economic Union)	05/03/2004	22/11/2007	76	Kuwait	12/02/1966	

Table 1 UAE Bilateral Investment Treaties (concluded as at 27 June 2018)
Source: UNCTAD http://unctad.org/Sections/dite_pcbb/docs/bits_uae.pdf
http://investmentpolicyhub.unctad.org/IIA/AdvancedSearchBITResults

The increase in the number of BITs among the GCC countries reflects the aspirations of GCC governments to create a favourable investment climate for foreign investors and to strengthen investors' confidence in in the region. GCC countries were characterised as being rich in natural resources, which lured resource-seeking FDI including natural resource rent, investment in infrastructure, and cost of fuel (Mohamed Mahjoub, 2016). At the same time, the GCC governments began to focus on the non-oil sector as a source of capital to maintain a country's development. Governments in GCC countries turned their focus to FDI as an active contributor to economic growth, by building strategies that can help countries to attract new FDI from different foreign countries.

There is evidence from the literature that provides support for the positive relationship between BITs and FDI flows (Egger and Merlo, 2007, Busse et al., 2010). However, there is also evidence that opposes this view (Hallward-Driemeier, 2003). The existing literature offers contradicting conclusions with respect to the effect that BIT agreements have on FDI flows. Some studies do not find any relation between BITs and FDI (Hallward-Driemeier, 2003, Salacuse and Sullivan, 2005, Tobin and Rose-Ackerman 2005), while others emphasise the importance of BITs in attracting FDI (Kerner, 2009, Busse et al., 2010).

These contradictory conclusions could be partly due to a lack of bilateral FDI data for many countries; and this lack of bilateral FDI data has forced researchers in the past to deal with aggregate FDI data, which produces ambiguous results (Bankole and Adewuyi, 2013). Also, the relationship could be conditional on other factors. For example, Mina (2009) and Busse et al. (2010) find that BITs are only significant to FDI when the host countries have some important characteristics including a high level of GDP, and a high quality of government institutions[8].

The contradicting results in defining the relation between BITs and FDI is not the only debate in the literature. There is also debate on what control variables should be included in this relation (Bevan et al., 2004). Some, for example, believe that the political factors, including low country risk, is necessary to achieve a positive relationship between BITs and FDI (Kerner, 2009), while others (Salacuse and Sullivan, 2005) argue that a country's economic conditions is the key control variable. This research is an opportunity to clarify and contribute to this debate. The objective of this thesis is to contribute to the literature by addressing a research question that, to the best of my knowledge, has not been examined in the UAE context: *What is the relationship between BITS and FDI inflows and outflows?*

To answer this question, this thesis draws its data from the OECD database. The OECD database nowadays provides divestment statistics, which offers a new way to measure the duration of the foreign investment or to estimate how long host countries sustain FDI from particular countries (Allee and Peinhardt, 2011, Tobin and Rose-Ackerman, 2011, Mariev et al., 2016). These data were not available 10 years ago particularly for GCC countries. This thesis takes advantage of the new data to explore whether there is a sustaining relationship between BITs and FDI in the

[8] The conclusions from these articles will be incorporated in the model I use in this thesis.

host countries. This study's focus then concentrates on policy implications relating to the case of the UAE and the effects of BITs in attracting and sustaining FDI in the UAE.

The core of this research thus presents an important contribution to policy makers in the UAE, a country that has come to depend on FDI for its growth. Despite the general rise in the aggregate foreign investments to the UAE, some countries have withdrawn their investments. For example, the total FDI stock coming from the UK targeting the UAE accounted for US$9.6 billion in 2006. In the next year, 2007, the amount of FDI decreased to account for only US$694 million (OECD data – current values). Previous studies have not empirically examined this significant decline in FDI inflow to the UAE and its relation to government policies and BIT agreements.

1.3 Research Questions and Contribution

This chapter has thus far focused on the importance of FDI and on the ongoing debates in the literature regarding FDI. The reason for this area of discussion is that it is necessary to understand the importance of FDI for the economic growth of a country, as well as the changing global trends of FDI flows before the study state the central research question of this thesis.

Given the emphasis this study discussion has placed on the relation of FDI with growth and welfare, the importance of FDI in the case of the UAE can also be recognised by the immense focus that the government has placed on diversifying the country's economy and stimulating interest in encouraging FDI to the UAE markets. However, it was also important to ensure the right circumstances to create a suitable environment for foreign investors by protecting the rights of the investor. This was achieved by increasing the numbers of BITS with foreign investor countries.

The purpose of this study is therefore to examine the relationship between BITs and FDI inflows into and outflows from the UAE. However, there is not only a need to understand the impact of BITs but also their ability to sustain the level of FDI into the UAE into the future. *So, the second question examines whether BITs play an important role in sustaining FDI*. To summarise, the study concentrates on two central research questions:

1. *What is the relationship between bilateral investment treaties (BITs) and the attractiveness for FDI into the UAE and FDI flows from the UAE?*
2. *Whether BITs lead towards sustained levels of inward and outward FDI in the UAE?*

By understanding the contribution of FDI inflow generated from signing BIT agreements, the thesis intends to come up with policy suggestions targeted for the UAE to promote an attractive environment for business and eventually assist the economic growth of the country and the welfare of its inhabitants.

1.4 Gap in the Literature

Although there are a number of studies aimed at understanding the attractiveness of FDI, as well as the role of BITs in determined FDI inflow, this study is unique and contributes to the existing literature in several ways. In general, this thesis is the first to focus on both inward and outward FDI and how this is impacted by international treaties for an important geographical area in the emerging market world (i.e. GCC) that was not covered in previous studies. This analysis is important to undertake for a fast growing economy, such as the UAE, because focusing on the

impact of BITs on inward and outward FDI is a crucial component to understand in unison with the many other determinants of FDI for the UAE. Thus, the first contribution is that this thesis focuses on an emerging market context in the GCC, whereas the previous literature has mainly analysed the case of North to South investments (i.e. developed country FDI attracted to developing/emerging countries). The second contribution lies in choice of the UAE as the country of investigation within the GCC. The UAE is important country in the Middle East, which historically has been successful in attracting FDI as well as generating an increasing level of outward FDI from the UAE to other foreign countries. Therefore, by concentrating on the UAE, this study will be able contribute new evidence that will assist in the understanding of the relationship between BITs and FDI in the UAE context. The third contribution is that the analysis will take into account both inward FDI and outward FDI in exploring the relationship between BITs and FDI. This is achieved by exploiting the OECD database which provides bilateral FDI data from 2001-2012 which will be used in the econometric models. This means that this thesis will take advantage of the availability of data from the OECD database by adopting bilateral data for each pair of countries. In this way, it avoids the shortcomings of using aggregate FDI, which has been the case in previous studies This data has so far not been used for the case of the UAE and how BITs are related to both inward and outward FDI. The fourth and final contribution is that the thesis aims to contribute to the existing literature by uncovering new insights into the relationship between UAE BITs and inward/outward FDI, whereby our results allow us draw numerous policy recommendations for the UAE in terms of how to achieve sustainable levels of inward and outward FDI flows which are an important driver for economic growth for the UAE.

1.5 Summary and Structure of the Thesis

This study consists of eight chapters. The first chapter is the introduction, highlighting the research questions, the contributions and the gap in the literature. Chapter 2 reviews the history and evaluation of BITs and explores the objective of concluding BITs between countries including the UAE, followed by a discussion on the evaluation methodology for BITs. Chapter 3 reviews the literature on this topic, outlining the different types of economic integration and exploring the characteristic of BITs compared with other kinds of agreements or economic integration. This chapter will also discuss important tools to understand sustained FDI inflow and outflow, and will define sustained FDI and the different approaches to measuring it. Chapter 3 also outlines a range of FDI theory and then differentiates between FDI stocks and flows as well as horizontal and vertical FDI and the distinguishing features between FDI and trade. Next, a review of the importance of FDI inflow and outward for the growth of a country's development is provided. Also, a review of the key findings from current studies in the UAE are offered with the aim of identifying the importance of UAE economics factors. Furthermore, the review of the literature on BITs includes other types of international agreements, the neutrality of BITs, and the importance of BITs in attracting FDI. The section in the review covers the literature on the common variables used in the previous studies that also adopt gravity models and other estimation techniques. It includes in more detail the colonial ties, gross domestic product (GDP), common language, geographical distance, and border. Methodology used in the relevant literature is also provided. The theoretical underpinning of the Gravity model is explained. Also, section 3.9 sets out the study hypothesis derived from the literature.

Based on this review, Chapter 4 discusses the theoretical model for the study in more detail, by covering the empirical literature regarding the gravity model and the history of the equation that

was first used for trade and later for FDI. It also examines the modification of the gravity equation, and how its more recent use in FDI studies. The chapter also discusses the limitations and problems encountered when using the gravity equation, including how we deal with zero FDI data in the observations during years when no FDI is recorded from a specific source, heteroscedasticity, and non-stationarity of the variables. Chapter 4 also presents the data sources and study sample by describing the dependent and independent variables, and the econometric approach adopted. While Chapter 5 discusses the results including the empirical results and analysis, Chapter 6 addresses the author's reflections and research limitations Chapter 7 sets out conclusions of the research. Finally, Chapter 8 offers recommendations followed by implications of this research for policy makers as well as further research directions.

CHAPTER 2

The main purpose of this chapter is to offer an overview of the BIT history. The first part reviews the historical stages that led to the emergence of BITs starting from the first treaty to its current status. It identifies how BIT has grown in popularity; the reason that led countries to choose these treaties; and why they have become acceptable between countries. This chapter also identifies the objectives of BITs internationally and locally, and discusses the evaluation of BITs.

2 The History and Evaluation of BITs

After more than three decades of growing interest in signing BITs between countries, it is necessary to address the following important question: To what extent have BITs successfully achieved their objectives? To answer this question, we need to evaluate the performance of BITS in order to assess the level of their perceived overall success, or otherwise. This question has been subject to considerable doubt in BITs literature (Salacuse and Sullivan, 2005). In order to evaluate the outcomes for countries that have entered into BITs, it is first important to understand the history of such treaties and know the circumstances that guided most countries to sign such treaties. It is also important to identify the primary objectives that are designed and agreed between signatory countries, which normally consist of the legal and legislative framework for the conventions.

2.2 The History of BITs

Treaties between countries have in fact existed for more than a century, but have spread widely in the past two decades and taken a variety of forms, including BITs, Bilateral Investment Promotion and Protection Agreement (BIPA) and double taxation treaty (DTTs) (Agrawal, 2016). In fact, the historical development for such types of treaties was an inevitable result of rapid growth in international trade and investment between countries as well as success in removal of most of the trade barriers, an initiative that has drawn great attention in recent times from most countries of the world.

The question of the expanding international trade throughout history coincided with the need to enact legislation and treaties that aim to regulate trade between countries. In early economic theories (eighteenth and nineteenth centuries) and before the existence of specialised research aimed at studying international trade treaties, scholars focused on designing theories that aimed to help understand the characteristics of the free economy and the factors that helped trade to flourish between countries (Lipsey, 2001). For example, David Ricardo and Adam Smith sought to explain the main reasons for the existence of international trade by illustrating the benefits driven by international trade and show how all countries involved in it can gain from trade, where a rise in international trade can be considered essential for the growth of globalisation and economic growth (Trevino and Daniels, 1995).

According to neoclassical economic theory international trade will occur and maintain continuity of growth with help from at least one of these factors – (i) products diversity, (ii) different level of technology, (iii) ease of access to information, (iv) highly advanced transportation systems,

and (v) differences in the distribution of natural resources between countries. These factors, combined or individual, will ultimately assist in increasing the trade exchange between countries, and enhance import and export movements between states (Ricardo, 1821, Robert, 1957, Hill, 2009). The growth in international trade has helped in the provision of goods worth less than the local market, because product manufactured price and demand difference in the host country help to create trade.

It follows that the difference in commodities prices between countries is one of the main reasons for the emergence of international trade, but the debate among economists was about the interpretation of how countries maximise their benefit from international trade (Appleyard et al., 2008). This is not just because product diversity, communication and transportation facilities have dramatically improved and promoted international trade, but may also be because the profits are driven from international trade.

The subject gain from international trade was the focus of attention of many prominent researchers in economics. The new classical theory clarified that all the participating countries in international trade eventually will be taking advantage of trade regardless of differences in demand condition and production capabilities. Let us assume, for example, the existence of international trade between two countries – country (A) and country (B). At the same time, we exclude some other factors influencing trade including the following. (1) There are no transportation costs and policy barriers to trade. (2) Perfect competition exists (Jones et al., 2005). But there is a difference in the cost of manufacturing in country B which might be because this country has advanced technology, including managerial practice and production

method. In addition, producing product "X" in country (B) is considered below the world price. Therefore, and with existence of international trade between countries (A) and (B) country (A) will import product "X" until reach at world price for the same products in-country (A). Moreover country (A) will concentrate on producing other products assuming it is symbolised by product "Y" instead of product "X" (Robert, 1957, Hill, 2009). This process gives the exporting and importing countries opportunities to attract interest from international trade through focusing on the manufacturing products that have competitive advantage and import products that have greater competitive advantage in other exporting countries (Dunning, 2008). The existence of mutual benefit between exporting and importing countries in the process of international trade has been proven by economic theories.

With the historical development of international trade and the spread between most countries, as well as the development of economic theories that helped understand the common interest in the growth of international trade, there was a need to strengthen international trade and remove trade obstacles for free movement of goods and services, until this evolved and took shape as FDI. Thus, there was an urgent need for the existence of a framework that protects these investments in the form of bilateral agreements certified by the legislative bodies.

In fact, treaties between countries have existed for more than a century to include all different areas of the world – Europe, Middle East, Africa, Asia and America. Despite the differing views in the literature, people's reactions toward the expansion of the scope of foreign investment that reaches their own countries has been divided into two parts based on historical evidence. This suggests that international trade has been heavily present in some countries while, in other countries, the international trade is weakly presented or was presented late when compared with

other nations (Lipsey, 2001, Agrawal, 2016). There are several reasons which might help interpret this phenomenon, including policy of isolationism and hostility against the foreign investor. However, public benefits which are driven from trade scholars in this field sought to find agreed legal framework as international law that not only to allow for free movement of goods and service but also protect the FDI between the countries. This is particularly the case for countries that are showing an increasing interest in enhancing the ability to expand their overseas trade.

One such ambition was clear in the eighteenth and nineteenth centuries – specifically in the colonial period – where there was heavy investment in the context of colonial expansion. In the same period, the foreign investment that came from colonial states did not require any type of protection (Agrawal, 2016). This is because the legislative systems in the occupied countries were combined with the systems that existed in the imperial powers. Further, because the legal system always worked for the benefit of merchants who came from colonial empires, consequently, foreign investments were guaranteed protection by imperial powers, while other treaties that signed with those countries which stood outside the imperial system were tied by the treaties that aimed to facilitate trade in the interests of the imperial powers (Vandevelde, 1997, Goldstone, 2009, Boldizzoni, 2011). Therefore, in this era, the logic behind such power was the key that controlled the facilitation and protection of foreign investments, which came from the context of trade expansion between countries.

It was only after the dissolution of the Empire that there emerged the need for a system that provided protection for foreign investment. From the period prior to World War II and up to the

1950s, many efforts were made to create numerous treaties, but they were limited to trading with the aim of facilitating trade between countries and did not include provisions to protect and facilitate investment between signatory countries. Some examples are treaties that the US government signed with many countries, known as Bilateral Treaty of Friendship, Commerce and Navigation, one of which was the 1956 treaty between the United States and Nicaragua (Sornarajah and Ebrary, 2004). Although some of these agreements included provisions allowing US citizens to own and manage their businesses activities in the territory of the host countries they also addressed several issues. However, two factors that were not addressed were the mechanisms to protect foreign investments or to ensure the freedom of foreign investors to make monetary transfers between countries. Instead, these conventions were harnessed to serve the interests of major exporting nations.

The period after World War II witnessed a great effort from many countries that sought to develop international investment law, specifically from countries whose foreign investment had been affected as a result of World War II. Germany for example took the lead after facing strong pressure from German investors to force the government to undertake preventive measures designed to protect their companies and investments abroad (Agrawal, 2016). Also, until the 1970s, the customary international law, considered as one of the three primary sources of the International Court of Justice, addressed some shortcomings in solving major issues of concern to foreign investors; for example, the customary international law was unable to solve disputes between investors and host countries that place restrictions on monetary transfers. In addition, many researchers openly criticised the customary international law and found that the principles

were vague and often open to interpretation (Sornarajah and Ebrary, 2004, Salacuse and Sullivan, 2005).

These circumstances created a need to develop an appropriate international investment law that would provide legal protection for foreign investment as well as design regulations aimed to facilitate investment between countries. In the late 1950s, many countries around the world sought to provide protection for foreign investments through the creation of multilateral treaties, and the results began to emerge gradually (Dunning, 1981), particularly after increasing the investment opportunities and knowledge transfer in emerging markets which lured foreign investment that needed the market stability and protection.

A growth in the flow of foreign investment accompanied increasing multilateral treaties between countries. One of these treaties was the International Convention for the Mutual Protection of Private Property Rights in Foreign Countries (1957). Despite the lack of success of these agreements, they did help to produce a new form of bilateral investment treaty, which heralded the beginning of the era of bilateral investment agreements.

Among European countries, Germany in particular was one of the first countries to sign such agreements where they signed up with Pakistan in 1959 followed by other European countries such as Switzerland, the UK and Belgium (Bevan et al., 2004). Recently, the BITs have become the fundamental sources of international investment law (Egger and Merlo, 2012). The reason for the growing acceptance of such agreements is their ability to provide more protection than currently offered by customary international law. These treaties have extended to two levels – *multilateral level* and *bilateral level*,

The *multilateral-level* regional treaties contain investment protection treaties for more than two countries; for example, the North American Free Trade Agreement (NAFTA) that recognised a right of entry and establishment for foreign investment between members. In addition, chapter 11 on NAFTA describes investment protection rules considered as a fundamental component of BITs.

BITs were more prevalent than multilateral treaties, and the way in which negotiations took place were the main reason for a country's preference for a BIT, where the negotiations on BITs were characterised by the kind of flexibility that often achieved equality in the rights and duties of the parties. In contrast, the negotiations on multilateral treaties are more complicated and often managed by major countries in the Convention, and major countries on the negotiations try to be the biggest beneficiary of this treaty.

Achieving the principle of equal protection of investors' rights and the free movement of money as well as resolving conflicts within the scope of the bilateral agreement assisted significantly in extending the BITs between countries. Consequently, the BITs were no longer limited to being present among capital exporting countries, but more recently included BITs between two developing countries. Where developed countries negotiated BITs to create a legal framework for their national investments in specific countries (Neumayer and Spess, 2005), these interests include access to countries that have strong labour forces or high levels of natural resources. This diversity of investment interests brought the opportunity for different BIT models to emerge, the most well-known of which is the US BIT Model. However, this difference is located in some of the BITs' goals; for example, the American conventions providing protection for foreign

investments, even after the expiry of the treaty period between the signatory countries. To identify the different BIT models we need to understand the main objectives of signing BITs.

2.3 The objective of BITs

The primary need for solving foreign investors' problems, in particular investment protection, was the main driver in the creation of a legislative system that took the form of bilateral investment treaties. Without such BITs, the foreign investors would instead rely on the host country's law alone in order to protect their investment, which may result in some degree of risk on their investments. For example, changes in the host country legislation may have a negative impact on the interests of the foreign investors. For instance, in 2006, the proposed acquisitions of major operations in six major US ports by Dubai Ports World (DP World) and intervention of the US government to cancel the contract a few months after its conclusion occurred because of serious concerns of US Congress on the country's national security (Jackson, 2007). This type of the regulation change creates serious risks that are of concern to foreign investment.

In this example, if the United Arab Emirates (UAE) had signed a BIT, the US government was not able to cause any damage to UAE investments because of the nature of the regulations attached to the actions. Therefore, the primary objective of signing BITs is to provide mutual protection of foreign investments. The BITs also aim to set out clear rules for the foreign investors who come from signatory countries, in order to avoid any unpredictable change in the rules that may harm their investment. Therefore BITs help to reduce the political risk for foreign investors in the host countries (Egger and Wamser, 2013), and also promote the investment climate in the host countries which might attract more FDI inflow (UNCTAD, 1998).

Most importantly, by the signing of BITs between countries will make the treaty an effective implementation tool for dispute settlement provisions that ensures investors' rights in the host countries, and which ultimately helps to reduce the uncertainty over FDI.

The objective of signing a BIT are not concentrate only to improve protection and provide transparency in the host country's regulations relating to foreign investors, but also to enhance the marketing liberalisation by facilitating entry of foreign investment and give freedom to those operating such investment. These objectives are considered an important aspect when negotiations are taking place to conclude a BIT. Specifically, *developed* countries are still seeking to enter emerging markets due to the abundance of investment opportunities; in contrast, *developing* countries are also seeking to attract capital and technology transfer in order to ensure the continuity of their economic growth. Therefore, a desire of both parties is to identify the mutual goal of market liberalisation in signing bilateral investment treaties.

There are also indirect objectives for signing a BIT, which might be intentional or unintentional, because signing of such treaties is an indication that the country concerned is trying to change their image by liberalising their policy and is indicating that it is now prepared to accept standards of protection relating to foreign investment. In addition to aiming to promote foreign investment by signing a BIT, this may also be an important target for developing countries that wish to increase the amount of capital they have available to advance their development. To conclude, there are four primary objectives that motivate countries to sign BITs; these are (1) Provide foreign investment protection, (2) Reduce country risk, (3) Create market liberalisation, and (4) Motivate foreign investment promotion among the signing parties to the BIT.

2.4 The objective of BITs in the UAE

The factors that motivate states to conclude many BITs might not be different from the motivation in GCC countries, particularly in the UAE, where the countries in this region are characterised as abundant in natural resources. Also, recently, their economic strategies have been built based on diversifying their capital income and they have also sought to reduce reliance on oil revenue through encouraging FDI inflow. One of the government strategies adopted by the decision makers when signing a BIT is that they will attract additional FDI inflow; moreover, – and very recently – the region has witnessed a paradigm shift where major UAE companies are now seeking to expand their investment abroad. This also creates interest in signing BITs.

Given that the population of the United Arab Emirates is not significant compared to the size of the capital for national companies, this gives them the ability to expand into new markets. Over the last two decades UAE outward FDI increased gradually, from US$14.2 billion in 1990 to more than US$60 billion by the end of 2012 (UNCTAD, 2014). Figure 3 shows the outward FDI from GCC countries in constant dollars.

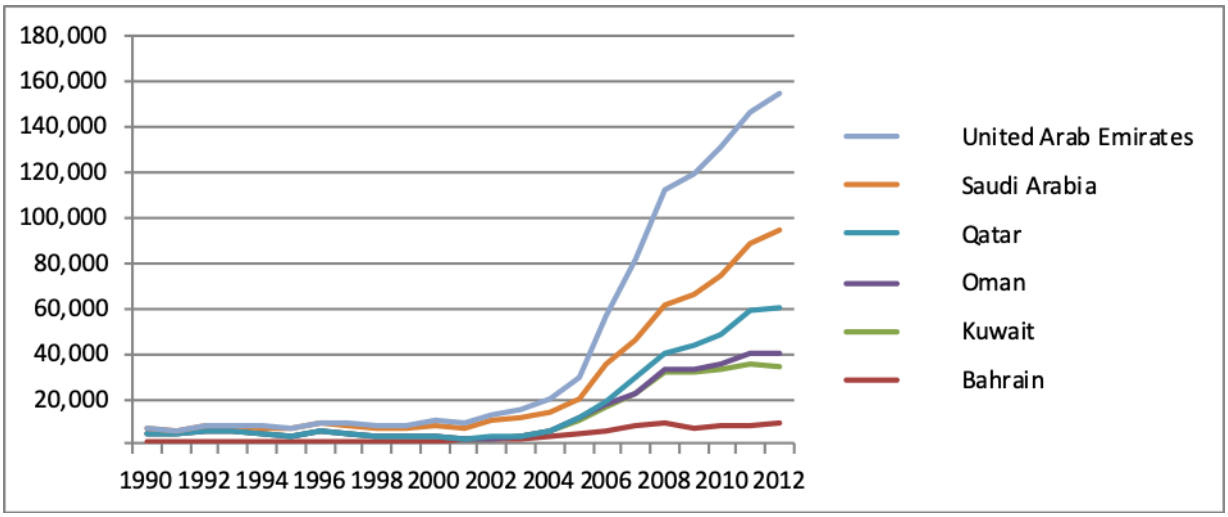

Figure 3 FDI outward to GCC countries 1990-2012 in US$ Million

Source: United Nations Conference on Trade and Development (UNCTAD). The data are presented in constant US dollars.

These huge investments that come from the UAE to foreign countries require a legal framework that provides protection and freedom in the administration; therefore, the BITs can be used as effective mechanisms to ensure protection of UAE investment in partner countries. This objective was announced by the Minister of Finance in the UAE. For example, when the UAE signed a BIT with the Netherlands on 4 December 2013, he acknowledged that "this agreement will allow UAE investors to expand their investments in the Netherlands far away from any risk except commercial or political that might hamper or limit investment expansion in Holland" (Emirates Today, 2013: 16). This represents the government's vision to enhance international investment relations with many countries, which will ultimately return economic growth to the UAE and signatory partners.

2.5 The evaluation of BITs

Logically, the best way to evaluate a strategy or framework is to observe the change in the outcome. In the case of BITs, as mentioned above, the primary objective is to create an investments environment that attracts more FDI inflow to the host country. This can be achieved by three tools – enhance FDI protection, market liberalisation and FDI promotion – and whether these factors work effectively after signing a BIT can be verified by examining the amount of FDI inflow that comes from partner countries.

Theoretically, to date, most studies in this area have measured BITs' performance against the amount of FDI inflow in a particular country. Any increase in in FDI inflow between signatory countries reflected the effectiveness of BITs. This in turn ensured to some extent more investment protection, market liberalisation and FDI promotion, but without determining the difference in the impact of these factors related to FDI inflow to the partner country, because these factors were also measured by their ability to achieve the main goal – namely, increase in FDI inflow. Other studies' evaluations of BITs were based on BITs' objectives, and they examined each factor in detail as a separate issue; for example, these studies examined host countries' foreign investment protection against expropriation, which is considered one of the most standard components of every bilateral investment treaties. Other aspects that were examined individually were capital movement and profit repatriation (Salacuse and Sullivan, 2005).

One issue that has arisen when evaluating the outcome of signing a BIT is the difference in the results between BITs' agreements that have been signed but still not implementing or ratification compared with those BITs that are in force and the implementation take place for the host and

home country. That because there is a gap between the time a BIT is signed and the time that BIT comes into force usually take more than a one-year. This might create a different result when examining the relationship between BITs and FDI inflow or outward. If we divide the factors and examine these within the two time periods (date of signing a BIT and date of entry into force) some factors might have different level of impact to FDI. This requires further empirical analysis.

2.6 Summary

The evolution of political events throughout history has assisted States to adapt a legal system that aims to facilitate international trade. In addition, the escalation of interest in the transition countries of the export process to direct investment in other countries has increased the need for a framework that protects these investments, particularly given that the international laws suffer from weakness in the protection of foreign investment. To achieve this, states have resorted to relying on BITS as a substitute for international law, which provides foreign investors with a safe and stable environment through the presence of government legislations that secure an appropriate business environment aim to protects foreign investments from any greed, risks, or expropriation caused by the host countries.

Research in this area identified three main objectives in the conclusion of any BITs, which are foreign investors' protection, market liberalisation, and FDI promotion. The performance of BITS is evaluated by the amount of FDI inward and outward with the partner countries in the treaty.

The United Arab Emirates may differ from many countries in terms of demographics and the abundance of natural resources, as well as investment opportunities, but it still has the same incentives to conclude bilateral investment treaties with other countries. The UAE BIT programme, initiated by the Minister of Finance in 1966, is intended to encourage and protect UAE investments abroad. Overall, UAE BITs give the opportunity to open up channels for UAE enterprises to expand and grow their business interests globally.

CHAPTER 3

3 Literature Review

The following review of the literature reveals important factors relevant to the topic under investigation. (Hart, 1998, 13) defined the literature review process in management studies as "the selection of available documents on the topic, which contain information, ideas, data, and evidence written from a particular standpoint and the effective evaluation of these documents in relation to the research being proposed". Therefore, this section adopts and applies Hart's and Baker's (1998) strategy in conducting the literature review which will furthermore lead us and allow us to construct the model that the study will use for the application in this study.

There are two main objectives in the literature review chapter, the first main objective is to review existing research and critical literature related to study in order to clarify and highlight the gap in knowledge and to determine the importance of bridging the gap. This has been covered in chapter 1 and 2. This chapter will also discuss the literature review in more detail, by reviewing relevant topics and important theories in the context of the issue of FDI and its relationship to BITs, as well as reviewing the important variables in the study. The second objective is to develop a thesis by discussing and critiquing the various articles in the literature review in order to derive several hypotheses in order to isolate the gap in the literature highlighting how the hypotheses and findings contribute to knowledge in this particular context.

The chapter is set out as follows. The first section provides important details about the FDI and definitions for type of FDI including stock or flow. Once the basic and relevant definitions are given, the thesis provides a brief review of trade theory and associates the models developed with those that are examined for FDI. Next, the study examine FDI theory and variables related

to the topic under study. Moreover, a review of the importance of FDI for the growth of a country is presented. This will enrich our understanding of the factors that attract foreign investment in the UAE. The second part discusses literature on BITs by evaluating the adequacy of the current theories, related debates, and key findings. Finally, the third section covers literature relevant to the UAE. In particular, the thesis reviews studies conducted in the UAE as well as in GCC countries, and discusses important factors used in the research model, following which an evaluation of the methodologies used in the literature is presented.

3.1 Economic integration

In fact, the circumstances that led decision makers in most countries to find a framework that will help to protect their investments in a foreign country through signing of the BITs or joining one of the several types of bilateral agreements, this approach can be considered as kind of creating an economic integration between treaty parties (Baier et al., 2014, Dixon and Haslam, 2016, Baier et al., 2018). Therefore, the BITs might play an important role in strengthening the integration of economic entities for smooth merging into global markets because these treaties play an important role in creating an attractive business environment for both signatories' countries. BITs also work in order to remove investment barriers by promoting and protecting FDI. When we address the subject of economic integration we can define it as a "*Process in which two or more states in a broadly defined geographic area reduce a range of trade barriers to advance or protect a set of economic goals*" (Motta and Norman, 1996, p.758). The economic integration normally takes several forms that represent varying degrees of integration; these include a free trade area, customs union, common market, economic union and complete economic integration (Bungenberg et al., 2016).

Therefore, it is necessary to highlight the different stages of economic integration and review their characteristics in order to distinguish between BITs and economic integration. The first stage of economic integration is *free-trade area* (FTA). The most common integration scheme is formed when at least two countries partially or fully eliminate customs tariffs on products exported between members, while at the same time each member in the FTA agreement has independence in determining and establishing trade policies with other countries (Salvatore, 2007). One FTA example is the *North American Free Trade Agreement* (NAFTA) which was set up in 1994. The second stage of economic integration is *customs union* where all trade tariffs are removed between countries' members and they also adopt a common external commercial policy toward non-member countries. One of the main features for the customs union is that the members act as one body when negotiating or signing a treaty agreement with a non-member country. On example is the Customs Union for GCC states ratified on 1 January2003.

The third stage of economic integration is *common market*, whereby all trade tariffs between members are removed and they also adopt a common external commercial policy toward non-member countries. They also adopt policy for free movements of labour and capital between members by removing all barriers to movement among countries' members (Gerber, 2005). Furthermore, the members act as one body when negotiating or signing a treaty agreement with a non-member country. The fourth stage of economic integration, which is a more comprehensive form of economic integration, is *economic union* through which the countries adopt all features of the common market as well as engage in unification and coordination of economic policy between all members' countries, although independence in the political policy is still preset.

Furthermore when adopting a common currency the economic integration becomes a *monetary union* (Appleyard et al., 2008).

Although there are variations between levels of economic integration as ranked above, the important point here is how to evaluate the stages of economic integration based on the needs of the foreign investors. In fact, most stages in economic integration have a significant impact on increasing export and import commodities (Ruth, 2017); therefore, the economic integration plays a major role in facilitating international trade activities between group of countries' members rather than enhancing FDI or protecting and promoting foreign investments. Therefore, the key distinction between BITs and all stages of economic integration is that BITs deal mainly with FDI in terms of protection and promotion through commitment to an agreement concluded between two or more countries (bilateral treaty) which aims to promote and protect FDI in host countries. Therefore, the BIT is not a type of economic integration but it can be considered as a tool that helps to promote and protect FDI inflow between two countries and which may have a positive impact on trade. While these differences exist between economic integration and BITs, the countries of the world have shown interest in entering into economic blocs.

In particular, from the end of World War II until recently, the world economic integration has gradually increased with many countries entering into economic arrangements which have grown to unprecedented heights. This shift started in Geneva on 1 January 1948 where the General Agreement on Tariffs and Trade (GATT) was signed by 23 countries. The main purpose of this Agreement was to liberalise trade through reduce trade prairie and eliminate trade quota (Mansfield and Reinhardt, 2003). After almost half a century, the GATT agreement was replaced

by a more comprehensive agreement, the World Trade Organization (WTO) on 1 January 1995, which has since been signed by 123 countries as a successor to the GATT agreement. The key objectives of the agreement are implementing a global system in international trade that creates a mechanism aimed at liberalising international trade, as well as participating in solving trade disputes between countries' members, enhancing the principle of transparency in decision making, developing joint cooperation for all economic integration and institutions, and finally supporting developing countries to achieve growth and benefit from the flow of investments and trade (Egger and Wamser, 2013).

The objectives of GATT and WTO agreements are to support international trade through reducing trade barriers among member countries, which in turn has drawn the attention of investors to the importance of FDI as one significant tool to generate i greater returns on investments compared to current exporting commodities activities to host countries. Even under the WTO umbrella, these investments need to set a framework that protects their investment in the host countries from any discrimination activity against it by host countries' governments, which might lead to unexpected losses (Sampson and Lamy, 2005, Kalim, 2016). Therefore, the host country needs to treat foreign companies in a manner consistent with the way local companies are treated. This equality between foreign and domestic companies ensures a competitive freedom between them, which retains the benefit of the end users as well as the contribution to the countries' economic growth and ensures reciprocity for the countries in terms of FDI, which brings greater competitiveness and sustaining of foreign investments. Therefore, it is not about which strategy is creating better economic environments whether involving

economic integration or signing BITs but, more importantly, it is how attract more FDI outflow or inflow, and how to sustain these investments

Nevertheless, it is still questionable whether factors that may increase the attractiveness of FDI inflow in a particular country may also be drivers for the sustainability of FDI inflow or FDI outflow. There may be several factors that stimulate the sustainability of FDI inflow, which also may be correlated with the attractiveness of FDI inflow factors. This study aims to shed the light in this new area of study in more details.

3.2 Sustained FDI inflow

To the best of the author's knowledge, to date there is no specific research that theoretically defines the concept of sustainable FDI or identifies a methodology to measure sustainable FDI flow in particular. Thus what the precise the concept of "sustainable" is remains both elusive and controversial particularly when applied to the attractiveness of FDI in a particular country. When I looked for the term 'sustainability' within the relevant literature I found other terminology associated with it; for example, stimulating economic growth competitiveness and sustainable development (Porter, 1990b, Tobin and Rose-Ackerman, 2011).

The linguistic coherence in the relevant literature of these concepts – namely, the sustainability of FDI and the continuity of economic growth – is not because they have the same meaning but because they both share the same goal, which is achieved through the significant contribution of the continued flow of FDI into the economic growth. Extensive research found that SMEs as the

main actor of sustainable development, for which FDI is considered, from research and institutional points of view, are a vital source for sustainability development (Melane-Lavado et al., 2018). That, in turn, gives the decision maker in government a pattern of the pursuit of the nominal objective not only to seek to attract FDI as much as possible but also seek to preserve its stability, and prevent its decline significantly or a total withdrawal by foreign investors from host countries' markets. This decline in FDI can be seen when looking at the database of the OECD stock FDI inflow or outflow as well as the UNCTAD FDI/TNC database.

Whenever there is a difference or some decrease in figures, or even negative figures in the amount of cash flowing during the year compared to the previous calendar year from FDI flows' figures this indicates that the negative amount will represent the return of these amounts to the home country. In other words, repatriations will take two forms; either as profit surplus which is transferred to the main company's country or a move to partially withdraw investors from the target country.

Table 2 shows the FDI stock flow into the UAE from 2001 to 2012. note that in 2008, France investors withdrew 1.6 billion dollars from their investment in the United Arab Emirates compared from 2007 where the total FDI stock that came from France to the UAE was 275 million dollars. This is explained by the fact that French companies either withdrew their profits in the UAE markets or sold their assets and withdrew their cash from the UAE markets particularly during the global economic crisis where it was at its worst stage in the same year. In both cases, the amounts have not been reinvested in the UAE but it has been returned from the foreign markets, these measures are taken by the French companies to withdraw their

investments from foreign markets, including the UAE. Regardless of the reasons for the justification for whether it was a surplus of profits withdrawn or total investments withdrawn from the UAE market, this will ultimately result in failure to contribute these important amounts to the economic growth of the UAE. However, injecting this amount into the French market significantly and directly contributed to the economic growth of France.

The distinction between profit cash repatriations or investors fully withdrawing by selling companies capital including their assets might become a matter of debate particularly when there is a lack of information in most databases. More importantly, foreigner investors are not interested in reinvesting or, as in our example in Table 2, the UAE failed to sustain French FDI inflow. This was due to large return of earnings by French investors as foreign affiliates located in the UAE who withdrew their profit or, in some cases, assets were sold in order to transfer it to the parent company outside the UAE, resulting in large negative FDI value recorded on OECD and World Bank database. This ultimately reflected no interest among French FDI to sustain inflow to UAE, which the study sheds light on in order to understand how to promote FDI inflow and outflow.

Reporting economy	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Argentina	-	-	-	-	-	-	-	4	- 3	12	2	6
Bangladesh	1	-	17	13	55	88	83	102	67	25	10	15
Belgium	-	1	1	-	-	-	-	-	81	24	10	- 141
Bulgaria	-	1	-	-	1	6	9	6	1	3	53	27
Croatia	-	-	-	-	-	-	-	-	- 1	- 4	- 3	-
Cyprus	-	..	-	..	16	-	75	31	20	- 16	222	54
Czech Republic	-	-	-	-	-	-	- 6	-	-	-	-	-
Denmark	-	-	-	-	2	9	12	10	-	-	-	-
Egypt	-	-	4	2	67	2 734	527	763	952	404	508	418
Finland	-	-	-	-	- 4	- 6	- 26	- 40	15	3	- 5	15
France	21	110	230	277	458	464	275	-1 610	4 513	- 901	7 760	- 717
Germany	1	- 8	16	62	5	11	479	220	921	-	-	-
India	-	-	-	-	47	215	226	234	373	188	346	173
Italy	25	-	1	5	3	40	6	51	25	25	38	- 3
Japan	-	-	-	1	- 1	-	-	-	-	-	27	-
Kenya	-	-	-	-	-	-	1	-	-	-	-	-
Korea, Republic of	-	-	-	1	-	13	25	9	2	- 4	-	-
Latvia	-	-	-	-	-	-	-	-	-	-	-	- 1
Luxembourg	-	- 49	- 16	- 30	- 47	- 19	- 31	66 966	161	693	300	-5 779
Malawi	-	- 15	2	-	-	-	-	-	-	-	-	-
Mauritius	-	-	2	-	-	4	41	30	12	11	13	11
Morocco	1	11	23	37	82	88	465	608	143	310	573	-
Mozambique	-	-	-	-	-	-	-	-	6	7	44	217
Netherlands	174	162	40	19	-	-	-	-	-	-	-	-
Nigeria	-	-	-	-	-	-	-	-	-	-	-	1
Oman	-	-	-	-	-	362	796	420	- 221	156	467	-
Pakistan	5	114	46	114	392	1 639	670	432	166	297	174	1
Philippines	-	-	-	-	-	-	1	-	1	-	1	-
Poland	-	-	-	-	-	-	-	-	-	-	6	- 1
Portugal	-	-	-	-	-	-	-	-	-	8	-	-
Qatar	-	-	-	-	-	-	-	-	- 95	-	-	-
Romania	-	-	1	3	1	14	14	23	1	-	-	1
Saudi Arabia	5	1	10	846	5 015	- 19	2 381	5 595	- 268	355	-	-
Slovakia	-	-	-	-	-	-	-	- 1	- 3	- 9	- 3	-
Spain	-	-	-	-	-	-	-	-	4 747	164	6 260	225
Sweden	11	..	-	-	-	-	..	-	-	..	..	..
Thailand	-	-	-	-	3	33	24	30	44	- 16	- 8	15
Tunisia	-	-	-	-	10	2 265	38	65	66	39	59	40
Turkey	-	1	-	-	1 625	1 548	183	148	6	104	89	52
United Republic of Tanzania	15	1	11	2	2	30	64	-	-	- 118	- 147	-
United States	- 19	6	4	- 23	..	1 064	..	1 617	151	- 197	617	- 104
Zambia	-	-	-	-	-	-	1	-	11	18	43	5

Table 2 FDI flows from UAE to abroad (Millions of US dollars)

Source: UNCTAD FDI/TNC database.

Note: Data are based on information reported by the economies listed above.

Additionally, for a more in-depth understanding of the concept of sustainability FDI flow, the relevant literature guides us to the concept of sustainability in economic growth, where many researchers address questions related to sustainable economic growth. For example Albu (2013) and Dierk (2010) set out to define sustainable economic growth as a rate of growth that can be maintained without creating other significant economic problems, for future generations. In addition, according to the Oxford Dictionary, the definition of the term 'sustaining' is "*continue it or maintain it for a period of time*" and "*able to be continued or sustained*" (Stevenson, 2010: 735). Relatively, in the context of FDI, based on understanding of the data methodology used by UNCTD[9], the term 'sustaining FDI' can be defined as preventing foreign investors from partly or fully withdrawing their investments that include capital assets in a particular country within a period of time. Thus foreign investments in the host country continue for a long period of time – in other words, generating a continuous FDI inflow into a specific country where the total amount of foreign investment recorded in a period of time does not show any withdrawn until the next calendar year. This ultimately reflects on sustainable investments over the long term without complete withdrawal of FDI.

Furthermore, most related studies have sought to understand the factors that impact the sustainable economic growth. Once such study is by Albu (2013), who addressed the question of whether the Chinese economic growth can be sustained in the future. The author explained how China has successfully sustained remarkable economic growth to become the second largest economy in the world. One of the sources of the economic growth is massive inward FDI to the country (Kirby, 2001). One of the most recent studies was carried out by Karl and Mann (2018) as part of the United Nation Sustainable Development Goals (SDGs) vision. They assessed

[9] UNCTD website provides more information about FDI flows with a negative sign.

theoretical framework in identifying the sustainable FDI but in a more comprehensive way, which was closer to the sustainable economic growth definition. Their study shed light on important sets of sustainability characteristics, which include substantially higher FDI flows and other economic, social, environmental, and governance contributory factors.

The United Nation Sustainable Development Goals set several goals in order to achieve their vision of meeting global sustainability in economic growth in 2030. These goals can be used as an instrument in order to determine if the economic growth is 'sustainable'. The instruments include economic and social aspects. Of importance to this thesis is understanding sustainability in term of FDI inflow and outflow. In this context, some of these tools, which measure sustainability in economic growth, can be used and applied within the scope of measuring sustainability in the FDI flow related to a particular country.

Another terminology related to sustainable development describes it as "the enhancement of the economic, social, and ecological well-being of current and future generations" (Şen, 2015, p.49). A review of the listings of the United Nation Sustainable Development Goals (UNSDG) calls attention to the need to maintain some of the development goals. These include supporting the sustaining of per capita economic growth in developing countries, in addition to encouraging these countries in developing sources of country income and enabling them to develop new industries that contribute to the growth of economic diversification in the countries' economic resources and technological innovation. They are also encouraged to promote a government policy that aims to create an attractive environment for FDI by adopting policies that protect

these investments, stimulate innovation, create new job opportunities and support productive activities (UNSDG, 2019).

These goals, which the UNSDG has established, share a homogeneity with the main factors used in the gravity equation, which is implemented in this study to understand the relationship between FDI and economic factors, which represent the elements of the gravity equation. Literature continuously refers to GDP, and it can conclude that if there is a positive relationship between FDI and GDP, FDI achieves sustainable economic growth and as such will achieve sustainable development.

In addition, many researchers and organisations, including the UNSDG, have developed several international goals and strategies which have progressively helped to achieve and maintain sustainable economic growth among countries, particularly developing countries. These goals contribute to drawing the conceptual framework for sustainable FDI; for example, but not limited to (a) Achieve job opportunities for all and guarantee their equal rights , including persons with disabilities; (b) Preserve the human rights principles of workers in international companies, including combating child labour; (c) Promote safe working environments for all workers at international companies; (d) Implement policies necessary for foreign investment to contribute to job creation and enhance local culture and products, and (e) Implement strategies that aim to strengthen the capacity of domestic financial institutions in order to encourage exchanges trade, including support FDI and local companies.

This strategic vision of these institutions in supporting global economic sustainability, which combines economic factors with political and humanitarian factors, in general, can help to draw the concept of economic sustainability. By looking to these goals, the focus is on economic factors through openness to markets, ease of doing business, and workers' rights. In fact, openness can be measured by the level of attractiveness of FDI to a particular country. Other economic factors can be measured by the level of GDP and GDP per capita, and this is precisely what this thesis aims to cover in the gravity equation. Therefore, providing these factors positively for a long period of time in a particular country will definitely reflect on considering that the country has achieved economic sustainability.

3.3 Measuring sustainable FDI

In 1972, for the first time, the term "sustainable development" was coined at the Stockholm Conference as the main actor of economic growth, for which FDI is the main engine. An important study carried by Zaman et al. (2012) used a survey analysis that provides evidence of the relationship between the level of FDI inflow and the sustainable economic development in Romania. The study was designed to understand the attractants for FDI in Romania, which contributes positively to the future of the country's sustainable economic development.

Moreover, the study by You and Solomon (2015) is one of a few that measured and explored whether the sustainability in the volume of local investment within China's economy correlates with to the volume of outward FDI. The study shows a positive relationship between local investment in the industry sector with China's OFDI; this effect mainly depends on government

subsidies. The study provides some suggestions in order to sustain China's economic growth, which includes promoting increased government support for Chinese industries that contribute to economic growth and thus enhance Chinese foreign investment abroad.

Although a few studies in the field of sustainable FDI have achieved a general understanding of the term 'sustainability' and its relationship with other synonymous concept, there a lack in the literature specifically in defining the methodology that aims to measure the sustainable FDI. This in fact will give scientists the opportunity to conduct more in-depth research to test the most effective ways to successfully measure the sustainability of FDI. However, they need to take into consideration the methodologies that are used in measuring other concepts which are consistent with the sustainability of FDI; for example, the tools for measuring economic growth as the main objective which constitutes a part of FDI based on Flynn (2019,7) who states that "the economic growth of a nation is measured as the percentage increase in its GDP during one year". Flynn's study also concluded that the sustainable FDI of a nation is measured as the percentage increase in its FDI inflow which is positively related to GDP during one year as well as to continuous increases going forward.

To explore the percentage increase or decrease in FDI inflow, one can use the OECD database. This database reports that some countries have a negative FDI figure, which represents a (partial or full) withdrawal of their investment in a specific host country. This means that there are some circumstances that might lead investors to withdraw from the particular host market (Bankole and Adewuyi, 2013, Kerner, 2018). These circumstances might include a recent change in government regulation that impacts foreign investments or lack of the market attractiveness

resulted from some factors for instant political instability or trade barriers (Mudambi et al., 2012), one of the solutions is to liberalise international trade through forming BITs with its major trade partners would keep contributing to sustaining the country's economic growth.

The OECD (2018, p. 2) provides an explanatory note setting out three reasons for why negative FDI may occur:

> "First, if there is disinvestment in assets— that is, the direct investor sells its interest in a direct investment enterprise to a third party or back to the direct investment enterprise. Second, if the parent borrowed money from its affiliate or if the affiliate paid off a loan from its direct investor. Third, if reinvested earnings are negative. Reinvested earnings are negative if the affiliate loses money or if the dividends paid out to the direct investor are greater than the income recorded in that period." Or "Negative FDI positions largely result when the loans from the affiliate to its parent exceed the loans and equity capital given by the parent to the affiliate. This is most likely to occur when FDI statistics are presented by partner country"[10].

These reasons, despite their differences, indicate either the inability of the foreign investor to continue his investments in the host country for external reason. One reason may be losses that forced him to sell his shares for a change that has occurred in the government legislation related to the foreign investor (Salacuse and Sullivan, 2005, Fereidouni and Masron, 2011). Another may be the desire on the part of the investor to reduce his investments because there are more attractive markets.

In general, these scenarios are described in Table 2 and Table 3 and show the FDI statistics for the United Arab Emirates. It is important to understand the role of government relations with regard to FDI, which represents the BITs that aim to promote and protect as well as maintain it

[10] OECD provides FDI definitions, available at this website.

within the UAE market for a long period into the future. This thesis highlights the external and internal factors in order to understand the mechanism of continued FDI inflow targeting the UAE market.

3.4 Sustained outward FDI

The sustained outward FDI (SOFDI) is no less important than sustained inward FDI (SIFDI). As important factors contributing positively to economic growth (Wong, 2013, Cassey et al., 2016), outward FDI in fact reflects the success of UAE companies in growing and expanding into foreign markets. This is important in their development and external competitiveness, which will ultimately recover their profits to pump into the UAE economy.

However, what distinguishes sustained outward FDI from sustained inward FDI is that the latter is heavily influenced by internal factors of legislation, regulations and other economic factors which can be controlled in some way by the local authorities (Cassey et al., 2016, Wong, 2013). On the other hand, outward FDI is affected by external factors which may be difficult to control because they fall within the competence of other countries and cannot be predicted, although they can be reduced through the conclusion of BIT and can therefore contribute to the sustainability of outward FDI. Table 3 shows the outward FDI from the UAE to 31 countries from 2001 to 2012.

Table 3 United Arab Emirates FDI stock in the host economy, by geographical origin (Millions of US dollars)

Reporting economy	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Australia	..	..	26	16	..	..	..	..	700	..	..	..
Austria	-	-	-	51	-	153	231	338	1 252	1 187	2 038	2 304
Belgium	-	-	-	-	-	-	-	-	311	1 366	929	950
Brazil	-	-	-	8	-	-	-	-	-	-	-	6
Bulgaria	-	-	-	0	1	-	4	11	11	11	11	14
Canada	45	3	2	2	3	118	66	-	67	-	-	-
Chile	-	-	-	-	-	709	1 029	1 045	3 269	4 937	5 133	6 123
China	-	-	31	47	145	145	234	376	440	764	1 175	1 337
Cyprus	-	-	-	50	74	113	146	-	55	22	-	-
Czech Republic	203	44	93	321	321	-	-	3	1	-	-	-
Denmark	-	-	-	183	241	670	847	1 097	193	249	261	283
Estonia	-	-	-	-	-	-	1	1	1	1	-	-
Finland	-	-	-	- 1	85	75 2	89	98	98	116	45	58
France	559	1 296	769	718	1 825	463	2 594	3 987	4 029	4 287	10 937	11 322
Germany	196	220	330	331	488	793	1 078	1 709	1 889	2 182	2 532	..
Greece	-	-	-	-	-	-	-	-	84	-	-	-
Iceland	-	-	-	-	-	-	-	-	-	6	1	5
India	-	-	-	-	-	-	-	-	-	3 380	3 977	3 874
Italy	-	-	-	-	-	-	851	1 695	2 253	3 078	4 426	-
Japan	13	43	44	39	184	183	252	302	338	377	409	328
Korea, Republic of	14	14	14	21	27	132	202	214	328	388	-	-
Malaysia	-	-	-	-	-	-	-	260	272	516	694	986
Morocco	-	1	1	1	-	-	-	10	10	10	11	-
Netherlands	94	211	282	272	257	150	236	519	635	1 078	865	530
New Zealand	1	-	-	-	..	..	..	..	..	15	17	..
Norway	400	434	384	315	226	168	76	147	130	152	162	226
Oman	-	-	-	-	316	222	369	418	442	880	993	-
Pakistan	-	-	-	68	-	176	255	385	356	308	281	-
Poland	-	-	-	-	-	-	-	-	-	112	131	132
Portugal	-	-	-	-	-	-	-	-	-	- 4	-	-
Qatar	-	-	-	-	-	-	-	1 072	1 259	-	-	-
Slovenia	-	-	-	-	-	1	6	6	13	16	10	6
South Africa	-	-	1	5	1	1	93	2 141	3 090	3 527	775	907
Switzerland	195	303	506	465	432	551	300	8 290	6 917	4 583	7 724	9 770
Thailand	-	-	-	-	-	1	15	21	25	135	224	250
Turkey	-	1	1 1	1 2	1	2 2	17	16	29	15	32	39
United States	834	1 087	934	962	2 285	670	2 967	3 337	4 118	4 935	5 864	7 826

Source: UNCTAD FDI/TNC database.

3.5 Summary

To summarise, sustainable FDI is a new area of study, which is design to continue the flow of FDI for an extended period without total withdrawal of foreign capital from the host countries, contributing to the sustainability of investment resulting in economic growth. This understanding draws many researchers to determine its factors and correlations, which is closely related to the concept of sustainable economic growth. Practically it can be measured and understood but further study is required.

3.6 Literature on FDI

3.6.1 FDI theory

In the eighteenth century, Adam Smith was one of the first to attract the attention of economists in the field of FDI, particularly after he published his seminal work, the *Wealth of Nations*. Scholarly interest in this field increased after the economic world recovery of European and American markets from the impact of World War II and reached its peak in the second quarter of the twentieth century (Porter, 1990a, Trevino and Daniels, 1995, Dunning and Zhang, 2008, Buckley, 2009). In a simplified manner, FDI is described as capital migration between countries. Therefore, it is derived from the international trade model, particularly since there was no specific microeconomic model dedicated to FDI (Dunning, 2002).

Currently, most of the microeconomic models of FDI are developed based on international trade models starting from the classical theory (Ricardo theory) and neoclassical theory (Heckscher-

Ohlin-Samuelson theory). These theories of international trade are based on the absolute mobility of capital where from the price of capital equalises due to international trade (Dunning, 2013, Mariev et al., 2016) with main source theories at both micro and macro levels which sought to explain the flow of FDI (Ricardo, 1821, Smith, 1910, Mundell, 1957, Stephen, 1970). In 1957, Mundell was the first to study the implications of capital mobility with a heavy emphasis on the effect of portfolio capital movements on the efficacy of monetary and fiscal policy. Mundell's model raises important considerations for policy makers in order to understand the determinants of international trade as well as FDI.

A primary work that was established the field of FDI was done by Hymer (1977) who has fundamentally shifted the focus away from neoclassical economics theories to shed light on the determinants of interest rate differentials, along with other theories that classify firms that invest overseas for different reasons. The major investment motivations include the need to access physical assets in order to create value, reduce costs, and enter markets. Dunning (1981; 1998) asserted that firms engaging in FDI is related to locational determinants and he suggested firm market-seeking, resource-seeking, and competitive strategic motivation which are all in fact related to location advantages, which are major investment motivations.

In addition, other studies have emphasised institutional factors which explain FDI inflow (Grosse and Trevino, 2005, Trevino et al., 2008). Empirically and theoretically, there are several reasons that encourage companies to engage in FDI for the purpose of accessing large and growing global markets and taking advantage of large ROI. Among many researchers, Charkrabarti (2001) draws a link between the growth of foreign markets and the encouragement of companies

to enter and invest overseas, which allows them to engage in mass production and specialisation in order to achieve economic abundance due to reduced costs and growth in host markets. Yet, locational determinants of FDI are usually related to the development of Dunning's (1980) study on internationalisation theory, which identified three forms of FDI that companies undertake: these are 1) resource-seeking; 2) market seeking and 3) efficiency seeking. Also, Dunning (1993) suggested that the FDI increased when they are able to gain certain advantages over rival companies in a given location. Specifically, these are ownership advantages, location advantages and the benefits of internationalisation (Fereidouni and Masron, 2011). Moreover Ross and Rania Miniesy (2015) explained that there were simultaneous attempts to explain the phenomenon by relying on two streams of FDI theory; the first is the cost-of-capital which is supported by many researchers and the second is industrial organisation, The importance of the cost-of-capital theory and the industrial theory in explaining FDI has been highlighted by Trevino and Daniels (1995) study, Where the researcher extract five variables from both theories to test his study hypothesis that aim to understand the factors that attract FDI in US market, The five factors that he referred as a characteristics of FDI in the US are, 1- company size 2- firm profit value, 3- Export level - the level of industry concentration 5- Expenditure in R&D, the (Trevino and Daniels, 1995) study conclude that the company size and the firm profit value are more likely explain the FDI inflow to US.

For the purpose of this thesis, I am interested in the BITs as one of the motivations of FDI among many other important factors. These factors are not excluded from this thesis as most of the FDI studies consider them. They include (i) economic factors, (ii) geographical factors which are related to the distance between home and target countries, and (iii) political factors.

3.6.2 Definitions of FDI

The term 'Foreign Direct Investment' (FDI) typically refers to the means of transferring a firm's assets, both tangible and intangible, including knowledge, which directly invests in facilities to produce products in a foreign country (Hill, 2009). Practically FDI refers to the tools that quantify the volume of multinational investments in the host countries. The inherent difficulty in defining what constitutes FDI lies in defining the extent of 'control'; in other words, the threshold of foreign equity that gives foreign investors some degree of involvement in management. There is no consensus in determining the minimum equity shares that are necessary for 'control' to be recorded as foreign investment (Jones et al., 2005). For example the OECD and the IMF identified a minimum of 10% or more of enterprise shares acquired by foreign investors as necessary to record this investment as FDI (Michael and Eric, 2001). Other countries have different minimum equity stakes deemed necessary for control of a foreign company to exist. In the UK, Germany and the UAE for instance, the figure is 20% as a threshold of ownership for it to be considered as FDI. In fact, this ratio is necessary to act as a basic dividing line between direct investments and portfolio investments.

In addition, there are two categories of criteria that are commonly used to distinguish between FDI and Foreign Portfolio Investment (FPI); these are the *time horizon of the investment* and the *motivation of investors* (Stephan and Pfaffmann, 2001). Therefore, this study classifies an investment as direct if there is a long-term interest strategy and if there is an incentive to influence or vote on enterprise management. Moreover, it also classifies an investment as direct if foreign investors own a minimum of 10% to 20% of shares. This percentage depends on each

country's criteria for classifying direct and portfolio investment. On the other hand, the FPI does not require active management or control, and has large net inflows.

Another important characteristic that we have to consider when we define FDI is the method of measuring direct investment, which typically adopts either of the following two types of measurement - *flow* and *stocks*. A stock refers to the total accumulated value of investment at one specific time, while a flow refers to the total value of transactions over an interval of time – normally one year (Hill, 2009, Moosa and Burns, 2013). In this study, I focus on FDI stocks for several reasons. First, measures of flows only include direct investments financed from sources of the country-of-origin investor. They do not include other investments that pass from different sources. Therefore flows provide an "approximate" measure of FDI and do not represent the exact FDI flow (Bellak, 1998). Second, using stocks as units of measurement for FDI is grounded in the fact that the decision of foreign investors in the allocation of their investments around the world is based on corporate output. Thus, capital stocks are more transparent in that their results are reviewed constantly, which offers an easily measured tool that can be employed in the process of the foreign investor's decision. Third, because the amount of stocks for FDI that are funded by the local markets is included in the statistics, this makes it easy to measure them, in contrast to flows that attract different sources of finance and exclude locally funded in the countries statistics that measure FDI inflow. This means that the flow is only measured very roughly, as it ignores almost 50% of the FDI amount, and therefore the stock FDI data are more effective in measuring capital ownership. Finally, the stocks are less volatile than flows which are often a big acquisition and far more volatile, a regular occurrence in less developed

countries[11] (Bénassy-Quéré et al., 2007). The OECD and UNCTAD databases which are used by most FDI studies clearly describe how to distinguish between FDI *stock* and FDI *flow* in terms of their measurement.

In fact, most FDI studies prefer to deal with FDI stock as the unit of analysis rather than FDI flow (Allee and Peinhardt, 2011, Mina, 2012). For the aforementioned reason and additional reasons that will become clear in the methodology of this study, focus mainly on stocks of FDI data. According to UNCTAD the unit measurement of the FDI stock represents

> "the value of the share of capital and reserves including retained profits attributable to the parent enterprise, plus the net indebtedness of affiliates to the parent enterprises. It is approximated by the accumulated value of past FDI flows" (UNCTAD, 2018, p.245).

while the OECD defines FDI flow measurement by recording the value of cross-border transactions related to direct investment during a given period – usually a quarter or a year. The financial flows normally consist of equity transactions, reinvestment of earnings, and intercompany debt transactions.

On the other hand, the OECD provides a methodology that deals with outward FDI data, which is also called direct investment abroad. This represents all the transactions announced by the investor in an existing economy in a particular country and considered as a surplus of investment pumped into a foreign economy through purchases of equity or reinvestment of earnings. Any transactions affecting the actual value of a foreign investment will be deducted from it; for example, selling shares and borrowing from the resident investor in the foreign company

[11] There are additional shortcomings of FDI flow. Bellak (1998) provides a more detailed discussion about measurement limitations.

(Brzozowski and Tchorek, 2017). On the other hand inward FDI flows, also called direct investment in the reporting country, represent total financial transactions that increase the investment owned by the foreign investor that were entered into the institutions declared in the local economy of the host country through the investor's purchase of shares after deducting any transactions that decrease the amount of investment. FDI flows are usually measured in USD and as a share of GDP. Both directions of FDI create stable and long-lasting links between economies (Dierk, 2010, Albu, 2013).

Whether to examine FDI stocks or FDI flows relating to the distribution of FDI among different target countries depends on profit opportunities. The primary goal for any profit-maximising firm is to seek access to major markets that potentially offer higher profit rates than local markets (Hill, 2009). High potential profit will however not be the only factor as firms will try to access/invest in countries that concentrate their policies on the creation of a favourable environment for foreign investment in the hope of attracting more FDI and subsequently benefiting from it.

Given those initial definitions provided above, the study next discusses how firms will try to invest in markets with high potential profit and a favourable investment environment that host nations try to create. It explains why nations place importance on creating a favourable environment in order to attract FDI to their country. This part of the discussion revolves around the relationship between FDI, economic growth and economic wellbeing, and discusses some of the theories that have sought to explain FDI and its contribution to the field of economics.

3.6.3 The relationship between FDI and trade

In fact, FDI and international trade that take the form of import and export are conceptually interrelated. In other words, they are two sides of the same coin, represented in several aspects. For example, an international enterprise's activity has a distinct effect on the structure of trade for both source and host countries because of their ability and willingness to internationalise cross-border transactions, thereby affecting the product value for both countries. International trade can be traded substituting for FDI when local investors prefer import-substituting activities aimed at supplying a domestic market, and FDI can be traded when foreign investors aim at acquiring offshore production facilities to supply other markets in order to benefit from the presence of labour and raw materials (Herrera-Echeverri et al., 2014, Metulini et al., 2017). It can be trade diverting where foreign investment is aimed at taking advantage of unfilled quotas under preferential arrangements (Narula, 1995).

3.6.4 The Importance of FDI: FDI and Economic Growth

Host countries welcome FDI because, other than its direct relationship with growth and welfare, it is also believed to have a number of additional positive effects. It creates job opportunities and, at the same time, it is considered as an easy source of capital which ultimately contributes greatly to economic growth (Bermejo Carbonell and Werner, 2018). This belief led almost all countries to engage in fierce competition in order to attract more FDI. In fact, empirical economic studies find a strong relationship between economic growth and FDI flows (Borensztein et al., 1998, Nikhil Kumar and Urvashi, 2012, Albu, 2013). One of those studies conducted by Wu and Hsu (2008) examined a panel of 62 countries from 1975 to 2000 and

found that FDI has a significant impact on economic growth. Their results, however, are limited to cases when the target country has adequate capacities of initial GDP and human capital. The results of this study were compatible with a previous study carried out by Alfaro et al. (2004); however, Alfaro and colleagues also found that countries with well-developed financial markets will gain significantly from FDI flow. Likewise, Dinç and Gökmen (2019) concluded that FDI is positively and significantly related to Brazilian economic growth but only in the long term and there are no significant relations between FDI and economic growth in the short term.

Nevertheless, it is not only the inflow of FDI that contributes to economic growth. ***Outward*** FDI also has a significant impact on economic growth. This was empirically examined by Dierk (2010) which was the first attempt to examine the impact of aggregate outflow FDI related to the growth in domestic economy, using two econometric methodological approaches – a cross-country regression and time-series for 50 countries. His results suggested that increases in the outward investment is positively related to domestic economic growth; therefore I can conclude that increases in both inward and outward FDI will have a positive impact on a country's growth and for both home and source countries so all countries can gain from FDI.

Given that countries welcome and seek FDI in order to promote economic growth I now look at the other side of the coin; namely, how FDI is directed to target countries. Arguably, economic theories were diligent in seeking interpretation of the attractiveness of FDI between countries; however, the constantly changing shape of the world economies requires a dynamic formulation of the theories used.

The earliest theories attempted to explain the reasons for international trade. For example, Adam Smith (1723-1790) who is considered as one of the founders of the science of economics focused on the notion of absolute advantage as the driving force behind trade. He suggested that countries should export those products where they have an absolute advantage, i.e. products they can produce at a lower absolute cost than their trading partners produce, and import products from other countries where they have an absolute disadvantage. David Ricardo (1772-1823) suggested that trade benefits come from comparative advantage. His approach evolved from neoclassical theory (international capital movements theory). He suggested that it is not the *absolute* advantage but the *relative* advantage that explains the direction of trade. Heckscher-Ohlin (H-O) used a general equilibrium framework of two countries, two products and two resources and tried to explain the direction of trade using factor endowments, suggesting that a country should concentrate production on and export the product that uses most intensively those resources that are most abundant in the country. Heckscher-Ohlin's (H-O) theory concentrated on natural resource-intensive products as the explanation for international investment. After a series of theories emerged that attempted to explain the international business activities between countries, an interesting theory bridge was attempted by Vernon in 1966, who sought to draw a link between knowledge-intensive products and the direction of trade among countries.

Vernon shifted the direction of the debate and introduced the Product Cycle Theory (PCT). The Product Cycle Theory explains the direction of investment transfers between countries, that emerge from knowledge-intensive- production countries and are then exported or relocated to low-cost-production countries (Appleyard et al., 2008). The development of these theories forms the main source of today's FDI theories that came to identify the key factors that affect

international investment (Dunning, 2001). Each theory has its own view that complements earlier theories. In fact, some of the fundamentals of these theories are still valid and applicable in the current economic environment, but there is greater accuracy today in defining the determinants of FDI (Buckley, 2009).

Also, the researchers in this field have begun to concentrate more on FDI in their studies and have based their analysis on international trade, which normally takes the form of exporting. Trade is the opposite business activity of FDI. FDI occurs when investors actively move their direct investments to other countries, in the case that direct investment is cheaper than exporting, due to the high transportation costs that are added to the production cost as a result of the geographical distances (Helpman et al., 2004). Therefore, the distinction between FDI and international trade lies in the geographical distance where the FDI related to the distance should have a positive relationship, unlike the trade (normally as export goods) which should have a negative relationship with the geographical distance between two countries. This might be because the transportation cost is high which led to reducing the trade and increasing FDI flows.

This distinction between FDI and international trade, and the attention paid by decision makers in almost all countries to attracting FDI has given researchers a greater opportunity to focus only on FDI by identifying the main factors that encourage the FDI flow. One of the prominent theories in this area is the Dunning's 1981 location advantage hypothesis, of (Dunning, 1981) termed the *ownership location internalization* (Fereidouni and Masron, 2011) paradigm. The location advantage hypothesis argues that location advantages have to exist in the host countries for corporations to bring foreign investment to the country. The location advantage arises from

the natural and human resource endowments, market size, cheap factors of production, the degree of economic development, and the stability of the country; these factors attract foreign firms to invest in the host countries. These models allow us to identify factors that countries should focus on in order to achieve a greater potential FDI inflow.

Despite the vast number of applications of the OLI paradigm in the FDI literature, there are some notable weaknesses in generating an understanding of the reasons for the exchange of foreign investment among countries. In other words, Dunning's theory is limited in the measurement of the accumulated FDI inflow, and does not have a feature that can measure bilateral FDI flows. Therefore, some researchers turned their attention to another theory that offers greater accuracy in identifying the factors influencing FDI flows and outflows[12]; specifically, the gravity approach, which is heavily used in explaining the impact of economic factors in attracting foreign investments due to its ability to analyse bilateral FDI flows for both target and source countries.

Indeed, the key factors used in Dunning's theory are similar to some extent to the elements used in the Gravity model, which gives an indicator of the importance of these factors. These key factors include GDP for the source and target countries, geographical distance between source country and host country, and other cultural proximity variables such as common language, landlocked status, religion, colony and more recently – and one of the foci of this study – investment agreements between pair countries. The key factors in the gravity approach are

[12] Mina (2009) acknowledges that the Gravity Model is more efficient in FDI studies but because he did not have bilateral FDI data he used Dunning's 1981 model.

considered the basic features for building international investment relations between countries which formed as bilateral investment agreements.

Building international investment relations has become a priority goal for many countries around the world that aim to achieve an additional source of capital through FDI inflow, which is the reason the study concentrate on this topic in the next section. The relevant factors mentioned in the FDI literature are to some extent complementary and interconnected, and some of these variables are controlled by the regulations in the host countries (Grosse, 1996). These regulations impact both directly and indirectly on the FDI inflow. As a result, and in order to overcome this problem, many countries sought to establish a framework that protects investors while encouraging them.

3.6.5 Outward FDI

3.6.5.1 Introduction

The importance of Inward FDI (IFDI) is not less than Outward FDI (OFDI). OFDI is defined as investment by domestic businesses in one country expanding their operations and investments to another foreign country. Such investments can take various forms, including Greenfield investment, merger or acquisitions or expansion of an existing foreign facility including services investments (Brzozowski and Tchorek, 2017, Cassey et al., 2016). Recently, many developed and developing countries have taken an interest in motivating local companies to expand their investments in other countries because of its importance for the demotic economic growth. the

World Investment report[13] shows how OFDI is present in most of the countries around the world and the OFDI data are recorded in many databases including the OECD and UNCTAD.

When talking about the language of numbers we realise that the global outward FDI increases rapidly. Figure 4 shows the total outward FDI stock for all countries from 1995 till 2017 where the total OFDI in 1995 was US$3.9 billion and the OFDI was recording a continued increase to reach US$30.8 billion by 2017, with only one year's drop due to the global economic crisis.

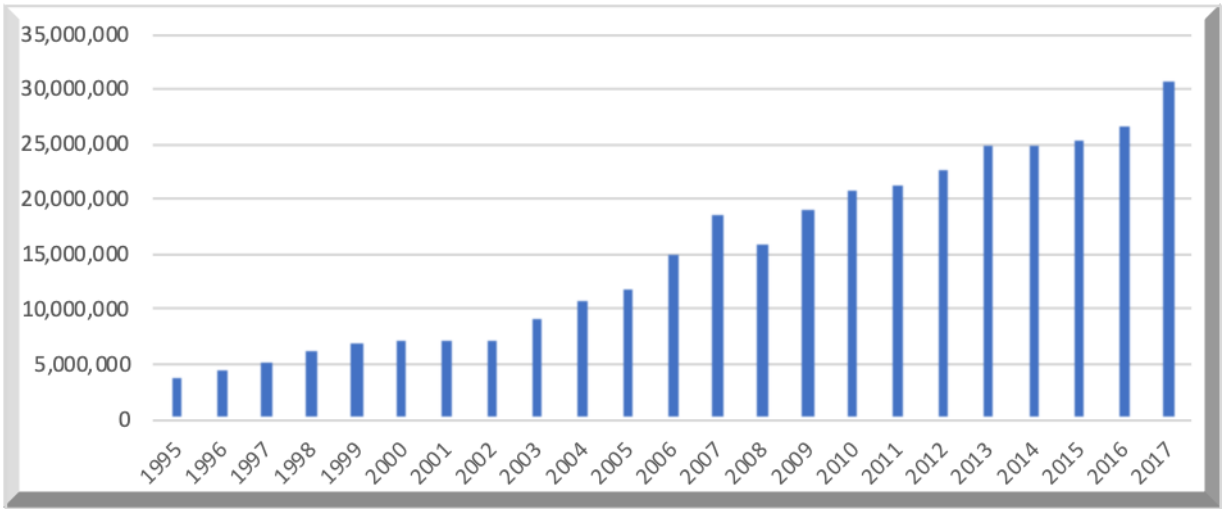

Figure 4 FDI stock outward for all countries from 1995 to 2017 - UNCTAD
In US millions of dollars

[13] World Investment Report 2018 Investment and New Industrial Policies published by UNCTAD and available at online: https://unctad.org/en/PublicationsLibrary/wir2018_overview_en.pdf.

3.6.5.2 OFDI and Economic growth

A debate currently exists in the literature over how outward FDI contributes to the development of the domestic economy, where two different opinions have emerged. The first opinion argues that, although outward FDI makes a significant contribution to domestic economic growth, at the same time local firms shift part of their own production or management operation to be located in foreign markets. This ultimately exerts a negative effect on the level of domestic investments which in turn might increase the unemployment rate and, therefore, will negatively affect the domestic economic growth (Castellani and Zanfei, 2003).

On the other hand, the second opinion holds that, by entering a new market, foreign firms will have access to raw materials at cheaper cost, and with their advanced ability to transfer new technology that enhances their productivity, this will enhance the competitiveness of the company compared to local firms (Hill, 2009, Brzozowski and Tchorek, 2017). This will lead to an increase in net profit, which ultimately will return to the home country, creating better welfare and positively contributing to economic growth.

In fact, most of the FDI studies that find a negative relation between OFDI and economic growth based on firm- or industry-level data analysis, whereas some others find a positive relationship between OFDI and economic growth based on aggregate outward FDI data. The finding is not limited to specific industry or services that might lead to excluding potential OFDI in the analysis. Rationally, using aggregate outward FDI data will give the researcher the ability to measure the impact of OFDI on the economy as a whole.

Herzer (2010) verified the impact of outward FDI on US economic growth using two econometric approaches – cross-country regressions and time-series estimators – for a sample of 50 countries. The results of the two approaches tell the same story; that outward FDI is positively related with domestic economic growth. Using time series estimators, he also examines the relationships between Malaysia's domestic economic growth and the OFDI on the nine-year dataset (1999-2008). The main findings do not support that Malaysia's domestic economic growth impacts the country's level of OFDI. Moreover, the study corresponds to theories that confirm the importance of focusing on factors that contribute to economic growth, including openness, export, and developing the financial sectors. and . Buczkowski et al. (2015) examined the characteristics of OFDI of Polish companies and the results are not significant as the researcher expected, due to the fact that the study sample was during the financial crises which might explain the research result.

To conclude the debate, and summarise the finding from recent studies that aim to examine whether aggregate outward FDI influences economic growth, and based on their results, we can concluded that both OFDI and IFDI significantly contribute to economic growth for both countries (Alfaro et al., 2004, Dierk, 2010, Tobin and Rose-Ackerman, 2011, Albu, 2013, Raičević et al., 2016).

However, for a long time the IFDI has attracted more researchers than OFDI studies in spite of using similar theories and literature in their approach. Recently, however, with dynamic economic change that took place around the world through understanding the importance of OFDI, researchers have started to work on understanding the other side of the coin – namely, the

strategies that are used in home countries to promote local firms in order to expand their investments abroad. More specifically, researchers have started to shed light on identifying empirical determinants of OFDI at country level. The only distinction between IFDI and OFDI studies is that those examining IFDI look at it from the perspective of host countries while the OFDI studies examine the determinants of FDI in the perspective of home countries (Cassey et al., 2016). The factors that attract IFDI are somewhat similar to OFDI which includes GDP, GDP per capita, transportation cost and others variables related to market size (Buczkowski et al., 2015, Cardamone and Scoppola, 2015, Cassey et al., 2016).

The similarities between OFDI and IFDI and an in-depth understanding of the reasons behind OFDI and IFDI investment will identify the tools that might encourage investors from both developed and developing countries to transfer their investments to other countries. This will give researchers a broad overview of the incentives of FDI because the belief is that FDI is an instrument of growth and development for the host and home countries.

Since 2010, researchers began to focus on the understanding of OFDI, by searching for new factors that motivate or even factors that can be used as moderators for OFDI. One of the important studies by Ross (2015) aimed to identify the determinants of Chinese OFDI into eight African countries using panel data for the period 2003 to 2012, He found that Chinese investors prefer to invest in countries that can be used to access natural resources. In addition, the level of Chinese OFDI in a particular country was impacted by the home country's infrastructure quality and government regulation related to the efficiency and ease of doing business. This study in fact is applicable with Dunning's theory which is related to location endowments with FDI.

You and Solomon (2015) address the question of how China's domestic investment responds to FDI outflows. They found that outward FDI has a positive influence on domestic investment, which means that Chinese industries' overseas expansion will create more abundant domestic savings which ultimately contributed to Chinese economic growth. This supports Kardos' (2014) research results where he concluded that OFDI is considered to contribute to the increase of domestic capital.

To conclude, the economic factors are important in the BITs studies, since most of the previous studies find that OFDI is positively related to economic growth and it is not less important than IFDI or perhaps, more importantlly, particularly for the UAE as a case of study which is considered as one of the emerging economies. The existence of economic policies in the UAE that have an impact in motivating local companies to become a global competitive ability may enhance the classification of the country to become as one of the developed countries or one of the transition economy countries. Understanding the impact of OFDI on the conclusion of bilateral treaties with the UAE will add to the knowledge, particularly since the UAE has different economic characteristics with many countries in terms of population structure, geographical location, and economic situation. This research will, therefore, contribute to shaping UAE government policy towards drawing up trade relations and concluding bilateral treaties.

3.7 FDI and BITs

3.7.1 Introduction

The matter of BITs overlaps of FDI is by now an intensively studied topic examined in many countries as well as economic unions. More than 1,545 articles in academic journal have produced hits for all disciplines, most published within last two decades. These numbers are indicative of the broad research interest in the topic and aim to find other moderator factors that might have significant impact on the relationship between FDI and BITs (Egger and Merlo, 2012). Many studies consider changing policies related to foreign investment and building investment relations through bilateral treaties as an important factor in stimulating FDI. Other studies have suggested that there should be other economic factors, including good infrastructure and high level of GDP, in order to achieve a positive relationship between BITs and FDI (Kerner, 2009, Busse et al., 2010, Tobin and Rose-Ackerman, 2011, Egger and Wamser, 2013, Kerner, 2018).

In this context, this study highlights the relationship between BITs and FDI, covering an important area categorised as an economic zone that has been highly ranked among countries according to the volume of FDI attracted.

This study aims to understand the relationship between OFDI and BITs in the UAE for several reasons. The first is because of the importance of FDI as an instrument to the UAE's economic growth. Another reason is to shed light on the OFDI of the UAE, which provides a contribution

to knowledge in this area of study. The third reason is to help decision makers to understand the importance of BITs not only in stimulating the inflow of FDI but also in opening up a new market for local companies and giving them the opportunity to enter these countries by providing security and guarantee for their investment, thus creating investment opportunities that enhance the ability of local companies to compete internationally.

3.7.2 The Objective of BITs

The main objective for signing BITs is to reduce the exposure risks for the investors. These risks originate from a country's regulations and they present an obstacle to the entry of foreign investments (Vijayakumar et al., 2009). According to UNCTD (2011), countries try to stimulate foreign investment through signing more BITs, hoping to send an effective signal to investors around the world to present the image of the country as a lucrative business environment for foreign investors. Normally the encouragement created by policy makers in host countries takes two basic forms; first, by unilateral regulatory changes and incentives – for example, removing restrictions for foreign investment and ownership; and second by bilateral treaties agreements (Busse et al., 2010). The difference between these two forms lies in a country's level of commitment, where the unilateral regulatory changes usually come from the host country and the regulations are not mandatory. In this case, there is a possibility that an unexpected change of this regulation might have a negative impact on FDI flow, while in the case of BITs,

> "host countries have committed themselves in a legally binding way to grant foreign investors various rights that reduce uncertainty with respect to entry and exit conditions, post entry operations as well as dispute settlement mechanisms" (Busse et al., 2010, p.149).

Therefore, it makes sense that the BITs encourage FDI flow among countries. Specifically, the BITs are considered as "*a pact that defines the terms and conditions for the investors of any country in the host country*" (Wei, 2012, p.664), which aims to encourage FDI inflow and reciprocal protection of investments. Despite this and through the above review, the literature shows the existence of a debate about the relationship between BITs and FDI; for example Salacuse and Sullivan (2005) found that BITs between developed countries and the USA led to increased FDI inflow, while signing BITs with developing countries did not have the same result. At the time that Salacuse and Sullivan conducted their research, 60% of the total BITs were signed with developed countries; this might provide an interpretation of why Salacuse and Sullivan (2005) found a positive relation between FDI and BITs only within developed countries. More recently, they also found that the change in the BITs trend, to include a large number of developing countries that are signing BITs which exceeded the number of BITs signed by developed countries, might show a positive relationship between BITs and FDI within developing countries.

The BITs should also incorporate complementary economic and political factors in order to achieve a positive relationship with FDI inflow, and BITs cannot be judged in isolation. This was concluded by Tobin and Rose-Ackerman (2011), who found that a host country should have the necessary domestic institutions which can efficiently interact with BITs in order to benefit from attracting more FDI. In other words, it is necessary for government institutions to work together effectively and efficiently in compliance with BITs' articles to ensure a positive relationship between FDI inflow and BITs. Also, in an earlier study, Tobin and Rose-Ackerman

(2006) argued that economics and political factors have to complement one another in order to ensure a positive relation between BITs and FDI inflow. Indeed, there is a clear convergence between the results of these studies, which provides an important insight, because most of the developed countries are characterised by strong economic factors (high GDP and GDP per capita) and efficient government institutions compared to developing countries. Therefore, the developing countries have greater chances of successfully achieving the desired goals of concluding BITs through an achievement of higher FDI inflow.

Allee and Peinhardt (2011) highlighted a new direction in the BITs debate, where they study the compliance, or lack thereof, with BITs. They stated that BITs between countries should be associated with greater FDI inflow, but only if these countries have not violated their treaty commitments. The researchers stressed that there are some violations in treaties in some countries, which led investors to resort to arbitration in order to resolve disputes. The problem of compliance might partly explain why there are a number of studies that find a negative relation between BITs and FDI (Hallward-Driemeier, 2003). Because the violation between pair countries in the BITs is considered as the absence of the BIT, there is therefore a need to emphasise compliance or lack thereof with BITs studies in order to achieve accurate results.

To model the compliance in BITs, Allee and Peinhardt (2011) used the International Centre for the Settlement of Investment Disputes (ICSID) as a source of information to measure the degree of the host countries' actions to comply with BITs obligations. Thus, this information allows the researcher to exclude the BITs that recorded a violation in the analysis of the BITs studies. Allee and Peinhardt (2011) suggested that, in order to avoid overestimating the effect that BITs have

on FDI flow, they should be linked to economic factors and cultural interdependence among countries that are considered as complementing factors in examining the relationship between BITs and FDI inflow. This can be achieved by examining the BITs with the gravity equation including relative economic factors and countries' characteristics. In this research, the researcher shift the study of BITs effects in an important new direction by examining how BITs will help to not just generate more FDI inflow but also have the ability to sustain foreign investment for a longer period of time into an important region – namely, the UAE - that historically has recorded high levels of FDI flow accompanied by an dramatic increase in the number of BITs. In so doing, the researcher take into account the complementary factors such as GDP, location, common language, landlocked status, religion, and colony relation.

Despite the success of the United Arab Emirates government in attracting FDI, the country has unique characteristics that distinguish it from other countries regarding government regulations and the availability of economics factors that have attracted FDI inflow. In the next section, the study review previous literature on BITs in the UAE and the GCC countries, and discuss factors that are complementary to BITs in the UAE.

3.7.3 BIT limitations

Limitations exist in many strategies and regulations, and the same is true of BITs There are numbers of limitations which might have negative implications for pair countries or result in failure to achieve the goals of concluding those agreements with the treaty partners. There are a

number of factors that cause these limitations; for example, (i) lack of clarity in the terms of the agreement, (ii) lack of obligation to comply in the provisions of the treaty; and (iii) in some cases the treaty is not equal between parties. Therefore, there is no actual application by the parties to the treaties and the BITs are not mandatory. Consequently, many countries sought to resolve these shortcomings through an amendment to the annex of the Treaty, If the discrepancy could not be solved the agreement might be terminated. Here, the study summarises a number of limitations.

3.7.3.1 Number of BITs limitation

1- Not all BITs impose enforceable obligations on home countries of investors.
2- The lack of balance between private interests and the public rights in a BIT. Most BITs are not concerned about the foreign investor's responsibilities regarding this matter. On the other hand, BITs are mainly concerned with protecting foreign investors without clarifying an appropriate framework to comply with public rights.
3- Language used in BITs. By using terms that are unclear or have multiple meanings, countries often tend to use understandable language in order to bring uniformity and coherence in treaty interpretations.
4- The backlash against BITs is gaining momentum, particularly when the agreement has impacted the environment; for example in the case of Bolivia and Ecuador vs Venezuela, when Ecuador terminated nine BITs.

BITs cover five areas; these are (i) admission of foreign investments, (ii) treatment, (iii) expropriation, and (iv) dispute settlement. They focus on the protection of investments and recently have BITs started to emphasise the promotion of investment (Egger and Merlo, 2012). However, there are some shortcomings, but many of the agreements have remedied such shortcomings, clarified them within the terms of the Convention, and signed with the consent of the parties

3.7.4 Bilateral Investment Treaties and Foreign Direct Investment in the UAE

The discussion now returns to the key factors that are relevant to BITs' research that aims to examine the relationship between FDI and other factors by using the traditional gravity equation. These factors have been mentioned in Dunning's (2001) theory. This thesis examines these factors and how they may impact FDI within the context of the UAE. The UAE is characterised as one of the few countries that has a high-advantage location, based on the availability of natural resources, the strategic location linking the east and west countries, high GDP and fast economic growth. Also, the UAE is a member of the GCC countries that have vast natural resources, accounting for approximately 40% of the world's entire reserves (Oil and Gas Report, 2011). These economic environments have lured resource-seeking FDI from many developed countries to invest in GCC countries, particularly targeting the UAE market.

These economic factors encourage many developed countries to conclude BITs with GCC and the UAE in particular. Mina (2009) highlighted some explanations for why the GCC countries

have increased the numbers of BITs in the last two decades. One reason is the possibility of associated GCC government policy with the Institutional Copying Hypothesis, which Ginsburg (2005) introduced to the field of study. The Institutional Copying Hypothesis suggests that, in the 1990s, in their increasing drive to be seen as 'modern', developing countries began to copy the strategies of foreign institutions. Arguably, this can be seen in the GCC countries. In his 2005 study, Ginsburg argued that institutional copying is a possible explanation for the rising number of BITs. This might also partly explain why some developing countries engage in signing new BITs. However, institutional copying might not be applicable for developed countries possibly because they do not follow or copy other modern countries' strategies. In addition, institutional copying does not offer explanations for the benefit of signing BITs such as encouraging more FDI flow, which ultimately led to increase the attention paid by policy makers to BITs.

Moreover, in light of the abundance of economic factors which resulted in rapid growth in the Gulf region (UNCTAD, 2017), they might serve as a catalyst for other countries to take a foothold and benefit from the rapid growth in the region. Also, the government regulations in the UAE are undergoing continuous improvement so there are legislative amendments that may affect foreign investors. Therefore, countries sponsoring foreign investors plan ahead to develop a legislative framework that protects the investor's rights in the target country through the signing of BITs.

3.8 Common Variables impacting inward and outward FDI

There are a number of variables that have a direct impact to FDI. In this study, the study highlight variables that have been used in the relevant literature to measure the FDI inflow and outflow using the gravity equation. These variables include colony relations, the level of gross domestic product (GDP) in the host and home countries, common languages, geographical distance, common border and finally the violation of BITs by the countries that are signatories to the treaties.

3.8.1 Colonial ties

In the era of the British Empire, the colonial relationship has a direct bearing on the drawing-up of BITs and trade agreements, in particular, the Empire occupied some Asian and African countries for a range of reasons, some of which were related to international trade. These included a strategy to be close to maritime international trade routes in order to provide protection for international trade, and to ensure entering foreign markets (Kam and Tse, 2018). During the colonial period in which the British Imperials continued to dominate those countries, this led to a direct impact on the diplomatic relations as well as absolute loyalty to the colony country. Cultures were also affected from the knowledge transferred from the colony country (Goldstone, 2009) and the colonial language became the official first or second language in government department's communications and commercial transactions activities in domestic markets. An example is Lebanon which still shows the influence of French language and French culture as it was a French colony from 1920-1943. The same scenario can clearly recognised in

India which, until recent times, was influenced by the English language due to the colonial relationship between British and India, from 1858- 1937. South Africa has also been influenced by the English language and English culture (1836-1961).

These examples might repeat with many countries, which have a colonial relationship and have a continuous influence on several aspects, including language, culture and religion, thus giving these colonial-related countries a priority in building trade and investment relations. Among many studies that examined the relationship between BITs and bilateral FDI stock used the colony relation, Bandelj and Mahutga (2013) used the gravity equation and tested colonial-related as the dummy variable. They found this positively related to FDI. Meanwhile, Haberly and Wójcik (2015) aimed to understand the factors that related to offshore FDI inflow. They highlighted the factors of tax haven FDI related to FDI stocks among non-tax havens using the gravity model and data extracted from the IMF. Using the gravity equation they tested the bilateral FDI stock as the dependent variable related to 15 independent variables. Dummy variables include political relationships and colony relations. The authors defined these as dummy variables to be equal to one when a host was colonised by a source and equal to zero when there was no colonised relation where the dummy variable was tested separately. Most of the previous studies that examined the relationship between FDI related to other factors have discussed the colony relations, particularly studies that used the gravity equation (Brzozowski and Tchorek, 2017).

This study employs the gravity equation to understand the relationship between the extent of attraction of FDI and its impact on BIT. One important dummy variable that most studies

examine in the gravity equation is the colony ties (Hallward-Driemeier, 2003, Bankole and Adewuyi, 2013, Mariev et al., 2016). In order to have a greater understanding of this relation, this study highlights the UAE history related to colony ties.

The UAE is a modern country consisting of seven emirates and has had two colony relationships, under the British and the Portuguese. British Imperialism was dominant in the Gulf countries from 1820 until its withdrawal in 1971 and the declaration of the independence and emergence of the UAE (Bristol-Rhys, 2009).

Britain imposed some treaties in order to protect its investments and its international trade lines in the Gulf region, the most prominent of which was the *anti-piracy treaty* known as the General Treaty of 1820, which represents a way of it imposing its sovereignty on the Arab Gulf region. It was also imposed to manage its relations with the rulers of the Emirates of the Gulf Coast and Oman, including the designation of some agents – for example, *the post of Political Agent for the Lower Gulf*. The Portuguese colonisation of the coast of Oman and parts of the UAE, including the city of Khor Fakkan, where the Portuguese colonization began in 1500, lasted nearly two centuries.

The colonial influence is still evident in the UAE and has an impact on culture and language especially British colonialism because of the constant interrelationship between the systems in place in the governmental institutions (Bristol-Rhys, 2009, Smith, 2017). This impact might relate to the UAE's determination of the countries that enter into BITs; therefore, including this

dummy variable in the study will help to gain a wide understanding of the relation between FDI and BITs in the UAE.

3.8.2 Gross domestic product (GDP)

The GDP is one of the most important characteristics that represent a country's economic condition; the economic condition of the host country is constantly an important incentive in attracting foreign capital inflows. The GDP plays a key role in reflecting the country's sustainable economic growth, one of the important factors that attract FDI inflow. Therefore, foreigner investors prefer to enter high GDP countries rather than those with low levels of GDP in order to derive higher returns on their investments.

The success of any country in increasing and sustaining its GDP rates will reflect on the success of the government's intuitions strategy in how they organize their spending and investment as well as the level of exports (Falvey, 2017). This achievement is the result of a successful government strategy based on supporting the economic sector and is an incentive to attract and encourage foreign and domestic investments. Therefore, the GDP is one of the key factors in influencing the decision of foreign investors to enter foreign markets.

The OECD defines GDP as the final aggregate value of the cost of production including services cost added to it the total value-added which engaged in the production process plus taxes, and minus government subsidies which exclude it from the product cost. The GDP is calculated without any deductions, resulting from assets depreciation (UNCTD, 2017). The theory of

gravity which was used previously to measure the factors attracting international trade and currently used to measure the factors attracting FDI mainly focused on the GDP and GDP per capita as variables which are used in the gravity equation in most previous studies (Mariev et al., 2016).

3.8.2.1 Literature on GDP and related to BITs

As mentioned earlier about the importance of BITs as one of the tools that encourage FDI inflows in host countries, one needs to control for other explanatory variables which most studies have used, such as GDP and GDP per capita (Salacuse and Sullivan, 2005, Kerner, 2009). In other words, there are several characteristics of the host country or exporting country that may play important roles in shaping trade relations between countries, including bilateral treaties.

Differences in economic size might also matter. If the country's economic size as measured by GDP shows a very low rate, the foreign investor will take this into account before making the decision to enter. It may also play an important role in attracting or preventing the FDI. Bellak (2013) addressed the question of whether some of the differences between host and source country in terms of the market size measured by GDP, and investigated whether the level of development measured by GDP per capita could help explain the effects of BITs on FDI flows, Bellak's study adopts a gravity equation to examine FDI flow data from 22 OECD source countries to 101 developed host economies. The results showed that BITs have a positive impact on OECD FDI flows; the impacts are greatest when zero and negative FDI flows are included. Bellak's study includes dummy variables (GDP and GDP per capita) in the gravity equation.

Falvey and Foster-McGregor (2017) demonstrated that the effectiveness of BITs in encouraging bilateral FDI flows mainly depends on the difference in GDP and GDP per capita between countries' partners in the treaty. This means that the FDI inflow increased when signatory countries' partners in the BIT have significant differences in GDP or GDP per capita. This is represented in the differences in economic institutions which, broadly defined, means that the host countries government have high property rights and successfully implement strategies for protection against corruption. A recent study by Alamá-Sabater et al. (2016) investigated the drivers of interdependence between flows of bilateral FDI focusing on one of the possible causes of the interrelationships between geographically oriented FDI countries and the similarities between countries of destination with similar levels of public debt. They found that a similarity in public debt levels drives cross-country correlation in FDI inflows. The level of government debt has a direct effect on GDP calculation.

Most studies on BITs used a gravity equation which is based on variables including the group of dummy variables that includes GDP (Hallward-Driemeier, 2003, Salacuse and Sullivan, 2005, Kerner, 2009, Tobin and Rose-Ackerman, 2011, Bankole and Adewuyi, 2013). The purpose of using these dummy variables is to provide a comprehensive explanation for the similarity in economic condition between partners' countries in the BIT agreement, which represent the market size and other economic characteristics that attract FDI inflows.

3.8.2.2 The GDP in the UAE

Since its independence in 1971, the UAE has been considered one of the successful countries that has experienced a steady increase in GDP. This is due to the UAE encouragement policy targeting investors, as well as the UAE's prime geographical location near high-intensity population countries. In addition, during the past three decades, the UAE adopted diversification in its economic strategies. Until the late 1970s, it relied mainly on oil exportation as the country's resources. Now it has adopted diversifying policies -related to sources of income to include other sectors such as trade, services and re-exports. Figure 5 shows how the UAE's GDP credibly increased from 1975 to 2015 with only one year, 2008, where the country's GDP fell due to the world economic crisis.

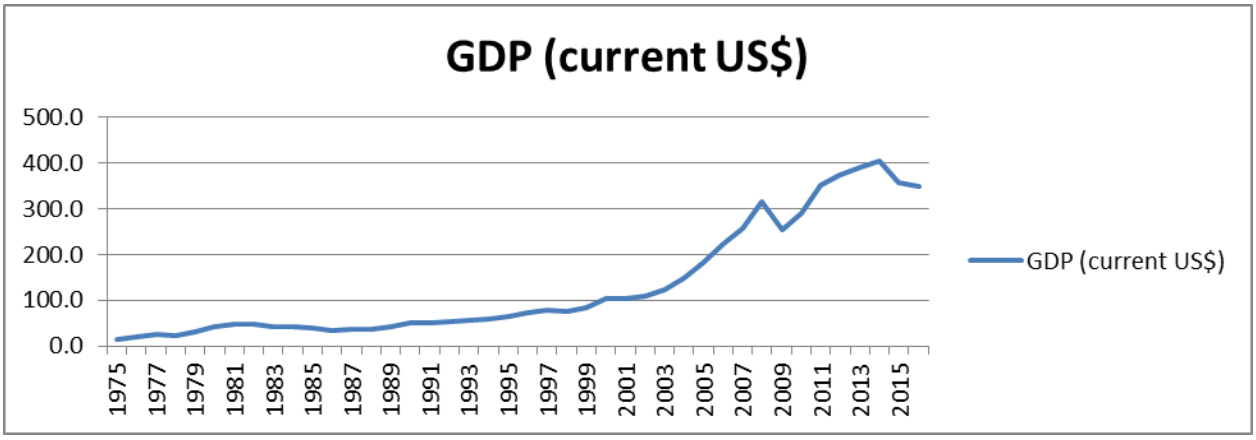

Figure 5 GDP to UAE Current 1975-2016 US dollars
Source: The World Bank. The data are presented in current US dollars[14] (2018) available at the World Bank website.

[14] Data are in current US. dollars Dollar figures for GDP are converted from domestic currencies using single year official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used.

To understand the relationship between BITs with FDI, it is important to compare the GDP with the country's partner involved in the treaty. This can be achieved through the gravity equation which this study addresses along with other variables.

3.8.3 Common language

The common language plays an important role that influences FDI. It is the main element of business communications which is the most critical part in building business relations. Basically, the common language is the intermediate language used between international traders or investment partners. The common language described as simple laypersons' words is mostly used in business communication in an investment country that allows ease of communication without translation. More specifically, it is the official language that is practically used by the host country in order to organise FDI activities (Hejazi and Ma, 2011, Selmier and Oh, 2013, Ly et al., 2018),.This common language is used officially in government institutions, as well as in official and commercial correspondence with the courts and other related entities.

The FDI literature focused on our understanding of language influence on FDI (Ly et al., 2018); however, some might suggest that international partners sharing the same language positively impacts FDI capital flows. That is because it has been noted that speaking a similar language lowers communication costs, thereby positively facilitating the business communication, which ultimately will lead to increased international trade as well as foreign investments. In addition, the language differences between countries will increase the difficulties for foreign investors to identify business opportunities in new markets and in the negotiation process (James and Vitor,

2002). In the context of international business communication, there must a language that is intelligible to all parties concerned in order to conclude the business deal. Furthermore, some studies indicate that language distance between countries involved in FDI is cost-related, and English-speaking countries consistently form positive relationships with most major language speakers including French, Spanish and Arabic. Furthermore, the transaction cost of FDI is lower when directed to French-speaking countries compared to Arabic-speaking countries (Selmier and Oh, 2013), also they recommend to adopting English in FDI transactions in order to reduce costs.

Being a multilingual investor is an increasingly important entrepreneurs' required skill as world marketplaces become more connected and globalised than ever before. The rapid development of new economies as well as the rapid development of cheap means of transportation has created a need for common communication in understandable languages. The value of being able to speak a major language such as English is increasing (Tenzer et al., 2017, Osama, 2019). To date, the English language remains the leading global favorite language, with approximately 1.1 billion people reading, writing, and speaking English around the world (UN Data, 2018[15]). English is not only used through face-to-face communication but also through e-commerce channels, which significantly increased during the last decade; therefore, the increasing dominance of the English language is a fait accompli and continuing, It is the language of the international business, and FDI.

One of the main causes for the rapid growth of learning and speaking English is the globalization, as well as the boom in international trade and FDI, has brought people from different countries and cultures and together to communicate and negotiate in order to trade and

[15] UN data available online http://data.un.org/Default.aspx

invest, which also led to an increase in the number of travelers around the world for investment purposes and the search for investment opportunities than ever before, English has increasingly become the world's favourite international investment language (Osama, 2019).

This is strongly underlined by the statistic which estimated that approximately 80% of those internationally communicating in English are non-native speakers (Tietze and Dick, 2013). Many studies in FDI literature that employed a gravity module indicate the importance of language and highlight how its impact on the decision to identify the investment locations. A recent study by Flynn (2019) explored the relationship between the language similarity with the level of FDI, using a gravity module for 71,309 pairs of FDI relations, from 2000 to 2012. The results showed that countries with the English language are positively associated with a high level of FDI. However, the study results cannot be generalised, due to FDI differences according to the nature of the country and the official language adopted compared with other countries.

3.8.3.21 Trade Language Impact FDI

Language choice does attract FDI. This thesis argues that language, a dynamic instrument for reducing transaction costs, can influence an investor's decisions to allocate capital (Changkyu, 2004, Hejazi and Ma, 2011, Tietze and Dick, 2013). Potential host countries attract investments by coordinating their domestic language policies – particularly those in education – to match the language of the potential FDI investor.

The theory underpinning this thesis builds on an economic argument about transaction costs. Potential receiver countries attract FDI by decreasing transaction costs. The cost of communication in FDI activities is instrumental to achieving this objective. The prospective receiver countries tactically choose to learn the major official language of an FDI home country (Tenzer et al., 2017). Adoption of this change in the strategy of the host countries has a positive impact on increasing the FDI inflows from senders' countries. In fact, language is prominently featured in FDI models.

This study expects that transaction costs of English will be lower than other major trade languages for countries not speaking major trade languages. Thus, we expect that non-major trade language-speaking countries will have lower trade and FDI than they would have with an English speaking country, and vice versa. Some theories (i.e. James and Vitor, 2002, Selmier and Oh, 2013) show that countries whose citizens do not speak the major languages are more likely to adopt the English language in their international commercial dealings compared to the countries whose citizens speak Spanish, French or Arabic, due to lower English communication costs. The above-mentioned arguments can be better illustrated through the gravity models used in the study.

3.8.3.22 UAE language

UAE has over 190 different nationalities from different cultures, which creates a unique business environment. A common language is needed to facilitate the communication between the

different nationalities within the UAE. According to the World Bank (2019) the total population in the UAE in 2018 was 9.54 million, approximately 85% of who were non-nationals. - Although Arabic is the official language in the UAE which has been used for thousands of years, however, for more than three decades an increasing number of newspapers, radio and television channels use the English language which effectively facilitates the communication between citizens within the UAE.

Therefore, the English language is the second official language in the UAE, and traffic signs and companies addresses are often written in both Arabic and English. Most business communication in the UAE uses both English and Arabic.

3.8.3.23 Concluding

FDI and international trade are both significantly affected by the speaking language used between agreements' parties. However, among the main commercial languages – English, Spanish, French and Arabic – the English language shows notable success in achieving benefits for the parties to the economic transactions. Conversely, the other speaking languages did not achieve the same level of interest among their negotiated parties for the reasons of associated with high costs and difficulty in understanding the contracts concluded, with the exception of countries sharing a common language (Selmier and Oh, 2013, Ly et al., 2018).

Clearly, countries have different characteristics, where different nationalities are present, or several languages are used, and most of them do not speak major trading languages. Therefore, the majority of them resort to dealing in the English language and invest their time to learn it. This affords English greater value among other major languages. There are, nevertheless, important subtleties to consider. One of these is distribution of populations' nationalities in the host countries where, for example, in the UAE, the nationals from India, Pakistan, Bangladesh and the Philippines[16] accounted for the highest percentages in the expatriate population of the communities residing in the country. Therefore, their languages may play a role in facilitating and reducing the costs of language in the case that there is foreign investment from their countries. Language, in other words, may play a moderating role in the study equation.

Based on FDI literature, there are two ways to look at language effects on FDI, and both ways implicitly grant tremendous power to languages. First, when FDI engages in the foreign market, expatriate managers are expected to influence the host country's language as well as local customers to learn the language used by the FD. Second, it is important to take into consideration the investment patterns inherent in the language data. If FDI acknowledges the necessity to communicate with host country clienteles, then those FDI would likely estimate the language costs involved (Changkyu, 2004, Bankole and Adewuyi, 2013). Consequently, the results of the distribution of FDI between countries mainly depend on the strategy based on estimating language costs in commercial and investment transactions.

[16] According to the World Bank, the total expat population living in the UAE in 2018 was 8.45 million, with 27.4% of Indian nationality, 12.69% of Pakistan nationality, 7.4% of Bangladesh nationality and 5.5% of Philippines nationality.

In both scenarios, the language has a significant impact on FDI and is more intensively used than is international trade because investors have direct contact with the end-users. Further, the more open global countries are to attract FDI, the greater the need to use and learn major languages. Meanwhile English remains 'dominion' in FDI as a modern style of communication that accompanies foreign investment.

3.8.4 Geographical Distance

Geographical distance is one of the critical factors in international trade as well as FDI, and the distance costs are always taken into consideration when a foreigner investor decides to enter new markets (Mateev, 2009, Ly et al., 2018). Where international trade and FDI have grown significantly over the last five decades, registering an annual growth rate of at least 5%, one prominent possible explanation for sustainable growth in international trade is a reduction in shipping cost as well as reduce international transportation cost. Technological development and globalisation have contributed to saving freight and transportation costs, where economists documented how technological development led to significant reductions in shipping costs over the period from 1900 to 2000 (Hummels, 2007). Econometric evidence has also linked shipping cost declines to rapid growth in trade and FDI. Therefore, the geographical distance is intensely examined in the literature, specifically using the gravity module, studies that focus on understanding the factors attracting FDI and international trade draw particular interest. For example Håkanson and Dow (2012) addressed the importance of distance related to the international business by examining the relation using a gravity model for 25 countries for the period 1962–2008, and the results showed a significantly positive relationship.

More practically, one of the most prominent aspects in the gravity equation is the geographical distance. By analysing the determinants of FDI and a focus on the role played by geographic distance, Brainard (1993) acknowledged that the impact of distance-related on FDI restricted by the ability to replace FDI to trade, which represents exports and import, and the relationship should be positive. Indeed, when the distance between the two partner countries is high, international companies prefer to build branches of their companies and manufacturers in the host countries that are highly geographically distant in order to reduce freight and transport costs and to ultimately enter the host country market instead of exporting the goods. Conversely, Hummels (1999) adopted a gravity equation to estimate FDI data collected from 29 OECD countries between 1997 and 2000. Hummels' study highlighted the relationship between the costs of exporting and transporting goods with the setting up of new factories in the host country as a type of FDI. The results yielded a negative coefficient of distance, which increases over time and increases when the distance increase. Based on the empirical findings. Hummels pointed out that the influence of distance on FDI is negative when the fixed costs related with the setting up of new factories outweighs the transport cost effect. This finding supports the prevailing view in subsequent studies of an inverse relationship between FDI and distance, so when the cost of the distance is high, international institutions prefer to enter foreign markets rather than export.

However, if it seems realistic to assume that the variable and fixed costs that include shipping, fees, and trade restrictions associated with FDI are dependent on distance, it is essential to figure out what factors – political, economic, and cultural – are at work behind the distance variable. A significant strand of the literature emphasises economic systems' low quality, uncertainty in the exchange rate, and asymmetries in the legal system. It may be possible to say a substantial

impact of legal similarities and exchange rate uncertainty on FDI. Nevertheless, the introduction of these variables does not decrease the coefficient of distance. Moreover, there was no empirical evidence t that financial institution system differences impact on FDI preference.

Moreover, Portes et al. (1999) also confirmed the role of distance in FDI decisions. Their study focused on the cost of the information related to the cross-border equity investments, where the authors used panel data to estimate a gravity equation on 14 countries for seven years starting from 1989. The results showed that the distance accounts for a very significant proportion of the variance of the transaction flows.

In the international business literature, the distance has a negative impact on international trade in several areas, the most important of which is the shipping costs. however, This effect may decrease over time due to technological advances in alternative energy and saving transportation costs. On the other hand, distance should play a positive role in FDI through the encouragement of foreigner investors in action by entering foreign markets when the cost of shipping is high. Nevertheless, empirical evidence shows ambivalent conclusions about the changeable role of distance related to FDI and international trade, which is measured and understood through export and import data. Leamer et al. (1994) found that the influence of the distance factor on international trade does not change over time. To offer further explanation, Zwinkels and Beugelsdijk (2010) suggested an augmented cost function related to other factors – for instance, the fluctuation of the oil price – and they found a decrease in the significance of distance in case oil has to decrease.

For FDI, there are two important aspects related to the distance factor. The first is based on the comparison between FDI and export framework, and the relation between distance on the ratio between FDI and exports is normally positive. The second aspects relates to the abundance of information available through the internet. However, moving goods is more expensive relative to the cost of transferring information about products (Mateev, 2009). Companies should find an investment increasingly more effective than trade for serving foreign markets; this will be achieved through FDI.

In regards to the effect of information, this hinges upon the hypothesis that imperfect or incomplete information regarding FDI movement plays a significant role in companies' location choices. Therefore, the result will be stronger in countries with weak financial institute leading to high informational costs and capital misallocation. However, despite the importance of geographical distance in the decision of FDI, it is directly affected by other factors; for example, the profusion of information, which includes information on foreign exchange and information on the financial systems of foreign countries as well as previously mentioned information on shipping costs and the price of oil and others of administrative fees.

To conclude, the cost of geographical distance is relatively important to FDI, where most previous studies that investigated the factors that attract FDI considered the importance of geographic distance, particularly studies that used the gravity equation. There is a belief that the impact of distance on FDI may differ from its impact on international trade which represents export and import (Kerner, 2009, Mariev et al., 2016, Kerner, 2018). Therefore, in this thesis I highlight the importance of geographical distance in order to understand this relationship,

particularly in that the UAE is associated with FDI with geographically distant partner countries such as Australia and Canada.

3.8.5 Border

Country border is a widely used variable in gravity equation literature (Salacuse and Sullivan, 2005, Mariev et al., 2016), there is empirical evidence that the length of the country's border has a direct effect on the trade volume as well as FDI in the host country (Anderson and Wincoop, 2003, Okubo, 2004). In addition, the country borders in certain geographical and political circumstances may have caused trade barriers or, conversely, might have had a positive role in creating business relationships between countries. 'There are two categories of 'border' in the gravity equation – an *open* country border and a *closed* country border (Okubo, 2004). The differences depend on the country's geographical location (i) *Closed country border* means that the country does not have naval ports or maritime boundaries and its land borders are closed from all sides with other neighbouring countries. (ii) *Open country border* indicates that the country partners share a land border; or the country owns a maritime border; or it may have only a naval boundary without a land border, for example, Japan.

A country's maritime borders have an important role in international trade due to its low cost compared to air or land transportation (Portes et al., 1999). Therefore, there is a positive correlation between major ports and the volume of export and import, which shows the importance of the spread of ports in most countries where the economic growth is flourishing and might relate to the flow of FDI. For example, the port of Hong Kong and Jebel Ali Port in Dubai and other international ports are centres for import and export operations, as well as the

engine that attracts FDI. It makes sense to consider countries with maritime borders as more attractive to foreign investments compared to closed countries, and it might become more attractive in the presence of neighbouring countries which are categorised as closed country borders, which generally will lead to using ports of neighbouring countries in the export and import procedures. This study explores the role of the borders in the UAE related to FDI.

A massive body of literature that is aimed at measuring and understanding trade and FDI border effects. Anderson and van Wincoop (2003) found that a country with a smaller economy has a high border affect while a country with a large economy has a lower border affect. In fact, Anderson and van Wincoop successfully resolved the border puzzle by applying the theory of the gravity equation to the estimation and to the general-equilibrium comparative statistics of borders. They made reference to the fact that having an international border caused Canadian inter-province trade to be 22 times – or 2100% – greater than province-state international trade in 1988, other things being equal. This finding inspired an entire body of literature, including Anderson and van Wincoop's seminal 2003 works (Bergstrand et al., 2015).

The recent study by Mariev et al. (2016) examined whether Russia is successful in attracting FDI as well as to identifying major Russia's countries partner, using a gravity model including borders as a dummy variable, where they assume that a common border between countries will increase bilateral FDI due to the high similarity (social, cultural, economic) of bordering countries. Meriev et al. (2016) examined relevant factors that explain the variance of bilateral FDI flows in Russia; these included GDP, geographical distance, common official language, the common border and colonial relationships between countries. These variables are commonly

used in the gravity model; however, Mariev et al (2016) added more variables to the equation. These were level of institutions development, wage level, whether countries are members of the same economic union, and the wages relatively duplicate the GDP. This allowed them to calculate the effect of GDP twice in the equation. More importantly, the authors categorised three groups that have an impact on FDI inflow. The first group deals with indicators that characterise the similarities between two countries: (i) common language, (ii) common border, and (iii) common historical features. This study gave convincing justification for the negative relationship between country borders and FDI; in fact, most of the previous studies provided the same result.

3.8.6 UAE Border

In this thesis, aims to measure the size of the impact of the national borders in attracting FDI in the United Arab Emirates as well as its relation to the potential outflow and inflow of the UAE FDI using the gravity equation. The UAE has a wide maritime border overlooking the Arabian Gulf and the Sea of Oman as well as land borders connected with the Kingdom of Saudi Arabia and Oman. In addition, the geographical location of the UAE between the East and the West has made its maritime border very important and the advanced ports which were built in 1979 (Bristol-Rhys, 2009, Mina, 2008) helped to make the country the gateway to the East and West and the centre for the transport of goods between Asian and European countries.

Therefore, it is essential to understand the extent of the impact of national borders on FDI. It is one of the dummy variables along with others that are commonly used in the FDI and BITs literature. It is also important to identify the role of the border in the research model, which will help to understand the real magnitude of its impact on FDI, as well as other factors, particularly BITs. Because it may be an indirect cause in the drawing up of BITs between countries by decision makers, it is a factor correlated to other factors addressed in the study.

3.8.6.1 Violations in BITs

Few scholars have touched on the measurement of the violations in BITs literature. This factor is significantly essential to promote sustainable FDI for countries that adopt BITs in their strategy. it also might play as a moderator factor which interpretation for those studies that find a negative relationship between BITs and attracting FDI. It is likely that the lack of commitment by countries to the terms of the agreement or the existence of some violations that adversely affect foreign investors will lead to the withdrawal of FDI. Recently the impacts of international investment disputes on BIT related to FDI flows are becoming evident. Researchers in this area have answered many questions, including the fact that FDI flows to the host country are reduced if they are submitted to the International Center for Settlement of Investment Disputes (ICSID) (Allee, 2008). By exploring the previous literature related to this matter, this thesis assumes that BITs should have a positive impact on FDI flows, but in conditions where that host country has not had a BIT claim that has been brought to international arbitration during the period that the BIT is in force.

In the context of violations in BITs, Allee and Peinhardt (2011; 414) shed light on the importance of good behaviour of government by the commitment to the BITs which creates confidence among foreign investors. The authors hypothesised that "*Governments whose behavior is challenged via ICSID arbitration will experience reduced FDI flows*". Their study result showed that a BIT has a positive impact on FDI inflow only if host countries are abiding by their commitments and there is no arbitration in the International Centre for Settlement of Investment Disputes (ICSID). This result is was confirmed by Aisbett et al. (2017) who considered the negative impact of ICSID on FDI inflows between BIT countries (Falvey, 2017). Moreover, Allee (2008) answered an important question on the topic of international relations and found a negative relationship between investment disputes and future FDI inflows. In fact, it is related to the efforts of a country to protect their reputation. In other words, it might take a long time to solve any damage to a country's reputation, which also has a direct impact of the attractiveness to FDI inflow. Consequently, bilateral investment treaties regulate partners in complying with dispute settlement provisions, with the aim of achieving the guarantee of the rights of the parties and separating the litigants to achieve justice.

In terms of violations in BITs related to the UAE there are some cases in which the UAE has entered into a dispute regarding FDI with other countries and has been used in international arbitration, although they were often represented as sovereign portfolios. However, in the case of a dispute involving foreign investors, it may justify the difference in the expected results of the study. This may be a future direction of study for other researchers in this area, but in this study, I l highlight the countries that have generated disputes related to FDI – for example, the USA and the UAE.

3.8.7 Putting it all Together: The Factors that Affect the Relationship between FDI and BITs

To conclude, the findings in the BITs literature suggest evidence that BITs are related to FDI inflow. This relationship is provisional on some conditions such as the level of the host countries' GDP, the distance between home and the target countries, the official language used by the host and home countries, the quality of government institutions, and other factors. Therefore, and in order to have a clear interpretation of the relationship between BITs and FDI, first need to find out how these factors explain the relationship, as discussed earlier. These factors are, in fact, the components of the research model, which is inspired by the gravity theory, which is effectively used in previous studies.

In addition to the previous factors, the GDP per capita related to the economic condition and the purchasing power is the level of GDP for target and source countries. The GDP per capita in the UAE increased significantly during the last decade despite the repercussions of the 2008 global economic crisis. The effect of the crisis on the UAE was short-lived and then GDP began rising again, from US$22,295 in 1988 to US$44,498 at the end of 2008 (see Figure 6). The GDP per capita was used in the gravity equation to measure the market size which is an important host-country characteristic affecting FDI (Ginsburg, 2005). The second primary factor in the gravity equation is geographical distance which is important for multinational companies to decide between exports and direct investment. The UAE has a distinct strategic location in the moderate distance between the East and the West; however, from an empirical point of view, this factor should include dummy variables which have been modified in the equation. These dummy

variables include common language, colony relation, landlocked status, religion, and bilateral treaty agreement (Paniagua, 2011). The purpose of using these dummy variables is to provide a comprehensive explanation for the distance; for instance, the common language is considered a positive factor in the cultural interdependence among people, which in turn increases the interdependence of culture and investments.

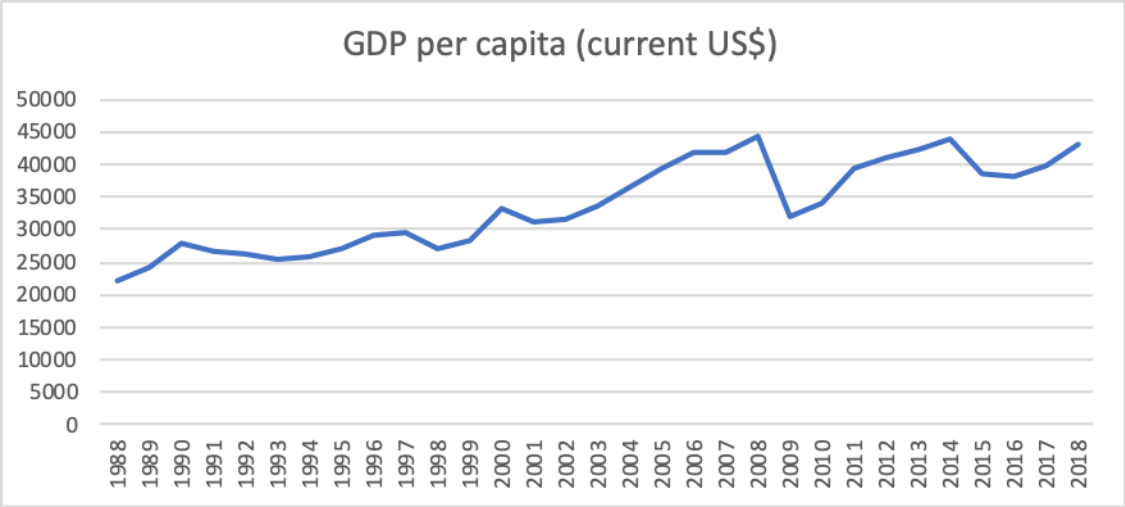

Figure 6 The GDP Per Capita in the UAE (1988-2018) in constant US Billion dollars
Source: The World Data Bank: http://databank.worldbank.org/data/views/reports/tableview.aspx#

3.9 Hypotheses derived from literature

In the context of FDI factors related to BITs, the extant literature has shown several critical determinants, such as colonial relationships, GDP, common language and geographical distance. This highlights the importance of these variables in understanding the relationship between FDI and BIT that the study aims to, in addition, these variables extracted from the relevant literature

harmoniously fit into the unique characteristics of the UAE in terms of demographic and cultural diversity which ultimately explain the relationships between FDI inflow and outflow with BITs . I have therefore concluded three hypotheses that will be tested in this study as follows:

H1: BITs have a positive impact on FDI inflow to the UAE if there are stable economic conditions, far geographical distance, and politically common tie relations.
H2: BITs have a positive impact on FDI outflow to the UAE if there are stable economic conditions, far geographical distance, and politically common tie related.
H3: Countries that signed BITs with the UAE have contributed towards sustaining FDI inflow.

By summarising the literature review, particularly with regard to the GDP, the previous studies showed the importance of FDI and how it significantly contributes to the country's economic growth in both cases (host and home countries). Therefore, any factor that positively affects FDI (including bilateral investment treaties) will positively affect in the GDP and therefore the expected relationship in this study is positive.

As for the colonial relationship, the previous studies indicate that the countries with historical colonial relations are affected culturally and commercially and that the probability of continuing the investments relationship between these countries is high. Therefore, I expect the relationship between these countries in this study to be positive as well.

With regard to the common language between the countries that participate in BITs, most previous studies highlight the importance of language in facilitating communication between them, and often has an impact on the preference of the countries that participate in the same language. Therefore, the likelihood of its impact on FDI is high, as well as on the decision-maker who concludes BITs, so the expected relationship will be positive.

As for the geographical distance, this study found that the previous studies, which focus on the relationship between international trade and geographical distance, conclude with a positive relationship. However, this may not applicable to FDI studies as FDI is different from the concept of international trade, which is the most suitable alternative to trade and represented in exports only, so I expect to find a negative relationship between FDI and geographical distance.

3.10 Methodologies used in previous studies

In order to achieve the objective of this study I need to apply an appropriate methodological framework. By reviewing the methodology used in the previous literature on BITs I conclude that there are two primary approaches. The first approach is built on Dunning's 1981 location advantage hypothesis. These earlier studies measured government policy effectiveness including BITs using Dunning's hypothesis. Some studies modified Dunning's theory and included market size, natural resources, quality of government institutes and other control variables (Mina, 2009). However, these studies have a number of shortcomings: first, this method does not distinguish whether the sources of FDI are from countries that signed BITs or from countries that have not signed BITs. Therefore, if the source of FDI was ambiguous, then the increase in the number of

BITs is not an indicator for FDI growth, which might involve other factors. This might explain why these studies did not reach a common conclusion.

The second approach was based on a gravity equation which deals with bilateral FDI data for both source and target countries. The gravity model has been increasingly and extensively used to study FDI inflows and its implications (Toubal and Kleinert, 2010, Bellos and Subasat, 2012a, Bellos and Subasat, 2012b). It is considered as the 'workhorse' in explaining FDI patterns, due to many advantages such as the capacity to deal with large sample sizes and variables. It also allows for an examination of both home and target countries in empirical analysis as well as examining the FDI outflow and its implications. In addition, the gravity model extends Dunning's hypothesis where the main factors in Dunning's theory can be found in the gravity equation; for example, the market size in Dunning's theory is replaced by GDP in the gravity equation. By using the gravity equation This thesis addresses the shortcomings among BIT studies.

Based on the analysis of the literature review for FDI theories and FDI in the UAE, it is clear that the UAE's government has shown great interest in signing bilateral treaty agreements particularly with OECD countries and other major partner countries from 2000 to the present. However, to the best of the author's knowledge, no study has examined how BITs help to sustain the inward FDI in the UAE as well as outward FDI from the UAE and the other member countries of the GCC, or explained how BITs contribute in encouraging inward FDI in the UAE as well as outward FDI from the UAE in particular. This gap in the body of literature needs to be filled to generate a better understanding of the relationship between the attractiveness of FDI and the

BITs in the UAE, which, consequently, will help to build a strong government strategy to promote the economic growth in the UAE.

CHAPTER 4

4 Research Method

All effective studies need a sound research design upon which the study will be grounded. This study applies a scientific research method to provide a framework that can answer research questions, where the key question addressed by this research is characterised as exploratory in nature. The primary goal of this type of question is to develop proposition for further inquiry to understand a specific phenomenon. The phenomena in this research are the relationship between BITS and the attractiveness of FDI in the UAE, and whether the FDI inflow was sustained by signing a BIT with a particular country.

A review of the BITs literature shows that almost all BITs studies adopted a quantitative research method. Basically, quantitative research aims to understand a specific natural phenomenon through emphasis on statistical analysis rather than a social or cultural phenomenon which is normally investigated through a qualitative research method (Myers, 2009). Moreover, most of the FDI and BITs studies adopted a comparative research design in order to illustrate the differences among countries in the attracting of FDI and signing BITs (Neumayer and Spess, 2005, Dunning and Zhang, 2008, Mina, 2009, Lal and Van Wyk, 2010, Allee and Peinhardt, 2011, Mudambi et al., 2012). These studies focused on time-series data analysis. The time-series data are generally used to understand the change that occurs over a period of time; in other words, how the past can affect the future (Wooldridge, 2009). In the case of BITs, the starting point at which a BIT begins to affect FDI is the date the treaty entered into with the partner

country comes into force[17]. This allows us to examine how BITs impact on FDI inflow with partner countries.

It is important to highlight the epistemological and ontological considerations for the studies; where the "epistemological issue concerns the question of what is regarded as acceptable knowledge in a discipline" (Bryman and Bell, 2007, p.16) while the question of ontology concentrates on the nature of social entities. The epistemological assumptions of the research lie in the positivism stance, where the reality is objectively proven through testing the relationship between BITs and FDI to predict and interpret the phenomenon of rapid FDI increase in the UAE. From this where it can be infer that the value of FDI flow (the dependent variable) related to instruments of gravity variables including BITs (the independent variables) represents the level of attractiveness of the UAE to foreign investors. This in fact is an interpretation of the phenomenon of the study (Myers, 2009). Therefore, the study adopts an objectivism ontological position, where the phenomenon that the study investigates is separated from social actors. The objectivism ontology can be achieved by employing the most recent model employed that is appropriate to the research question in the FDI literature – The Gravity Equation (Myers, 2009, Eisenhardt, 1989).

Based on the methodology applied in previous BITs literature, and based on the nature of the research objective as well as research questions, the appropriate method here for this study is quantitative research with panel data analysis to examine the relationship between BITS and FDI inflow in the UAE using a panel of 66 countries including the OECD and the main partner's

[17] The BITs have two important dates that might impact on the FDI inward and outward: first, the signing treaty date and the entering into force date. However, the differences between these dates might have a different impact on the FDI inflow. This is investigated in this study. Moreover, there is an expectation that future treaties or the signal given out by signing many BITs - that foreign investors are welcome to invest - might also have an impact on FDI inflow and outflow.

source countries between 2001 and 2012, using the gravity model. The selected research design for the study is based on secondary data, which include bilateral FDI data extracted from the OECD database and World Bank database, and total observations are 792. The data have many advantages as they provide details on inward and outward FDI for each partner's country for specific years with their relative dummy variables (GDP, distance, language, colonial relationship, borders and the date of signing the BIT as well as the date the BIT came entered into force). This dataset was analysed using the gravity model through Stata software.

Before presenting the research models and in order to clearly explanation the reasons for choosing the gravity model in particular, it is necessary to review the way that the model works, and describe the origins of the model, including any subsequent changes to it. The gravity model has traditionally been used in the field of international trade, and is a significant tool for researchers interested in the effects of FDI inflow or outflow related to specific policy. It offers a convenient testing bed on which to assess the FDI influences of different type of government policies (UNCTAD, 2019). Leamer et al. (1994) acknowledge that the gravity equation has produced some of the clearest and most potent results in empirical economics. Recently it has been used with FDI models as well. The model was originally inspired by Newton's famous gravity equation in physics (Van Bergeijk, 2010). The formulation of Newton's universal gravitation law states that the attractive force between two celestial bodies (F) is directly proportional to their masses (m) and indirectly proportional to the square of the distance r. This law was then adapted to the empirical analysis of international trade theory:

$$F = G\,\frac{m_1 m_2}{r^2}$$

In the early 1960s, Tinbergen (1962) was the first to use the gravity model to analyse the volume of international trade flows between partner countries. According to Tinbergen's gravity equation for international trade, the amount of trade flow (F) between two countries (ij), is explained by economic mass (M) for each country and geographical distance (Beugelsdijk and Zwinkels) between two countries:

$$F_{ij} = G \frac{M_i M_i}{D_{ij}}.$$

The underpinning rationale for using the gravity equation in international trade derives from the similarity from Newton's law of gravity and the nonlinear form of the equation exports are directly proportional to the exporting and importing countries' economic "mass" which is represented by gross domestic product, and inversely proportional to the distance between them and not the square of the distance between them, as in physics (Krisztin and Fischer, 2015). In other words, the equation suggests that trade attractiveness between the larger country pairs to trade economically and close geographical distance is more favourable, but the further apart countries geographically are the less favourable and weak trade is between country pairs. This is perhaps because of the high transporting costs of goods between them.

The traditional gravity model has employed the basic explanatory variables such as geographical distance and the GDP for both source and target countries as explained by the basic gravity equation. In the standard gravity model and international trade studies, transportation cost is used as a proxy for the distance between countries. By applying the standard gravity equation, Y_{it} represents exports or inward FDI from country (j) to the host country (i), at time t. X_{it}includes

GDP for host and source countries and geographical distance, and the dummy variables in matrix D_{it} are religion, common language and colony:

$$Y_{it} = \alpha_1 X_{it} + \beta_1 D_{it} + \varepsilon_{it} .$$

Later, Linnermann (1966) included population in the gravity equation. However, the model lacked theoretical foundation. Anderson (1979) resolved this issue by providing strong theoretical foundations to the gravity approach (Anderson and Wincoop, 2003). The main idea of the model was that the volume of trade (or FDI more recently) between countries depends on several characteristics of the source and target countries. These characteristics consist of market size (GDP) for the countries and the geographical distance between source country and target country and relative variables as explained with the previous equation.

As time passed the popularity of the gravity model increased. Authors have also increasingly used panel data. More than 20 articles were published between 2000 and 2010 in the International Business Review and the Journal of International Business Studies (Beugelsdijk and Zwinkels, 2010). This clearly shows the growing attention in the literature and the continuous effort to improve the gravity model which has become one of the most successful in the empirical economics literature. In addition to the theoretical improvements, the increase of data availability has encouraged scholars to focus their attention on employing additional variables in the gravity equation to include corruption, ease of doing business[18] and institutional factors (Bénassy-Quéré et al., 2007, Bellos and Subasat, 2012a).

[18] Most of the previous studies extract the data from the ease of doing business index which is available online.

Studies involving FDI as the dependent variable was formulated with some appropriate amendments to the model. The gravity model for the FDI is similar to the gravity model used in international trade, but the dependent variable is *FDI flows* instead of *trade flows*. By applying the gravity equation for FDI, FDI_{ijt} represents FDI inflow from country (i) to the host country (j) at time (t), and the GDP for host and source countries for country (i) at time (t). (POPULATION) represent the population for host country (i) at time (t), D_{ij} is geographical distance between country (i) to country (j), $\beta_1 to\ \beta_4$ are the slope parameters, and finally ε_{ij} is the error term.

$$In(FDI_{ijt}) = \alpha_1 + \beta_1 In(GDP_{it}) + \beta_2 In(GDP_{it}) + \beta_3(POPULATION_{it}) + \beta_4(POPULATION_{it}) + \beta_4(DISTANCE_{ij}) + \varepsilon_{ij}$$

4.2 The ability of modification for the Gravity model

The gravity equation has undergone many modifications over time, and authors in this field conclude that the correct specification for a gravity model of FDI is still a matter open to debate (Talamo, 2009). This offers a great opportunity for further research to improve on the model. Among a recent amendment in the of gravity model is a pendulum gravity model however, it has been widely used in studies that focus on understanding international trade, and its might be one of the future researches' gravity model in the area of BITs and FDI relation **(**Liu et al., 2016**)**.

More recently, the theoretical foundations of the gravity equation have been strengthened by adding bilateral investment treaties (BITs) in the specification (Kerner, 2018, Mariev et al., 2016). A number of researchers who studied the link between bilateral investment treaties and

FDI suggest that the treaties that are signed with developing countries have a positive impact on a country's ability to encourage foreign investors (Bénassy-Quéré et al., 2007, Busse and Groizard, 2008).

The quality of the host country government institutions was also found to be an important factor (Tobin and Rose-Ackerman, 2011). Talamo (2011) highlighted the importance of a good governance system in attracting foreign investors, where one of the important results was the presence of a good governance system that encourages transparency among government institutions, which in turn gives the country political credibility worldwide. Improved credibility not only contributes to attracting new foreign investors but also to retaining them for a longer period. In contrast, lack of an efficient governance system might lead to serious economic consequences; for example, it is considered one of the causes of financial crises, and also deters foreign investors from entering these countries. Talamo (2011) acknowledged that countries that pay attention to improving corporate government will attract increased FDI inflow, which will help in solving economic problems and thus reduce the risk from economic crises. In order to achieve these outcomes, the governments should promote transparency and prevention of corruption, and develop fair and clear legislation. These are important factors which are attractive to the foreign investor. Bénassy-Quéré et al. (2007) also examined GDP per capita in the gravity equation. The GDP per capita represents the purchasing power of the consumers and real wages. The authors concluded that GDP per capita in the host countries is not significant, and that there is multicollinearity between GDP per capita and institutions.

Geographical location has been found to have a different impact. Most studies found the expected negative relation. Paniagua (2011) attributed this result to two important reasons. *First,*

the distance should not only be measured in kilometres, because it was affected by other control variables that should be taken into account in the measurement. Therefore, in his study, Paniagua (2011) employed dummy variables to adjust and capture the costs involved in the distance. He also includes information cost, common language dummies, colonisation information, religion, landlocked status, same-country dummies and same-border dummies. *The second* reason is the possibility of an increase in import operations from source country to host country carried out by foreign companies located in the host countries. For example, when foreign companies establish manufacturing sites in another country, they import basic materials that are necessary in the manufacturing process from the original source of the company. In this case, FDI will result in an increase in the imports. Paniagua (2011) concluded that core-FDI variables including distance, GDP, colony, language and religion are positively related to FDI with the exception of distance. Secondary-FDI variables comprising FTA, landlocked, home and host democratic index, and neighbour violence are statistically significant in most cases. The main contribution of his study was how to treat zeros in the dyadic data where he found that Core-FDI variables did not experience any change by using the zero-method but the R^2 became higher. Also, he found that the PPML is more efficient than HMR approaches.

In summary, and taking advantage of the information this thesis has gathered from previous studies, BITs cannot be examined in isolation and, therefore, should include other complementary factors. The study discussion has identified four key factors that this study will concentrate on; these are host country economic factors, cultural interdependence, geographical characteristics, and political business relation.

The four key factors are necessary to examine the relationship between BITs and FDI inflow. The factors that relate to the economic characteristics of a country include GDP, relative location of the country to its trading partner, inward FDI, outward FDI, natural resource endowments and human resource endowment. Cultural interdependence factors will consist of dummy variables used in this study to capture the distance cost between host and source countries in kilometres, common language, religion, and colony relation[19]. In addition, political factors include level of corruption and quality of government institutions. In fact, the complementary factors for the BITs studies are similar to those used in the standard gravity model that aims to find the determinants of FDI inflows between countries. In this study, I use two gravity estimations; the first model examines the relationship between BITs and FDI inflow in the UAE, while the second estimation tests how FDI was sustained in the UAE with the countries with which it had signed BITs.

4.3 The Research Model and the Hypotheses

Based on the research question, this study aims to describe and explore the relationship between bilateral investment treaties (BITs) and the attractiveness of FDI in the UAE. Based on the literature review, and in order to examine the relationship, the study concluded that it should include four important categories of variables (host and home countries' economic factors, countries' characteristics and geographical variables, cultural interdependence, and historical political relation). As a result, the study's first hypothesis takes the following form:

[19] These variables were used in gravity models in FDI and BITs studies; see for example BEUGELSDIJK, S. & ZWINKELS, R. C. J. 2010. Gravity equations: workhorse or Trojan horse in explaining trade and FDI patterns across time and space? *International Business Review,* 19**,** 102-115.

H1: BITs have a positive impact on FDI inflow to the UAE if there are stable economic conditions, far geographical distance, and politically common tie relations.

The BITs can play a major role in protecting and promoting FDI in the UAE, so I believe that the relationship should be positive. This is a result that the basic formulation of the econometric specification presented earlier will be able to model. For the ease of presentation, it is reproduced below:

$$In(FDI_{ij}) = \alpha_1 + \zeta_1 In(s_{it}) + \xi_1 In(m_{it}) \beta_1 In(Distance_{ij}) + \beta_2 BIT_{ij} + \beta_3 colony_{ij} + \beta_4 religion_{ij} + \beta_5 lang_{ij} + \beta_6 locked_{ij} + \beta_6 border_{ij} + \beta_7 CORRU_{ij} + \varepsilon_{ij}$$

FDI_{ij} is the dependent variable which represents the bilateral FDI stock inflow from country i to country j in current US dollars. s_{it} is the home country's GDP, and m_{it} is the host country's GDP in current US dollars; $Distance_{ij}$ is the geographic distance from country *i* to country *j* in kilometers, and BIT_{ij} is the bilateral investment treaty between country *i* and country *j* from the time they signed it. Dummy variables to explain the distance between host and home countries include colony, religion, common language, host landlocked and border, and control variables that have a direct impact on BITs including, for example, country corruption. ε_{ij} is the error term.

A bilateral investment treaty was normally signed in order to protect foreign investment from government confiscation or other risk directly caused by the host country; therefore, BITs

stimulate investment and the relation with FDI should be positive. In terms of GDP for the host country, GDP represents the market size; therefore, I expect a positive relationship between FDI and GDP. $Distance_{ij}$ represents the distance in kilometres between host and home countries. Therefore, based on the literature review I expect a negative relationship between FDI and Distance. Several dummy variables include colony, religion, common language, host landlocked and border and I expect to estimate a positive relationship. $CORRU_{ij}$ is the control variable in the model; it represents the level of the corruption in the host country and the researcher expect a negative relationship between FDI and corruption, measured by the *International Country Risk Guide* (ICRG).

In term of finding the relationship between BITs and outward FDI and based on the literature review, and to understand the relationship the study use the previous equation to examine the relationship. The only difference in this equation is replacing the inward FDI variable with the outward FDI one. I concluded that I should include four essential categories of variables (host and home countries' economic factors, countries' characteristics and geographical variables, cultural interdependence, and historical political relation); as a result, the second hypothesis takes the following form:

H2: BITs have a positive impact on FDI outflow to the UAE if there are stable economic conditions, far geographical distance, and politically common tie relations.

The BITs can play a significant role in encouraging the UAE's companies in contributing to FDI outflow. BITs guarantee investments' protection, which ultimately will lead to expansion of

UAE companies abroad. Therefore, I believe the relationship should be positive. For the ease of presentation, it is reproduced below:

$$In(FDI_{ij}) = \alpha_1 + \zeta_1 In(s_{it}) + \xi_1 In(m_{it}) \beta_1 In(Distance_{ij}) + \beta_2 BIT_{ij} + \beta_3 colony_{ij} + \beta_4 religion_{ij} + \beta_5 lang_{ij} + \beta_6 locked_{ij} + \beta_6 border_{ij} + \beta_7 CORRU_{ij} + \varepsilon_{ij}$$

FDI_{ij} is the dependent variable which represents the bilateral FDI stock outflow from country *i* to country *j* in current US dollars. s_{it} is the home country's GDP, and m_{it} is the host country's GDP in current US dollars; $Distance_{ij}$ is the geographic distance from country *i* to country *j* in kilometres, and BIT_{ij} is the bilateral investment treaty between country *i* and country *j* from the time they signed it. Dummy variables to explain the distance between host and home countries are colony relation, common language, host landlocked, and border. Based on the literature which stressed the important role of outward FDI in contribution to economic growth (e.g., Wong, 2013, Cassey et al., 2016), I expect a positive relationship between outward FDI and GDP. Also, regarding the relationship between outward FDI with each dummy variable used in the estimation, the expected result is that it will match the first hypothesis as they share common characteristics. In addition, the difference between outward FDI and inward FDI lies only in the equation that concentrates on the home country (UAE); namely home country of investors, instead of concentrating on the home county that is receiving FDI (covered by first equation).

In order to answer the second part of the research question, which is predictive in nature, the third hypothesis is that:

H3: Countries that signed BITs with the UAE have contributed towards sustaining FDI inflow.

Based on the literature review, the study identified sustaining FDI inflow as preventing foreign investment from partly or totally withdrawing their investment from a host country within a period of time. In other words, sustaining FDI is characterised as continuous foreign investments in the host country for a long period of time, accordingly the relationship between BITs and FDI inflow should be positive for more than five years and continuous. In order to conclude that BITs contribute on sustaining FDI inflow in the UAE, the relationship between BITs and FDI inflow it should be positive for more than five years. Therefore, the researcher expects that BITs contribute towards sustaining FDI inflow. However, to model this hypothesis, and to the best of the researcher's knowledge, there is no direct model in the previous literature that can be applicable in examining the sustained FDI inflows. Therefore, this will be a part of the research contribution in the FDI gravity model, but the study included a step that can help to achieve the appropriate model that examines how to sustain FDI, through the use of the above two equations focusing on a positive relationship lasting for more than five years .

After estimating the first model I can extract the important factors related to BITs. After that, and in order to examine the sustained FDI inflow, I first need to split the dependent variables into two categories; this can be achieved by running the stationary test for FDI series to differentiate the countries in two groups. The first group contains countries that have non-stationary FDI with increasing FDI series and countries that have stationary FDI series that show relative stability. The second group of countries show non-stationary FDI series but decreasing FDI stock levels;

this group represents the countries that show an increase in the FDI at some point in time but which is not sustained for a long period in the host country.

Once the first step is achieved, two separate gravity models will then be used to examine the two groups, and to find the most important factors that contribute to increases in FDI and the most important factors that contribute to decreases in FDI. In other words, investigate whether the BITs have a significant impact on model one, or model two. The gravity equation is similar to the first one; however, one more control variable is added – namely, the violation of BITs – by using the information from the International Centre for the Settlement of Investment Disputes (ICSID).

$$In(FDINS_{ij}) = \alpha_1 + \zeta_1 In(s_i) + \xi_1 In(m_{it})\ \beta_1 In(Distance_{ij}) + \beta_2 BIT_{ij} + \beta_3 colony_{ij} + \beta_4 religion_{ij} + \beta_5 lang_{ij} + \beta_6 locked_{ij} + \beta_6 border_{ij} + \beta_7 ICSID_{ij} + \varepsilon_{ij}$$

$FDINS_{ij}$ represents the first group which is bilateral FDI stock inflow from a country that has non-stationary with increasing FDI *i* to country *j* in current US dollars. The second group $FDIS_{ij}$ represents the bilateral FDI stock inflow from a country that has non-stationary with increasing FDI *i* to country *j* in current US dollars. s_i is the home country GDP and m_{it} is the host country GDP. $Distance_{ij}$ is the geographic distance from country i to country j in kilometres, and BIT_{ij} is the bilateral investment treaty between country *i* and country *j* from time they signed. Dummy variables used to explain the distance between host and home countries are colony, religion, common language, host landlocked and border, and $\beta_7 ICSID_j$ is the violation in

the BITs contract. ε_{ij} is the error term. The study modifies Bergstrand et al.' (2015) methodology which helps in understanding the study model.

4.4 Data Sources and Research Sample

Bilateral FDI inflow and outflow are taken from the international direct investment database of the OECD as well as World Bank data in order to expand the sample size, and data on GDP in current US dollars and GDP per capita are taken from the World Bank. Bilateral investment treaties are found in the United Nations Conference on Trade and Development database, and colony, religion, common language, host landlocked and border are obtained from the Research and Expertise on the World Economy website (http://www.cepii.fr/CEPII/en/welcome.asp). Finally, the International Centre for the Settlement of Investment Disputes (ICSID) provides the information about countries' adherence to BITs obligations.

4.4.1 The sample period and size

Initially, the study starts by using the OECD dataset International Investment Statistics which only covers 34 countries in our dataset and which significantly reduces the estimation sample. The World Bank recently provided a bilateral FDI dataset, which covers 66 countries. However, including measures of inward and outward FDI government policies allows us to get an idea of the extent to which policy restrictions matters as a determinant of the pattern of FDI (UNCTAD,

2019). The panel data currently cover 13 years over the period 2001-2013 [20]for 66 countries for a total of 792 observations. Here this study ensures the criteria of practical significance and statistical significance by adopting the rule of thumb, 4-2, which states that "the minimum ratio of the observations to variables is 5:1 but the preferred ratio is 15:1" (Hair, 2010, p.176). The study employs eight variables; therefore, the preferred number of observations is 120. Table 4 presents three columns: 1) the variables used in the study; 2) the unit of measurement, and 3) the data sources.

Table 4 Variables used in the research model

Variables	Units of measurement	Data Source
FDI	US dollars	https://data.worldbank.org
Distance	Kilometres	www.cepii.fr
GDP (host and source country)	US dollars	www.worldbank.org
Bilateral investment treaties (BITs)	Dummy	www.unctad.org
Colony Relation	Dummy	www.cepii.fr
Common language	Dummy	www.cepii.fr
Border	Dummy	www.cepii.fr
Volition in BITs	Dummy	https://icsid.worldbank.org/ICSID/FrontServlet

[20] According to bilateral FDI data the last available data for UAE is 2013 in both data (UNCTAD and OECD).

4.4.2 The Data Description

The initial source of the FDI inflow and outflow database was 34 OECD members' countries (Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States) and their partner's country from OECD members' and non-members. Currently, the UAE is not a member but the data that came from OECD members included the UAE in the estimation. However, this study extends their sample size by merging 66 countries from the World Bank dataset [21]. This dataset from the World Bank includes major FDI country partners as well as neighbour countries (GCC countries) which are non-members of the OECD (for example; India, Korea, Republic of, Malaysia, Morocco, Oman, Pakistan, Philippines, Qatar, Romania, Saudi Arabia, Slovak Republic, Slovenia, South Africa, Thailand, Tunisia, United Republic of Tanzania, the United States, Viet Nam and Zambia).

These countries represent FDI strategic partners with the UAE, including GCC countries, sharing a common culture and language with the UAE as well as borders. Among these countries the most important partner is Saudi Arabia, followed by countries that have large resident communities in the UAE – namely, India and the Philippines. These foreign communities residing in the UAE for long periods might have an important role in promoting foreign investors from their countries to enter the UAE.

[21] The full sets of home and host countries are listed in the Appendix.

Foreign investment may involve different sectors, not just tangible products but also services and industries that include Agriculture and Fishing, Mining and Quarrying, Manufacturing, Electricity, Gas and Water, Construction, and other Services sectors. By clarifying FDI in a simplified way, it can be described as direct investment enterprise (inward investment for the reporting country). A direct investment enterprise is defined as an incorporated or unincorporated enterprise in which a foreign investor owns 10% or more of the ordinary shares or voting power of an incorporated enterprise or the equivalent of an unincorporated enterprise (OECD, 2000)[22].

Despite specifying 10% of ordinary shares to be considered as FDI ownership, which gives the foreign investors the right to vote in the management, participate in it, and influence its decisions, it does not give the foreign investor the right to absolute control.

Some researchers have criticised setting the foreign investment threshold at 10% in most countries. Although the Organization for Economic Cooperation and Development did not recommend limiting the share of 10% of the shares as FDI, many countries see the need to treat the 10% cut-off point in a flexible manner and improve it according to the appropriate conditions. In some cases, a direct investor owns less than 10% of the shares and has a significant influence on the company management decision, while in other cases the direct investor owns more than 10% of the shares but does not have any effective voice in the company's management decision (Hill, 2009). Some countries have set other criteria to determine the presence of elements of the FDI relationship. These factors include: 1)

[22] OECD provide direct investment definition on their report on the survey of implementation of methodological standers available online

participation in decision-making; 2) Participation and representation on the company's board of directors; and 3) Transparency and obtaining technical information (OECD, 2017).

There are also other models of FDI relationship that are more complex, as they include enterprises operating in two different countries which have the same board of directors. They also have common policies and share resources, but in one there is an estimated shareholding of about 10% that is allocated to foreign investors, while the other does not have allocated shares for foreign investors. In such cases where neither is a direct investment enterprise of the other, these are not regarded as direct investments.

Before describing all datasets, it is necessary to explain the negative FDI inflow, according to OECD database definition the FDI inflow may have a negative result for three reasons. "*First, if there is disinvestment in assets that is, the direct investor sells its interest in a direct investment enterprise to a third party or back to the direct investment enterprise"* (OECD, 2017:2). The second reason is if it is associated with borrowing operations from the parent company, as well as in case of repaying the loans from its direct investor. The third reason is if the reinvested earnings are negative. "*Reinvested earnings are negative if the affiliate loses money or if the dividends paid out to the direct investor are greater than the income recorded in that period. Negative FDI positions largely result when the loans from the affiliate to its parent exceed the loans and equity capital given by the parent to the affiliate. This is most likely to occur when FDI statistics are presented by the partner country*" (OECD, 2017:2).

4.4.3 Missing Data

Based on the BIT literature, this study applies a log transformation to measures FDI as a means of reducing the skewness of the distribution. The routine application of the log transformation will eliminate from estimation the large number of zero FDI inflows as well as the negative FDI inflows involving reversals of investment or non-investment. In order to deal with a form of endogeneity that arises due to the presence of zero FDI flows and outflow and to retain these values (zero and negative observations) in the analysis the study therefore use the inverse hyperbolic sine transformation which has been used by (Falvey, 2017). Table 5 shows the missing variables in the study which represented in some variable almost 40% from the total observation, while Table 6 show the descriptive statistics for all variables used in the study.

Table 5 Missing Data

		Years	Home Country	Target country	FDI stock from UAE to abroad	FDI stock inflow into UAE	FDI stock abroad, by geographical destination	FDI INWARD (DATA FROM OECD)	FDI Outward (Data From OECD)	GDP (current US$)	GDP PER CAPITA (CURRENT US$)	Population, total	Distance in Kilometers
N	Valid	792	792	792	272	279	304	245	241	775	775	779	792
	Missing	0	0	0	520	513	488	547	551	0	0	0	0

4.4.4 Negative FDI Values

Dealing with negative FDI data is a common problem with most BIT studies that implement gravity equations (Salacuse and Sullivan, 2005, Bankole and Adewuyi, 2013, Mariev et al., 2016, Falvey and Foster-Mcgregor, 2017, Aisbett et al., 2018). This study encountered the same problem and therefore followed the majority of the BIT studies using the gravity equation particularly when the data consist of large negative and zero values for FDI inflow or outflow,

which involve instances of partly withdrawn FDI or disinvestment often associated with skewness of the distribution. This normally creates a problem in the gravity estimation so order to deal with negative FDI inflow and outflow in the analysis, this study followed Falvey and Foster-McGregor (2017) by applying a log-transformation of these observations. Aisbett et al. (2018) and Berger et al. (2010) also use a log transformation.

CHAPTER 5

5 Results and Discussion

This chapter covers the regression analysis showing the results of the gravity estimation. The goal of this chapter is to test the research hypothesis, starting by providing the descriptive analysis for the variables. The next step is correlation analysis, followed by in-depth discussion of the results including the relationship between IFDI and BITs as well as OFDI and BITs.

A multiple regression technique is used to answer research questions; multiple regressions are appropriate when there is a single metric dependent variable presumed to be related to two or more metric independent variables. The study examining the correlation between variables (Table 7) one correlation is a bit high between two variables borders and common colony (r = .7). The model summary table (see Table 9) shows that R Square = (.29). The study begins the discussion of the results in Table 6 which present the descriptive analysis then the correlation tables. Next the empirical result which cover regression results report the effects of UAE BITs on FDI inflow from source countries to the UAE as host country and the effects of BITs on FDI outflow from the UAE as source country to partner countries in the BITs.

5.1 Descriptive data

The descriptive statistics of the study model variables, as set out in Tables 5 and 6, show several main features. First, there are missing FDI observations as well as zero and negative FDI values, which imply an unbalanced panel. The study used a commonly used technique of data

interpolation whereby missing observations are filled in with the average value of the previous year and following year.

In order to retain negative and zero values in our sample, I followed Falvey and Foster-McGregor (2017) in using the inverse hyperbolic sine transformation ln $(y + (y^2 + 1)^{\frac{1}{2}})$. This is approximately equal to ln 1n (2) + ln (y_i), meaning that coefficients can be interpreted in the same way as when using logs. In this way, the transformation has the benefit of being directly outlined for negative and zero observations. Second, the study used the maximum and minimum values of FDI outflow and inflow in millions of US dollars (−53 and 12,620)[23] and inflow stock (-1,600 and 11,322)[24]. Third, the study shows the minimum and maximum values of both GDP per capita (4.988809 and 11.6458) which widely represent different countries economic level, in addition, the standard deviations of both GDP per capita (1.544507) of the target countries which are relatively high, indicating that target and home countries are quite diverse in terms of country economic level. Moreover, the coefficients of correlations among the explanatory variables are relatively low, which meaning that the study used the appropriate dataset to estimate the UAE's outward FDI effectively and efficiency.

[23] The highest outward FDI was in 2010 to Saudi Arabia with a total amount of US$12.62 billion while the lowest outward FDI was in 2010 to Finland, source: UNICTAD 2019.

[24] The highest FDI inflow was in 2012 from France with a total amount of US$11,3 US billion while the lowest amount was in 2011 from the United Kingdom with a total amount of US$ 1.6 billion.

Table 6 Descriptive Analysis

Variables	*Observation*	*Mean*	*Std. Dev*	*Min*	*Max*
Inward FDI	254	4.232236	2.843614	-3.633404	9.580071
Outward FDI	358	3.28612	2.856587	-3.506558	11.11194
BIT signed	792	0.415404	0.493103	0	1
BIT relation	792	9.103607	0.4806262	0	1
GDP per capita	775	10.52977	0.1282243	4.988809	11.6458
UAE GDP per capita	792	8.417372	0.6860203	10.34373	10.73114
Distance	792	0.2424242	0.4288204	5.716842	9.592524
Common colony	792	0.030303	0.1715281	0	1
Colonial link	792	0.030303	0.1715281	0	1
landlocked	792	0.1363636	0.3433911	0	1
language	792	0.0454545	0.2084305	0	1
EM	792	0.6363636	0.4813497	0	1

5.2 Correlations Analysis

The first stage of the data analysis consists of examining the correlations among variables. Table 7 shows this via a correlations table, which identifies the variables that might have implications for the gravity modelling. the study shows that inward FDI and GDP per capita are positively correlated, and that the correlation is about the same for outward FDI and GDP. This result supports the basic intuition that larger economic countries tend to invest more. By contrast, the study finds a negative correlation between FDI and distance where country partners in BIT that are geographically distant tend to invest less. In addition, there is a negative correlation between borders and distance, which is expected. The other variables in the study are not correlated.

Table 6 Correlation Matrix

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12	13
1. Inward FDI	1.0000												
2. Outward FDI	0.2150	1.0000											
3. BIT signed	0.2693	0.4293	1.0000										
4. BIT relation	0.2084	0.3086	0.8461	1.0000									
5. GDP per capita.	0.3526	-0.0041	0.2881	0.2103	1.0000								
6. UAE GDP per Capita	-0.1352	0.1863	0.0918	0.0713	-0.0571	1.0000							
7. Distance	-0.0831	-0.2591	-0.0410	-0.1407	0.2331	-0.1399	1.0000						
8. Common colony	-0.0486	0.2061	-0.2708	-0.1947	-0.3664	0.1427	-0.3122	1.0000					
9. Colonial link	0.1591	0.2016	0.1577	0.1863	0.1318	-0.0414	0.0549	-0.0775	1.0000				
10. Landlocked	.	.	.	.	.	.	.	.	.	.			
11. Language	-0.2738	0.2176	0.2813	0.3324	-0.2837	0.1156	-0.3467	-0.1382	-0.0510	.	1.0000		
12. Borders	0.0471	0.1656	0.1577	0.1863	0.0370	0.0810	-0.7454	-0.0775	-0.0286	.	0.5606	1.0000	
13. EM	-0.5170	0.0259	-0.3859	-0.3146	-0.7985	0.1742	-0.4235	0.3443	-0.1577	.	0.3232	0.1812	1.0000

The Landlocked in the correlation matrix is blank due to the fact that all observations in the study do not include any country that classified as landlocked

5.3 Empirical Results

5.3.1 Inward FDI and BITs

It is necessary to point out here that the UAE has unique characteristics in several aspects; these are demographics, geographical location, different trade regulations, and legislation, among others. Based on the BITs literature reviewed in Chapter 3, it can be concluded that each study that aims to understand the relationship between BITs and the attractiveness of FDI offers mixed results depending on the countries under study and the period of time involved. In this study, face the same influence where the study found unexpected result as well as new findings which shed light on this field of study for future researchers, as well as UAE decision makers in the international business relations.

Table 8 presents the relationship between BITs signing and inward FDI within the UAE market. I indicate that the dummy variable indicating whether the UAE has a BIT signed with another country has the expected sign, but it is statistically not significant. Therefore, the first hypothesis is rejected; this is a somewhat unexpected result. There are several explanations for this result One of the most important explanations is that large stake of FDI in the UAE generated from real estate sectors was in 2002, when the UAE enjoyed a boom in investment in real estate projects. During this period some foreign investors began to accumulate substantial wealth, and the bulk of FDI was directed into the real estate sectors, particularly in Dubai. These results, in fact, come after enactment of new legislation in 2006 to govern the acquisition of real estate by foreigners. This law was a magnet for foreign investment flows in the UAE. However, this privilege was not among the provisions of BITs; rather, it was a policy that gave all nationalities the opportunity to

own property in the UAE, which constituted an attractive factor for FDI inflow not only targeting investors from countries that sign a BIT with the UAE but also investors from all around the world. Consequently, this policy might prove more effective than BITs or it might play the role of a moderator factor.

In addition to the fact that the UAE is one of the fastest-growing countries accompanied by the enactment of new legislation, including the signing of the BITs with other countries, which makes the UAE an attractive area for investment, and despite the research finding of the absence of a positive relationship between inward FDI and BITs concluded with the UAE, but the result for a short-term relationship, a number of studies are consistent with this study's findings for example, (Hallward-Driemeier, 2003, Salacuse and Sullivan, 2005). Another possible explanation is that most BITs were signed after 2011 as indicated by Table 1 above, and the study sample only covers a period of 12 years (2001 to 2013) which represents a short-terms relationship that might need observation over a long period of time (more than 20 years) in order to catch a positive relation in the analysis. For instance, Falvey and Foster-Mcgregor (2017) extracted data from 101 host countries from 1985 to 2011 which represents a long time period. Another potential explanation is the global economic crisis in 2008; the study sample came in the period of the global economic crisis, the impact of which extended for nearly five years until 2013 (Milner, 2014). Therefore, most foreign investments reduced their investments and, in some cases, they withdrew their foreign investments and re-pumped them to their home country to cover their losses.

In addition, another potential explanation could be that the UAE signed BITs with countries classified as strong in certain sectors, for example, tourism, industrial, electronic or agricultural sectors. However, the UAE does not have a promising portfolio matching sector to attract inward FDI from a specific signatory country (Colen et al., 2016). This gap in BIT literature needs to be filled by further research in order to understand the most attractive investment sectors in the UAE that really encourage countries to sign a BIT. However, currently, and to the best of my knowledge, there is no database that provides us with FDI data in detail for each sector in the UAE. Recently the OECD start providing much of these data, but only for OECD countries' members. This might encourage other countries including the UAE to provide them in the near future.

Furthermore, Table 8 indicates that GDP per capita of both the UAE and the donor countries is statistically significant at 10% and 1%, respectively. A 1% increase in donor countries' GDP per capita will result in a 0.8% increase in inward FDI to UAE. Surprisingly, though, a 1% decrease in the UAE's GDP per capita will increase inward FDI to UAE by 3.6%. In other words, there seems to be a negative relationship between the UAE's GDP per capita and inward FDI to the UAE.

A potential explanation lies along the line that the UAE economy was in recession for some years at the second half of the time period of the sample. Hence, it could be that foreign investors conducted inward FDI in order to acquire assets from UAE firms, since value of assets declines during recessions (Schneider and Kirchgässner, 2009). Another explanation could be that during

the Global Financial Crisis of 2008, in order to avoid the economic turbulence across the globe many investors decided to invest in the UAE, because they viewed it as a safe haven, despite the fact that its economy was contracting. Hence, because of the timing of important global events, i.e. Global Financial Crisis, this study's sample might actually offer more insights on the FDI gravity equation.

Despite all the economic uncertainty and global downturn throughout the world and in the UAE economy towards the end of the 2000s, distance still has a negative and statistically significant (at 10%) effect on the UAE's inward FDI. In particular, a 1% increase in kilometric distance between UAE and a donor country will decrease Inward FDI to UAE by 0.9%. Hence, it is apparent that most of UAE's Inward FDI comes from neighbor countries specifically the GCC countries. Thus, although signing BITs does not seem to lead in higher levels of inward FDI into the UAE, the UAEs institutional characteristics and business-friendly environment could explain the increase in receiving FDI from abroad, while distance and donor GDP per capita have a statistically significant effect. It should be noted that in this estimation have controlled for year fixed effects and population. The year fixed effects allow common annual effects irrespective of countries affecting inward FDI and have mixed signs, but are for the vast majority of years not statistically significant.

Table 10 shows the relation between the UAE and BITs in force, which is also negatively related to inward FDI. The BITs in force normally take the second stages after concluding the BIT between countries' partners. This takes approximately from one to three years; in some cases, it might take longer – for example, the BIT between the UAE and France was signed on 9

September1991 and the start date was from 10 January 1995 which mean that the treaty took more than four years to be enforced. In this study, 32 BITs out of 76 BITs were concluded with the UAE government, although the start date was not mentioned on these treaties. This might be a possible explanation for finding a negative relationship in this study, while the GDP per capita has a statistically significant effect on the inward FDI of both the UAE and the donor countries, and distance has a statistically significant effect. Other variables including common language and common colony relation do not show any statistically significant effect on FDI.

5.3.2 Outward FDI and BITs

Table 9 shows that the relationship between outward FDI and signing a BIT agreement with a recipient country has a highly statistically significant effect, which is also high in magnitude. Therefore, the second hypothesis is accepted, suggesting that BITs are positively affecting the UAE's outward FDI. This result was expected and is consistent with Egger and Pfaffermayr (2004).

This study concluded that signing a BIT with a recipient country will lead to an increase in outward FDI from the UAE by 1.7%. The recipient's GDP per capita plays an important role in explaining outward FDI from the UAE. In particular, a 1% increase in such country's GDP per person will increase FDI flowing from the UAE by 0.6%. Hence, UAE investors seriously take into consideration the level of development in the country in which they invest. From the statistical analysis shown in Table 9, it appears that the UAE's GDP per capita has an anticipated positive effect on the UAE's outward FDI, but it is not statistically significant. This result, together with the previous finding about the UAE's GDP per capita on the UAE's inward FDI, casts doubt on whether both foreign and domestic investors behave in the way a FDI gravity

equation assumes. As before, distance has a large in magnitude and highly statistically significant effect on outward FDI from the UAE. As distance in kilometres between the UAE's capital and a recipient's capital increases by 1%, then outward FDI from the UAE into this foreign country decreases by 1.2%. This is a clear indication that UAE investors tend to prefer to invest in nearby countries. Regarding the other controls in this estimation, it is worth mentioning that some year effects are statistically significant and with positive signs. In particular, the year effects in 2009 and 2010 are statistically significant and with high magnitudes of 1.3% and 0.8%, respectively. Two and three years after the Global Financial Crisis, outward FDI from the UAE appears to increase significantly after controlling for all variables as detailed in Table 2 above.

The conclusion of BITs has a positive effect on motivating investors within the United Arab Emirates to expand their investments to the country's partners on BITs. This expansion has a positive impact on UAE economic growth, Therefore, the importance of the UAE's BITs is not limited to its increase in outward FDI issued to partner countries, but also helps the UAE's economic growth, as these investments will return their investment profits to the UAE market. This result is consistent with the Falvey and Foster-McGregor (2017) study.

As previously mentioned in this research, UAE investors prefer to invest in countries that have relatively close geographical locations. This result can be explained by the fact that UAE investors prefer to invest in countries with common culture and language, as well as similarities in the implementing rules and regulations of the foreign investments. This can be found in neighbouring countries, which are close to UAE borders such as Saudi Arabia where, in 2010, the total UAE's outward FDI to Saudi Arabia was $12.6billion, while the distance between the

UAE and Saudi Arabia is only 774.5853 kilometres. The size of UAE outward FDI that targeted Saudi Arabia compared to other countries is relatively higher than countries whose geographical location is relatively distant. Therefore, distance is important to UAE outward FDI.

The historical colonial relation also plays an important role in the UAE outward FDI. Table 10 shows that UAE BITs are positively related to common colonial countries; therefore, UAE investors prefer to choose countries that signed BITs with the UAE and share the same historical colonial relation. This is interpreted by political reasons or the possibility of ease of doing business because of the similarities in the countries rules and regulation that resulted from colonial relations between host and home countries (Mariev et al., 2016). Overall, it appears that there is a common explanation for the inward FDI increase followed by outward FDI increase. IFDI increased despite the fall in the UAE's GDP during the Global Financial Crisis (2007-2009), because the UAE was seen as a "safe haven" by foreign investors in the region. Once the turbulences in the global economy eased off, around 2009 and 2010, investors decided to move their money out of the UAE, hence the increase in the UAE's outward FDI.

Table 11 shows the case of outward FDI. Following the signing of a BIT agreement with a recipient country, the highly statistically significant effect will not sustained for a long period of time. After the BIT treaty becomes enforced, which can take approximately three to five years, the relation becomes statistically insignificant. While the other variables in the equation retain a positive relation, this was a surprising result which was not expected; therefore, the third hypothesis is rejected. There are several explanations for this negative relationship. One of these is the media momentum accompanying the announcement of a new agreement conclusion

between the UAE and its partner country in BITs that this study shows has a direct impact in stimulating UAE investment for these countries. However, after several years and during the stage of enforcing the BITs, the importance of the BITs for the UAE's investors begins to fade and the importance of this agreement in its impact on FDI diminishes. However, and to the best of my knowledge, to date no studies have examined the role of social media in the relationships between BITs and FDI. This gap in the literature opens up avenues for further investigation. Another possible explanation is the influence of the relationship with other factors that lead to its weakness; for example, conflict implications of arbitrations related to UAEs BITs, or a violation in UAE treaties may exist which led investors to resort to arbitration in order to resolve disputes. This problem has been addressed by Hallward-Driemeier (2003). In addition, Allee and Peinhardt's (2011) study explained why some BITs studies find a negative relation between BITs and FDI using the International Centre for the Settlement of Investment Disputes (ICSID).

Table 7 Inward FDI following BITs signed

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI
Bitsigned	0.0371	0.836	0.836	0.836	0.784	0.771	0.876	0.726	0.682	0.803	0.176	0.784
	(0.804)	(0.548)	(0.551)	(0.551)	(0.563)	(0.570)	(0.568)	(0.574)	(0.572)	(0.560)	(0.561)	(0.563)
ln_gdppercapitacurrentus	-0.377		0.306	0.306	0.320	0.334	0.307	0.284	0.276	0.372	0.843***	0.320
	(0.797)		(0.290)	(0.290)	(0.296)	(0.318)	(0.298)	(0.305)	(0.303)	(0.296)	(0.304)	(0.296)
ln_uaegdppercapitacurrentus	0.354			-2.373	-2.377	-2.399	-2.359	-2.216	-2.218	-2.563	-3.641*	-6.072
	(3.072)			(2.050)	(2.055)	(2.084)	(2.050)	(2.073)	(2.057)	(2.059)	(2.037)	(15.48)
2002.year	-0.350	-0.401	-0.431	-0.412	-0.411	-0.412	-0.412	-0.407	-0.406	-0.415	-0.450	-0.442
	(0.559)	(0.570)	(0.569)	(0.561)	(0.561)	(0.560)	(0.558)	(0.560)	(0.558)	(0.562)	(0.554)	(0.563)
2003.year	-0.165	-0.257	-0.323	-0.163	-0.164	-0.165	-0.165	-0.164	-0.162	-0.162	-0.209	-0.0490
	(0.524)	(0.585)	(0.587)	(0.527)	(0.527)	(0.526)	(0.524)	(0.527)	(0.524)	(0.528)	(0.521)	(0.756)
2004.year	-0.469	-0.769	-0.877	-0.517	-0.511	-0.507	-0.512	-0.502	-0.499	-0.508	-0.432	-0.184
	(0.473)	(0.575)	(0.584)	(0.472)	(0.472)	(0.471)	(0.469)	(0.471)	(0.470)	(0.473)	(0.468)	(1.515)
2005.year	-0.768	-1.062*	-1.200**	-0.633	-0.629	-0.625	-0.633	-0.632	-0.642	-0.613	-0.497	-0.112
	(0.499)	(0.564)	(0.578)	(0.471)	(0.471)	(0.471)	(0.469)	(0.471)	(0.469)	(0.472)	(0.471)	(2.301)
2006.year	-0.580	-0.873	-1.040*	-0.303	-0.302	-0.299	-0.313	-0.317	-0.319	-0.288	-0.139	0.327

	(0.555)	(0.546)	(0.568)	(0.499)	(0.499)	(0.499)	(0.497)	(0.499)	(0.497)	(0.500)	(0.500)	(2.779)
2007.year	-0.140	-0.491	-0.698	0.0552	0.0510	0.0524	0.0442	0.0437	0.0499	0.0661	0.146	0.543
	(0.520)	(0.541)	(0.576)	(0.496)	(0.496)	(0.496)	(0.493)	(0.496)	(0.494)	(0.497)	(0.495)	(2.248)
2008.year	0.0748	-0.267	-0.507	0.412	0.408	0.409	0.405	0.388	0.400	0.430	0.534	1.008
	(0.632)	(0.542)	(0.587)	(0.580)	(0.580)	(0.581)	(0.577)	(0.580)	(0.578)	(0.581)	(0.579)	(2.725)
2009.year	-0.300	-0.706	-0.928	-0.779	-0.794	-0.796	-0.778	-0.759	-0.765	-0.832	-1.038**	-1.514
	(0.662)	(0.543)	(0.582)	(0.503)	(0.505)	(0.508)	(0.503)	(0.508)	(0.505)	(0.507)	(0.500)	(2.840)
2010.year	0.219	-0.154	-0.400	-0.114	-0.119	-0.125	-0.120	-0.0926	-0.101	-0.137	-0.348	-0.713
	(0.590)	(0.560)	(0.606)	(0.478)	(0.479)	(0.481)	(0.477)	(0.481)	(0.478)	(0.479)	(0.477)	(2.304)
2011.year	0.235	-0.231	-0.507	0.119	0.118	0.121	0.137	0.124	0.138	0.106	0.0249	
	(0.487)	(0.567)	(0.625)	(0.476)	(0.476)	(0.475)	(0.474)	(0.475)	(0.474)	(0.477)	(0.474)	
2012o.year	-			-	-	-	-	-	-	-	-	-
2012.year		-0.446	-0.721									
		(0.565)	(0.623)									
ln_distanceinkilometers					-0.240	-0.385	-0.849	-0.267	-0.281	-0.0317	-0.922*	-0.240
					(0.540)	(0.946)	(0.665)	(0.548)	(0.550)	(0.567)	(0.530)	(0.540)
Borders						-0.563						
						(3.094)						
Language							-2.774					
							(1.752)					
Landlocked								1.344				
								(2.311)				
Coloniallink									2.870			
									(2.318)			
Commoncolonial										1.021		
										(0.960)		
ln_populationtotal											0.815***	
											(0.218)	
ln_uaepopulation												1.140
												(4.581)
2011o.year												-
Constant	4.266	3.964***	1.189	25.73	27.69	29.04	32.94	26.56	26.76	27.16	28.35	48.79
	(26.62)	(0.594)	(2.700)	(20.52)	(21.09)	(22.92)	(21.30)	(21.18)	(21.07)	(21.10)	(20.76)	(92.45)
Observations	254	254	254	254	254	254	254	254	254	254	253	254
R-squared	0.032											
Number of foreign_id	35	35	35	35	35	35	35	35	35	35	35	35

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 8 Outward FDI following BITs signed

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI
Bitsigned	2.273***	2.113***	2.005***	2.005***	1.861***	1.868***	1.853***	1.843***	1.864***	2.003***	1.730***	1.861***
	(0.547)	(0.422)	(0.424)	(0.424)	(0.428)	(0.430)	(0.440)	(0.431)	(0.430)	(0.428)	(0.429)	(0.428)
ln_gdppercapitacurrentus	2.430***		0.423**	0.423**	0.466**	0.502**	0.471**	0.447**	0.468**	0.679***	0.615***	0.466**
	(0.707)		(0.196)	(0.196)	(0.194)	(0.202)	(0.197)	(0.199)	(0.198)	(0.210)	(0.206)	(0.194)
ln_uaegdppercapitacurrentus	-2.765			2.886*	2.854*	2.776*	2.846*	2.918*	2.854*	2.135	2.369	-15.09
	(2.518)			(1.550)	(1.546)	(1.551)	(1.548)	(1.552)	(1.551)	(1.562)	(1.559)	(12.39)
2002.year	-0.170	-0.0694	-0.0797	-0.103	-0.1000	-0.0990	-0.100	-0.100	-0.101	-0.104	-0.101	-0.250

	(0.432)	(0.442)	(0.439)	(0.434)	(0.434)	(0.434)	(0.434)	(0.434)	(0.434)	(0.432)	(0.433)	(0.437)
2003.year	-0.399	-0.0393	-0.120	-0.314	-0.313	-0.313	-0.314	-0.313	-0.313	-0.320	-0.322	0.246
	(0.391)	(0.435)	(0.434)	(0.393)	(0.393)	(0.393)	(0.393)	(0.393)	(0.393)	(0.391)	(0.392)	(0.585)
2004.year	-0.285	0.188	0.0533	-0.385	-0.374	-0.373	-0.374	-0.375	-0.375	-0.358	-0.345	1.211
	(0.376)	(0.439)	(0.441)	(0.375)	(0.375)	(0.375)	(0.375)	(0.375)	(0.375)	(0.373)	(0.375)	(1.213)
2005.year	0.191	0.623	0.469	-0.220	-0.203	-0.198	-0.203	-0.209	-0.205	-0.153	-0.147	2.312
	(0.407)	(0.426)	(0.429)	(0.374)	(0.375)	(0.374)	(0.375)	(0.375)	(0.375)	(0.373)	(0.375)	(1.842)
2006.year	1.144**	1.559***	1.370***	0.474	0.487	0.496	0.487	0.478	0.486	0.579	0.560	3.540
	(0.478)	(0.416)	(0.423)	(0.411)	(0.412)	(0.412)	(0.412)	(0.412)	(0.412)	(0.411)	(0.412)	(2.234)
2007.year	0.958**	1.693***	1.445***	0.529	0.533	0.539	0.533	0.526	0.532	0.601	0.587	2.924
	(0.448)	(0.425)	(0.438)	(0.417)	(0.418)	(0.417)	(0.418)	(0.418)	(0.418)	(0.416)	(0.417)	(1.813)
2008.year	1.124**	1.927***	1.627***	0.509	0.517	0.528	0.517	0.502	0.516	0.625	0.588	3.433
	(0.543)	(0.440)	(0.459)	(0.493)	(0.493)	(0.493)	(0.493)	(0.494)	(0.494)	(0.492)	(0.493)	(2.202)
2009.year	0.371	1.903***	1.633***	1.452***	1.461***	1.444***	1.459***	1.466***	1.459***	1.335***	1.381***	-2.038
	(0.540)	(0.437)	(0.452)	(0.402)	(0.401)	(0.402)	(0.401)	(0.401)	(0.402)	(0.402)	(0.402)	(2.259)
2010.year	0.120	1.614***	1.325***	0.978**	0.976**	0.967**	0.973**	0.977**	0.974**	0.886**	0.909**	-1.907
	(0.488)	(0.461)	(0.477)	(0.400)	(0.400)	(0.400)	(0.401)	(0.400)	(0.401)	(0.399)	(0.401)	(1.831)
2011.year	0.375	1.667***	1.325***	0.564	0.575	0.576	0.574	0.573	0.575	0.571	0.564	
	(0.384)	(0.436)	(0.462)	(0.378)	(0.378)	(0.378)	(0.379)	(0.378)	(0.378)	(0.376)	(0.378)	
2012o.year	-			-	-	-	-	-	-	-	-	-
2012.year		1.205***	0.877*									
		(0.448)	(0.471)									
ln_distanceinkilometers					-0.913*	-1.312	-0.876	-0.920*	-0.918*	-0.416	-1.205**	-0.913*
					(0.542)	(0.822)	(0.627)	(0.549)	(0.552)	(0.572)	(0.553)	(0.542)
Borders						-1.522						
						(2.339)						
Language							0.150					
							(1.200)					
Landlocked								1.351				
								(2.274)				
Coloniallink									0.130			
									(1.555)			
Commoncolonial										2.121**		
										(0.862)		
ln_populationtotal											0.415**	
											(0.209)	
ln_uaepopulation												5.538
												(3.645)
2011o.year												-
Constant	9.237	1.134**	-2.457	-32.31**	-24.64	-20.73	-24.93	-25.10	-24.62	-23.72	-25.39	77.82
	(21.67)	(0.454)	(1.725)	(15.78)	(16.42)	(17.47)	(16.65)	(16.46)	(16.45)	(16.30)	(16.34)	(74.30)
Observations	358	358	358	358	358	358	358	358	358	358	358	358
R-squared	0.294											
Number of foreign_id	49	49	49	49	49	49	49	49	49	49	49	49

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 9 BITs related to Inward FDI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI	Inward FDI
bitsrelation	-0.0197	0.578	0.583	0.583	0.522	0.508	0.604	0.460	0.415	0.517	0.0963	0.522
	(0.706)	(0.522)	(0.524)	(0.524)	(0.538)	(0.543)	(0.542)	(0.548)	(0.546)	(0.537)	(0.525)	(0.538)
ln_gdppercapitacurrentus	-0.386		0.306	0.306	0.321	0.332	0.307	0.281	0.275	0.370	0.851***	0.321
	(0.783)		(0.291)	(0.291)	(0.297)	(0.319)	(0.299)	(0.306)	(0.304)	(0.298)	(0.303)	(0.297)
ln_uaegdppercapitacurrentus	0.411			-2.238	-2.240	-2.252	-2.216	-2.065	-2.074	-2.401	-3.622*	-6.112
	(2.999)			(2.054)	(2.058)	(2.086)	(2.053)	(2.075)	(2.059)	(2.062)	(2.039)	(15.51)
2002.year	-0.348	-0.383	-0.413	-0.395	-0.396	-0.396	-0.394	-0.391	-0.391	-0.399	-0.447	-0.428
	(0.559)	(0.571)	(0.570)	(0.562)	(0.562)	(0.561)	(0.559)	(0.561)	(0.559)	(0.563)	(0.554)	(0.564)
2003.year	-0.165	-0.273	-0.340	-0.189	-0.187	-0.188	-0.192	-0.185	-0.181	-0.186	-0.214	-0.0668
	(0.525)	(0.587)	(0.589)	(0.528)	(0.528)	(0.527)	(0.526)	(0.528)	(0.525)	(0.529)	(0.521)	(0.757)
2004.year	-0.467	-0.683	-0.791	-0.451	-0.449	-0.446	-0.443	-0.445	-0.445	-0.445	-0.418	-0.107
	(0.470)	(0.571)	(0.580)	(0.471)	(0.471)	(0.470)	(0.468)	(0.470)	(0.468)	(0.471)	(0.465)	(1.517)
2005.year	-0.770	-0.988*	-1.126*	-0.592	-0.591	-0.589	-0.590	-0.598	-0.611	-0.576	-0.487	-0.0487
	(0.501)	(0.561)	(0.576)	(0.473)	(0.473)	(0.473)	(0.471)	(0.473)	(0.471)	(0.474)	(0.471)	(2.305)
2006.year	-0.585	-0.782	-0.949*	-0.254	-0.258	-0.258	-0.262	-0.280	-0.286	-0.246	-0.129	0.401
	(0.559)	(0.542)	(0.564)	(0.502)	(0.502)	(0.503)	(0.500)	(0.503)	(0.501)	(0.503)	(0.502)	(2.785)
2007.year	-0.144	-0.425	-0.633	0.0779	0.0705	0.0706	0.0672	0.0599	0.0645	0.0841	0.151	0.587
	(0.521)	(0.538)	(0.573)	(0.497)	(0.498)	(0.497)	(0.495)	(0.497)	(0.495)	(0.498)	(0.496)	(2.253)
2008.year	0.0684	-0.213	-0.454	0.413	0.407	0.407	0.405	0.384	0.396	0.426	0.535	1.036
	(0.630)	(0.540)	(0.587)	(0.582)	(0.582)	(0.582)	(0.579)	(0.582)	(0.579)	(0.583)	(0.580)	(2.731)
2009.year	-0.289	-0.639	-0.861	-0.721	-0.739	-0.740	-0.719	-0.704	-0.713	-0.772	-1.029**	-1.494
	(0.643)	(0.540)	(0.580)	(0.501)	(0.503)	(0.506)	(0.502)	(0.506)	(0.502)	(0.505)	(0.499)	(2.845)
2010.year	0.228	-0.100	-0.347	-0.0777	-0.0842	-0.0888	-0.0826	-0.0561	-0.0668	-0.0992	-0.343	-0.706
	(0.577)	(0.559)	(0.605)	(0.478)	(0.478)	(0.480)	(0.477)	(0.480)	(0.477)	(0.479)	(0.476)	(2.308)
2011.year	0.237	-0.188	-0.465	0.125	0.124	0.126	0.143	0.130	0.144	0.113	0.0249	
	(0.487)	(0.567)	(0.625)	(0.477)	(0.477)	(0.476)	(0.475)	(0.476)	(0.475)	(0.477)	(0.474)	
2012o.year	-			-	-	-	-	-	-	-	-	-
2012.year		-0.404	-0.680									
		(0.566)	(0.624)									
ln_distanceinkilometers					-0.267	-0.395	-0.856	-0.298	-0.314	-0.0712	-0.941*	-0.267
					(0.544)	(0.952)	(0.669)	(0.553)	(0.555)	(0.573)	(0.530)	(0.544)
Borders						-0.494						
						(3.105)						
Language							-2.689					
							(1.760)					
landlocked								1.481				
								(2.318)				
coloniallink									2.974			
									(2.328)			
Commoncolonial										0.981		
										(0.968)		
ln_populationtotal											0.827***	
											(0.213)	

ln_uaepopulation												1.195
												(4.590)
2011o.year												-
Constant	3.783	4.077***	1.301	24.45	26.61	27.74	31.63	25.40	25.65	25.97	28.06	48.72
	(26.09)	(0.588)	(2.706)	(20.55)	(21.11)	(22.94)	(21.32)	(21.20)	(21.09)	(21.13)	(20.75)	(92.62)
Observations	254	254	254	254	254	254	254	254	254	254	253	254
R-squared	0.032											
Number of foreign_id	35	35	35	35	35	35	35	35	35	35	35	35

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 10 BITs related to Onward FDI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI	Outward FDI
bitsrelation	0.365	0.876**	0.749*	0.749*	0.523	0.512	0.436	0.480	0.511	0.633	0.420	0.523
	(0.553)	(0.433)	(0.433)	(0.433)	(0.443)	(0.445)	(0.455)	(0.447)	(0.446)	(0.445)	(0.440)	(0.443)
ln_gdppercapitacurrentus	2.335***		0.485**	0.485**	0.549***	0.583***	0.569***	0.523***	0.549***	0.725***	0.734***	0.549***
	(0.729)		(0.197)	(0.197)	(0.196)	(0.205)	(0.199)	(0.202)	(0.200)	(0.215)	(0.207)	(0.196)
ln_uaegdppercapitacurrentus	-1.258			3.376**	3.353**	3.294**	3.345**	3.459**	3.374**	2.761*	2.728*	-16.32
	(2.614)			(1.597)	(1.589)	(1.594)	(1.590)	(1.594)	(1.594)	(1.611)	(1.597)	(12.75)
2002.year	-0.124	-0.0527	-0.0638	-0.0908	-0.0868	-0.0853	-0.0877	-0.0864	-0.0874	-0.0906	-0.0886	-0.251
	(0.444)	(0.457)	(0.453)	(0.448)	(0.446)	(0.446)	(0.446)	(0.446)	(0.446)	(0.444)	(0.444)	(0.449)
2003.year	-0.393	0.0110	-0.0814	-0.309	-0.310	-0.311	-0.313	-0.311	-0.311	-0.315	-0.322	0.302
	(0.402)	(0.450)	(0.448)	(0.405)	(0.404)	(0.404)	(0.404)	(0.404)	(0.404)	(0.402)	(0.402)	(0.601)
2004.year	-0.206	0.356	0.200	-0.313	-0.304	-0.302	-0.302	-0.306	-0.304	-0.288	-0.273	1.435
	(0.386)	(0.453)	(0.454)	(0.386)	(0.385)	(0.385)	(0.385)	(0.385)	(0.385)	(0.384)	(0.383)	(1.246)
2005.year	0.198	0.834*	0.654	-0.152	-0.142	-0.138	-0.143	-0.153	-0.146	-0.0957	-0.0796	2.615
	(0.421)	(0.438)	(0.441)	(0.386)	(0.385)	(0.385)	(0.385)	(0.385)	(0.385)	(0.384)	(0.383)	(1.894)
2006.year	1.048**	1.770***	1.550***	0.502	0.507	0.513	0.506	0.491	0.503	0.588	0.592	3.854*
	(0.497)	(0.428)	(0.434)	(0.425)	(0.424)	(0.424)	(0.423)	(0.424)	(0.424)	(0.424)	(0.423)	(2.298)
2007.year	0.866*	1.887***	1.602***	0.530	0.529	0.533	0.527	0.518	0.525	0.588	0.594	3.151*
	(0.462)	(0.438)	(0.450)	(0.431)	(0.429)	(0.429)	(0.429)	(0.429)	(0.429)	(0.429)	(0.428)	(1.865)
2008.year	0.928*	2.109***	1.765***	0.457	0.460	0.468	0.454	0.437	0.455	0.551	0.550	3.657
	(0.562)	(0.454)	(0.472)	(0.509)	(0.507)	(0.507)	(0.507)	(0.508)	(0.508)	(0.507)	(0.506)	(2.265)
2009.year	0.680	2.109***	1.799***	1.587***	1.598***	1.583***	1.594***	1.607***	1.599***	1.495***	1.490***	-2.238
	(0.557)	(0.451)	(0.465)	(0.413)	(0.411)	(0.412)	(0.411)	(0.411)	(0.412)	(0.413)	(0.411)	(2.325)
2010.year	0.347	1.825***	1.492***	1.086***	1.077***	1.070***	1.067***	1.078***	1.077***	1.006**	0.986**	-2.084
	(0.501)	(0.475)	(0.490)	(0.412)	(0.411)	(0.411)	(0.410)	(0.410)	(0.411)	(0.410)	(0.410)	(1.883)
2011.year	0.450	1.915***	1.517***	0.627	0.630	0.632	0.622	0.626	0.631	0.633	0.611	
	(0.394)	(0.448)	(0.473)	(0.390)	(0.389)	(0.389)	(0.389)	(0.389)	(0.389)	(0.387)	(0.387)	
2012o.year	-			-	-	-	-	-	-	-	-	-
2012.year		1.399***	1.025**									
		(0.464)	(0.485)									
ln_distanceinkilometers					-1.207**	-1.569*	-0.968	-1.223**	-1.222**	-0.799	-1.563***	-1.207**

					(0.554)	(0.837)	(0.634)	(0.561)	(0.564)	(0.590)	(0.562)	(0.554)
borders						-1.361						
						(2.360)						
language							0.985					
							(1.210)					
landlocked								1.918				
								(2.301)				
coloniallink									0.327			
									(1.571)			
commoncolonial										1.723**		
										(0.878)		
ln_populationtotal											0.518**	
											(0.209)	
ln_uaepopulation												6.072
												(3.747)
2011o.year												-
Constant	-4.902	1.566***	-2.560	-37.48**	-27.61	-24.19	-29.78*	-28.36*	-27.70	-26.83	-28.40*	84.73
	(22.50)	(0.457)	(1.737)	(16.29)	(16.83)	(17.87)	(17.05)	(16.87)	(16.86)	(16.77)	(16.70)	(76.43)
Observations	358	358	358	358	358	358	358	358	358	358	358	358
R-squared	0.254											
Number of foreign_id	49	49	49	49	49	49	49	49	49	49	49	49

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

CHAPTER 6

Reflections and Research Limitations

There are a number of challenges that encounter during the study; one of the most sensitive of these is the ethical considerations that must be taken into account at all stages of the research. This issue must be addressed by locating the study in an ethical framework, such as the University of Wollongong UOW's Code of Practice. This and other ethical codes share common ethical principles that must underpin a piece of research; for example, informed consent, protecting privacy and confidentiality, and avoiding harm (Bell and Bryman, 2007; Hodgson 2009). Therefore, in this study, for example, the secondary data are based on statistics, which help to measure the FDI and BITs, and the related data are available from, and approved for public view by, the OECD and World Bank databases. Therefore, informed consent is not required to access this information. Some of the data were accessed using the University's digital library website. A Confidentiality Agreement was drawn up when the study requires access to a specific organisation (for example UAE statistics, Ministry of Foreign Trade in the UAE) and to assure them that their data will not be used for any purpose other than to inform the study findings.

Further issues arose from the research. Where the study concentrates on inward FDI and outward FDI, the bilateral FDI data are only available for OECD countries and recently from World Bank inward and outward FDI with the UAE, which covered only 66 country partners. Other countries are not included in the studies. Therefore, future research should cover the long-term BITs related to FDI in the UAE.

In addition, an issue arose by using two databases (OECD and World Bank). Information on UAE bilateral FDI inflow and outflow data was only available up to 2013, while other BITs that were signed with the UAE after 2013 were excluded from the study. This matter led to the inability to measure the impact of the new treaties, which may have a major impact or it might change the research results for some years. The results of the research will have an important impact in shaping the UAE's international investment relations with partner countries as well as in the breadth of coverage of more BITs.

CHAPTER 7

Conclusions and contributions of the study

This study has documented the rapid spread of BITs in recent decades between developed and developing countries, including GCC countries and OECD countries. Recently both host and source countries have relied on BITs, hoping to encourage more FDI inflow and outflow to the country to contribute to economic growth, improved opportunities and increased welfare in the country. However, previous literature on the BITs provides us with contradicting conclusions with respect to the impact of BIT on FDI flows. Some researchers (Hallward-Driemeier, 2003, Salacuse and Sullivan, 2005) find no significant relations between BITs and FDI inflow, while others (Kerner, 2009, Busse et al., 2010) find a significant relationship but only under specific conditions. The debate in the literature also focused on the control variables that should be included in examining the relationship (Bevan et al., 2004).

This study shed light on the new direction of the debate by addressing a new question: What is the relationship between bilateral investment treaties (BITs) and the attractiveness for FDI in the UAE, and how can the relationship between BITs and the attractiveness of FDI be sustained? The study focused on a region that is unique in several aspects. The cultural diversity in the UAE includes approximately 200 different nationalities and a population of predominantly foreign residents The UAE is an important geographical location linking the East and West, and an economic system distinct from the rest of the countries in the same region. This offered economic freedom for foreign investors, which reflected a rapid economic growth of the country.

In order to answer the research questions posed, this study adopted a gravity model using panel data analysis. The study examined the relationship between BITs and FDI inflow and outflow in the UAE using a panel of 66 countries including OECD and main partner's source countries. The data covered the period from 2001 to 2012. The research design selected for the study is based on secondary data, which include bilateral FDI data extracted from the OECD database and World Bank database, and the total sample size is 792. The data provide details on inward and outward FDI for each partner's country for specific years with relative dummy variables comprising GDP, geographical distance, language, colonial relationship, borders and the date of signing the BITs as well as the date of BITs was entering into force. The gravity model was analysed through Stata software. The gravity model has many advantages; one of its key advantages is its ability to analyse bilateral FDI data for both target and source countries. The 66 countries from the OECD and major country partners were selected as the sample for this study related to the UAE.

The findings of this study offer several insights covering both the determinants of the relationship between FDI and BITs in the UAE and an understanding of the main causes in the directions of this relationship. This overall finding is important for the UAE such that OFDI positively influences economic growth. More specifically, this study finds evidence that BITs significantly affect the UAE's outward FDI to the country's partners, which means that concluding such an BIT with a host country partner will increase the UAE's outward FDI by 1.7%. The recipient's GDP per capita plays an important role in explaining outward FDI from the UAE. In particular, a 1% increase in a country's GDP per person will increase FDI flowing from the UAE by 0.6%. this is a strong indicator that BITs significantly contribute to the UAE's economic growth. The dummy variables generate different results, where distance was found

negatively related to FDI, while GDP and common colony relation were found to play important roles in the relationship. However, language and borders did not show any statistical significance.

Interestingly, the positive relationship between BITs and the UAE's OFDI is not sustained for a long period of time, where the study found that, when the BIT came into force, the relationship was not positive and statistically significant, which means that BITs are strongly affecting the UAE's outward FDI. At the time of announcement of a new BIT which is associated to the signature date the media may report the signing of the between UAE and another country. However, the study finds that after three to four years the impact of UAE BITs on FDI reduced gradually.

In addition, the study highlighted that BITs are negatively related to the UAE inward FDI in both estimations - namely, the time of conclusion the BIT and at the time the BIT comes into force. This finding supports previous BITs literature – for example, Salacuse and Sullivan (2005) and Hallward-Driemeier (2003) who found no significant relation between BITs and FDI inflow. This can be explained by the existence of economic policies in the UAE that have a greater impact than the BITs in attracting FDI inflow. In addition, the study examined a short-term relationship where the FDI data only covered 12 years from 2001-2013, while most studies that find a positive relationship between BITs and FDI had examined government strategy over the long term. For example, the FDI data used in the study by Falvey and Foster-Mcgregor (2017) covered more than 24 years.

7.1 The contributions of the study

This study contributes to knowledge in several aspects. First, it is one of the few to prove the importance of BITs and their positive relationship that motivates outward FDI. Additionally, to the best of my knowledge, this is the first study to discover the importance of the UAE's BITs and highlighted the role of BITs as positively related to OFDI. The study also reports on the role of BITs in the growth of OFDI specifically in developing countries, and how they significantly motivate investors to enter new markets. Moreover, this study added to knowledge through shedding light on an important factor – namely, the BIT that positively contributes to the growth of UAE local companies to become international companies. Therefore, it has proved the importance of a key factor – the bilateral international treaty – that encourages local companies. It can also be described as the protection tool for foreign investment which is generated from the existence of such treaties between signatories' countries.

This factor was not given more attention in the literature of creating and encouraging foreign investment or the area of the study that focuses on the expansion of the scope of local companies to compete in international investments, specifically in developing countries. Such countries need a qualitative shift in the development of their local companies to open up the way for competition on an international scale. Therefore, the BIT has a prominent role in outward foreign investment and plays an important role in transforming the emerging companies to become international companies. In addition, this study proved that the UAE companies that expanded their investments outside the country are among the emerging companies, including companies less than 10 years old, and it was concluded that the BITs, which aim to protect the UAE investments, positively encouraged local companies to enter new markets

Second, the study explored the relationship between BITs and FDI in an important area and provides empirical evidence that the relationship between BITs and FDI inflow is not necessarily a positive relationship and cannot be generalised due to the differences in results from previous studies result depending on the economic characteristics of the country. Also it may vary according to place and time. Therefore, what has been inferred from this study is that the United Arab Emirates is one of the countries that did not generate additional FDI inflow by signing BITs; however, the UAE has benefitted from them in the sense that they motivate the UAE companies in expanding their investments with BIT signatory countries. This study adds to the BITs literature that the relationship between BITs and inward FDI may not be positively significant, due to the characteristics of the country, but is dependent on economic and political characteristics, as the UAE is different in these aspects.

Third, the study makes a significant contribution to the methodology by proposing a gravity model that can measure sustained FDI inflow which can ensure the originality of the research papers. Moreover, the study shows the importance of BITs as an effective treatment to reduce the risk associated with foreign investment in the host countries.

Fourth, the study shows that BITs are also an effective tool in sending a welcome signal to investors around the world to encourage UAE investors to invest abroad. Ultimately, this will support the study's recommendations on how to build a strong economic environment in the UAE by relying on BITs. The study shows the bilateral investment treaties (BITs) as one of the prominent tools to encourage FDI outflow from the United Arab Emirates.

Five, this study adds an important aspect to the BIT literature, which is a difference between the results of the relationship in the short term and the long term. More specifically, previous studies did not separate the date of the announcement in the conclusion of the BIT and the date the BIT was enforced when examining the relationship. This study has successfully indicated and highlighted the differences in the generated search results, which indicates that the announcement in concluding a BIT has a significant positive impact on foreign investment, but that after the implementation of the agreement, which took a few years, the significance of the relationship decreased. Therefore, this study will open a new field for research and will be a starting point for more research experiences in other countries.

Finally, many countries are aware that the wealth of nations comes from a large stake in FDI inflow. Thus, among the continued policy efforts aimed at attracting FDI, one promising policy is signing a BIT with other countries in order to liberalise entry conditions in different industries including services and retail. BITs help in promoting and facilitating investment by protecting investment and simplifying administrative procedures, and encourage countries to establish new economic zones, where the cost of concluding a BIT is low compared with other government policies, which may cost the country enormous sums. Therefore, many countries are seeking to adopt policies in the hope of attracting a wide segment of foreign investment. The political implications and consequences may not be directly apparent, and may take some time to emerge; therefore, it might be very useful to benefit from the experiences of other countries in order to understand the benefits and costs that result from government acts in the marketplace, which are

related to FDI inflow. Consequently, governments play the role of control in the marketplace, which can either encourage or discourage foreign investment.

An overall conclusion from this study is that BITs represent a significant practical policy instrument that the UAE Ministry of Economy can trust more in building an international business relationship with other countries. This is based on the evidence that BITs increase the outward FDI targeting country partners by millions of US dollars yearly, which positively contributes to the country's economic growth, and the ability of UAE local companies to compete in the international market. Despite the lack of evidence on the effectiveness of BITs in attracting FDI into the UAE, BITs remain an effective policy in encouraging outward FDI while the cost for implement these strategies is negligible (apart from administrative costs, including travel and accommodation tickets, for government officials involved in signing the agreement).

CHAPTER 8

Recommendations and further research

8.1 Practical Recommendations

Any scientific research should include practical recommendations resulting from the analysis process to benefit practically from the study. In this study the objectives are not only to fill the gap in the literature but also to gain benefit from the practical application of the findings to the field of study - FDI.

This study has several objectives, including motivating FDI as well as encouraging the expansion of foreign investment for local companies, which makes significant contribution to the economic growth in the United Arab Emirates. The motivation strategies have different tools and factors. This study has highlighted the relationship between *government* related to attractiveness of FDI inflow and outflow through creating a suitable business environment for investors and the *strategy* that is in place to protect and promote foreign investments. This is achieved by concluding bilateral investment treaties between partner countries.

Therefore, this study is mainly concerned with the practical aspect of the discourse, particularly related to UAE international business relations, and provides empirical evidence in support of implementation of several of the following recommendations:

1- By the end of 2019 the UAE was involved in 76 bilateral investment treaties based on the research results that show a statistically significant relationship between BITs and outward

FDI. The study recommends increasing BITs numbers to include other important countries that have high GDP – for instance Japan, Iran and Vietnam.

2- The UAE resorted to international arbitration in order to protect their outward FDI; for example, the disputed issue between Dubai World and Government of Djibouti, after Djibouti seized the company port managed by DW. The dispute mainly affected the trade relationship between the two countries. Therefore, I suggest that it is essential for the UAE to view the historical record of disputes concerning FDI or breaches of bilateral treaties between countries and specifically of the target countries, in order to ensure the avoidance of any losses for their investments by avoiding these countries.

3- The UAE used arbitration with some countries' governments in order to protect their investments. In order to have strong FDI protection I recommend that the UAE has an IIA agreement in place that includes GCC countries to act as one body in the treaties with the partner country, which ensures a strong position in the global market.

4- Understanding the sectors that are most attractive to FDI in the UAE helps us to understand the factors that are significantly affecting it. However, in the case of absence of of these sector-related statistics, the distribution of FDI within the country constitutes an obstacle in its understanding, and therefore I suggest that the Ministry of Economy establishes a central database that is primarily responsible for collecting this information.

5- The study results indicated that the period of signing the BIT is the most important period in attracting FDI and therefore this indicates that the media hustle during the period of the agreement has a direct impact in stimulating investment. Accordingly, I suggest that ministry concerned focuses on informing the media when signing any BIT because it has an important role in encouraging investments and in clarifying the role the BIT plays; for example, protect their foreign investments.

6- The findings of this research can not only help in better understanding the implications of UAE BITs related to FDI but also provide practical implications for decision makers in the UAE to draw international relations to gain a greater stake in FDI inflow and outflow.

8.2 Further research

To the best of my knowledge, this thesis is the first to focus on UAE BITs related to FDI. The findings are promising; they and shed light on the topic and can fuel researchers' interest in this field. The findings also offer a first step for researchers towards filling the gap in this body of literature; for example; researchers may investigate why UAE outward FDI is not sustained for a long period of time that targeting UAE partner's countries in BITs, which might be influenced by other factors. Furthermore, according to the results of this thesis, at the time of signing BITs the outward FDI has a significantly positive relationship with BITs. This in turn raises an interesting question about what other variables may be related to this relationship, which may include social media or other media platforms that are used to announce the conclusion of BITs. There is a

need, therefore, to explore what role these variables play in this relationship, or whether they can be used as moderator factors in the gravity equation.

Another important issue related to the terms and conditions of the BIT and the most important question is whether the quality of treaties in terms of covering the provisions for all aspects that investors need the BIT for is the driving factor in achieving a positive relationship – in other words, relying on quality instead of quantity. The answer to this question requires qualitative research method using the interview as the main data-collection tool.

The thesis highlighted how BITs have significantly increased the UAE's outward FDI; however, due to the lack of availability to such data, it did not explore UAE FDI separately for each sector, or the most invested-in FDI sector that attracts UAE companies to expand their investment in foreign countries. This area of study needs to be addressed in order to understand the moderator factors in the relationship, which might include GDP or a number of the important sectors, for example, tourism or services industries. It also needs to find inward FDI based on the most important sector and the countries that the UAE needs to sign BITs with, which might attract more FDI inflow.

Another area of study should focus on how the BIT increases the quality of products and services for the UAE companies as well as the capability for international computations. Finally, the implication of arbitrations related to the UAE's BITs is also critical for the relationship between BITs and FDI. This question needs to be addressed specifically in the case of countries that have a negative relationship.

In addition, further research in BITs might face several challenges, the most prominent is the lack of statistics or the difficulty in obtaining relevant data, which includes statistics for breaches of BITs where some countries may impede the foreign investor from submitting complaints about violations in their protecting his investments in the host countries, which poses a challenge to the researcher where these practices lead to obtaining incorrect statistics. Another challenge that researchers face is included additional variables in the gravity equation which might play an important role in the understanding of the relationship between FDI and BIT, for example, the economic crisis in 2008 and the Covid-19 pandemic in 2019, these factors must be taken into account when conducting any future research in BITs.

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10 Appendix

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. **Outward FDI**


. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus i.year, fe
note: 2012.year omitted because of collinearity

Fixed-effects (within) regression               Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2540                                         min =          1
     between = 0.0735                                         avg =        7.3
     overall = 0.0648                                         max =         12

                                                F(13,296)         =       7.75
corr(u_i, Xb)  = -0.7929                        Prob > F          =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |     .36494    .552776     0.66   0.510    -.7229291    1.452809
ln_gdpperc~s |   2.334923   .7286553     3.20   0.002     .9009217    3.768925
ln_uaegdpp~s |  -1.258492   2.613997    -0.48   0.631    -6.402867    3.885882
             |
        year |
       2002  |  -.1240798   .4440907    -0.28   0.780    -.9980551    .7498955
       2003  |  -.3926838   .4022833    -0.98   0.330    -1.184382     .399014
       2004  |  -.2059587   .3858737    -0.53   0.594    -.9653623    .5534449
       2005  |   .1982707   .4207265     0.47   0.638    -.6297236    1.026265
       2006  |   1.048275   .4965137     2.11   0.036     .0711309    2.025419
       2007  |   .8661677   .4623386     1.87   0.062    -.0437196    1.776055
       2008  |   .9280911   .5616371     1.65   0.099    -.1772168    2.033399
       2009  |   .6798585   .5569404     1.22   0.223    -.4162061    1.775923
       2010  |    .346888   .5014921     0.69   0.490    -.6400538     1.33383
       2011  |    .450395   .3944468     1.14   0.254    -.3258805    1.226671
       2012  |          0  (omitted)
             |
       _cons |  -4.902255   22.50294    -0.22   0.828    -49.18828    39.38378
-------------+----------------------------------------------------------------
     sigma_u |  3.7775354
     sigma_e |  1.5941657
         rho |  .84882853   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(48, 296) = 13.55                     Prob > F = 0.0000

.
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation i.year, re

Random-effects GLS regression                   Number of obs     =       358
Group variable: foreign_id                      Number of groups  =        49

R-sq:                                           Obs per group:
     within  = 0.2239                                         min =         1
     between = 0.0630                                         avg =       7.3
     overall = 0.1297                                         max =        12

                                                Wald chi2(12)     =     88.80
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .8757847   .4333045     2.02   0.043     .0265235    1.725046
             |
        year |
       2002  |  -.0526996   .4567822    -0.12   0.908    -.9479762     .842577
       2003  |   .0109767   .4496697     0.02   0.981    -.8703597    .8923131
       2004  |   .3562986   .4525079     0.79   0.431    -.5306007    1.243198
       2005  |   .8336693   .4378031     1.90   0.057    -.0244091    1.691748
       2006  |    1.77042   .4280512     4.14   0.000     .9314552    2.609385
       2007  |   1.887191   .4383362     4.31   0.000     1.028068    2.746314
       2008  |   2.108823   .4539538     4.65   0.000     1.219089    2.998556
       2009  |   2.108714   .4510098     4.68   0.000     1.224751    2.992677
       2010  |    1.82487   .4747207     3.84   0.000     .8944344    2.755305
       2011  |   1.914575   .4476771     4.28   0.000     1.037144    2.792006
       2012  |   1.398669   .4641847     3.01   0.003     .4888843    2.308455
             |
       _cons |   1.565526   .4570118     3.43   0.001     .6697989    2.461252
-------------+----------------------------------------------------------------
     sigma_u |  2.0872427
     sigma_e |  1.6188489
         rho |  .62439782   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus i.year,
>  re

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2353                                         min =          1
     between = 0.1084                                         avg =        7.3
     overall = 0.1453                                         max =         12

                                                Wald chi2(13)     =      96.19
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .7487402   .4334069     1.73   0.084    -.1007218    1.598202
ln_gdpperc~s |   .4854745    .197363     2.46   0.014     .0986501    .8722988
             |
        year |
       2002  |  -.0637846   .4533686    -0.14   0.888    -.9523709    .8248016
       2003  |   -.081402   .4478704    -0.18   0.856    -.9592118    .7964078
       2004  |   .2000373   .4535987     0.44   0.659    -.6889999    1.089074
       2005  |   .6540696   .4406274     1.48   0.138    -.2095442    1.517683
       2006  |   1.550055    .434216     3.57   0.000     .6990073    2.401103
       2007  |   1.602282   .4502533     3.56   0.000     .7198012    2.484762
       2008  |   1.764862   .4718137     3.74   0.000     .8401239      2.6896
       2009  |   1.799003   .4650479     3.87   0.000     .8875258     2.71048
       2010  |     1.4922   .4902326     3.04   0.002     .5313616    2.453038
       2011  |   1.517499   .4728399     3.21   0.001     .5907494    2.444248
       2012  |   1.025428   .4851628     2.11   0.035     .0745261    1.976329
             |
       _cons |  -2.559666   1.737441    -1.47   0.141    -5.964989     .845656
-------------+----------------------------------------------------------------
     sigma_u |  2.0601416
     sigma_e |  1.5941657
         rho |  .62547395   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus  i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       358
Group variable: foreign_id                      Number of groups  =        49

R-sq:                                           Obs per group:
     within  = 0.2353                                         min =         1
     between = 0.1084                                         avg =       7.3
     overall = 0.1453                                         max =        12

                                                Wald chi2(13)     =     96.19
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .7487402   .4334069     1.73   0.084    -.1007218    1.598202
ln_gdpperc~s |   .4854745    .197363     2.46   0.014     .0986501    .8722988
ln_uaegdpp~s |   3.375766   1.597183     2.11   0.035     .2453442    6.506188
             |
        year |
       2002  |  -.0908274   .4475954    -0.20   0.839    -.9680982    .7864433
       2003  |  -.3092634   .4052106    -0.76   0.445    -1.103462    .4849348
       2004  |  -.3131321   .3862019    -0.81   0.417    -1.070074    .4438097
       2005  |  -.1520828   .3860717    -0.39   0.694    -.9087695    .6046038
       2006  |   .5018018   .4251312     1.18   0.238    -.3314401    1.335044
       2007  |   .5301792   .4307376     1.23   0.218     -.314051    1.374409
       2008  |   .4570331   .5091079     0.90   0.369       -.5408    1.454866
       2009  |   1.587226   .4130338     3.84   0.000     .7776941    2.396757
       2010  |   1.085553   .4119548     2.64   0.008     .2781369     1.89297
       2011  |   .6272753   .3902359     1.61   0.108     -.137573    1.392124
       2012  |          0  (omitted)
             |
       _cons |  -37.47766   16.29039    -2.30   0.021    -69.40624   -5.549085
-------------+----------------------------------------------------------------
     sigma_u |  2.0601416
     sigma_e |  1.5941657
         rho |  .62547395   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus ln_distanceinkilometers i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2381                                         min =          1
     between = 0.1786                                         avg =        7.3
     overall = 0.1881                                         max =         12

                                                Wald chi2(14)     =     101.66
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |    .523348   .4428216     1.18   0.237    -.3445664    1.391262
ln_gdpperc~s |   .5494566    .196095     2.80   0.005     .1651173    .9337958
ln_uaegdpp~s |    3.35312   1.588634     2.11   0.035     .2394541    6.466786
ln_distanc~s |  -1.206897   .5543189    -2.18   0.029    -2.293342   -.1204517
             |
        year |
        2002 |  -.0867889   .4463329    -0.19   0.846    -.9615853    .7880076
        2003 |  -.3103113   .4040623    -0.77   0.442    -1.102259    .4816361
        2004 |  -.3038306   .3851118    -0.79   0.430    -1.058636    .4509748
        2005 |  -.1417937   .3848734    -0.37   0.713    -.8961317    .6125444
        2006 |   .5067176   .4236562     1.20   0.232    -.3236333    1.337068
        2007 |   .5289375   .4293747     1.23   0.218    -.3126214    1.370496
        2008 |   .4601221   .5074221     0.91   0.365    -.5344069    1.454651
        2009 |   1.597554   .4113769     3.88   0.000     .7912703    2.403838
        2010 |   1.077025   .4105181     2.62   0.009     .2724247    1.881626
        2011 |   .6304681   .3890714     1.62   0.105    -.1320979    1.393034
        2012 |          0  (omitted)
             |
       _cons |  -27.60792      16.83    -1.64   0.101    -60.59411    5.378265
-------------+----------------------------------------------------------------
     sigma_u |  2.0160663
     sigma_e |  1.5927708
         rho |  .61570234   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus ln_distanceinkilometers borders i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       358
Group variable: foreign_id                      Number of groups  =        49

R-sq:                                           Obs per group:
     within  = 0.2388                                         min =         1
     between = 0.1800                                         avg =       7.3
     overall = 0.1900                                         max =        12

                                                Wald chi2(15)     =    101.93
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .5123723   .4446626     1.15   0.249    -.3591505    1.383895
ln_gdpperc~s |   .5833873   .2049712     2.85   0.004     .1816511    .9851235
ln_uaegdpp~s |   3.293973   1.593696     2.07   0.039     .1703855     6.41756
ln_distanc~s |  -1.569186   .8372365    -1.87   0.061     -3.21014    .0717671
     borders |  -1.360608   2.359847    -0.58   0.564    -5.985824    3.264607
             |
        year |
        2002 |  -.0853311   .4459693    -0.19   0.848     -.959415    .7887527
        2003 |  -.3105313   .4037302    -0.77   0.442    -1.101828    .4807653
        2004 |  -.3024039   .3848179    -0.79   0.432    -1.056633    .4518253
        2005 |  -.1376648   .3847596    -0.36   0.720    -.8917797    .6164502
        2006 |   .5134736   .4237107     1.21   0.226    -.3169842    1.343931
        2007 |    .533085   .4292218     1.24   0.214    -.3081743    1.374344
        2008 |   .4684267   .5074603     0.92   0.356    -.5261773    1.463031
        2009 |   1.583345    .411991     3.84   0.000     .7758573    2.390832
        2010 |   1.069666   .4105231     2.61   0.009     .2650555    1.874276
        2011 |   .6315711   .3888026     1.62   0.104     -.130468     1.39361
        2012 |          0  (omitted)
             |
       _cons |  -24.19174   17.86977    -1.35   0.176    -59.21584    10.83236
-------------+----------------------------------------------------------------
     sigma_u |  2.0472439
     sigma_e |  1.5927708
         rho |   .6229383   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus ln_distanceinkilometers language i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2389                                         min =          1
     between = 0.1881                                         avg =        7.3
     overall = 0.1960                                         max =         12

                                                Wald chi2(15)     =     102.33
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .4363359   .4553603     0.96   0.338    -.4561538    1.328826
ln_gdpperc~s |   .5691328   .1988855     2.86   0.004     .1793245    .9589412
ln_uaegdpp~s |   3.345292   1.589544     2.10   0.035     .2298429    6.460741
ln_distanc~s |  -.9677954    .633948    -1.53   0.127    -2.210311    .2747199
    language |    .984597   1.210184     0.81   0.416    -1.387319    3.356513
             |
        year |
        2002 |  -.0876562   .4459184    -0.20   0.844    -.9616401    .7863277
        2003 |  -.3130379   .4036971    -0.78   0.438     -1.10427     .478194
        2004 |  -.3018566   .3847728    -0.78   0.433    -1.055997    .4522842
        2005 |  -.1427076    .384588    -0.37   0.711    -.8964863     .611071
        2006 |   .5062295   .4234212     1.20   0.232    -.3236608     1.33612
        2007 |    .527427   .4290596     1.23   0.219    -.3135144    1.368368
        2008 |   .4539189   .5071306     0.90   0.371    -.5400387    1.447877
        2009 |   1.594143    .411295     3.88   0.000     .7880192    2.400266
        2010 |   1.066942   .4104536     2.60   0.009      .262468    1.871417
        2011 |   .6221241    .388875     1.60   0.110     -.140057    1.384305
        2012 |          0  (omitted)
             |
       _cons |   -29.7824   17.05229    -1.75   0.081    -63.20428    3.639485
-------------+----------------------------------------------------------------
     sigma_u |  2.0406724
     sigma_e |  1.5927708
         rho |  .62142674   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus ln_distanceinkilometers landlocked i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2379                                         min =          1
     between = 0.1958                                         avg =        7.3
     overall = 0.1934                                         max =         12

                                                Wald chi2(15)     =     102.39
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .4800174   .4465044     1.08   0.282    -.3951151     1.35515
ln_gdpperc~s |   .5225645   .2015541     2.59   0.010     .1275258    .9176033
ln_uaegdpp~s |   3.458838   1.594442     2.17   0.030      .333789    6.583887
ln_distanc~s |  -1.223296   .5606058    -2.18   0.029    -2.322063   -.1245286
  landlocked |   1.917956   2.300518     0.83   0.404    -2.590976    6.426888
             |
        year |
        2002 |  -.0863581   .4457948    -0.19   0.846    -.9600999    .7873837
        2003 |  -.3111857   .4035769    -0.77   0.441    -1.102182    .4798104
        2004 |  -.3056171   .3846669    -0.79   0.427     -1.05955    .4483162
        2005 |   -.152666   .3846736    -0.40   0.691    -.9066123    .6012803
        2006 |   .4914461   .4236911     1.16   0.246    -.3389732    1.321865
        2007 |   .5179612   .4291234     1.21   0.227    -.3231052    1.359028
        2008 |   .4365355   .5076835     0.86   0.390     -.558506    1.431577
        2009 |   1.606635   .4114153     3.91   0.000     .8002755    2.412994
        2010 |    1.07826   .4102381     2.63   0.009     .2742078    1.882312
        2011 |   .6257155   .3886831     1.61   0.107    -.1360893     1.38752
        2012 |          0  (omitted)
             |
       _cons |  -28.35839   16.86664    -1.68   0.093    -61.41639    4.699608
-------------+----------------------------------------------------------------
     sigma_u |  2.0446147
     sigma_e |  1.5927708
         rho |   .6223344   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus ln_distanceinkilometers coloniallink i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2382                                         min =          1
     between = 0.1795                                         avg =        7.3
     overall = 0.1869                                         max =         12

                                                Wald chi2(15)     =     101.57
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .5110149   .4456215     1.15   0.251    -.3623872    1.384417
ln_gdpperc~s |    .548798   .2003148     2.74   0.006     .1561882    .9414077
ln_uaegdpp~s |   3.373595   1.593816     2.12   0.034     .2497735    6.497417
ln_distanc~s |  -1.222168   .5644189    -2.17   0.030    -2.328409   -.1159275
coloniallink |   .3271325   1.570526     0.21   0.835    -2.751042    3.405307
             |
        year |
        2002 |  -.0873795   .4461039    -0.20   0.845     -.961727     .786968
        2003 |  -.3108197   .4038404    -0.77   0.442    -1.102332    .4806929
        2004 |  -.3043373   .3849203    -0.79   0.429    -1.058767    .4500927
        2005 |  -.1456099   .3849526    -0.38   0.705     -.900103    .6088833
        2006 |   .5025783   .4239379     1.19   0.236    -.3283247    1.333481
        2007 |   .5251897    .429437     1.22   0.221    -.3164913    1.366871
        2008 |    .455311   .5075913     0.90   0.370    -.5395496    1.450172
        2009 |   1.598685    .411781     3.88   0.000     .7916088     2.40576
        2010 |    1.07671    .410585     2.62   0.009     .2719782    1.881442
        2011 |   .6311544   .3889303     1.62   0.105     -.131135    1.393444
        2012 |          0  (omitted)
             |
       _cons |  -27.69878   16.86479    -1.64   0.101    -60.75316    5.355594
-------------+----------------------------------------------------------------
     sigma_u |  2.0498822
     sigma_e |  1.5927708
         rho |  .62354311   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus ln_distanceinkilometers commoncolonial i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2404                                         min =          1
     between = 0.2218                                         avg =        7.3
     overall = 0.2100                                         max =         12

                                                Wald chi2(15)     =     106.36
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .6333311   .4445861     1.42   0.154    -.2380416    1.504704
ln_gdpperc~s |   .7251979   .2148645     3.38   0.001     .3040713    1.146325
ln_uaegdpp~s |   2.761157   1.610573     1.71   0.086    -.3955074    5.917821
ln_distanc~s |  -.7989663    .590044    -1.35   0.176    -1.955431    .3574987
commoncolo~l |   1.722524   .8776974     1.96   0.050      .002269     3.44278
             |
        year |
       2002  |  -.0905921   .4444714    -0.20   0.838      -.96174    .7805559
       2003  |  -.3146666   .4023794    -0.78   0.434    -1.103316    .4739825
       2004  |  -.2876536    .383591    -0.75   0.453    -1.039478    .4641711
       2005  |  -.0957169   .3839866    -0.25   0.803    -.8483167     .656883
       2006  |   .5881978   .4239297     1.39   0.165    -.2426891    1.419085
       2007  |   .5877119   .4286312     1.37   0.170    -.2523898    1.427814
       2008  |   .5508909   .5074198     1.09   0.278    -.4436337    1.545415
       2009  |    1.49526   .4129671     3.62   0.000     .6858589     2.30466
       2010  |   1.006337   .4103897     2.45   0.014     .2019884    1.810687
       2011  |   .6331864   .3874488     1.63   0.102    -.1261993    1.392572
       2012  |          0  (omitted)
             |
       _cons |  -26.82736   16.76534    -1.60   0.110    -59.68683    6.032111
-------------+----------------------------------------------------------------
     sigma_u |  2.0169038
     sigma_e |  1.5927708
         rho |  .61589886   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus ln_distanceinkilometers ln_populationtotal i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       358
Group variable: foreign_id                      Number of groups  =        49

R-sq:                                           Obs per group:
     within  = 0.2440                                         min =         1
     between = 0.2369                                         avg =       7.3
     overall = 0.2457                                         max =        12

                                                Wald chi2(15)     =    109.17
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .4198935   .4403216     0.95   0.340     -.443121    1.282908
ln_gdpperc~s |   .7335499   .2068557     3.55   0.000     .3281202     1.13898
ln_uaegdpp~s |   2.727783   1.596805     1.71   0.088    -.4018969    5.857464
ln_distanc~s |  -1.563001    .562476    -2.78   0.005    -2.665434   -.4605683
ln_populat~l |   .5175643   .2087605     2.48   0.013     .1084013    .9267273
             |
        year |
       2002  |  -.0885681   .4439251    -0.20   0.842    -.9586452    .7815091
       2003  |  -.3219955   .4019101    -0.80   0.423    -1.109725    .4657339
       2004  |  -.2728226   .3832196    -0.71   0.477    -1.023919     .478274
       2005  |  -.0796368     .38348    -0.21   0.835    -.8312437    .6719702
       2006  |   .5924692   .4225379     1.40   0.161    -.2356899    1.420628
       2007  |   .5944312   .4277276     1.39   0.165    -.2438994    1.432762
       2008  |   .5501007   .5057461     1.09   0.277    -.4411434    1.541345
       2009  |   1.490009   .4111249     3.62   0.000     .6842185    2.295799
       2010  |    .985849   .4097802     2.41   0.016     .1826946    1.789003
       2011  |   .6105726   .3870062     1.58   0.115    -.1479456    1.369091
       2012  |          0  (omitted)
             |
       _cons |  -28.40379   16.70303    -1.70   0.089    -61.14114    4.333551
-------------+----------------------------------------------------------------
     sigma_u |  1.9706394
     sigma_e |  1.5835373
         rho |  .60763786   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsrelation ln_gdppercapitacurrentus ln_uaeg
> dppercapitacurrentus ln_distanceinkilometers ln_uaepopulation i.year, re
note: 2011.year omitted because of collinearity
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       358
Group variable: foreign_id                      Number of groups  =        49

R-sq:                                           Obs per group:
     within  = 0.2381                                         min =         1
     between = 0.1786                                         avg =       7.3
     overall = 0.1881                                         max =        12

                                                Wald chi2(14)     =    101.66
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |    .523348   .4428216     1.18   0.237    -.3445664    1.391262
ln_gdpperc~s |   .5494566    .196095     2.80   0.005     .1651173    .9337958
ln_uaegdpp~s |   -16.3221    12.7458    -1.28   0.200    -41.30341    8.659206
ln_distanc~s |  -1.206897   .5543189    -2.18   0.029    -2.293342   -.1204517
ln_uaepopu~n |   6.071758   3.746974     1.62   0.105    -1.272176    13.41569
             |
        year |
       2002  |   -.251263   .4494814    -0.56   0.576     -1.13223    .6297043
       2003  |   .3023589   .6014089     0.50   0.615    -.8763808    1.481099
       2004  |   1.434752   1.246406     1.15   0.250    -1.008159    3.877664
       2005  |   2.614867   1.894081     1.38   0.167    -1.097463    6.327198
       2006  |   3.854106   2.297884     1.68   0.093    -.6496649    8.357876
       2007  |   3.150902   1.864582     1.69   0.091    -.5036111    6.805414
       2008  |   3.656854   2.265382     1.61   0.106    -.7832132    8.096922
       2009  |  -2.238452   2.324656    -0.96   0.336    -6.794695    2.317791
       2010  |  -2.083879   1.883223    -1.11   0.268    -5.774928    1.607171
       2011  |           0  (omitted)
       2012  |           0  (omitted)
             |
       _cons |    84.7258     76.429     1.11   0.268    -65.07229    234.5239
-------------+----------------------------------------------------------------
     sigma_u |  2.0160663
     sigma_e |  1.5927708
         rho |  .61570234   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
 . **Inward FDI**


. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus i.year, fe
note: 2012.year omitted because of collinearity

Fixed-effects (within) regression               Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0320                                         min =         1
     between = 0.0283                                         avg =       7.3
     overall = 0.0083                                         max =        12

                                                F(13,206)         =      0.52
corr(u_i, Xb)  = -0.3039                        Prob > F          =    0.9081

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |  -.0196672   .7062123    -0.03   0.978    -1.411998    1.372663
ln_gdpperc~s |  -.3863687   .7830987    -0.49   0.622    -1.930284    1.157547
ln_uaegdpp~s |   .4113678   2.998885     0.14   0.891    -5.501074     6.32381
             |
        year |
       2002  |  -.3484846   .5586553    -0.62   0.533      -1.4499    .7529304
       2003  |  -.1652966   .5246251    -0.32   0.753     -1.19962    .8690262
       2004  |   -.466892   .4704504    -0.99   0.322    -1.394407    .4606228
       2005  |  -.7700219   .5014075    -1.54   0.126     -1.75857    .2185264
       2006  |  -.5849437   .5594979    -1.05   0.297     -1.68802    .5181326
       2007  |  -.1439334   .5212279    -0.28   0.783    -1.171559    .8836917
       2008  |   .0683877   .6296866     0.11   0.914    -1.173069    1.309844
       2009  |  -.2885282   .6429642    -0.45   0.654    -1.556162    .9791057
       2010  |   .2279967   .5774332     0.39   0.693    -.9104397    1.366433
       2011  |   .2366222   .4866857     0.49   0.627    -.7229013    1.196146
       2012  |           0  (omitted)
             |
       _cons |   3.783075   26.08528     0.15   0.885    -47.64528    55.21143
-------------+----------------------------------------------------------------
     sigma_u |  2.5059971
     sigma_e |   1.586262
         rho |  .71394315   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(34, 206) = 15.83                     Prob > F = 0.0000
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation i.year, re

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0279                                         min =         1
     between = 0.1040                                         avg =       7.3
     overall = 0.0492                                         max =        12

                                                Wald chi2(12)     =      8.34
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.7578

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .5778251   .5222249     1.11   0.269     -.445717    1.601367
             |
        year |
       2002  |  -.3826296   .5706598    -0.67   0.503    -1.501102    .7358432
       2003  |   -.273433     .58667    -0.47   0.641    -1.423285    .8764191
       2004  |    -.68275   .5712692    -1.20   0.232    -1.802417    .4369171
       2005  |  -.9880861   .5610101    -1.76   0.078    -2.087646    .1114736
       2006  |  -.7821401   .5416511    -1.44   0.149    -1.843757    .2794766
       2007  |  -.4245981   .5382733    -0.79   0.430    -1.479594    .6303981
       2008  |  -.2134719   .5402537    -0.40   0.693     -1.27235    .8454058
       2009  |  -.6386547   .5403282    -1.18   0.237    -1.697678    .4203691
       2010  |  -.1004593   .5588265    -0.18   0.857    -1.195739    .9948205
       2011  |  -.1881618   .5668108    -0.33   0.740     -1.29909    .9227669
       2012  |  -.4036479   .5656481    -0.71   0.475    -1.512298    .7050019
             |
       _cons |   4.076888   .5878783     6.93   0.000     2.924668    5.229108
-------------+----------------------------------------------------------------
     sigma_u |  2.0108909
     sigma_e |  1.5833605
         rho |   .6172889   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus i.year, re
>

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0260                                         min =         1
     between = 0.1216                                         avg =       7.3
     overall = 0.0769                                         max =        12

                                                Wald chi2(13)     =      9.42
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.7402

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .5826547   .5238532     1.11   0.266    -.4440787    1.609388
ln_gdpperc~s |   .3060238   .2912116     1.05   0.293    -.2647404     .876788
             |
        year |
       2002  |  -.4132553   .5702856    -0.72   0.469    -1.530994    .7044838
       2003  |   -.339683   .5889906    -0.58   0.564    -1.494083    .8147174
       2004  |  -.7914181   .5798826    -1.36   0.172    -1.927967     .345131
       2005  |  -1.126058   .5756551    -1.96   0.050    -2.254321    .0022054
       2006  |  -.9490543   .5639424    -1.68   0.092    -2.054361    .1562524
       2007  |  -.6327441   .5733281    -1.10   0.270    -1.756447    .4909583
       2008  |   -.454216   .5866008    -0.77   0.439    -1.603933    .6955005
       2009  |   -.861025   .5798749    -1.48   0.138    -1.997559     .275509
       2010  |  -.3472065   .6054104    -0.57   0.566    -1.533789     .839376
       2011  |  -.4652286   .6252287    -0.74   0.457    -1.690654    .7601973
       2012  |  -.6797217   .6237959    -1.09   0.276    -1.902339    .5428957
             |
       _cons |   1.301351   2.706128     0.48   0.631    -4.002562    6.605264
-------------+----------------------------------------------------------------
     sigma_u |   2.038759
     sigma_e |   1.586262
         rho |   .6229109   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus  i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0260                                         min =         1
     between = 0.1216                                         avg =       7.3
     overall = 0.0769                                         max =        12

                                                Wald chi2(13)     =      9.42
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.7402

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .5826547   .5238532     1.11   0.266    -.4440787    1.609388
ln_gdpperc~s |   .3060238   .2912116     1.05   0.293    -.2647404     .876788
ln_uaegdpp~s |  -2.237682   2.053571    -1.09   0.276    -6.262608    1.787244
             |
        year |
       2002  |  -.3953296   .5620368    -0.70   0.482    -1.496901    .7062423
       2003  |  -.1886413   .5283433    -0.36   0.721    -1.224175    .8468924
       2004  |  -.4512553   .4706875    -0.96   0.338    -1.373786    .4712753
       2005  |  -.5916865   .4727054    -1.25   0.211    -1.518172     .334799
       2006  |  -.2542024   .5021591    -0.51   0.613    -1.238416    .7300114
       2007  |   .0779166   .4974908     0.16   0.876    -.8971474    1.052981
       2008  |   .4126998   .5815495     0.71   0.478    -.7271162    1.552516
       2009  |  -.7206449   .5011091    -1.44   0.150    -1.702801    .2615109
       2010  |  -.0776542     .47792    -0.16   0.871     -1.01436    .8590519
       2011  |   .1248707   .4766392     0.26   0.793    -.8093249    1.059066
       2012  |          0  (omitted)
             |
       _cons |   24.44732   20.55368     1.19   0.234    -15.83716     64.7318
-------------+----------------------------------------------------------------
     sigma_u |   2.038759
     sigma_e |   1.586262
         rho |   .6229109   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        254
Group variable: foreign_id                      Number of groups  =         35

R-sq:                                           Obs per group:
     within  = 0.0264                                         min =          1
     between = 0.1260                                         avg =        7.3
     overall = 0.0715                                         max =         12

                                                Wald chi2(14)     =       9.56
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.7935

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .5215327   .5383118     0.97   0.333     -.533539    1.576604
ln_gdpperc~s |   .3210648   .2967305     1.08   0.279    -.2605163     .902646
ln_uaegdpp~s |  -2.239784   2.057851    -1.09   0.276    -6.273097    1.793529
ln_distanc~s |  -.2669832   .5442902    -0.49   0.624    -1.333772    .7998061
             |
        year |
       2002  |  -.3956693   .5617819    -0.70   0.481    -1.496742    .7054031
       2003  |  -.1874173   .5281295    -0.35   0.723    -1.222532    .8476975
       2004  |  -.4490498   .4705439    -0.95   0.340    -1.371299    .4731994
       2005  |  -.5913251   .4726852    -1.25   0.211    -1.517771    .3351208
       2006  |  -.2581586   .5022644    -0.51   0.607    -1.242579    .7262615
       2007  |    .070495   .4975754     0.14   0.887    -.9047349    1.045725
       2008  |   .4065075   .5816184     0.70   0.485    -.7334437    1.546459
       2009  |  -.7385996   .5033112    -1.47   0.142    -1.725071    .2478723
       2010  |  -.0842406   .4783852    -0.18   0.860    -1.021858    .8533771
       2011  |   .1240936   .4765578     0.26   0.795    -.8099425     1.05813
       2012  |          0  (omitted)
             |
       _cons |   26.60713   21.11254     1.26   0.208    -14.77269    67.98694
-------------+----------------------------------------------------------------
     sigma_u |  2.0694235
     sigma_e |   1.586262
         rho |  .62989807   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers borders i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0264                                         min =         1
     between = 0.1298                                         avg =       7.3
     overall = 0.0699                                         max =        12

                                                Wald chi2(15)     =      9.41
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.8551

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .5077333    .543278     0.93   0.350     -.557072    1.572539
ln_gdpperc~s |   .3316948   .3193711     1.04   0.299     -.294261    .9576507
ln_uaegdpp~s |  -2.252029   2.085517    -1.08   0.280    -6.339567     1.83551
ln_distanc~s |  -.3951862   .9523799    -0.41   0.678    -2.261817    1.471444
     borders |  -.4935656   3.104569    -0.16   0.874     -6.57841    5.591279
             |
        year |
        2002 |  -.3964502   .5608389    -0.71   0.480    -1.495674    .7027739
        2003 |  -.1877683   .5272518    -0.36   0.722    -1.221163    .8456262
        2004 |  -.4464043   .4699248    -0.95   0.342     -1.36744    .4746314
        2005 |  -.5887668   .4727716    -1.25   0.213    -1.515382    .3378484
        2006 |  -.2580165   .5029177    -0.51   0.608    -1.243717    .7276842
        2007 |   .0706298   .4974427     0.14   0.887    -.9043399    1.045599
        2008 |    .406776   .5822696     0.70   0.485    -.7344515    1.548003
        2009 |  -.7403319   .5056172    -1.46   0.143    -1.731323    .2506595
        2010 |  -.0888116   .4800088    -0.19   0.853    -1.029611    .8519883
        2011 |   .1262033   .4759958     0.27   0.791    -.8067313    1.059138
        2012 |          0  (omitted)
             |
       _cons |   27.74233   22.93855     1.21   0.227     -17.2164    72.70106
-------------+----------------------------------------------------------------
     sigma_u |  2.1292731
     sigma_e |   1.586262
         rho |  .64308991   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers language i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        254
Group variable: foreign_id                      Number of groups  =         35

R-sq:                                           Obs per group:
     within  = 0.0259                                         min =          1
     between = 0.1848                                         avg =        7.3
     overall = 0.1183                                         max =         12

                                                Wald chi2(15)     =      11.87
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.6886

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .6035347    .542032     1.11   0.266    -.4588285    1.665898
ln_gdpperc~s |   .3074729   .2989042     1.03   0.304    -.2783685    .8933143
ln_uaegdpp~s |  -2.216395   2.052904    -1.08   0.280    -6.240012    1.807222
ln_distanc~s |   -.856377   .6693048    -1.28   0.201     -2.16819    .4554362
    language |  -2.688979   1.760172    -1.53   0.127    -6.138852    .7608944
             |
        year |
        2002 |  -.3942978   .5590645    -0.71   0.481    -1.490044    .7014486
        2003 |  -.1916118   .5256013    -0.36   0.715    -1.221771    .8385478
        2004 |  -.4431782   .4683405    -0.95   0.344    -1.361109    .4747524
        2005 |  -.5898156   .4705986    -1.25   0.210    -1.512172    .3325407
        2006 |  -.2620703   .5001724    -0.52   0.600     -1.24239    .7182496
        2007 |   .0671917   .4953442     0.14   0.892    -.9036652    1.038049
        2008 |    .405105   .5791098     0.70   0.484    -.7299293    1.540139
        2009 |  -.7191646   .5016957    -1.43   0.152     -1.70247     .264141
        2010 |  -.0826237   .4765402    -0.17   0.862    -1.016625    .8513779
        2011 |    .142554   .4745239     0.30   0.764    -.7874957    1.072604
        2012 |           0  (omitted)
             |
       _cons |   31.62847   21.32211     1.48   0.138    -10.16211    73.41904
-------------+----------------------------------------------------------------
     sigma_u |    2.10164
     sigma_e |   1.586262
         rho |  .63707135   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers landlocked i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        254
Group variable: foreign_id                      Number of groups  =         35

R-sq:                                           Obs per group:
     within  = 0.0271                                         min =          1
     between = 0.1259                                         avg =        7.3
     overall = 0.0688                                         max =         12

                                                Wald chi2(15)     =       9.86
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.8283

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .4602568   .5477314     0.84   0.401     -.613277    1.533791
ln_gdpperc~s |   .2806017   .3059468     0.92   0.359     -.319043    .8802465
ln_uaegdpp~s |  -2.065127   2.075156    -1.00   0.320    -6.132358    2.002103
ln_distanc~s |  -.2981126   .5528175    -0.54   0.590    -1.381615    .7853899
  landlocked |   1.481357   2.318489     0.64   0.523    -3.062798    6.025512
             |
        year |
        2002 |  -.3914909   .5612193    -0.70   0.485    -1.491461    .7084787
        2003 |  -.1854492   .5275983    -0.35   0.725    -1.219523    .8486245
        2004 |  -.4452722   .4701343    -0.95   0.344    -1.366719    .4761742
        2005 |  -.5982176   .4725063    -1.27   0.205    -1.524313    .3278776
        2006 |  -.2799204   .5029837    -0.56   0.578     -1.26575    .7059095
        2007 |   .0598547   .4974317     0.12   0.904    -.9150934    1.034803
        2008 |   .3840744   .5821131     0.66   0.509    -.7568463    1.524995
        2009 |  -.7036753   .5060152    -1.39   0.164    -1.695447    .2880963
        2010 |  -.0561483   .4802835    -0.12   0.907    -.9974866    .8851901
        2011 |   .1298074   .4762571     0.27   0.785    -.8036395    1.063254
        2012 |          0  (omitted)
             |
       _cons |   25.40002   21.19915     1.20   0.231    -16.14954    66.94958
-------------+----------------------------------------------------------------
     sigma_u |  2.1054391
     sigma_e |   1.586262
         rho |  .63790609   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers coloniallink i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        254
Group variable: foreign_id                      Number of groups  =         35

R-sq:                                           Obs per group:
     within  = 0.0275                                         min =          1
     between = 0.1551                                         avg =        7.3
     overall = 0.0793                                         max =         12

                                                Wald chi2(15)     =      11.08
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.7470

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .4145561   .5464426     0.76   0.448    -.6564517    1.485564
ln_gdpperc~s |   .2748039   .3035166     0.91   0.365    -.3200778    .8696855
ln_uaegdpp~s |  -2.073522   2.059231    -1.01   0.314     -6.10954    1.962497
ln_distanc~s |  -.3135673   .5548295    -0.57   0.572    -1.401013    .7738785
coloniallink |   2.974051   2.327792     1.28   0.201    -1.588338     7.53644
             |
        year |
        2002 |  -.3913687   .5589005    -0.70   0.484    -1.486793     .704056
        2003 |  -.1811651    .525472    -0.34   0.730    -1.211071    .8487411
        2004 |  -.4452988   .4682397    -0.95   0.342    -1.363032    .4724342
        2005 |  -.6113226   .4708594    -1.30   0.194     -1.53419    .3115449
        2006 |  -.2858487   .5006382    -0.57   0.568    -1.267082     .695384
        2007 |   .0645166   .4953488     0.13   0.896    -.9063493    1.035382
        2008 |   .3955347   .5792143     0.68   0.495    -.7397044    1.530774
        2009 |  -.7131434   .5022944    -1.42   0.156    -1.697622    .2713355
        2010 |  -.0668473   .4769696    -0.14   0.889    -1.001691     .867996
        2011 |   .1435019   .4745587     0.30   0.762     -.786616     1.07362
        2012 |          0  (omitted)
             |
       _cons |   25.65456   21.08869     1.22   0.224    -15.67852    66.98764
-------------+----------------------------------------------------------------
     sigma_u |   2.130206
     sigma_e |   1.586262
         rho |  .64329098   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers commoncolonial i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        254
Group variable: foreign_id                      Number of groups  =         35

R-sq:                                           Obs per group:
     within  = 0.0259                                         min =          1
     between = 0.1509                                         avg =        7.3
     overall = 0.0909                                         max =         12

                                                Wald chi2(15)     =      10.65
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.7770

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .5167704   .5367592     0.96   0.336    -.5352583    1.568799
ln_gdpperc~s |   .3703769   .2981162     1.24   0.214    -.2139202    .9546739
ln_uaegdpp~s |   -2.40115   2.062315    -1.16   0.244    -6.443212    1.640913
ln_distanc~s |  -.0712107   .5728511    -0.12   0.901    -1.193978    1.051557
commoncolo~l |   .9812558   .9676723     1.01   0.311     -.915347    2.877859
             |
        year |
        2002 |  -.3986993   .5626704    -0.71   0.479    -1.501513    .7041144
        2003 |  -.1856109   .5289445    -0.35   0.726    -1.222323    .8511012
        2004 |  -.4453389   .4712524    -0.95   0.345    -1.368977    .4782988
        2005 |  -.5758429   .4735069    -1.22   0.224    -1.503899    .3522135
        2006 |  -.2456678   .5029007    -0.49   0.625    -1.231335    .7399995
        2007 |   .0840685   .4983682     0.17   0.866    -.8927152    1.060852
        2008 |   .4256577   .5825341     0.73   0.465    -.7160881    1.567404
        2009 |  -.7722292   .5045203    -1.53   0.126    -1.761071    .2166124
        2010 |   -.099248   .4789871    -0.21   0.836    -1.038045    .8395494
        2011 |   .1129604   .4773184     0.24   0.813    -.8225665    1.048487
        2012 |          0  (omitted)
             |
       _cons |   25.96845   21.12711     1.23   0.219    -15.43993    67.37683
-------------+----------------------------------------------------------------
     sigma_u |  2.0448986
     sigma_e |   1.586262
         rho |  .62432244   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers ln_populationtotal i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        253
Group variable: foreign_id                      Number of groups  =         35

R-sq:                                           Obs per group:
     within  = 0.0231                                         min =          1
     between = 0.4536                                         avg =        7.2
     overall = 0.2913                                         max =         12

                                                Wald chi2(15)     =      25.62
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0422

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .0962933   .5253249     0.18   0.855    -.9333247    1.125911
ln_gdpperc~s |   .8512747   .3026391     2.81   0.005     .2581129    1.444436
ln_uaegdpp~s |  -3.622082   2.039001    -1.78   0.076    -7.618451    .3742874
ln_distanc~s |  -.9410413   .5304584    -1.77   0.076    -1.980721    .0986381
ln_populat~l |   .8270943   .2127571     3.89   0.000      .410098    1.244091
             |
        year |
       2002  |  -.4473163      .5544    -0.81   0.420     -1.53392    .6392878
       2003  |  -.2138518   .5212353    -0.41   0.682    -1.235454    .8077507
       2004  |  -.4178594   .4653797    -0.90   0.369    -1.329987     .494268
       2005  |  -.4874649   .4712582    -1.03   0.301    -1.411114    .4361842
       2006  |  -.1286336   .5015178    -0.26   0.798     -1.11159    .8543233
       2007  |   .1510082   .4957842     0.30   0.761    -.8207109    1.122727
       2008  |   .5346122   .5796419     0.92   0.356    -.6014651     1.67069
       2009  |  -1.028896   .4986665    -2.06   0.039    -2.006265   -.0515279
       2010  |  -.3425093   .4763188    -0.72   0.472    -1.276077    .5910583
       2011  |   .0248725   .4742812     0.05   0.958    -.9047016    .9544466
       2012  |           0  (omitted)
             |
       _cons |   28.06395   20.74826     1.35   0.176     -12.6019    68.72979
-------------+----------------------------------------------------------------
     sigma_u |  1.8889131
     sigma_e |  1.5898865
         rho |  .58532641   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsrelation ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers ln_uaepopulation i.year, re
note: 2011.year omitted because of collinearity
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        254
Group variable: foreign_id                      Number of groups  =         35

R-sq:                                           Obs per group:
     within  = 0.0264                                         min =          1
     between = 0.1260                                         avg =        7.3
     overall = 0.0715                                         max =         12

                                                Wald chi2(14)     =       9.56
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.7935

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
bitsrelation |   .5215327   .5383118     0.97   0.333     -.533539    1.576604
ln_gdpperc~s |   .3210648   .2967305     1.08   0.279    -.2605163     .902646
ln_uaegdpp~s |  -6.112412   15.51388    -0.39   0.694    -36.51906    24.29424
ln_distanc~s |  -.2669832   .5442902    -0.49   0.624    -1.333772    .7998061
ln_uaepopu~n |    1.19509   4.589516     0.26   0.795    -7.800196    10.19038
             |
        year |
       2002  |  -.4280423   .5635284    -0.76   0.448    -1.532538    .6764531
       2003  |  -.0668268    .757309    -0.09   0.930    -1.551125    1.417471
       2004  |  -.1068485   1.516803    -0.07   0.944    -3.079727     2.86603
       2005  |  -.0487379   2.305157    -0.02   0.983    -4.566762    4.469286
       2006  |   .4007001   2.784804     0.14   0.886    -5.057415    5.858815
       2007  |   .5865702   2.252587     0.26   0.795     -3.82842     5.00156
       2008  |   1.035713   2.730746     0.38   0.704    -4.316451    6.387877
       2009  |  -1.493632   2.845159    -0.52   0.600     -7.07004    4.082776
       2010  |  -.7063941   2.308213    -0.31   0.760    -5.230408     3.81762
       2011  |           0  (omitted)
       2012  |           0  (omitted)
             |
       _cons |   48.71751   92.62437     0.53   0.599    -132.8229    230.2579
-------------+----------------------------------------------------------------
     sigma_u |  2.0694235
     sigma_e |   1.586262
         rho |  .62989807   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. ***bitsigned***


. **Outward FDI**


. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus i.year, fe
note: 2012.year omitted because of collinearity

Fixed-effects (within) regression               Number of obs     =       358
Group variable: foreign_id                      Number of groups  =        49

R-sq:                                           Obs per group:
     within  = 0.2941                                         min =         1
     between = 0.1161                                         avg =       7.3
     overall = 0.0985                                         max =        12

                                                F(13,296)         =      9.48
corr(u_i, Xb)  = -0.8182                        Prob > F          =    0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   2.272763   .5472652     4.15   0.000      1.19574    3.349787
ln_gdpperc~s |   2.430196   .7065224     3.44   0.001     1.039752     3.82064
ln_uaegdpp~s |  -2.764567   2.518292    -1.10   0.273    -7.720592    2.191458
             |
        year |
        2002 |  -.1697109   .4319169    -0.39   0.695    -1.019728    .6803061
        2003 |  -.3986519   .3913392    -1.02   0.309    -1.168812    .3715077
        2004 |  -.2852411   .3758722    -0.76   0.449    -1.024962    .4544795
        2005 |   .1914605   .4072883     0.47   0.639    -.6100873    .9930082
        2006 |   1.143721   .4783923     2.39   0.017     .2022398    2.085202
        2007 |    .958189   .4478497     2.14   0.033      .076816    1.839562
        2008 |   1.123727   .5433008     2.07   0.039     .0545055    2.192949
        2009 |   .3714147   .5397954     0.69   0.492    -.6909085    1.433738
        2010 |    .120102   .4881373     0.25   0.806    -.8405573    1.080761
        2011 |   .3747391   .3839344     0.98   0.330    -.3808478    1.130326
        2012 |          0  (omitted)
             |
       _cons |   9.236652   21.66892     0.43   0.670    -33.40802    51.88133
-------------+----------------------------------------------------------------
     sigma_u |  4.0026879
     sigma_e |  1.5507986
         rho |  .86948264   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(48, 296) = 13.83                     Prob > F = 0.0000
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned i.year, re

Random-effects GLS regression                   Number of obs     =       358
Group variable: foreign_id                      Number of groups  =        49

R-sq:                                           Obs per group:
     within  = 0.2656                                         min =         1
     between = 0.1465                                         avg =       7.3
     overall = 0.1829                                         max =        12

                                                Wald chi2(12)     =    115.53
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   2.112805   .4223173     5.00   0.000     1.285079    2.940532
             |
        year |
       2002  |  -.0693899    .442152    -0.16   0.875    -.9359918     .797212
       2003  |  -.0393412   .4353876    -0.09   0.928    -.8926852    .8140027
       2004  |   .1879245   .4389285     0.43   0.669    -.6723596    1.048209
       2005  |    .622699   .4259034     1.46   0.144    -.2120563    1.457454
       2006  |    1.55883   .4164255     3.74   0.000     .7426513    2.375009
       2007  |   1.693447   .4248798     3.99   0.000     .8606976    2.526196
       2008  |   1.927406   .4396151     4.38   0.000     1.065776    2.789036
       2009  |   1.903143   .4371529     4.35   0.000     1.046339    2.759947
       2010  |   1.613874    .460759     3.50   0.000     .7108024    2.516945
       2011  |   1.667046   .4359922     3.82   0.000     .8125173    2.521575
       2012  |   1.204794   .4480709     2.69   0.007     .3265909    2.082996
             |
       _cons |   1.133597   .4536586     2.50   0.012     .2444426    2.022752
-------------+----------------------------------------------------------------
     sigma_u |  2.0874364
     sigma_e |  1.5788233
         rho |  .63610859   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus i.year, re
>

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2747                                         min =          1
     between = 0.1815                                         avg =        7.3
     overall = 0.2020                                         max =         12

                                                Wald chi2(13)     =     121.51
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   2.005062   .4238768     4.73   0.000     1.174279    2.835846
ln_gdpperc~s |   .4231792   .1962639     2.16   0.031     .0385091    .8078494
             |
        year |
       2002  |  -.0797122   .4394869    -0.18   0.856    -.9410906    .7816663
       2003  |  -.1196142    .434349    -0.28   0.783    -.9709226    .7316941
       2004  |   .0532964   .4407378     0.12   0.904    -.8105338    .9171266
       2005  |   .4692347   .4292869     1.09   0.274    -.3721521    1.310621
       2006  |   1.369713   .4231563     3.24   0.001     .5403421    2.199085
       2007  |   1.444947    .437823     3.30   0.001     .5868295    2.303064
       2008  |    1.62706   .4587148     3.55   0.000     .7279959    2.526125
       2009  |   1.633277   .4522342     3.61   0.000     .7469139    2.519639
       2010  |   1.325221   .4771936     2.78   0.005     .3899388    2.260503
       2011  |   1.325338   .4616429     2.87   0.004     .4205345    2.230141
       2012  |    .876532   .4708576     1.86   0.063    -.0463321    1.799396
             |
       _cons |  -2.457368   1.725326    -1.42   0.154    -5.838944    .9242081
-------------+----------------------------------------------------------------
     sigma_u |  2.0652901
     sigma_e |  1.5507986
         rho |  .63945544   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus  i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       358
Group variable: foreign_id                      Number of groups  =        49

R-sq:                                           Obs per group:
     within  = 0.2747                                         min =         1
     between = 0.1815                                         avg =       7.3
     overall = 0.2020                                         max =        12

                                                Wald chi2(13)     =    121.51
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   2.005062   .4238768     4.73   0.000     1.174279    2.835846
ln_gdpperc~s |   .4231792   .1962639     2.16   0.031     .0385091    .8078494
ln_uaegdpp~s |   2.885593    1.55009     1.86   0.063    -.1525278    5.923714
             |
        year |
       2002  |  -.1028282   .4338918    -0.24   0.813    -.9532405     .747584
       2003  |  -.3143893   .3927792    -0.80   0.423    -1.084223    .4554438
       2004  |   -.385359   .3747747    -1.03   0.304    -1.119904     .349186
       2005  |  -.2198616   .3742291    -0.59   0.557     -.953337    .5136139
       2006  |   .4736703    .411493     1.15   0.250    -.3328413    1.280182
       2007  |   .5285175   .4173676     1.27   0.205     -.289508    1.346543
       2008  |   .5091332   .4931339     1.03   0.302    -.4573915    1.475658
       2009  |    1.45225   .4015352     3.62   0.000     .6652555    2.239245
       2010  |   .9776211   .4004284     2.44   0.015      .192796    1.762446
       2011  |   .5643782   .3781352     1.49   0.136    -.1767532     1.30551
       2012  |          0  (omitted)
             |
       _cons |  -32.30515   15.78185    -2.05   0.041    -63.23701   -1.373287
-------------+----------------------------------------------------------------
     sigma_u |  2.0652901
     sigma_e |  1.5507986
         rho |  .63945544   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2751                                         min =          1
     between = 0.2318                                         avg =        7.3
     overall = 0.2347                                         max =         12

                                                Wald chi2(14)     =     124.56
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   1.860793   .4275895     4.35   0.000     1.022733    2.698853
ln_gdpperc~s |   .4656689   .1937597     2.40   0.016     .0859069    .8454309
ln_uaegdpp~s |   2.854198   1.545878     1.85   0.065    -.1756679    5.884064
ln_distanc~s |    -.91271   .5422411    -1.68   0.092    -1.975483    .1500631
             |
        year |
       2002  |  -.0999946   .4343448    -0.23   0.818    -.9512949    .7513056
       2003  |  -.3132405   .3931837    -0.80   0.426    -1.083866    .4573855
       2004  |  -.3743486   .3751751    -1.00   0.318    -1.109678    .3609812
       2005  |  -.2027506   .3745459    -0.54   0.588    -.9368471     .531346
       2006  |   .4865591   .4116169     1.18   0.237    -.3201951    1.293313
       2007  |   .5328161   .4176015     1.28   0.202    -.2856678      1.3513
       2008  |   .5169353   .4933218     1.05   0.295    -.4499577    1.483828
       2009  |   1.461221   .4011818     3.64   0.000     .6749187    2.247523
       2010  |   .9761367   .4003883     2.44   0.015     .1913901    1.760883
       2011  |   .5750572   .3784991     1.52   0.129    -.1667874    1.316902
       2012  |          0  (omitted)
             |
       _cons |  -24.63991   16.41616    -1.50   0.133    -56.81498     7.53517
-------------+----------------------------------------------------------------
     sigma_u |  2.0006513
     sigma_e |  1.5501536
         rho |  .62486215   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers borders i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       358
Group variable: foreign_id                      Number of groups  =        49

R-sq:                                           Obs per group:
     within  = 0.2758                                         min =         1
     between = 0.2337                                         avg =       7.3
     overall = 0.2379                                         max =        12

                                                Wald chi2(15)     =    124.91
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   1.867913   .4296373     4.35   0.000     1.025839    2.709986
ln_gdpperc~s |   .5022584   .2024521     2.48   0.013     .1054596    .8990573
ln_uaegdpp~s |   2.775779   1.551258     1.79   0.074    -.2646309    5.816189
ln_distanc~s |  -1.312026   .8224017    -1.60   0.111    -2.923904    .2998513
     borders |  -1.522448   2.338501    -0.65   0.515    -6.105825    3.060929
             |
        year |
        2002 |  -.0989894   .4339113    -0.23   0.820    -.9494399    .7514611
        2003 |  -.3132009   .3927897    -0.80   0.425    -1.083055    .4566528
        2004 |  -.3732425   .3748255    -1.00   0.319    -1.107887     .361402
        2005 |  -.1976195   .3743822    -0.53   0.598    -.9313951     .536156
        2006 |   .4955993    .411623     1.20   0.229    -.3111669    1.302365
        2007 |   .5386864   .4173924     1.29   0.197    -.2793876     1.35676
        2008 |   .5282548   .4933086     1.07   0.284    -.4386123    1.495122
        2009 |   1.443518   .4018206     3.59   0.000     .6559643    2.231072
        2010 |   .9667507   .4003726     2.41   0.016     .1820349    1.751467
        2011 |   .5764868   .3781679     1.52   0.127    -.1647087    1.317682
        2012 |          0  (omitted)
             |
       _cons |  -20.73435   17.47282    -1.19   0.235    -54.98044    13.51175
-------------+----------------------------------------------------------------
     sigma_u |  2.0335638
     sigma_e |  1.5501536
         rho |  .63248017   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers language i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2752                                         min =          1
     between = 0.2328                                         avg =        7.3
     overall = 0.2352                                         max =         12

                                                Wald chi2(15)     =     124.33
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   1.852557   .4399734     4.21   0.000     .9902252    2.714889
ln_gdpperc~s |   .4714437   .1968629     2.39   0.017     .0855995    .8572879
ln_uaegdpp~s |   2.845655   1.548418     1.84   0.066    -.1891892      5.8805
ln_distanc~s |  -.8755895   .6266431    -1.40   0.162    -2.103787    .3526084
    language |   .1503883   1.200323     0.13   0.900    -2.202202    2.502978
             |
        year |
        2002 |  -.1003684   .4343081    -0.23   0.817    -.9515966    .7508598
        2003 |  -.3136629   .3931538    -0.80   0.425     -1.08423    .4569044
        2004 |  -.3740663   .3751929    -1.00   0.319    -1.109431    .3612983
        2005 |  -.2028672   .3746304    -0.54   0.588    -.9371293     .531395
        2006 |   .4874512   .4117822     1.18   0.237    -.3196271     1.29453
        2007 |   .5328858   .4176567     1.28   0.202    -.2857063    1.351478
        2008 |   .5165582   .4934363     1.05   0.295    -.4505591    1.483676
        2009 |   1.458603   .4014784     3.63   0.000     .6717198    2.245486
        2010 |   .9731687   .4006325     2.43   0.015     .1879435    1.758394
        2011 |   .5744844   .3785277     1.52   0.129    -.1674163    1.316385
        2012 |          0  (omitted)
             |
       _cons |   -24.9267   16.65326    -1.50   0.134    -57.56648    7.713085
-------------+----------------------------------------------------------------
     sigma_u |  2.0277503
     sigma_e |  1.5501536
         rho |  .63114822   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers landlocked i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2747                                         min =          1
     between = 0.2437                                         avg =        7.3
     overall = 0.2386                                         max =         12

                                                Wald chi2(15)     =     124.80
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   1.843412   .4308933     4.28   0.000     .9988769    2.687948
ln_gdpperc~s |   .4470597   .1993703     2.24   0.025      .056301    .8378183
ln_uaegdpp~s |   2.917972   1.552075     1.88   0.060    -.1240403    5.959984
ln_distanc~s |  -.9195577   .5486736    -1.68   0.094    -1.994938    .1558228
  landlocked |   1.351201    2.27393     0.59   0.552     -3.10562    5.808022
             |
        year |
        2002 |  -.1001311   .4340693    -0.23   0.818    -.9508913    .7506291
        2003 |  -.3134627    .392936    -0.80   0.425    -1.083603    .4566777
        2004 |  -.3753936   .3749568    -1.00   0.317    -1.110295    .3595083
        2005 |  -.2091158   .3745075    -0.56   0.577     -.943137    .5249054
        2006 |   .4780226   .4117858     1.16   0.246    -.3290627    1.285108
        2007 |   .5264139   .4175581     1.26   0.207    -.2919849    1.344813
        2008 |   .5024142     .49377     1.02   0.309    -.4653573    1.470186
        2009 |    1.46617   .4014607     3.65   0.000     .6793217    2.253019
        2010 |   .9766505   .4003645     2.44   0.015     .1919506     1.76135
        2011 |   .5733085   .3783076     1.52   0.130    -.1681607    1.314778
        2012 |          0  (omitted)
             |
       _cons |  -25.10277   16.46081    -1.53   0.127    -57.36537    7.159826
-------------+----------------------------------------------------------------
     sigma_u |  2.0286722
     sigma_e |  1.5501536
         rho |  .63135982   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers coloniallink i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2752                                         min =          1
     between = 0.2323                                         avg =        7.3
     overall = 0.2343                                         max =         12

                                                Wald chi2(15)     =     124.35
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   1.863758   .4303349     4.33   0.000     1.020317    2.707198
ln_gdpperc~s |   .4676951   .1980276     2.36   0.018     .0795681    .8558222
ln_uaegdpp~s |   2.853793   1.550966     1.84   0.066    -.1860444     5.89363
ln_distanc~s |  -.9177565   .5521476    -1.66   0.096    -1.999946    .1644329
coloniallink |   .1298607   1.555492     0.08   0.933    -2.918848    3.178569
             |
        year |
       2002  |  -.1005548   .4341723    -0.23   0.817    -.9515169    .7504072
       2003  |  -.3134761   .3930135    -0.80   0.425    -1.083768    .4568162
       2004  |  -.3749113   .3750352    -1.00   0.317    -1.109967    .3601443
       2005  |  -.2046056   .3746308    -0.55   0.585    -.9388685    .5296573
       2006  |   .4856119   .4118781     1.18   0.238    -.3216544    1.292878
       2007  |   .5316318    .417684     1.27   0.203    -.2870137    1.350277
       2008  |   .5157552   .4935083     1.05   0.296    -.4515032    1.483014
       2009  |   1.459371   .4016329     3.63   0.000     .6721847    2.246557
       2010  |   .9742841   .4005235     2.43   0.015     .1892726    1.759296
       2011  |   .5754988   .3784174     1.52   0.128    -.1661857    1.317183
       2012  |          0  (omitted)
             |
       _cons |  -24.61874    16.4526    -1.50   0.135    -56.86525     7.62776
-------------+----------------------------------------------------------------
     sigma_u |  2.0342735
     sigma_e |  1.5501536
         rho |  .63264237   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers commoncolonial i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2793                                         min =          1
     between = 0.2904                                         avg =        7.3
     overall = 0.2695                                         max =         12

                                                Wald chi2(15)     =     132.39
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   2.002811   .4276788     4.68   0.000     1.164576    2.841046
ln_gdpperc~s |   .6794203   .2103695     3.23   0.001     .2671036    1.091737
ln_uaegdpp~s |   2.135065   1.562361     1.37   0.172    -.9271062    5.197235
ln_distanc~s |   -.416302   .5716546    -0.73   0.466    -1.536724    .7041205
commoncolo~l |   2.121333   .8618513     2.46   0.014     .4321352     3.81053
             |
        year |
        2002 |  -.1044117   .4315831    -0.24   0.809     -.950299    .7414756
        2003 |  -.3199441    .390689    -0.82   0.413     -1.08568    .4457922
        2004 |  -.3584719   .3728301    -0.96   0.336    -1.089205    .3722616
        2005 |   -.153031   .3726508    -0.41   0.681    -.8834131    .5773512
        2006 |   .5790627   .4106263     1.41   0.158    -.2257501    1.383876
        2007 |   .6013828   .4158209     1.45   0.148    -.2136113    1.416377
        2008 |   .6251272     .49206     1.27   0.204    -.3392927    1.589547
        2009 |   1.334521   .4018193     3.32   0.001     .5469692    2.122072
        2010 |    .885961   .3994482     2.22   0.027     .1030568    1.668865
        2011 |   .5705613   .3760718     1.52   0.129     -.166526    1.307649
        2012 |          0  (omitted)
             |
       _cons |  -23.71665   16.29733    -1.46   0.146    -55.65884    8.225535
-------------+----------------------------------------------------------------
     sigma_u |  1.9845352
     sigma_e |  1.5501536
         rho |  .62106271   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers ln_populationtotal i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2789                                         min =          1
     between = 0.2721                                         avg =        7.3
     overall = 0.2732                                         max =         12

                                                Wald chi2(15)     =     129.46
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   1.729788   .4287015     4.03   0.000     .8895486    2.570028
ln_gdpperc~s |    .615159   .2055996     2.99   0.003     .2121912    1.018127
ln_uaegdpp~s |   2.369114   1.558829     1.52   0.129    -.6861358    5.424363
ln_distanc~s |  -1.205174   .5528573    -2.18   0.029    -2.288754   -.1215932
ln_populat~l |   .4153895    .208523     1.99   0.046     .0066919    .8240871
             |
        year |
       2002  |  -.1009086   .4333416    -0.23   0.816    -.9502424    .7484253
       2003  |  -.3216595   .3922971    -0.82   0.412    -1.090548    .4472287
       2004  |  -.3450893   .3745649    -0.92   0.357    -1.079223    .3890444
       2005  |  -.1469583   .3745887    -0.39   0.695    -.8811386     .587222
       2006  |   .5595083   .4120989     1.36   0.175    -.2481908    1.367207
       2007  |   .5869422   .4174014     1.41   0.160    -.2311495    1.405034
       2008  |     .58845   .4933022     1.19   0.233    -.3784045    1.555305
       2009  |   1.381065   .4020168     3.44   0.001     .5931263    2.169003
       2010  |   .9089145    .400742     2.27   0.023     .1234745    1.694354
       2011  |   .5644738   .3776156     1.49   0.135    -.1756391    1.304587
       2012  |          0  (omitted)
             |
       _cons |  -25.39199    16.3421    -1.55   0.120    -57.42191    6.637934
-------------+----------------------------------------------------------------
     sigma_u |  1.9579619
     sigma_e |  1.5434019
         rho |  .61676275   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_outward_flow_2 bitsigned ln_gdppercapitacurrentus ln_uaegdpp
> ercapitacurrentus ln_distanceinkilometers ln_uaepopulation i.year, re
note: 2011.year omitted because of collinearity
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        358
Group variable: foreign_id                      Number of groups  =         49

R-sq:                                           Obs per group:
     within  = 0.2751                                         min =          1
     between = 0.2318                                         avg =        7.3
     overall = 0.2347                                         max =         12

                                                Wald chi2(14)     =     124.56
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

------------------------------------------------------------------------------
ln_new_fdi~2 |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   1.860793   .4275895     4.35   0.000     1.022733    2.698853
ln_gdpperc~s |   .4656689   .1937597     2.40   0.016     .0859069    .8454309
ln_uaegdpp~s |  -15.09179   12.38792    -1.22   0.223    -39.37167    9.188084
ln_distanc~s |    -.91271   .5422411    -1.68   0.092    -1.975483    .1500631
ln_uaepopu~n |    5.53812   3.645156     1.52   0.129    -1.606255    12.68249
             |
        year |
        2002 |  -.2500134   .4373241    -0.57   0.568    -1.107153    .6071262
        2003 |    .245583    .585032     0.42   0.675    -.9010587    1.392225
        2004 |   1.211433   1.213311     1.00   0.318    -1.166613    3.589479
        2005 |   2.311631   1.842414     1.25   0.210    -1.299434    5.922696
        2006 |    3.53975   2.234374     1.58   0.113     -.839543    7.919043
        2007 |   2.924339   1.813223     1.61   0.107    -.6295124    6.478191
        2008 |   3.432711    2.20223     1.56   0.119    -.8835809    7.749003
        2009 |  -2.037644   2.258997    -0.90   0.367    -6.465198    2.389909
        2010 |   -1.90696   1.830764    -1.04   0.298     -5.49519    1.681271
        2011 |          0  (omitted)
        2012 |          0  (omitted)
             |
       _cons |   77.82096   74.30021     1.05   0.295    -67.80478    223.4467
-------------+----------------------------------------------------------------
     sigma_u |  2.0006513
     sigma_e |  1.5501536
         rho |  .62486215   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. **Inward FDI**


. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus i.year, fe
note: 2012.year omitted because of collinearity

Fixed-effects (within) regression               Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0320                                         min =         1
     between = 0.0221                                         avg =       7.3
     overall = 0.0062                                         max =        12

                                                F(13,206)         =      0.52
corr(u_i, Xb)  = -0.2861                        Prob > F          =    0.9080

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .0370618   .8044851     0.05   0.963    -1.549018    1.623142
ln_gdpperc~s |  -.3766739   .7966316    -0.47   0.637     -1.94727    1.193923
ln_uaegdpp~s |   .3541454   3.072137     0.12   0.908    -5.702716    6.411007
             |
        year |
       2002  |  -.3501447   .5593414    -0.63   0.532    -1.452912    .7526229
       2003  |  -.1653291   .5244229    -0.32   0.753    -1.199253    .8685951
       2004  |  -.4690242   .4731319    -0.99   0.323    -1.401826    .4637775
       2005  |  -.7677857    .499371    -1.54   0.126    -1.752319    .2167475
       2006  |  -.5797263   .5552522    -1.04   0.298    -1.674432    .5149793
       2007  |  -.1403952   .5202086    -0.27   0.788    -1.166011    .8852203
       2008  |   .0747771   .6317443     0.12   0.906    -1.170736     1.32029
       2009  |  -.2997191   .6620829    -0.45   0.651    -1.605046    1.005608
       2010  |   .2190206   .5895015     0.37   0.711    -.9432091     1.38125
       2011  |   .2348984    .487412     0.48   0.630     -.726057    1.195854
       2012  |          0  (omitted)
             |
       _cons |   4.266188   26.62281     0.16   0.873    -48.22193    56.75431
-------------+----------------------------------------------------------------
     sigma_u |  2.4935634
     sigma_e |  1.5862568
         rho |  .71190854   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(34, 206) = 15.42                     Prob > F = 0.0000
```

```
. xtreg ln_new_fdi_inward_flow bitsigned i.year, re

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0275                                         min =         1
     between = 0.1308                                         avg =       7.3
     overall = 0.0721                                         max =        12

                                                Wald chi2(12)     =      9.47
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.6623

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .8356185   .5484911     1.52   0.128    -.2394043    1.910641
             |
        year |
       2002  |  -.4005181   .5697537    -0.70   0.482    -1.517215    .7161786
       2003  |  -.2573776   .5847288    -0.44   0.660    -1.403425    .8886697
       2004  |  -.7692464   .5752239    -1.34   0.181    -1.896665    .3581718
       2005  |  -1.062351     .56396    -1.88   0.060    -2.167692    .0429905
       2006  |  -.8734029   .5463668    -1.60   0.110    -1.944262    .1974564
       2007  |  -.4908829   .5409176    -0.91   0.364    -1.551062    .5692961
       2008  |  -.2674666   .5415188    -0.49   0.621    -1.328824    .7938906
       2009  |  -.7063542   .5431349    -1.30   0.193    -1.770879    .3581706
       2010  |  -.1536174   .5598634    -0.27   0.784    -1.250929    .9436946
       2011  |  -.2306993   .5666857    -0.41   0.684    -1.341383    .8799843
       2012  |  -.4456189    .565177    -0.79   0.430    -1.553346    .6621077
             |
       _cons |   3.964135   .5938337     6.68   0.000     2.800242    5.128028
-------------+----------------------------------------------------------------
     sigma_u |  2.0066402
     sigma_e |  1.5832791
         rho |   .6163129   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus i.year, re
>

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0260                                         min =         1
     between = 0.1506                                         avg =       7.3
     overall = 0.0926                                         max =        12

                                                Wald chi2(13)     =     10.53
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.6501

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .8362682   .5508138     1.52   0.129     -.243307    1.915843
ln_gdpperc~s |   .3060791   .2904477     1.05   0.292    -.2631878    .8753461
             |
        year |
       2002  |  -.4310657   .5692777    -0.76   0.449     -1.54683    .6846981
       2003  |  -.3232171   .5868851    -0.55   0.582    -1.473491    .8270565
       2004  |  -.8773644    .583744    -1.50   0.133    -2.021482    .2667528
       2005  |  -1.199803   .5784563    -2.07   0.038    -2.333556   -.0660493
       2006  |  -1.039811   .5684314    -1.83   0.067    -2.153916    .0742938
       2007  |  -.6982816   .5755798    -1.21   0.225    -1.826397     .429834
       2008  |  -.5074412   .5873989    -0.86   0.388    -1.658722    .6438394
       2009  |   -.928015    .582232    -1.59   0.111    -2.069169    .2131387
       2010  |  -.3997333   .6059835    -0.66   0.509    -1.587439    .7879725
       2011  |  -.5068496   .6246169    -0.81   0.417    -1.731076    .7173771
       2012  |   -.720705   .6228364    -1.16   0.247    -1.941442    .5000319
             |
       _cons |   1.189283   2.700077     0.44   0.660     -4.10277    6.481337
-------------+----------------------------------------------------------------
     sigma_u |   2.037679
     sigma_e |  1.5862568
         rho |   .62266346   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus  i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0260                                         min =         1
     between = 0.1506                                         avg =       7.3
     overall = 0.0926                                         max =        12

                                                Wald chi2(13)     =     10.53
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.6501

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .8362682   .5508138     1.52   0.129     -.243307    1.915843
ln_gdpperc~s |   .3060791   .2904477     1.05   0.292    -.2631878    .8753461
ln_uaegdpp~s |  -2.372602   2.050413    -1.16   0.247    -6.391337    1.646133
             |
        year |
       2002  |  -.4120591    .561006    -0.73   0.463    -1.511611    .6874924
       2003  |  -.1630685   .5270473    -0.31   0.757    -1.196062    .8699253
       2004  |  -.5166917   .4715341    -1.10   0.273    -1.440882    .4074981
       2005  |  -.6332118   .4711264    -1.34   0.179    -1.556603     .290179
       2006  |  -.3030638   .4986022    -0.61   0.543    -1.280306    .6741787
       2007  |   .0552278   .4956322     0.11   0.911    -.9161934    1.026649
       2008  |   .4117446   .5796748     0.71   0.478    -.7243971    1.547886
       2009  |  -.7791708   .5031818    -1.55   0.122    -1.765389    .2070475
       2010  |  -.1139285   .4781647    -0.24   0.812    -1.051114    .8232571
       2011  |   .1188292   .4756485     0.25   0.803    -.8134246    1.051083
       2012  |          0  (omitted)
             |
       _cons |   25.73082   20.52132     1.25   0.210    -14.49022    65.95187
-------------+----------------------------------------------------------------
     sigma_u |   2.037679
     sigma_e |  1.5862568
         rho |  .62266346   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus ln_distanceinkilometers i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0263                                         min =         1
     between = 0.1545                                         avg =       7.3
     overall = 0.0885                                         max =        12

                                                Wald chi2(14)     =     10.60
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.7172

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .7842908   .5634809     1.39   0.164    -.3201115    1.888693
ln_gdpperc~s |   .3201503    .295815     1.08   0.279    -.2596365    .8999371
ln_uaegdpp~s |  -2.377203   2.055158    -1.16   0.247    -6.405238    1.650832
ln_distanc~s |  -.2399041   .5398165    -0.44   0.657    -1.297925    .8181167
             |
        year |
       2002  |  -.4114678    .560912    -0.73   0.463    -1.510835    .6878995
       2003  |  -.1640351    .526979    -0.31   0.756    -1.196895    .8688247
       2004  |  -.5105408   .4716619    -1.08   0.279    -1.434981    .4138997
       2005  |  -.6294297   .4712949    -1.34   0.182    -1.553151    .2942913
       2006  |  -.3017295   .4988298    -0.60   0.545    -1.279418    .6759589
       2007  |   .0510237   .4957435     0.10   0.918    -.9206156    1.022663
       2008  |   .4076207   .5798535     0.70   0.482    -.7288712    1.544113
       2009  |  -.7936201   .5052398    -1.57   0.116    -1.783872    .1966316
       2010  |  -.1193154   .4787238    -0.25   0.803    -1.057597    .8189661
       2011  |   .1183849   .4756904     0.25   0.803    -.8139511    1.050721
       2012  |          0  (omitted)
             |
       _cons |   27.69449   21.08954     1.31   0.189    -13.64025    69.02923
-------------+----------------------------------------------------------------
     sigma_u |  2.0660646
     sigma_e |  1.5862568
         rho |  .62914188   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus ln_distanceinkilometers borders i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        254
Group variable: foreign_id                      Number of groups  =         35

R-sq:                                           Obs per group:
     within  = 0.0263                                         min =          1
     between = 0.1586                                         avg =        7.3
     overall = 0.0870                                         max =         12

                                                Wald chi2(15)     =      10.41
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.7933

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .7709816   .5697278     1.35   0.176    -.3456644    1.887628
ln_gdpperc~s |   .3340001   .3183735     1.05   0.294    -.2900005    .9580006
ln_uaegdpp~s |  -2.398507   2.083922    -1.15   0.250    -6.482919    1.685905
ln_distanc~s |  -.3848628   .9459918    -0.41   0.684    -2.238973    1.469247
     borders |  -.5634509   3.094452    -0.18   0.856    -6.628466    5.501564
             |
        year |
        2002 |  -.4121158   .5600227    -0.74   0.462     -1.50974    .6855085
        2003 |  -.1648549   .5261498    -0.31   0.754     -1.19609    .8663798
        2004 |  -.5065987   .4711147    -1.08   0.282    -1.429967    .4167692
        2005 |  -.6254859   .4714107    -1.33   0.185    -1.549434    .2984621
        2006 |  -.2994484   .4994979    -0.60   0.549    -1.278446    .6795495
        2007 |   .0523776   .4956513     0.11   0.916     -.919081    1.023836
        2008 |   .4092123   .5805812     0.70   0.481    -.7287059     1.54713
        2009 |  -.7961329   .5077565    -1.57   0.117    -1.791317    .1990516
        2010 |  -.1248559   .4805036    -0.26   0.795    -1.066626    .8169139
        2011 |   .1205944   .4751694     0.25   0.800    -.8107205    1.051909
        2012 |           0  (omitted)
             |
       _cons |   29.03892   22.92337     1.27   0.205    -15.89007     73.9679
-------------+----------------------------------------------------------------
     sigma_u |  2.1255527
     sigma_e |  1.5862568
         rho |  .64228824   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus ln_distanceinkilometers language i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0258                                         min =         1
     between = 0.2181                                         avg =       7.3
     overall = 0.1411                                         max =        12

                                                Wald chi2(15)     =     13.08
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.5959

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |    .875781   .5676012     1.54   0.123    -.2366969    1.988259
ln_gdpperc~s |   .3068616   .2975901     1.03   0.302    -.2764043    .8901275
ln_uaegdpp~s |  -2.358964   2.049589    -1.15   0.250    -6.376084    1.658157
ln_distanc~s |   -.849441    .664746    -1.28   0.201    -2.152319    .4534372
    language |  -2.774338   1.752061    -1.58   0.113    -6.208314    .6596384
             |
        year |
        2002 |  -.4116657   .5581376    -0.74   0.461    -1.505595    .6822638
        2003 |  -.1649037     .52439    -0.31   0.753    -1.192689    .8628819
        2004 |  -.5117375   .4694057    -1.09   0.276    -1.431756    .4082808
        2005 |  -.6333738   .4691395    -1.35   0.177     -1.55287    .2861228
        2006 |  -.3127658   .4966692    -0.63   0.529     -1.28622    .6606879
        2007 |   .0441736    .493452     0.09   0.929    -.9229745    1.011322
        2008 |   .4048895   .5772514     0.70   0.483    -.7265025    1.536281
        2009 |  -.7784165   .5034803    -1.55   0.122     -1.76522    .2083867
        2010 |  -.1201038   .4768041    -0.25   0.801    -1.054623    .8144151
        2011 |   .1368183   .4735863     0.29   0.773    -.7913938     1.06503
        2012 |          0  (omitted)
             |
       _cons |   32.93736   21.29522     1.55   0.122      -8.8005    74.67523
-------------+----------------------------------------------------------------
     sigma_u |  2.0949411
     sigma_e |  1.5862568
         rho |  .63559527   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus ln_distanceinkilometers landlocked i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0269                                         min =         1
     between = 0.1543                                         avg =       7.3
     overall = 0.0861                                         max =        12

                                                Wald chi2(15)     =     10.79
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.7671

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .7257779   .5738002     1.26   0.206    -.3988498    1.850406
ln_gdpperc~s |   .2836112   .3051365     0.93   0.353    -.3144453    .8816678
ln_uaegdpp~s |  -2.216405   2.073057    -1.07   0.285    -6.279521    1.846711
ln_distanc~s |  -.2668352   .5483999    -0.49   0.627    -1.341679    .8080087
  landlocked |    1.34379   2.310538     0.58   0.561    -3.184781    5.872361
             |
        year |
        2002 |  -.4066041   .5604527    -0.73   0.468    -1.505071    .6918631
        2003 |  -.1644228   .5265181    -0.31   0.755    -1.196379    .8675336
        2004 |  -.5023708   .4714641    -1.07   0.287    -1.426424    .4216819
        2005 |  -.6321136   .4711003    -1.34   0.180    -1.555453    .2912262
        2006 |  -.3167684   .4992206    -0.63   0.526    -1.295223     .661686
        2007 |   .0437025   .4955797     0.09   0.930    -.9276159    1.015021
        2008 |   .3881893   .5803404     0.67   0.504     -.749257    1.525635
        2009 |  -.7590378   .5084682    -1.49   0.135    -1.755617    .2375416
        2010 |  -.0925891   .4808917    -0.19   0.847    -1.035119    .8499413
        2011 |   .1239619   .4754722     0.26   0.794    -.8079466     1.05587
        2012 |          0  (omitted)
             |
       _cons |   26.56441   21.18281     1.25   0.210    -14.95314    68.08196
-------------+----------------------------------------------------------------
     sigma_u |  2.1028835
     sigma_e |  1.5862568
         rho |  .63734633   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus ln_distanceinkilometers coloniallink i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0273                                         min =         1
     between = 0.1823                                         avg =       7.3
     overall = 0.0962                                         max =        12

                                                Wald chi2(15)     =     11.97
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.6813

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .6820965   .5723998     1.19   0.233    -.4397866     1.80398
ln_gdpperc~s |   .2761894   .3026662     0.91   0.361    -.3170255    .8694043
ln_uaegdpp~s |   -2.21845   2.057289    -1.08   0.281    -6.250663    1.813763
ln_distanc~s |  -.2810752   .5503644    -0.51   0.610     -1.35977    .7976193
coloniallink |    2.86969    2.31751     1.24   0.216    -1.672546    7.411925
             |
        year |
        2002 |  -.4055093   .5582098    -0.73   0.468     -1.49958    .6885617
        2003 |  -.1619296   .5244639    -0.31   0.758     -1.18986    .8660008
        2004 |  -.4987412   .4695899    -1.06   0.288    -1.419121    .4216381
        2005 |  -.6422043   .4694742    -1.37   0.171    -1.562357    .2779482
        2006 |  -.3193823   .4971143    -0.64   0.521    -1.293708    .6549438
        2007 |   .0498894   .4936493     0.10   0.920    -.9176455    1.017424
        2008 |   .3995221   .5776048     0.69   0.489    -.7325624    1.531607
        2009 |  -.7648657   .5045606    -1.52   0.130    -1.753786     .224055
        2010 |   -.100899   .4775348    -0.21   0.833     -1.03685     .835052
        2011 |   .1377067   .4738472     0.29   0.771    -.7910166     1.06643
        2012 |          0  (omitted)
             |
       _cons |   26.75619   21.07321     1.27   0.204    -14.54655    68.05894
-------------+----------------------------------------------------------------
     sigma_u |  2.1267539
     sigma_e |  1.5862568
         rho |   .6425478   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus ln_distanceinkilometers commoncolonial i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       254
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0258                                         min =         1
     between = 0.1832                                         avg =       7.3
     overall = 0.1102                                         max =        12

                                                Wald chi2(15)     =     11.86
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.6897

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .8026941   .5601394     1.43   0.152     -.295159    1.900547
ln_gdpperc~s |   .3719552   .2959381     1.26   0.209    -.2080729    .9519832
ln_uaegdpp~s |  -2.562593   2.059379    -1.24   0.213    -6.598901    1.473715
ln_distanc~s |  -.0316831    .567088    -0.06   0.955    -1.143155    1.079789
commoncolo~l |   1.020811   .9595923     1.06   0.287    -.8599554    2.901577
             |
        year |
       2002  |  -.4151749   .5621321    -0.74   0.460    -1.516934    .6865838
       2003  |   -.162024   .5280951    -0.31   0.759    -1.197071    .8730234
       2004  |  -.5083584   .4725937    -1.08   0.282    -1.434625    .4179082
       2005  |  -.6132753   .4723321    -1.30   0.194    -1.539029    .3124786
       2006  |  -.2876463    .499681    -0.58   0.565    -1.267003    .6917105
       2007  |   .0661185   .4967846     0.13   0.894    -.9075615    1.039798
       2008  |    .429721   .5810292     0.74   0.460    -.7090753    1.568517
       2009  |  -.8320095   .5065133    -1.64   0.100    -1.824757    .1607383
       2010  |  -.1368968   .4794331    -0.29   0.775    -1.076568    .8027747
       2011  |   .1063434   .4766811     0.22   0.823    -.8279343    1.040621
       2012  |           0  (omitted)
             |
       _cons |   27.16048     21.097     1.29   0.198    -14.18887    68.50984
-------------+----------------------------------------------------------------
     sigma_u |  2.0288293
     sigma_e |  1.5862568
         rho |  .62061602   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus ln_distanceinkilometers ln_populationtotal i.year, re
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =       253
Group variable: foreign_id                      Number of groups  =        35

R-sq:                                           Obs per group:
     within  = 0.0235                                         min =         1
     between = 0.4521                                         avg =       7.2
     overall = 0.2901                                         max =        12

                                                Wald chi2(15)     =     25.72
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0410

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .1757755   .5610043     0.31   0.754    -.9237727    1.275324
ln_gdpperc~s |   .8430571   .3041728     2.77   0.006     .2468894    1.439225
ln_uaegdpp~s |  -3.641342   2.036639    -1.79   0.074    -7.633082    .3503973
ln_distanc~s |  -.9220651   .5303173    -1.74   0.082    -1.961468    .1173377
ln_populat~l |   .8149799   .2176348     3.74   0.000     .3884235    1.241536
             |
        year |
        2002 |  -.4502961    .554476    -0.81   0.417    -1.537049    .6364568
        2003 |  -.2087178   .5211547    -0.40   0.689    -1.230162    .8127266
        2004 |  -.4321936   .4676255    -0.92   0.355    -1.348723    .4843355
        2005 |  -.4968118   .4713195    -1.05   0.292    -1.420581    .4269574
        2006 |  -.1388677   .4999184    -0.28   0.781     -1.11869    .8409544
        2007 |   .1463656   .4950933     0.30   0.768    -.8239995    1.116731
        2008 |    .534279   .5790027     0.92   0.356    -.6005455    1.669104
        2009 |  -1.038242   .4998768    -2.08   0.038    -2.017983   -.0585017
        2010 |  -.3475709   .4766254    -0.73   0.466    -1.281739    .5865977
        2011 |   .0249376   .4742481     0.05   0.958    -.9045717    .9544468
        2012 |           0  (omitted)
             |
       _cons |   28.34811   20.76033     1.37   0.172    -12.34138     69.0376
-------------+----------------------------------------------------------------
     sigma_u |  1.8869147
     sigma_e |  1.5899255
         rho |  .58480056   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. xtreg ln_new_fdi_inward_flow bitsigned ln_gdppercapitacurrentus ln_uaegdpperc
> apitacurrentus ln_distanceinkilometers ln_uaepopulation i.year, re
note: 2011.year omitted because of collinearity
note: 2012.year omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        254
Group variable: foreign_id                      Number of groups  =         35

R-sq:                                           Obs per group:
     within  = 0.0263                                         min =          1
     between = 0.1545                                         avg =        7.3
     overall = 0.0885                                         max =         12

                                                Wald chi2(14)     =      10.60
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.7172

------------------------------------------------------------------------------
ln_new_fdi~w |      Coef.   Std. Err.       z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   bitsigned |   .7842908   .5634809     1.39   0.164    -.3201115    1.888693
ln_gdpperc~s |   .3201503    .295815     1.08   0.279    -.2596365    .8999371
ln_uaegdpp~s |  -6.071679   15.48381    -0.39   0.695    -36.41938    24.27603
ln_distanc~s |  -.2399041   .5398165    -0.44   0.657    -1.297925    .8181167
ln_uaepopu~n |   1.140112   4.581162     0.25   0.803      -7.8388    10.11903
             |
        year |
        2002 |  -.4423516    .562624    -0.79   0.432    -1.545074    .6603713
        2003 |  -.0489922   .7557094    -0.06   0.948    -1.530155    1.432171
        2004 |  -.1840817   1.515084    -0.12   0.903    -3.153593    2.785429
        2005 |  -.1118031   2.301054    -0.05   0.961    -4.621786     4.39818
        2006 |   .3268198   2.779441     0.12   0.906    -5.120785    5.774425
        2007 |   .5433579   2.248317     0.24   0.809    -3.863263    4.949979
        2008 |   1.007881   2.725484     0.37   0.712    -4.333969    6.349731
        2009 |  -1.513919   2.839904    -0.53   0.594    -7.080029    4.052192
        2010 |  -.7128479   2.303845    -0.31   0.757    -5.228302    3.802606
        2011 |           0  (omitted)
        2012 |           0  (omitted)
             |
       _cons |   48.78774   92.44561     0.53   0.598    -132.4023    229.9778
-------------+----------------------------------------------------------------
     sigma_u |  2.0660646
     sigma_e |  1.5862568
         rho |  .62914188   (fraction of variance due to u_i)
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end of do-file

.                                     log close
      name:  <unnamed>
       log:  /Users/temoury1/Desktop/Rashed/Rashed results 02 May 2019.smcl
  log type:  smcl
 closed on:   2 May 2019, 08:56:34
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