# Can Ease of Doing Business Shorten the Distance and Attract Foreign Direct Investment? A Structural Gravity Model Approach

# هل من الممكن أن يقوم مؤشر سهولة ممارسة الأعمال بتقصير المسافة والعمل على جذب الاستثمار الأجنبي المباشر؟ دراسة تعتمد على نهج نموذج الجاذبية الهيكلية


**by**

**YOUSUF AL KHOORI**


**A thesis submitted in fulfilment**

**of the requirements for the degree of**

**DOCTOR OF PHILOSOPHY IN BUSINESS MANAGEMENT**

**at**

**The British University in Dubai**

**May 2021**

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**Thesis Supervisor**
**Professor Abdelmounaim Lahrech**

**Approved for award:**

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## Abstract

Due to the accelerating pace of globalization, Multinational Enterprises (MNEs) have increasingly employed foreign direct investment (FDI) to enter foreign markets. FDI has played a key role in modernizing the economies of host countries and stimulating economic development. According to the United Nations Conference on Trade and Development (UNCTAD), FDI has grown worldwide from around $200 Billion in 1990 to $1.4 Trillion in 2019. This magnificent growth has sparked the interest of researchers to explain why multinational corporations prefer to operate overseas rather than exporting with arm's length agreements?

This thesis is based on the theoretical framework of the Dunning OLI Paradigm. The objective of this thesis is to expand on existing research by conducting a more fundamental and detailed analysis of the relationship between four different dimensions of distance (economic, geographic, institutional, and cultural) and foreign direct investment inflow. The scope of the thesis was broadened to include the possible existence of a moderating role of a favorable business environment, for which Ease of Doing Business Index (EODB) was used as a proxy, on the distance determinants and FDI inflow. Four country characteristics (including common border, common language, colonial ties, and free trade agreement) were added to the model as control measures. This research deployed the Structural Gravity Model to examine FDI flows into Singapore from its 30 largest investors for the period from 2006 to 2018.

The empirical findings for testing the relationship between four different dimensions of distance and FDI largely confirmed expectations. However, the results of the moderating effect of a favorable business environment are novel and lead to additional insights for the determinants of FDI. Regarding the distance variables, with the exception of geographic distance (GeoDist), all are significant and exhibit their expected signs. The unexpected positive sign for the GeoDist

dimension can be attributed to the combination of large FDI inflows from non-Asian countries combined with the close proximity of the Asian countries with Singapore.

With regards to its moderating role, the ease of doing business (EODB) is effective in enhancing the positive influence of economic distance on FDI inflow. The empirical result also revealed that there is a significant moderating effect of doing business on the relationship between institutional distance and FDI inflows. In contrast to our theoretical assumptions, we found that the moderating effect of the ease of doing business index on the relationship between geographical distance and FDI is negatively significant. Interestingly, the result further indicates that the ease of doing business scoring does not moderate the relationship between cultural distance and FDI inflow.

This research made significant theoretical and practical contributions within the field of FDI literature. The unifying theme of this thesis is the role that a business friendly environment plays as a moderator of the risks associated with four different measures of distance. From a theoretical viewpoint, a novel way to measure the degree to which a country exhibits a favorable business climate was created in order to weight the individual components of the World Bank's Ease of Doing Business Index (EODB) according to their relative importance. Using this measure, our results show that a favorable business climate has a significant moderating effect on the risks that a MNC faces when investing in countries with significantly different wealth levels. In addition, this moderating effect is also evident for the risks associated with operating in countries with different legal and financial systems. Of equal importance for researchers is the contribution that a favorable business climate does not appear to exhibit a moderating effect for the risks associated with the cultural distance to the target country. In order to ensure that these results are reliable, a robust research design based on a structural gravity model using panel data of FDI flows was employed. From a practical viewpoint, this study provides strong evidence to policymakers that

improving the business friendliness of a country attracts FDI due to the moderating effect that it has on the risks associated with economic distance and institutional distance.

# Abstract in Arabic

*نظرا لتسارع وتيرة العولمة، أقبلت الشركات متعددة الجنسيات بشكل متزايد على الاستثمار الأجنبي المباشر للدخول للأسواق العالمية، وقد لعب الاستثمار الأجنبي المباشر دورا محوريا في تطوير اقتصاد الدول المستقطبة للاستثمار وتحفيز التنمية الاقتصادية فيها بشكل عام، ووفقا لمؤتمر الأمم المتحدة للتجارة والتنمية (**UNCTAD**) ، فإن الاستثمار الأجنبي المباشر قد شهد نمواً عالميا بما يقارب 200 مليار دولار في عام 1990 إلى ما يقارب 1.4 تريليون دولار في عام 2019 مما أثار اهتمام الباحثين لفهم أسباب تفضيل الشركات متعددة الجنسيات لإدارة عملياتها التشغيلية خارج الدولة بدلا من التصدير من الداخل باتفاقيات تجارية بحتة.*

*الهدف من هذه الأطروحة هو التوسع في مجال البحث الحالي من خلال إجراء تحليل أكثر تفصيلا وعمقا لدراسة العلاقة بين التدفق في الاستثمار الأجنبي وأربعة أبعاد مختلفة للمسافات الاقتصادية والجغرافية والمؤسسية والثقافية، وقد تم توسيع نطاق البحث ليشمل دراسة احتمال وجود دور وسيط لبيئة الأعمال المواتية حيث يكون مؤشر سهولة ممارسة الأعمال (**EODB**) مؤثرا على العلاقة بين المسافات المدروسة المختلفة و التدفق الداخلي للاستثمار الأجنبي المباشر للدولة، على أن يتم الأخذ بعين الاعتبار العوامل الاقتصادية الأخرى المؤثرة من مثل الحدود المشتركة واللغة المشتركة والروابط الاستعمارية السابقة ووجود اتفاقية تجارة حرة بين البلدين، وسيقوم هذا البحث بالاعتماد على منهجية الجاذبية الهيكلية لتحليل تدفقات الاستثمار الأجنبي المباشر إلى سنغافورة من أكبر 30 مستثمرًا لها وفي الفترة من 2006 إلى 2018.*

*أكدت النتائج التجريبية معظم الفرضيات الموضوعة لدراسة العلاقة التي تربط الاستثمار الأجنبي المباشر وأربعة ابعاد مختلفة للمسافة، بيد أن التأثير الوسيط لبيئة الأعمال المواتية أظهر نتائج جديدة من نوعها ذات رؤى تثري دراسة عوامل الاستثمار الأجنبي المباشر، وقد أظهرت جميع نتائج دراسة المسافات المختلفة النتائج المتوقعة ما عدا المسافة الجغرافية التي تظهر علاقة إيجابية والتي يمكن أن تفسر بتدفق مبالغ كبيرة من الاستثمار الأجنبي المباشر من دول غير آسيوية بالإضافة إلى سبب التقارب الجغرافي بين الدول الآسيوية ودولة سنغافورة.*

*وفيما يتعلق بدور الوسيط، فإن مؤشر سهولة ممارسة الأعمال يقوم بدور فعال في تعزيز التأثير الإيجابي للمسافة الاقتصادية في تدفق الاستثمار الأجنبي المباشر، كما أن النتائج التجريبية كشفت أن ظهور تأثير مهم لمؤسر سهولة ممارسة الأعمال كوسيط بين المسافة المؤسسية وتدفقات الاستثمار الأجنبي المباشر، وعلى الجانب النقيض من الفرضية النظرية كشفت النتائج لدراسة الدور*

*الوسيط ل(**EODB**) على العلاقة بين المسافة الجغرافية وتدفق الاستثمار الأجنبي علاقة عكسية مهمة، ومن المثير للاهتمام أن النتائج الخاصة أظهرت عدم فعالية دور الوسيط على العلاقة بين المسافة الثقافية وتدفق الاستثمار الأجنبي المباشر.*

*أسهم هذا البحث في إثراء الجوانب النظرية والعملية في مجال الاستثمار الأجنبي المباشر بشكل كبير، حيث يقوم الموضوع الموحد لهذه الأطروحة بإظهار الدور الوسيط الذي يقوم به توفير بيئة الأعمال المناسبة للتحكم بالمخاطر المرتبطة بأربعة مقاييس مختلفة للمسافة، حيث أنها اثرت الجانب النظري في هذا المجال بابتكار منهج جديد لقياس المؤشر الذي يحتسب فيه سهولة ممارسة الأعمال الذي يصدر من البنك الدولي من خلال وزن المعايير الفردية التي تكون المؤشر حسب أهميتها النسبية، وتوظيف هذا المقياس لإظهار نتائج أكثر فعالية، وباستخدام هذا المؤشر المطور في التحليل، أظهرت النتائج أن مناخ الأعمال الملائم له تأثير وسيط ومهم على المخاطر التي تواجهها الشركات متعددة الجنسيات عند الاستثمار في دول ذات ثروات متفاوتة أو ذات أنظمة قانونية ومالية مختلفة، وبنفس مستوى الأهمية، أظهرت النتائج مناخ الأعمال الملائم لا يظهر تأثيرًا وسيطا للمخاطر المرتبطة بالمسافة الثقافية للبلد المستثمر به، وحتى يتم الاعتماد على هذه النتائج، تم استخدام ترقية طرق التحليل الخاصة بمنهج الجاذبية الهيكلية باستخدام بيانات مفصلة لتدفقات الاستثمار الأجنبي المباشر، وبالتطرق إلى وجهة نظر عملية ، فإن هذه الدراسة تقدم أدلة هامة لمتخذي القرارات و العاملين على السياسات لتحسين بيئة ملاءمة الأعمال في جميع القطاعات بما يضمن اجتذاب الاستثمار الأجنبي المباشر باستخدام التأثير الوسيط له على المخاطر المرتبطة بالمسافة الاقتصادية والمسافة المؤسسية، وبشكل أكثر تحديدًا ، تقدم هذه النتائج توصيات بإعطاء الأولوية للسياسات المصممة لتسهيل دخول الأعمال للدولة وتمويلها بشكل مناسب.*

# Dedication

This Thesis is dedicated to my parents, siblings, and family for their moral, spiritual, and emotional support.

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Thanks to Allah for giving me strength to accomplish my PhD journey.

I wish to express my appreciation to my director of studies Dr. Abdelmounaim Lahrech. This work would not have been possible without his continuous support, guidance and encouragement. I would also like to extend my gratitude to Professor Ashly Pinnington and Dr. Hussam Malkawi for their support and contributions to this study.

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# Abbreviations

CPI - Consumer Price Index
EDBI - Ease of Doing Business Index
EIT - Economies in Transition
EODB - Ease of Doing Business
EU - European Union
FDI - Foreign Direct Investment
FPI - Foreign Portfolio Investment
FX - Foreign Exchange
GDP - Gross Domestic Product
GEI - General Environmental Institutions
GM - Gravity Model
GNI – Gross National Income
IDP - Investment Development Path
IMF - International Monetary Fund
IP - Institutional Policy
LOF - Liability of Foreignness
M&A - Mergers and acquisitions
MEODB – Modified Ease of Doing Business
MIP - Minority Investor Protection
MNC - Multinational Companies
MNE - Multinational Enterprises
MRT - Multilateral Resistance Term
NIE - Newly Industrialized Economies
OECD - Organisation for Economic Co-operation and Development
OLI - Ownership, Location, and Internalization
OLS - Ordinary Least Squares
PPML - Poisson Pseudo Maximum Likelihood
R&D - Research and Development
RIA - Regional Integration Agreement
SGM - Structural Gravity Model
SMEs - Small and Medium-sized Enterprises
SPV - Special Purpose Vehicle
TCE - Transactions Cost Economics
UNCTAD - United Nations Conference on Trade and Development
USD - United States Dollar
WB - World Bank

# Chapter 1
# Introduction

# Chapter 1: Introduction

## 1.1 Overview

Due to the accelerating pace of globalization, multinational enterprises (MNEs) have increasingly employed foreign direct investment (FDI) to enter foreign markets. According to the United Nations Conference on Trade and Development (UNCTAD), this FDI has grown worldwide from around $200 Billion in 1990 to $1.4 Trillion in 2019. This unprecedented investment activity has transformed the structure of the global economy and led to extraordinary growth in the countries receiving the investments. The resulting economic integration of the developed and developing economies has been an important driver in the globalization of business.

Because FDI is largely driven by Multinational Enterprises (MNE's) and not governments, academic research has been stimulated to explain why the growth of FDI continues to accelerate and to identify what motivates an MNE to invest abroad rather than in its home country. In addition, with research indicating that FDI is more important than domestic investment as an engine to promote economic development because of the proprietary technology that MNEs provide **(**Jadhav & Katti 2012**).** Governments have placed the attraction of FDI at the top of their policy agendas. This in turn has driven research to develop a prescriptive theory of the optimal policy framework for attracting FDI. Finally, with an increasing proportion of FDI going to developing countries, academic research has started to evaluate such factors as growth potential, risk-adjusted returns and financial stability as possible reasons for the increased attractiveness of developing countries as targets for FDI.

This research has been made easier due to the development of long time-series data from reliable international institutions (World Bank, IMF, OECD) using comparable definitions of FDI. While there are differences in the classification of FDI for data collection and reporting purposes, a

common working definition of FDI is composed of two parts: (1) the type of investment and (2) the level of control. As defined by World Bank, FDI refers to direct investment by an MNE in a host country in the form of equity, reinvested earnings or contributions (payments-in-kind) that ensure that the MNE has a significant influence (most commonly defined as having at least 10% of the voting shares). With this broad definition, empirical results of academic research based on different data sources can be incorporated without a loss of comparability.

Although research has gone in many directions, the fundamental question revolves around "why does FDI exist at all?" or "What's in it for the MNE's and for the host countries?". As the Literature Review will show, economists have had an interest in developing theories to explain and predict FDI flows since 1933 when the seminal work of Heckscher-Ohlin (HO) was first published. Building on the HO theoretical framework, the recognition that the FDI decisions are made by separate MNEs working independently is credited to Dunning and can be traced back to his work starting in the 1970's. With the change in focus from the construction of theoretical models to the statistical analysis of the actions of MNEs, academic research snowballed with the search to identify determinants of FDI, i.e., what really motivates MNEs to invest abroad. Recently, as both the absolute size, quantity and composition of FDI transactions has expanded, the research question has been refined to identify the factors that drive MNEs to invest in specific sectors and economies. Finally, the development of Small and Medium-sized Enterprises (SMEs) as significant FDI investors adds another layer of complexity in the search for factors driving the FDI decision.

But what about the host countries? The belief that FDI is desirable for host countries, particularly in developing economies, has existed for some time. However, it was not until a formal statement of the question was developed that answers could be proposed. The development of theoretical

models to provide answers is now known as Growth Theory and can be traced back to the work of Harrod and Domar in the 1940's. These macroeconomic models provide a foundation for understanding the conditions under which capital (i.e., investments) will flow between countries. However, it was not until research started to focus on the motives for MNEs to engage in FDI that the implications for host countries became apparent. While new production facilities and the transfer of advanced technology are the most visible expression of FDI in a country, the spillover effects of the investment are potentially the most beneficial for the economic development of a country. In order to be successful, the MNE frequently must provide intangible, but important, contributions in the form of organizational skills, management practices, R&D capacity and international marketing knowledge. To the extent that there is a spillover of these soft skills to other parts of the economy, there is an impetus for additional growth. From a political viewpoint, the role of FDI in the creation of knowledge is of particular relevance since it leads to higher wages, increased employment and accelerated innovation, which can all be used to convince voters that foreign investors in the economy should be welcomed, not rejected. It is therefore not surprising that there is an increasing competition between developing countries to attract FDI (Mallampally & Sauvant 1999).

While Growth Theory remains the dominant paradigm for explaining the investment decisions of MNEs, the application of the Modern Portfolio perspective has provided a useful complement to the standard model. From a portfolio perspective, a MNE is motivated not just by such factors as market size or the availability of inexpensive inputs for the production process, but also by the goal to diversify risk, which is an FDI determinant that is unique to the portfolio approach. In parallel with the globalization of production, worldwide financial markets have become more integrated as a result of the reduced restrictions in foreign exchange markets, the easing of market

entry for new participants, the continuous development of high-speed communications and the related data processing capabilities. As a result of these developments, MNEs have benefited from new sources of capital and a broader base of investors to provide financing to support their FDI plans. From a corporate finance point of view, growth theory covers the FDI determinants related to investments in real productive assets and the portfolio perspective adds the additional FDI determinant related to the optimal capital structure of the MNE.

To complement the development of theoretical models of trade flows, research has benefited from the development of new statistical methods to supplement the traditional time-series and regression methods. Particularly noteworthy in this regard is the Structural Gravity Model, which has been used with increasing frequency in the last decade as a result of the firm theoretical foundation developed by Anderson (1979) to support the model predictions. Empirical testing of the model predictions has been made possible by the development of reliable databases with statistics on FDI and trade flows. Because of the harmonization of definitions, data reporting time periods and reporting time periods, researchers have access to consistent and timely time-series data that is comparable across countries. For this thesis, the access to this robust data and the application of the Structural Gravity Model makes it possible to extend the research objectives to cover the source by country of FDI. This fine-tuning of predictions regarding the effects of various possible determinants on the FDI decision is perceived to be potentially very useful for policy makers.

A recently released World Bank report concludes that FDI has played a key role in modernizing the economies of host countries and stimulating economic development. In a closed economy, investment is limited by the amount of available savings, but with an open economy the exogenous inflow of capital makes higher levels of investment possible. Although these capital inflows can take many forms (e.g., portfolio equity, bank loans, government aid programs), FDI has proven to

be the dominant source over the past decades. Because MNEs are responsible for the FDI decision, an interesting issue of causality has been identified. Namely, is the FDI decision unidirectional from FDI to GDP growth or is there a feedback loop? Interesting, Iamsiraroj (2015) has suggested that FDI influences economic development, which in turn leads to more FDI inflows. If this bidirectional flow of causality can be confirmed by further research, then it would show that an exogenous inflow of FDI into an underdeveloped economy could be used to kick start a virtuous circle of investment and economic growth. Thus, a deep understanding of the determinants of FDI is extremely important for policy makers in a country.

While policy makers are concerned with identifying the optimal regulatory environment to attract FDI, there are important constraints. While MNEs are interested in building new markets and protecting their foreign investments, policy makers have additional political requirements to target specific industries and geographical development areas. The more that the goals of the MNE and of the policy makers diverge, the more difficult will be the attraction of FDI. In one study of FDI flows, Cole, Elliott and Zhang (2017) concluded that there was a positive relation showing that FDI tends to flow to countries with weak regulatory environments and ineffective corporate governance structures. This competition to attract FDI by loosening regulatory standards can lead to a "race to the bottom" that can have significant negative social and environmental consequences (Gray, 2002).

### 1.2 Definition and Types of FDI

The definition of FDI is an important element of the research design because it drives the collection and interpretation of data. A basic definition states that FDI is a long-term cross-border investment by a corporate entity (the "Direct Investor") in a target entity (the "Investee") for the purpose of acquiring significant influence over the management of an entity in another country (IMF, 1993;

OECD, 2008). While the International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development (OECD) contain these common elements in their respective definitions of FDI, they differ with respect to the details that are required in order to operationalize the data collection and presentation. Because it is specifically designed to account for the significant role that MNEs play in the FDI decision as well as for the multitude of financing instruments and tax structures that are continually evolving in the international environment, the OECD Benchmark Definition of Foreign Direct Investment (2008) is widely used.

Before discussing different types of FDI, it is important to distinguish and understand the difference between Foreign Direct Investments (FDI) and Foreign Portfolio Investments (FPI). At a high level, the OECD Benchmark clearly differentiates FPI ("Foreign Portfolio Investments") from FDI ("Foreign Direct Investments"). FPI simply refers to the purchase of securities and financial assets without granting the investor with direct ownership of a firm. As opposed to portfolio investments that are driven by risk and return relationships, FDI is driven by the objective of acquiring an active management position in the target entity for an indefinite time period. Although somewhat arbitrary, the cutoff point between an active and passive relationship is defined as a 10% equity interest in the target entity. Below this threshold, an investment is classified as a portfolio investment. This is the critical determinant in the FDI definition (OECD, 2008). Because the OECD definition emphasizes the "ultimate investor", it is fundamental to the identification of the investing country because of the corrections made to account for intermediate investment flows involving Special Purpose Vehicles ("SPV") located in a different legal jurisdiction. In addition to tracing the chain of control from the ultimate investor to the target investment, the multiple transaction types (e.g., M&A, brownfield investments, greenfield

investments, and additional capital transfers in the form of reinvested earnings) adds complexity to the collection of data (Jansen & Stokman 2004).

For purposes of strategy analysis, it is useful to divide the motivation for the FDI decision into two categories: vertical integration and horizontal integration (Aizenman & Marion 2004). Vertical integration can be either backward or forward. Backward integration is characterized by the focus on production in low cost countries (e.g., iPhone / Nike shoe production in China) or sourcing cheap raw materials (e.g., bauxite in Australia). On the other hand, forward integration focuses on exploiting company-specific competitive advantages (e.g. Baker Hughes investment in the drilling business in the UAE). As an alternative strategy, horizontal integration is focused on duplicating in a foreign market the product or service that an MNE is already providing in its home market. A McDonald's franchise is a good example of horizontal integration because the same business model is applied in all countries of the world. In a review of the empirical literature, Markusen and Maskus (2001) concluded that horizontal integration is the dominant motivation for an MNE to invest abroad. Foreign Direct Investments in Singapore refers to an investment where a foreign investor owns ten per cent (10%) or more of the shares or voting right in a Singaporean firm (Department of Statistics Singapore).

### 1.3 Research Problem

The increasing pace of globalization of business and national economies has led scholars to examine the underlying determinants of foreign direct investment (FDI) as well as the effects of FDI on both the Home and the Host countries. Our review has shown that there is no consensus among researches to why certain economies manage to attract foreign investors while others fail. According to the FDI literature, this is due to several reasons including but not limited to market size, availability of cheaper raw materials, low-cost labor, skilled labor, gain access to larger

market share and lower rental and tax rates. Existing literature has extensively addressed the relationship between the primary macroeconomic indicators (e.g. Gross Domestic Product, Consumer Price Index, Foreign Exchange Rates etc.) and the level of Foreign Direct Investment in various countries and regions around the world. On the other hand, comparative factors, such as economic and institutional distances, have been relatively neglected and underrepresented in FDI-focused research papers. Furthermore, studies on the impact of soft factors (e.g. dealing with construction permits, registering property, getting credit, investors protection, contract enforceability and resolving insolvency) on FDI inflows are very few despite their significant importance in facilitating foreign investments and positioning economies on the global-economy stage.

### 1.4 Research Questions

In order to achieve the objectives of this research, the research design is structured to deliver a deeper understanding of the following questions:

1. What is the relationship between economic distance and FDI flows?
2. What is the impact of geographical distance on FDI flows?
3. What is the influence of institutional distance on FDI flows?
4. What is the effect of cultural distance on FDI flows?
5. What is the moderating impact of EODB on the relationship between economic distance and FDI flows?
6. What is the moderating effect of EODB on the relationship between geographical distance and FDI flows?
7. What is the moderating impact of EODB on the relationship between institutional distance and FDI flows?
8. What is the moderating effect of EODB on the relationship between cultural distance and FDI flows?

## 1.5 Research Aims and Objectives

The primary aim of this research is to expand on existing research by conducting a more fundamental and detailed analysis of the moderating impact of Ease of Doing Business Index (EDBI) on the relationship between various dimensions of distance and FDI stock in Singapore using a Structural Gravity Model. In order to attain this research aim, we have developed eight (8) specific objectives. Other objectives of this research include:

1. To study the relationship between economic distance and FDI flows.
2. To examine the impact of geographical distance on FDI flows.
3. To test the influence of institutional distance on FDI flows.
4. To investigate the effect of cultural distance on FDI flows.
5. To examine the moderating effect of EODB on the relationship between economic distance and FDI flows.
6. To study the moderating impact of EODB on the relationship between geographical distance and FDI flows.
7. To investigate the moderating impact of EODB on the relationship between institutional distance and FDI flows.
8. To test the moderating effect of EODB on the relationship between cultural distance and FDI flows.

## 1.6 Research Novelty and Contribution

Although Singapore is one of the highest Foreign Direct Investment destinations in the global economy, it has been relatively neglected in the plethora of studies investigating the determinants of FDI inflows. In addition to adding evidence from the Singapore to the existing literature on FDI determinants, this thesis is designed to make several contributions. First, this research will combine and examine four different dimensions of distance (economic distance, institutional distance, geographic distance, and cultural distance) as possible determinants of FDI into Singapore.

Second, Ease of Doing Business (EODB) will be examined as a moderator on the four measures of distance. To the best of our knowledge, this paper will be the first to study the moderating impact of Ease of Doing Business Index on FDI inflows. This is of particular importance given Singapore has consistently ranked among the top three countries in terms of ease of doing business in the past few years. Third, unlike most of the existing empirical studies, this research provides a detailed description and study FDI into Singapore by source country. Fourth, this research will deploy the Structural Gravity Model to analyze data on FDI inflows into Singapore. Sixth, this thesis will further attempt to develop a new and enhanced version of EODB index referred to as Modified Ease of Doing Business (MEODB).

### 1.7 Research Organisation

This research is organized into 7 chapters. Chapter 1 includes the introduction, research questions, research aims and objectives, and research contribution. Chapter 2 provides a comprehensive review of the literature. Chapter 3 illustrates the research conceptual framework. Chapter 4 explains the research methodology. Chapter 5 presents research findings. Chapter 6 discussions the findings. Chapter 7 includes the conclusion and suggests for future research direction, followed by references and appendices.

# Chapter 2
# Literature Review

# Chapter 2: Literature Review

## 2.1 FDI Theories from a Historical Perspective

The specification of the determinants of Foreign Direct Investment (FDI) flows has long remained an interesting question to academics and practitioners. During the last two decades, significant progress has been made to solidify the theoretical foundation used to identify the determinants of FDI into a country. In parallel, empirical research has expanded and accelerated to test the theories, with the result that there now exists an extensive body of knowledge covering a wide range of determinants and geographical regions. Specifying

The theory of Foreign Direct Investment (FDI) has its roots in the economic analysis of international trade. Beginning with the analysis of why countries trade, economic theory has developed by refining the analysis to include the issue of why Multinational Companies (MNC's) invest in foreign countries instead of focusing entirely on investment in the domestic market. In addition, economic analysis has expanded to identify what conditions must exist before an MNC prefers to invest in a foreign market instead of just entering the market with exports. While economic models initially focused just on trade between countries, the growing importance of MNCs during the last few decades has led to a growth in the theoretical research examining the importance of FDI as an alternative to trade when an MNC expands operations internationally. The approach generally taken has been to build the existence of MNCs into the existing general equilibrium trade models that grew out of new trade theories. A closer examination of these models leads to a general conclusion that FDI can be viewed as both a compliment to and a substitute for trade when an MNC enters a foreign market (Africano & Magalhães, 2005). As a useful prelude to the topic, it is essential to begin with a review of the relevant historical theories. There are a large number of theories in the economic literature that try to identify and explain the determinants

of FDI flows. However, FDI theories can be classified under four headings: Theory of Production Cycles, Theory of Exchange Rates on Imperfect Capital Markets, Internalization Theory, and the Eclectic Paradigm of Dunning.

This section provides a review of the key theoretical approaches used to identify the most significant variables for this thesis. The review starts with a discussion of both the Classical and Neoclassical models of international trade, with a particular focus on the predictions made by the models and the empirical evidence that has been collected to test the validity of the models. Having examined the foundations, the review will continue with an examination of three important extensions: New Trade Theory, the OLI Paradigm and the Portfolio Approach.

### 2.1.1 Classical Theory

Writing in 1817, David Ricardo is commonly attributed to be the founder of international trade theory. He developed a one-factor model that predicts that trade between countries will be based on the comparative advantage of a single factor of production, which for Ricardo was the productivity of "Labor". The model predicts that, if trade is possible between countries, individual countries will increase production and export goods that it can produce most efficiently and that the wages paid to labor (the single factor of production) will increase as a result of increased productivity. Although the model is very simple, the conclusion that wages in exporting countries will increase as a result of international trade is very useful and has been supported by empirical evidence. While the single-factor model is valuable as a start to understand international trade flows and the consequences for individual countries, it cannot be applied for economies with more than one factor of production. This limitation in the model was not significant until capital investments started to compete with labor as a second factor of production in an economy.

### *2.1.2 Neoclassical Economic Theory*

Building on the work of Heckscher-Ohlin (1933), Samuelson (1948) extended the work of Ricardo to include two factors of production. The Samuelson extension is of particular importance because it specifies that there is one mobile production factor (i.e., labor) and one fixed production factor (i.e., capital). Although the Samuelson model was developed to examine factor mobility within a single country, a logical extension is to consider ways to increase the mobility of capital internationally.

The Samuelson model predicts that countries that have an abundance of capital (the fixed factor of production) would be net exporters of capital-intensive goods. Unfortunately, in what has become known as the Leontief Paradox, empirical tests of this prediction have not supported this assertion. If rich countries (i.e., those with lots of capital) are not net exporters of capital-intensive goods, then maybe they are instead exporting capital in the form of FDI. In this case, one hypothesis is that capital will flow from countries with abundant capital to countries where capital is scarce, i.e., to relatively poor countries. This idea was tested by Lucas (1990) who found that this flow from rich to poor (referred to as the "North-South" pattern) is not supported by the empirical evidence.

With respect to the determinants of FDI, the neoclassical framework focuses on the existence of differences in the returns to capital and initial factor endowments across different countries. This framework predicts that capital will flow to the country where the profitability of capital is the highest. One weakness in the neoclassical model is that it does not recognize the existence of market imperfections. Further, it assumes that transaction costs are zero, which in the international sphere is not a valid assumption. The result of test of these assumptions do not support the claims.

Lucas (1990) suggested that in reality the data support a "North-North" rather than a "North–South" pattern.

And yet, the data show that international capital flows continue to increase, even if capital mobility is less than perfect. While elegant, the neoclassical theory fails to predict the patterns of global capital movements. This has led a new generation of economists to examine additional motivations for the international movement of capital, e.g., economies of scale, systemic distortions, backward and forward linkages, and non-uniform regulatory environments (Sánchez-Martín, De Arce & Escribano 2014).

### *2.1.3 The Internalisation Theory*

Internalisation Theory examines the motives for an MNC to engage in foreign direct investment and provides an explanation for the increasing importance of multinational corporations in the global economy. Originally developed by Buckley and Casson in 1976, the theory was further elaborated by Hennart in 1982 and Casson in 1983. In his extension of the theory, Hennart (1982) develops the idea of internalization by developing models that differentiate between two types of integration: vertical and horizontal. In the original formulation of the theory, Buckley and Casson demonstrated that multinational corporations organize their internal activities so as to develop specific advantages, which can then to be exploited. Although Dunning acknowledges the importance of internalization theory and also uses it in his eclectic theory, he argues that it explains only part of the motivation for FDI flows.

As another possible determinate of the behavior of firms, the importance of transactions costs was initially introduced by Coase in 1937 in a national context and later extended by Hymer in 1976 to an international context. In his Doctoral Dissertation, Hymer identified two major determinants

of FDI. One was the motivation to remove competition. The other was the goal to take advantage of proprietary technology or the market knowledge which some firms possess in a particular activity (Hymer, 1976). According to Hymer, the concept of firm-specific advantages leads to the conclusion that FDI takes place only if the benefits of exploiting firm-specific advantages outweigh the relative costs of the operations abroad. In this way, Hymer explains that the MNC is motivated to exploit the market imperfections that led to a divergence from perfect competition in the final product market. In addition, Hymer discussed the additional costs that foreign firms face with respect to information search in distant markets, to unequal treatment by foreign governments, and to currency risk (Eden and Miller, 2004). These additional costs give further evidence to support the same conclusion: transnational companies face adjustment costs when investments are made abroad.

### *2.1.4 (OLI) Advantages Framework*

In recognition of the weaknesses of the Neoclassical model, Dunning (1973) was responsible for a paradigm shift in international trade theory. He was fundamental in changing the focus of the economic analysis from theory to an empirical analysis of what Multinational Companies (MNC's) actually use to decide on whether or not to invest internationally rather than just relying on exports to enter new markets. Dunning's eclectic theory makes a significant contribution to literature of economics as it ties together earlier traditional trade and internalization theories of Foreign Direct Investment (Chawla and Rohra, 2015). In what is now known as the OLI (ownership, location, internalization) paradigm, Dunning identified three advantages for international investment:

Ownership advantages (O): These are firm-specific advantages which can be best understood as monopolistic advantages. In this case, the MNC invests overseas in order to protect the competitive advantage inherent in its asset and technology base, marketing and management skill, proprietary

knowledge, and patent protected manufacturing processes. By investing in foreign markets, the MNC is not required to reveal its secrets to potential joint venture partners, thus providing the MNC with sustainable competitive advantages over domestic firms.

Location advantages (L): These are the firm's primary motivation to produce overseas. In this case, the MNC invests in order to take advantage of resources available in the foreign market (e.g., natural resources), to benefit from positive externalities (e.g., tax savings from free trade zones established in a country), to minimize transportation costs (e.g., establish production facilities near the source of raw materials) or to avoid trade barriers (e.g., tariffs on imports). Location advantages also refer to political, institutional, and cultural motives that create an attractive business environment.

Internalization advantages (I): These advantages build on the work of Coase (1937) and extend his theory of the firm to the international environment. In this case, the MNC is motivated to minimize transaction costs by keeping all processes within the firm. This concept is also referred to as Internalization Theory and is supported by the research in "Asymmetric Information" (Akerlof, 1970) that indicates that trade can be inhibited by asymmetric information available to the participants. By investing in the local market, the MNC avoids the additional costs associated with trading in asymmetric environments. Internalization advantages also minimize the risk of technology imitation while maintaining the good reputation of the MNC through effective management of public relations.

In tests of his own hypotheses, Dunning (1980) used firm-level data available for U.S. based companies to test empirically the propositions #1 ("Ownership Advantages") and #2 ("Location Advantages"). He identified the following significant factors influencing the FDI decisions of an

MNC: relative market size, wages, profitability, and a skilled labor force. The OLI Model has proven to be a fruitful extension of traditional economic analysis of the determinants of FDI. Subsequent tests of the model have been performed to confirm that the following factors influence the level of FDI: ownership, market size, transportation costs, legal investment framework, and in-country infrastructure and property rights. However, the theory has been criticized because of its inability to explain the predominant "North-North" pattern of capital investment (Lucas 1990).

### *2.1.5 New Trade Theory*

New Trade Theory (The Horizontal-Vertical Approach) emerged as a response to the challenges posed by Dunning. It incorporates both market imperfections (e.g., monopoly and oligopoly structures, tariffs) and the existence of multinational companies into the analysis and attempts to modify Neoclassical Theory in order to be able to respond to the criticisms raised by researchers. By recognizing the endogenous growth linking MNCs and government institutions, the theory expands the general framework to include horizontal investment (Markusen and Maskus, 2001), e.g., "knowledge factors", and vertical investment (Helpman, 1984), e.g., cheap factor prices. By introducing the costs of transportation, Krugman and Venables (1995) identified "distance between production and consumption" as a significant motivational factor for the FDI decision. In order to understand New Trade Theory at a deeper level, each of the following three pillars of the theory will be examined in turn: Resource-seeking activities, Horizontal FDI, and Vertical FDI.

*Resource-seeking activities:* In this case, an MNC establishes a manufacturing facility in a developing country in order to have access to an abundant supply of a specific raw material. Typically, the American and European investments in the 1990's in Latin America are given as examples of this motivation for an MNC to invest. The positive analysis of the role of MNC's emphasizes the benefits due to job creation and industrial development. On the negative side of

this development are the issues of resource exhaustion and excessive dependence on commodity trade. From the perspective of the Host Country, the benefit of FDI inflows depends on the terms of the concessionary arrangement with the MNC and the ability of the local country to effectively manage the income. Anecdotal evidence like the re-nationalization of YPF in Argentina shows that countries are politically sensitive to this issue and that MNC's are faced with expropriation risk (Sánchez-Martín, De Arce & Escribano 2014). Similarly, with respect to FDI, re-nationalization can have a negative spillover effect for other industries in the same country due to the negative signal to international investors.

*Horizontal FDI:* Another motivation for an FDI investment by an MNC is to enter a foreign target market where there is a large demand for its products without incurring excessive transportation costs from the home country. Although important, the avoidance of tariffs and other trade restrictions are of secondary importance for the investment decision. Originally developed by Markusen (1984), this model of the behavior of MNC's predicts that production facilities will be built in different countries whenever scale economies are limited, i.e., it is cheaper to produce using two factories than with a single large factory. For these reasons, horizontal FDI is viewed as a substitute for international trade and is frequently referred to as "tariff-jumping FDI".

In an attempt to integrate both the horizontal and vertical FDI models, the knowledge-capital model was developed (Markusen and Maskus, 2001). This synthesis of two FDI models is useful because it can be used to explain how the behavior of MNC's differs when host country economies differ with respect to size and demand for the MNC products. Similarly, in their research directed to types of FDI in developed and developing countries, Shatz and Venable (2000) found that investment in developed countries tends to be horizontal in nature (i.e., producing to meet local demand) and for developing countries to be vertical in nature (i.e., to take advantage of cheap

labor). However, it is not enough for a country to have a cheap labor force to motivate the MNC investment decision. For example, in an examination of the importance of location on the investment decision, Venables (2003) concluded that geography is an important determinant for the FDI decision. Even if there is a cheap source of labor, the advantage of making an investment in the host country can be negated if it is far from the final market for the goods or from the supply of other key production inputs.

*Vertical FDI:* As a final motivation for the FDI decision, according to New Trade Theory, the FDI investment decision by an MNC is motivated by the objective to take advantage of returns to scale or to exploit supply advantages in the host country (e.g., cheap labor). In the general equilibrium model of vertical FDI (Helpman, 1984), a key implication is that an MNC will separate its production across countries and establish production facilities in countries with substantial cheap supplies of inputs to the production process combined with transportation cost advantages. This export-oriented strategy can be beneficial for the local economy if transportation cost is significant and if there is a significant pool of qualified cheap labor (Sánchez-Martín, De Arce & Escribano 2014). From the viewpoint of the host country, FDI can lead to a virtuous circle of foreign investment leading to increased production and exports, which in turn leads to additional FDI.

In summary, as a reaction to the research direction suggested by Dunning based on his identification of to the limitations of the Neoclassical Framework, the New Trade Theory of FDI proposes that the decision by MNC's to invest abroad is influenced by both Horizontal and Vertical investment considerations. Given that trade can be an alternative to international investment, the results of empirical studies of Investment patterns (Dunning, 1997) are illuminating. Instead of being mutually exclusive, according to the empirical research, it is now largely agreed that FDI

and trade can be viewed as both substitutes (i.e., FDI replaces trade) and complements (i.e., as FDI increases, trade increases as well).

The New Trade Theory has added to the research agenda of international trade studies by uncovering the following areas for future research that are only now being explored:

- What is the causal relationship between FDI and trade? Does increasing FDI lead to more trade or vice versa?
- Are horizontal mergers limited to countries of similar size?
- Is horizontal FDI a substitute for trade (Venables, 2003)?
- To what extent does horizontal FDI supplant production (i.e., competition) from local industry?
- Are vertical mergers indicated when countries differ in size and asset endowments?

While New Trade Theory has successfully introduced the decision-making process of MNCs into the international trade framework, it can be criticized for not accounting for the practical political obstructions to trade. To remedy this deficiency, research has expanded to understand why world trade is best described as regional in nature rather than being truly free globally (Baldwin, 2006). This area of research is of particular interest because it introduces the idea that the FDI decision may follow a 2-step process, with MNCs initially deciding on a target region and then on a specific country within that region to be the target for their investment. Using data of existing trade agreements and FDI flows, Te Velde and Bezemer (2006) tested this hypothesis. They were not able to identify a regional effect for the MNC investment decision, which does not support the hypothesis of a regional effect based on the 2-step process. In an interesting variation of this research question, Blomstrom and Kokko (1997) examined how FDI changes after a Regional Integration Agreement (RIA) is established. The research conclusion is illuminating because a regional effect is identified with a positive effect on FDI inflow. A possible explanation for this

positive effect on FDI is that the RIA makes the investment environment more attractive by increasing macroeconomic stability and uniform customs integration in the region. Further evidence of the positive effect of RIA on FDI is provided by Levy-Yeyati, Stein and Daude (2003). However, the benefits of this increased FDI were not found to be distributed evenly across the member countries in the RIA.

### *2.1.6 Modern Portfolio Perspective*

Whereas the New Trade Theory can be viewed as a linear development of international economics of trade, the Modern Portfolio Perspective provides a new perspective on the FDI decision. The portfolio perspective recognizes that the MNC also incorporates risk mitigation into the FDI decision. For example, Dennis and Laincz (2005) have identified that the MNC's objective to minimize systematic exchange rate risk and business cycle risk is an important determinant in the FDI decision. This approach is useful because it offers at least a partial explanation for the existence of higher levels of FDI than would be expected by models based only on the Vertical FDI motivation. In an empirical test of the portfolio perspective using a measure of country-specific riskiness, Tabova (2013) found evidence to support the hypothesis that MNC's are motivated by risk reduction in their FDI decision. In a further development, insights from the New Institutional Economics (Rutherford, 2001) have started to be incorporated into the analysis of the FDI decision (Rodrick et.al., 2004). From this perspective, the FDI decision can be viewed as a "beauty contest" or "race to the bottom" in which countries are competing to provide the optimum set of policies required to attract MNCs. This analysis complements the portfolio perspective by identifying those specific elements of the investment decision related to political risk and the "business friendliness" of the host countries regulatory framework. This perspective is particularly relevant for the current thesis and its stated objective to identify policy recommendations to attract

FDI. In an extensive review of the Institutional Policy (IP) literature, Harrison et.al. (2010) concluded that IP designed to attract FDI was correlated with wealth creation in the country. In a study using 12 different measures of political risk and institutional effectiveness, Busse and Hefeker (2007) concluded that there is a strong positive correlation between such measures of government stability and strong legal institutions and FDI.

As shown in this section, the importance of FDI in international trade theory has shown a continual development and received extensive attention from many researchers over the past few decades. At the beginning in the Classical Theory, David Ricardo was focused on the advantages of specialization and comparative advantage and did not recognize FDI at all in their models explaining the determinants of international trade. Later, a clear role for FDI started to emerge with the development of the Neoclassical Theory Model. This model predicted that capital would flow from rich to poor countries based on measures of the relative scarcity or relative profitability of capital. The model also identified two ways that the capital could flow: (1) in the form of capital-intensive goods or (2) in the form of FDI flows to the target host country. With the development of the OLI Framework, Dunning introduced the concept of the Multinational Company (MNC) as the practical instrument for implementing FDI and expanded on the motivations for MNCs to invest abroad. He included additional factors such as market size or transportation costs as determinants of the investment decision. With the inclusion of MNCs into the analysis, New Trade Theory added to the list of potential motivating factors for the FDI decision by including such factors as resource-seeking activities. Finally, the Modern Portfolio Perspective introduced the idea of risk diversification as a motivating aspect for MNCs to invest overseas.

## 2.2 FDI Determinants

In the last few decades, the increasing pace of globalization as measured from both the business and national economy perspectives have led scholars to examine the underlying determinants of foreign direct investment (FDI) as well as the effects of FDI on both the Home and the Host countries. The resulting research agenda developed to explain the growing cross-border investment activity of MNEs has attracted scholars from many different disciplines. One important research direction that has emerged is to examine the firm-specific determinants for the FDI decision. From this viewpoint, the hypothesis is that firms expand internationally in order to take advantage of their proprietary intangible assets in order to enter new markets in other countries, while at the same time reducing the costs associated with internationalization (Blonigen 2005). Another direction that researches has taken is to examine the effect that FDI inflows have on the resulting economic growth in developing countries following the FDI inflows. A key benefit of this literature for policy makers is the deeper understanding of what drives the investment decision at the firm level to invest in a particular country or region (Kok & Ersoy, 2009). Yet another benefit to policy makers is the new research agenda focused on the effect of FDI inflows on a Host countries assets and institutions.

The testable hypothesis is that international investors seek to acquire natural resources, to exploit underdeveloped regulatory frameworks, and to take advantage of weak corporate governance structures in the Host Country (Cole, Elliott & Zhang 2017). An additional testable hypothesis results from the potential economic benefits of FDI to a Host country from technology and knowledge transfer. As a result of this hypothesis, a separate field of research has grown to examine the question of the social and economic consequences of FDI for the population of the Hosts country (Gray, 2002). One working hypothesis for empirical tests of the determinants of

FDI is that an investment is more likely when the distance between the MNE and the Host country is minimized. Following Ghemawat (2001), distance is commonly defined with reference to economic, geographic, administrative, and cultural differences between countries and is used to explain FDI decisions such as which foreign market to enter or the approach chosen to enter the market. The purpose of this section is to review the existing literature examining the relationship between the four different dimensions of distance and FDI inflows.

### *2.2.1 Economic Distance*

Researchers have long recognized that economic distance (as measured by such variables as income, wealth or the cost of natural and human resources) is a significant determinant of economic growth (Barro, 1991). While both geographic and economic distance are important, due to the widespread access to information and data transmission on the internet, there is a growing recognition that it is now possible for countries to be close economically and culturally without being geographically close. At one extreme, this globalization of information leads to a prediction that the importance of geographic distance as a determinant of trade and investment will continue to decrease (Mazurek, 2012). Initially, research focused on testing absolute measures of economic distance as determinants of FDI into a country. Recently however, the "relative economic distance" between two countries has been proposed as a better predictor of FDI flows (Tsang & Yip 2007). Unlike geographic distance which is stationary over time, "relative economic distance" fluctuates and therefore can serve as a proxy for the "relative success" of a country's economic policies. This new focus has stimulated research to explain changes in economic growth based on changes in specific measures of economic distance.

Although there is a consensus that economic distance is a key determinant of FDI, scholars are not in agreement on the determinants of economic distance. In an influential early paper, Ghemawat

(2001) proposed factor costs and technological capabilities as key determinants of the relative economic development between countries. For Ghemawat, the focus on relative economic development means that an ordinal scale used to rank the economic standing of countries must be replaced with a ratio scale in order to be able to evaluate differences between the different measures of economic development. Based on these measures of economic distance, both resource exploitation and resource exploration have been proposed as explanations for FDI. Resource exploitation takes place when an MNC uses proprietary resources to gain an advantage in less developed countries. In a test of this hypothesis using data collected on economies transitioning to a market-based system, Child and Markóczy (1993) provide evidence that MNCs can have a sustainable competitive advantage in host countries because local firms lack skills in technology, management and marketing that can only be corrected with the passage of time and investments in education. Resource exploration, on the other hand, refers to FDI flows to more developed countries in order to acquire strategic assets such as technology or management skill (Tsang & Yip 2007). In a test of this hypothesis using data collected on FDI flows for 328 Taiwanese firms, Makino et.al. (2002) proposed that firms in Newly Industrialized Economies (NIEs) made their FDI location decisions for both asset-exploitation and asset-seeking reasons. This represents an important test of the usefulness of "relative economic development" as a determinant of FDI flows. Consistent with prior research findings, the results of this study provide support for the hypotheses that FDI flows to developed countries are for resource-exploration reasons and FDI flows to less developed countries are for resource-acquisition (e.g., raw materials or cheap labor) reasons.

Further evidence of resource exploration as a motive for inward investment to developed countries is provided by Almeida (1996), Chang (1995) and Shan and Song (1997). These studies support the hypothesis that MNEs invest in the United States in order to have access to advanced

technology developed for the strategically important electronic, semiconductor and biotechnology industries. In a study later of 73 Outward Direct Investment projects between 2003-2009 of Chinese private firms, Wang et.al. (2011) generalized the research to all developed countries, not just the United States. Their conclusion was that the overwhelming motive for these investments was resource exploration, i.e., the acquisition of technology and brand names. Finally, in contrast to the assumption that only the host country benefits from the technology spillover effects of FDI, Bodman and Le (2013) provide evidence that FDI is a channel for technology transfer that is bi-directional, i.e., both the investing and the host countries exhibit positive spillover technology effects. They further conclude that the ability of a country to absorb the full benefits from the technology transfer is limited by the education level of the labor force. Thus, resource exploration motivates FDI flows not only from developed to developing countries, but also in the opposite direction as well.

As an alternative determinant of economic distance, proponents of “relative economic development" highlight that research based on this factor not only sheds light on the motives for the FDI decision, but also adds to the understanding of the form of investment that FDI takes. Because the benefits of FDI accrue to both the host country and the home country, the structuring of the investment is very important for both sides. As Murray and Kotabe (2005) have pointed out, the market for strategic assets (technology, management talent, brand names) is dynamic, so any investment based on resource exploration has to be designed to be flexible and responsive to a changing environment. The establishment of R&D Centers, Joint Ventures or M&A of host country firms with existing strategic assets are all examples of investment structures that have been used to adapt to dynamic environments (Wang et.al., 2011). Because these investments improve

long-run competitive performance, MNEs evaluate the success of the investment based on strategic as well as financial performance.

The inclusion of "relative economic development" as a determinant of economic distance can be viewed as an extension of the original OLI Paradigm (Dunning, 2008). According to this paradigm, from the perspective of a particular country, there exists an Investment Development Path (IDP) that is dynamic over time and takes into account the firm-specific advantages (i.e., ownership and internalization) and the country location advantages in the determination of the investment decision. For example, a decision to invest in less developed countries to take advantage of available natural resources or low wage rates (Location advantages in the OLI Paradigm) fits well with the resource exploitation concept. As a further refinement, the concept of "economic freedom distance" has been proposed as an additional measure for economic distance. As defined by the Fraser Institute, economic freedom exists when people can be sure that they have complete control over their assets, as long as these assets have been acquired legitimately. Using this distance measure, Arslan, Tarba & Larimo (2015) provide evidence that "economic freedom distance" is a key determinant of the FDI entry strategy chosen by an MNE. In the case of significant differences between countries, a strategy of "establishment mode" (e.g., greenfield investment) is followed in order to maximize control of the foreign asset. However, when countries are very similar, the strategy of "ownership mode" (e.g., Joint Venture) is chosen in order to take advantage of capital and human resources in the host country. While an MNE can mitigate the costs related to "economic freedom distance", a host country can also reduce this perceived risk by developing the logistic infrastructure in the country (Halaszovich & Kinra 2018). Thus, from the concept of relative economic development, a country's investment development path has caught the attention of both academics and policy makers interested in the determinants of economic growth.

For the purposes of this thesis, the measure of "relative economic development" is particularly relevant because it facilitates the application of the gravity model framework. In the CAGE model (Ghemawat, 2001), FDI motivated by market-seeking will suffer as geographic distance increases. However, if distance is defined as "relative economic development", the testable hypothesis is that distance doesn't matter. Similarly, if the measure of distance is not restricted to geographic distance, then researchers are motivated to search for possible mitigators for alternate distance measures. In a recent paper examining the influence of national transportation systems on both trade and FDI (Halaszovich & Kinra 2018), the CAGE model prediction that there is a negative relationship between distance and both trade and FDI is tested. With respect to FDI, the paper concluded that well-developed national transportation systems mitigate the negative effect of economic distance and increase a country's ability to attract FDI. In addition, the positive spillover benefits of FDI in the host country are magnified when developed logistics infrastructure is available. Contrary to the CAGE model prediction, the authors conclude that the costs of economic distance are not always relevant or negative. An objective of this paper is to examine and reconcile these contradictory predictions.

As the above studies show, "relative economic development" is a useful measure of distance as a determinant of FDI because it sheds light on both the resource exploration and resource exploitation motives for the MNC investment decision. In particular, it provides strong explanatory value to one trend identified in UNCTAD data (2012). Namely, although FDI from developed countries still accounted for more than 75% of all FDI in 2011, since 2003 the share of FDI from Newly Industrialized Economies (NIEs) and Economies in Transition (EITs) has been increasing steadily. Empirical research supports the hypothesis that the key motivation for this trend is resource exploration in developed countries. In addition, the evidence that 45% of outward FDI

goes from developed countries to NIEs and EITs supports the hypothesis of resource exploitation as the key motivation for this FDI.

Consistent with the findings of a significant volume of research, this thesis provides support for the hypothesis that there is a positive relationship between economic distance and FDI flows. However, this result is not consistent with New Trade Theory and the Linder effect, which predicts that trade decreases as the economic distance between countries gets bigger. The Linder Hypothesis is based on the assumption that demand for goods in the home market drives investment in their production. It further assumes that consumers in rich countries will demand similar goods and that trade between countries develops to exchange similar, but not homogenous, goods. Thus, rich countries will trade with each other, but not with poor countries. Therefore, the Linder effect would predict a negative relationship between economic development and FDI. In a study using panel data of bilateral trade flows between developed countries (EU 15, USA and Japan) for the period 1986-1997, Baltagi et. al. (2003) found a statistically significant negative relationship between the relative factor endowments (i.e., wealth) between two countries and trade flows, thus providing support for the Linder effect. Similarly, in a study using panel data for trade between three developing countries (Bangladesh, India, Pakistan), Bukhari et. al. (2005) conclude that countries with economies having similar per capita income levels trade more intensively with each other, which is also consistent with the Linder effect. Thus the Linder effect can be shown for both developed and developing countries.

Although evidence exists of a negative relationship between economic distance and trade flows, the hypothesis proposed for this thesis is that the nature of FDI is fundamentally different than that of trade in manufactured goods. Rather than being driven by demand in the home country as proposed by Linder, this thesis proposes that FDI flows are driven by a marginal benefit

calculation. Significantly, this hypothesis does not imply that FDI flows are strictly from developed countries to developing countries. With marginal benefit being the determinant, it follows that FDI flows will increase as the economic distance between countries increases, i.e., there will be a positive effect. This viewpoint is a relatively recent development in the FDI literature. For example, in a recent article be Fajgelbaum et.al. (2014) find evidence to support the Linder effect, but only for horizontal FDI. On the other hand, when the motivation for the FDI decision is efficiency seeking (i.e., vertical FDI), there is theoretical and empirical support for a positive relationship between economic distance and FDI (Aizenman et.al., 2001; Cieslik, 2019). For this thesis, the argument for a positive relationship between economic distance and FDI is more compelling and included as a testable hypothesis. In addition, it is proposed that FDI flows are bi-directional: from developed to developing countries when the motivation is resource-seeking and from developing to developed countries when the motivation is knowledge-seeking.

### *2.2.2 Geographical Distance*

The academic literature examining geographical distance as a determinant for the Multinational Enterprises' decision to engage in FDI is extensive (Kogut and Singh, 1988; Xu and Shenkar, 2002). To operationalize the concept of geographic distance, many different definitions have been employed. As could be expected, initial studies focused on spatial distance as measured by the straight-line distance between two points (i.e., the Euclidean measure). As research expanded, later studies modified the spacial distance measure by including potential moderating factors such as the existence of a common border or the availability of port infrastructure as proxies to measure the ease of access to a host country (Halaszovich and Kinra, 2018). Another direction that has been taken is to highlight the control perspective of geographic distance by introducing the negative effects of sub-standard communication networks or the difficulty of working internationally across

multiple time zones (Hattari and Rajan, 2008). In an interesting extension of this line of research, Boeh and Beamish (2012) added the concept of "dyad travel time" to the FDI literature. This concept states that when decision makers are making firm governance and FDI location decisions, they are more concerned about the time that it takes to commute between a parent company and a distant subsidiary than they are about the actual distance travelled. In a related study of the determinants of corporate governance structures, geographic distance has been proposed as a proxy for the information asymmetry that exists between the MNE and investors in the host country (Ragozzino, 2009). In keeping with the technological improvements in transportation and communications technology, it has become necessary to modify geographical measures of distance to include measures of travel time and quality of internet connections between countries.

As geographic distance increases, the MNE investment in a foreign country must be managed carefully to minimize conflicts that may arise because of control issues for subsidiaries that are far from the home country (Hymer, 1976). This "liability of foreignness" (LOF) is the source of additional costs to the MNE compared to similar companies operating in the host country (Berry et. al., 2010; Johanson and Vahlne, 2009). Among the factors giving rise to the extra costs associated with LOF is the psychic distance between the MNE management and the workers in the host country. This issue can arise when workers do not fully comply with management practices established by the MNE management (Slangen et. al., 2011).

As developed in the Uppsala internationalization model (Johanson and Vahlne, 1977), this perceived psychic distance to the host country is a potential determinant of the MNE market entry strategy for FDI. For markets that are distant in psychic terms, the model predicts that MNEs will enter foreign markets with minimal commitment initially, but will increase the level of investment as experience increases. In a test of this hypothesis based on MNE investments in three distinct

economic regions within China, Kuo and Fang (2008) included a measure for the international experience of the top management of the MNE. The test results confirmed the negative influence that psychic distance has on the investment location decision, but showed that this negative effect was mitigated by international management experience of the MNE. Thus, one way to reduce psychic distance is by rotating employees on different international assignments or by structured training programs.

As the body of research investigating multiple measures of distance (e.g., cultural, geographical, economic) as determinants of FDI has deepened, the hypothesis that FDI decreases as distance increases has generally been supported by the empirical test results (Dow and Ferencikova, 2010; Flores and Aguilera, 2007; Kogut and Singh 1988). Various explanations have been proposed for these results. For example, in his seminal dissertation, Hymer (1976) was the first scholar to describe the additional "costs of doing business abroad" CDBA that put an MNE at a disadvantage compared to local firms in the host country. The implicit assumption is that there is a direct relationship between CDBA and distance. More recently, in order to emphasize the social costs of investing in a foreign country, the concept of "liability of foreignness" (LOF) has been applied in research to describe the additional costs arising due to unfamiliarity in the local market.

Further sources of LOF costs are the difficulties that a foreign investor faces to adapt products to local markets or to adapt management practices to the institutions in a host country. However, there is evidence that the magnitude of these adaptation costs decreases as the degree of competition in the local market increases (Miller and Eden, 2004). This is one of the reasons proposed to explain the importance of industrial clusters for attracting FDI (Kuo and Fang, 2008). Finally, various studies have documented the additional costs arising for an MNE due to the time required to respond to lawsuits in the host country (Hennart et. al., 2002; Mezias, 2002).

At the country level, the United States has been the focus of much research due to the absolute size of the market as well as to the magnitude of both inflows and outflows of FDI. In one early study, geographic distance was found to have a negative impact on the magnitude of FDI inflows into the U.S. (Gross and Trevino 1996). More recently, in a study involving FDI inflows into transition economies in Eastern Europe, additional evidence is provided that there is a significant negative relationship between geographic distance and FDI inflows into less-developed economies. However, this negative relationship is not universal. For example, when a modified measure of geographic distance (i.e., sharing a common border) is used as a proxy for cultural and linguistic distance, one study found a positive relationship to FDI inflows, i.e., there was more FDI from neighboring countries than from countries without a common border (Bevan and Estrin, 2004). In addition, the negative impact of geographic distance can be mitigated. For example, when the size of the market in the host country is taken into account, the importance of geographical distance is significantly reduced (Bailey and Li, 2015). But even this conclusion is not undisputed. In a study on the determinants of FDI inflows into Indonesia and Singapore, market size is a significant positive influence in Singapore, but not in Indonesia (Mah and Yoon, 2010). Thus, there are significant exceptions to the intuitive negative relationship generally assumed between geographic distance and FDI.

Having established the importance of geographic distance as a country-level variable that has an impact on the FDI decision, scholars have started to examine geographic distance as a potential driver of specific investment decisions. For example, for the mode of entry decision, one study provided evidence that U.S. firms have a strong preference for full ownership in targets that are close to the home country (Ragozzino 2009). Similarly, the importance of geographic distance has also been confirmed at the sectoral level within a country (Resmini 2000), for agglomeration

economies that create value from network effects arising when companies are located in an industrial cluster (Campos and Kinoshita 2003) and for gravity factors (Bevan and Estrin 2004).

As the field has matured, research has been extended to examine even more specific FDI investment decisions. For example, with regard to geographic distance as a proxy for information asymmetry, the research of Garmaise and Moskowitz (2004) provides evidence that property buyers in the U.S. commercial property market are more likely to be local when the adverse selection bias is greatest. But as previously noted, the effect of geographical distance is not always negative. As an alternative measure of geographical distance, Mandal and Prasad (2017) provide evidence that differences in time zones between the MNE and the host country have a positive impact on the FDI decision. Namely, although communication technology provides for the seamless integration of markets, people still need to sleep. Therefore, MNEs in the service sector (investment banks, reporting agencies, consulting companies, etc.) make FDI decisions based on the availability of local staff during working hours. In this case, the need to provide seamless availability 24 hours a day as markets are open around the world is the key driver for the investment decision. Finally, research exists to show that for trade between the MNE and the host country, the cost optimization of the transportation cost is a significant factor. However, even the negative effect of transportation costs can be mitigated. In cases where a country has well-developed infrastructure, the deciding factor for the FDI decision is the availability of within-country transportation (Halaszovich and Kinra, 2018).

### *2.2.3 Institutional Distance*

The MNC decision to engage in Foreign Direct Investment (FDI) is driven by both hard and soft factors. Hard factors (e.g., market size, differences in tax regimes or interest rates) as determinants for the FDI decision are easily quantified and have been studied extensively in the literature. More recently, research has started to focus on the soft factors (e.g., quality of institutions, political stability, control of corruption in the host country, etc.) as potential determinants for the FDI decision. Generally, research has concluded that the so-called soft factors play a significant role in the investment decision and provide complementary insights on the FDI decision process.

Of the soft factors, Institutional Distance is used to describe in differences in the regulatory, cognitive institutions between two countries. It has been shown to be a significant determinant in the FDI decision. One way to test for the significance of this factor is to differentiate between formal and informal measures of institutional distance. In contrast to the formal (or regulatory) differences, informal differences require knowledge of the cultural environment in order to be understood. Because this knowledge can only be acquired by a company as it gains experience over time in a new country, an MNE is less likely to make a greenfield investment if the informal institutional distance is large (Estrin et. al. 2007). Similarly, in their seminal study of the FDI determinants for the investment location decision within China, Du et. al. (2012) found that differences between the different Chinese regions regarding such informal measures of distance as regulatory differences in contract enforcement or property rights protection were significant determinants for the FDI decision. For regions with weak regulatory structures, there was a significantly lower level of FDI.

As a further refinement of the soft factor of regulatory institutions, Choi et. al. (2016) proposed two levels of analysis regarding the effect of institutional distance on FDI. At the top level are General Environmental Institutions (GEI) that apply to the whole economy (e.g., the common legal

structure). At a lower level are Minority Investor Protection (MIP) institutions that regulate special interest groups such as minority equity investors and debt holders. Using this typology, the study concluded that there is a positive effect on FDI associated with better GEI in the host country, but somewhat surprisingly there is a negative effect on FDI associated with better MIP. As an alternative typology for regulatory institutions, in a related study measuring the quality of property rights as a determinant of FDI, a distinction was made between "property rights institutions" that mitigate the risk of government expropriation of assets and "contracting institutions" that determine the enforceability of contracts made between individuals. Using this distinction, for both measures of institutional quality, the hypothesis that good economic institutions have a positive effect on the FDI decision was supported (Acemoglu et. al., 2005; Bénassy-Quéré et. al. (2007); Habib et. al. (2002); Kaufmann et. al., 2002; Rodrik & Subramanian, 2004).

As the above examples highlight, there does not exist a consensus about the working definition of what comprises institutional quality. In an extensive study using panel data from Brazil, Russia, India, China, and South Africa (BRICS) for a 10-year period (2000-2010), Jadhav and Katti (2012) examined 7 different soft factors as possible measures of institutional quality and identified a strong positive correlation between government effectiveness and regulatory quality with FDI inflows. On the other hand, in a test of the effect of corruption on FDI, Schleifer and Vishny (1993) concluded that FDI is inhibited by the additional costs incurred by foreign investors as a result of government corruption. Thus, the effect of institutional quality on the FDI decision is symmetrical, either attracting or inhibiting FDI depending on the institutional distance between the home and the host countries. In contrast, in a more recent study, it was found that there is an asymmetrical impact of "corruption distance" on FDI. When a host country is relatively more corrupt, then FDI is inhibited. But if the host country is relatively less corrupt than the home country, then FDI is

not affected (Godinez & Liu 2015). But even when a country exhibits good economic institutions, foreign investors need to carefully assess the probability that these institutions will continue in the long term because the FDI decision, once made, is difficult to reverse (i.e., it can be viewed as a sunk cost). In a test of the importance of long-term institutional continuity, it has been established that government stability, the absence of religious tensions and clearly defined democratic accountability are all significant positive determinants of FDI into a country (Busse et. al. 2007; Naude & Krugell 2007).

Although there are exceptions, studies using a variety of data sets and measures for institutional quality generally conclude that there is a positive relationship between good institutional quality and FDI. For policymakers with an objective to attract FDI, the clear recommendation is to improve institutional quality. A less obvious recommendation is to compensate for weaknesses in the quality of institutions in a country by improving national transportation systems. In a study using data from South Asian countries, Halaszovich and Kinra (2018) concluded that the costs associated with institutional distance may not always be relevant. Namely, in the presence of mitigating factors (i.e., national transportation systems), the negative institutional distance may not be large enough to have an effect on the FDI decision.

Although historically the majority of FDI flows were from developed to developing countries, the importance of FDI flows between developing countries (i.e., the South-South FDI) has increased significantly since 2004 (UNCTAD, 2010; Aykut and Ratha 2004). As a result, research has expanded to investigate if investors from developed and developing countries are influenced by the same or different factors when making their investment decisions. In one of the first studies examining whether North and South investors are equally influenced by institutional distance in their FDI decisions, Aleksynska and Havrylchyk (2013) confirmed previous research showing that

North investors were deterred by institutional distance. While also being deterred by negative institutional distance, South investors exhibited a strong preference for FDI into countries with significantly positive institutional distance (i.e., the institutions in the target country were better). We believe a possible explanation for this behavior is that South investors are motivated to acquire intellectual property, patents, brands, etc. ("asset-seeking") which are more likely to be found in countries with strong institutions.

On the other hand, Cuervo-Cazurra (2006) and Darby et.al. (2009) concluded that South investors may be encouraged to invest in countries with negative institutional distance as well. In this case, the South investors may perceive that they have a comparative advantage in working in an environment with less than ideal institutions. Because of the experience gained in operating in their home country, the hypothesis is that South investors have a comparative advantage over North investors. In a further study involving the banking industry, the dataset of foreign banks in developing countries was divided into those that were majority owned by banks from the North ("north-south banks") and those that were majority owned by banks from the South ("south-south banks"). The finding that "south-south" banks represented a larger proportion of banks in low-income developing countries supports the hypothesis that institutional distance is less of a deterrent to FDI for South investors than it is for North investors (Claessens & Van Horen 2008).

In an interesting extension of possible FDI determinants, it has been proposed that adaptation costs should be included in the analysis in addition to the actual cost of the investment. The argument is that the full cost of the investment (including the adaptation costs) drives the FDI decision of the MNC. In a test of this decision variable, Cezar and Escobar (2015) found that adaptation costs are directly related to institutional distance. When entering a foreign market, an MNE must adapt its strategy to fit the institutional environment of the host country. This adaptation process might

reduce the profitability of the FDI and acts as a deterrent to the investment decision. Using this expanded definition of FDI, the study concluded that MNCs are more likely to invest in countries where the adaptation costs are low. However, as soon as a company enters a market through FDI, the adaptation costs start to decrease as a result of learning. To test this hypothesis based on a data set of investments made by Dutch firms over a 30-year period, Barkema and Vermeulen (1998) provide evidence that the multinational diversity that exists within an MNE provides a comparative advantage because it accelerates the learning process and reduces the adaptation costs for foreign investments. In a related study using a Transactions Cost Economics (TCE) approach, Rugman et. al. (2005) has shown that the existence of transaction costs (including adaptation costs) successfully explains why the largest MNCs in the world have most of the international sales within their primary region.

### *2.2.4 Cultural Distance*

Along with the ideas of foreignness and psychic distance, the concept of cultural distance has long been a part of the research program of the organization theorist (Siegel et. al., 2013). However, despite the centrality of the concept of cultural distance, there has been little progress in the academic literature towards a unified theory to explain such aspects as how culture evolves over time, how decision making is affected by cultural variables or how institutions moderate cultural influences. In research focusing on international business, the concept of cultural distance has been elaborated as a tool to investigate the decision-making process of MNCs and their international investment programs. Likewise, for research focused on the key determinants of a successful global marketing strategy, cultural distance has been used to identify key factors that need to be satisfied so that products targeted to international markets are successful. As research has expanded, the working definition of cultural distance has been modified to include multiple aspects

of a culture. For example, in the social sciences, a country's culture has been defined as the combination of shared values, beliefs, and symbols (Siegel et. al. 2013) or, as Hofstede (1984) has described it, culture is a frame of mind shared by a group of people that serves as a cohesive force for the group. Perhaps the most widely used definition of culture relates to shared norms and values (Hofstede 2001; Kogut and Singh 1988). As an alternative definition, cultural distance may be viewed as the extent to which people differ with respect to such factors as social behavior or working practices (Hofstede, 1980).

Because of its multidimensional nature, the analysis of culture is complex and must take into account many different dimensions. As one example of the complexity involved in the analysis, the language dimension is significant because it includes not just the oral and written language, but also the nonverbal communication that is ingrained from birth. To take another example, the moral dimension of a country is complex because it includes not just the written laws, but also the unwritten social norms and values that are accepted as guides for how people should live together. As Ghemawat (2001) has noted, some cultural attributes (e.g., language) are easily understood, while others (e.g., social norms) are more nuanced. For researchers, the six Hofstede Dimensions of Culture originally published in 1980 has grown to become the paradigm for measuring cultural attributes (Hofstede, 1980; Hofstede, 1988; Hofstede and Minkov, 2010). In one of the first tests of the hypothesis that cultural distance influences the FDI investment decision, Kogut and Singh (1988) used an index of the six Hofstede Cultural Dimensions to show statistically that there is a significant relationship between cultural distance and the form that FDI takes. Based on their test results, they concluded that the preferred mode of entry in this case is to invest in a greenfield project when the cultural distance is large. On the other hand, when the cultural distance is not significant, there is a preference for the direct acquisition of a company, with the assumption that

the empirical data shows that limited to cases where the culture in the host country was similar to that of the investing country. In contrast, in a study of FDI flows from Finland to South Asian countries (Tahir & Larimo 2004), it was found that a greenfield investment was preferred when the cultural distance was small. These contradictory results of research using cultural distance to explain FDI are not unexpected. As mentioned by Ghemawat (2001), cultural distance as a collective concept (as measured by religious beliefs, language, social norms, etc.) has been overlooked by researchers, so research results can differ because of varying methodologies and data sets.

Many academic disciplines employ the concept of cultural distance in their research (e.g., anthropology as it applies to tribes or political science as it applies to nations). In the field of organizational theory, cultural distance has come to the forefront for research into the possible determinants of the MNE strategic decision to invest in foreign countries. In order to operationalize this concept, it is necessary to be more specific about what is being measured. For example, egalitarianism is one dimension that has been proposed to characterize the culture of a country. In a test of this dimension (Siegel et. al., 2013), it was found that a culture characterized by the systematic abuse of market and political power (i.e., low egalitarianism) is a strong deterrent for FDI inflows into a country. As interest in the dimension of cultural distance has grown due to the increasing globalization of the world economy, research has become more refined. One such refinement is to investigate the source of a country's culture as a possible determinant for the FDI decision. Using Vietnam as a case study, three different historical ties to the country (i.e., the time periods covering the Chinese occupation, the French colonization and the membership in the Comecon economic union) were tested in addition to the Hofstede Cultural Dimensions as possible determinants for the significant FDI into the country during the period 1989 to 1999. One notable

conclusion from the study is that historical ties are a more stable determinant over time than cultural distance. Interestingly, although the former Comecon countries (e.g., Russia, Czech Republic, Hungary) are geographically distant and have significantly different cultures, they were early movers when Vietnam opened its market for foreign investment, which strongly supports the hypothesis that the shared Comecon experience acted as a mitigator for other measures of distance. As a further example, Beugelsdijk et. al. (2004) employed the concept of psychic distance in their research to identify the determinants of FDI flows. They found that decision-makers in MNEs were more likely to invest in countries that were perceived to be similar in terms of culture, language and social norms.

For a multinational enterprise (MNE) to become well established in a foreign country, it must adapt to the institutional environment of the host country and create social legitimacy. Because standards for social expectations and social responsibility are related to the culture of the host country, the effort required to attain social legitimacy is directly related to the cultural distance to the host country (Cui and Jiang, 2009b, 2010). Evidence of the relative importance of the institutional environment on the FDI decision indicates that institutional factors outweigh the importance of economic factors. For policymakers, this result means that an improvement in the institutional environment of a country is a mitigator of the country's negative economic factors. Furthermore, the degree of cultural distance is directly related to the difficulty that an MNE faces to gain social legitimacy in a host country. Examples of the pervasive, yet subtle, influence of culture on decision making abound. In Japan, for instance, because of the dense population in urban areas, the social norm is to conserve space which results in a preference for smaller cars (Ghemawat, 2001). The food industry provides many examples of the importance of social norms. Whereas the consumption of meat and rice are viewed as commodities in America, their

consumption can be strongly influenced by religion (e.g., Hindus are prohibited from eating meat) or social connotations that have developed over centuries (rice consumption in Japan).

In order to bridge the cultural distance to a host country, a multinational must incur additional costs related to information search in a distant country. In addition, there are costs associated with the establishment of reliable communication processes with the local subsidiary. Effective communication is critical in order to ensure compliance with company procedures and corporate guidelines related to the adaptation of the products to the local market (Chen and Hu, 2002; Madhok, 1997; Pak and Park, 2004; Randoy and Dibrell, 2002). In response to these additional costs, research indicates that MNEs establish joint ventures in countries that exhibit low investment risk, but set up wholly owned subsidiaries in high risk countries (Brouthers and Brouthers, 2001). In addition to the additional measurable costs, cultural distance also affects how managers assess risk and estimate the costs of entering a foreign market (Kogut and Singh, 1988). As a result, in addition to avoiding the establishment of wholly owned subsidiaries, MNEs also reduce financial commitments in markets that are culturally distant (Kim and Hwang, 1992).

On the other hand, other scholars have concluded that cultural diversity can be viewed as a positive factor because it adds to the knowledge base of the MNE. In this case, the knowledge gained from an investment in a single country can help the company to adapt more quickly to a changing business environment in multiple markets worldwide (Vermeulen et. al., 2001). In this scenario, an acquisition is the optimum mode of entry for an MNE to bridge cultures and minimize the additional costs associated with cultural distance.

Given that an MNE incorporates cultural distance when making the primary decision to make a foreign investment, the secondary decision relates to the functional structure (i.e., the entry mode)

of the FDI investment. Despite the suggestions that the entry mode decision is affected by cultural distance, researchers have found little or no correlation between the two (Tihanyi, et. al., 2005; 2010). For tests of the significance of cultural distance for the FDI decision, India and China both represent large economies with multiple distinct and identifiable cultures. In a study using investment data from the many diverse regions of India (Sathe and Handley-Schachler, 2006), no relationship was identified between FDI inflows and measures of social, cultural or institutional factors. In this study, the single significant explanatory factor was the level of urbanization in the host country. On the other hand, based on data from six major source countries and their FDI inflows into China, cultural proximity was both a significant factor for the location decisions of MNEs in the various regions in China and a mitigator for the negative effect of institutional differences perceived by the MNE investor. From the perspective of outward Chinese investment, evidence exists that there is an inverse relationship between cultural distance and the FDI location decisions of Chinese investors (Quer et. al., 2012). From the perspective of the internal organization of a company, a study comparing the marketing functions between the home and host countries found that cultural distance was not a cause of any significant differences between two countries (Mei Teh Goi, 2016). Hence, the above review shows, tests of the relation between cultural distance and FDI are inconclusive.

## 2.3 Ease of Doing Business

### *2.3.1 Ease of Doing Business Overview*

The focus of this dissertation is to identify the key institutional and regulatory factors that MNCs incorporate into the decision-making process for cross-border investments (FDI). In what is now referred to as the New Institutional Economics (NIE), the theoretical basis for the institutional and regulatory factors governing the social environment of a country is now well-established (North,

1991). In recognition of the fact that data is required in order to test the validity of theory, Djankov, et.al. (2002) presented a cross-sectional analysis of the cost of starting a business in 85 countries. Subsequently, Djankov led the World Bank Doing Business project which published the first annual "Doing Business" report in 2003 covering 5 indicator sets for the Ease of Doing Business (EODB) in 133 countries. According to World Bank, "Ease of doing business is an index published by the World Bank. It is an aggregate figure that includes different parameters which define the ease of doing business in a country". From the beginning, this report was extremely well received by researchers and has been used for research in thousands of articles published in refereed journals. The scope of variables included has steadily increased and has expanded in the current 16th edition to include 10 indicator sets in 190 countries. Since the choice of the EODB Index is of critical importance to the robustness of the research results of this dissertation, it is important to be clear about what the EOBD Index is and is not.

In addition to the strong theoretical logic underlying the EODB index, the backing of the World Bank is one of the most important reasons for researchers to use the index. Because of the integrity and financial foundation of the World Bank, researchers can be sure that the data and methodology used to construct the EODB Index are unbiased and accepted worldwide. In addition, the annual publication of the EODB Index goes back nearly two decades. This history of data gives researchers assurance that there will continue to be a continuity of published data so that significant research findings can be revalidated in future years as new data are published. It is the combination of reputation and money that makes it possible for the World Bank to organize the thousands of independent consultants and organizations required for the annual worldwide data collection required to update the EODB Index report.

But researchers are not the only beneficiaries of the EODB Index and reports. For governments, the EODB Index has been viewed as a blueprint for the reforms required to promote economic growth in the country. In the Doing Business Report 2019, the World Bank estimates that more than 3,500 reforms in 190 economies have come about since the first publication of the EODB Index in 2004. Although the purpose of the EODB Index is to provide a measure of the regulatory and institutional structure required to promote Small- and Medium-Sized Enterprises (SMEs), researchers and governments tend to broaden the target group to include MNCs as well. For future research, an estimate of the relative benefits of regulatory reform for SMEs and MNCs would be an interesting extension of the use of the EODB Index for policy makers.

The EODB provides both a Business Score (BS) and a Business Ranking (BR). The Business Score is an absolute measure summarizing the performance of a country on each of the components of regulatory best practice for each of the indicators included in the EODB report. For a specific country, the BS is measured on a scale from 0 (the worst regulatory performance) to 100 (the best regulatory performance) and provides an absolute aggregate measure of the regulatory environment at a point in time. Because the Business Score (BS) is published annually, this measure also shows how the regulatory environment has changed in absolute terms across time. Researchers, however, are interested in evaluating not only absolute performance, but also performance relative to other countries in the world. In order to perform country comparisons, the Business Ranking is calculated on the basis of each country's BS. Ranging from 0 (the lowest) to 190 (the highest), the BR sorts the individual country Business Scores from smallest to largest and provides a relative standing of the regulatory performance of individual countries at a specific point in time. The EODB Index (or score) is a composite score of 10 indicators topics that have been identified using survey data of entrepreneurs from 136,880 companies in 190 economies. To

build up these indicator topics, annual data is collected on 41 component indicators and then averaged to come up with the overall score for each of the indicator topics. The purpose of the EODB Index is to provide an overall measure of the "business friendliness" of an economy for entrepreneurs and SMEs. A short description of the 10 indicator topics follows.

1. *Starting a Business.* This indicator contains four different components and is designed to measure not only the direct costs of setting up a company, but also the investment in time that is required to complete all of the necessary legal procedures.
2. *Dealing with Construction Permits*. This indicator contains four different components and is designed to capture the bureaucratic hurdles (measured in terms of days, monetary costs, and the number of steps to complete) required to get permission to build a standard warehouse. In addition, there is a subjective measure of the quality of regulation included.
3. *Getting Electricity;* This indicator contains four different components and is designed to measure the bureaucratic hurdles (days, monetary costs, and the number of steps necessary to file an application) required to get an electricity connection for a standard warehouse. In addition, there is a subjective measure of the quality of connection in terms of the reliability of supply.
4. *Registering Property*. This indicator contains four different components and is designed to measure the bureaucratic hurdles (days, monetary cost, steps to complete the process) required to transfer ownership of a standard size of land and warehouse. In addition, there is a subjective measure of the quality of the public administration of the land registry.
5. *Getting Credit*. This indicator contains two different components and is designed to measure both the legal protection provided to borrowers and lenders using movable property as collateral for a loan as well as the availability of credit information on borrowers to lenders.

6. *Protecting Minority Investors*. This indicator contains two different components and is designed to measure how well shareholders are protected against the misappropriation of assets by directors of a company. In addition, there is a measure of the strength of shareholder rights in the corporate governance of a company.
7. *Paying Taxes*. This indicator contains four different components and is designed to measure the the total tax burden on a company in terms of time (hours to complete the tax return and get tax refunds), administration (number of payments per year) and monetary cost.
8. *Trading Across Borders*. This indicator contains four different components and is designed to measure the time (in terms of documentary and border compliance) and monetary cost to import and export a standardized quantity of products.
9. *Enforcing Contracts*. This indicator contains three different components and is designed to measure the cost (in terms of time and legal fees) of using the courts to enforce contracts. In addition, there is a subjective measure of the quality of the judicial system.
10. *Resolving Insolvency*. This indicator contains two different components and is designed to measure the expected recovery rate from an insolvent debtor as well as the strength of the insolvency framework.
11. *Labor Market Regulation*. Although detailed data related to labor market regulation is reported on the Doing Business Website, this data is not included in the EODB Index.

### *2.3.2 Empirical Studies using EODB Index*

A good business environment is believed to be the key to retaining the existing entrepreneurs in a country and to attracting additional foreign investors with the capital required to turn ideas into products. As such, many researchers have attempted to study the relationship between better business regulation, for which the Ease of Doing Business Index was used as a proxy, and foreign

direct investment. For researchers, this combination of a summary aggregate index as well as the separate component data series is ideal because it gives the opportunity to tailor the research questions and analyze results at the component level. In one of the earliest papers, Piwonski (2010) investigated the connection between government actions (EODB) and foreign investment. Using an OLS regression model, the study shows that a one rank increase in country's doing business ranking leads to additional FDI inflow of about USD 44 million. Hence, the model has shown that there is a link between government regulation and FDI inflow. Similarly, Mottaleb and Kalirajan (2010) suggested that business friendly environment can helps in attracting FDI.

In an exploration of the impact of an increase in the EODB ranking on foreign direct investment inflows, Jayasuriya (2011) conducted an analysis using Arellano-Bond dynamic panel estimators. Using data from 2006 to 2009, the findings reveal that an improvement in the doing business ranking for an average country is likely to boost FDI inflow. But the result is insignificant when the sample is restricted to developing countries. In a study of 35 Sub-Saharan African and 21 Asian countries for the period 2000 to 2005, Morris and Aziz (2011) used a correlation coefficient test and found only partial support for the hypothesis that there is a positive relationship between the EODB Index and the level of FDI in a country. However, because of the availability of the index component data series, the researchers were able to pinpoint two factors (e.g. registering property and trading across borders) that did have strong positive correlations for all six years of the study for the Sub-Saharan African countries. Given the limitations of the study with respect to sample size (6 years) and methodology (correlation analysis), the study conclusions might not be reliable. Nevertheless, in general, the availability of this level of detail in the EODB Index is particularly useful for policy makers that must set priorities when constructing a development plan for a country.

Olaval (2012) tested the relationship between Doing Business factors and FDI for developed and developing countries. The author concluded that a higher doing business ranking is required for attracting greater FDI in general, but is especially important for developing countries. Similarly, Bayraktar (2013) assessed the relation between Ease of Doing Business indicators and FDI covering the years from 2004 to 2010. This study provides additional support for the hypothesis that countries with better doing business records tend to attract more FDI. Bhanushali (2015) also showed that there is a significant association between foreign direct investment and ease of doing business. Bhanushali further suggested that governments should look at eliminating some of the unnecessary procedures to start business, speeding up the resolution process for business insolvency, and reducing electricity cost.

In a later study involving six Asian countries (Afghanistan, Bangladesh, India, Iran, Pakistan and Sri Lanka), Shahadan et.al. (2014) used a larger sample size from 2004-2013 (10 years) and a more sophisticated methodology (random effect method) to examine the potential relationship between the business environment and FDI inflows. As stated by the authors, the use of Panel Analysis makes full use of the availability of component data for the index and makes it possible to tailor recommendations to policy makers targeting specific types of FDI. Using the example of attracting MNCs to build distribution hubs in a country, the recommendation to policy makers would be to focus on such factors as the "cost of building" and the ease of "trading across borders". This study provides further support for the general positive relationship between EODB and FDI, but adds the additional contribution of identifying 3 factors (registering properties, getting credits, trade across borders) that are related to the attraction of FDI. For future research, a further improvement to the research design would be the disaggregation of FDI by sector. This would provide useful information for policy makers interested in targeting specific types of FDI.

Published in the same year, Corcoran and Gillanders (2014) introduced both the World Bank's "World Development Indicators" to measure the FDI inflow into a country as well as the U.S. Bureau of Economic Analysis (BEA) data to link the bilateral FDI outflow from a major investing country to specific countries. Using data from 149 countries for the period 2004 to 2009, the authors used Cross-Sectional Analysis to analyze FDI flows at both the country level as well as the level of two important economic clusters – the OECD (a proxy for "rich" countries) and Sub-Saharan Africa (a proxy for "poor" countries). Based on this analysis, it was found that there is no evidence linking an improvement in the EODB Index to an improvement in FDI inflows to either rich or poor countries (as measured by the countries in the same economic trading clusters), although there was a positive relationship for middle-income countries. For countries with a common border, the study concluded that a higher EODB does not lead to relatively higher FDI inflows. Given these interesting results, an extension of this research methodology using the gravity model would provide a more robust test of the results.

As an example of the use of the EODB Index at the policy level, Singh (2015) applied Johansen's co-integration test and the Granger causality test to analyze the correlation between six variables of Ease of Doing Business (Starting a Business, Construction Permits, Getting Electricity, Registering Property, Enforcing Contracts, and Paying Taxes) and FDI. This study was initiated to evaluate the effectiveness of the government campaign to improve the business environment in India. The empirical results illustrated that none of these six components leads to FDI in the short run. However, there is a long run relationship between foreign direct investment and these six variables using Johansen's co-integration test.

Using data collected from the 10 ASEAN countries, Vogiatzoglou (2016) applied a two-stage research methodology combining Factor Analysis and Regression Analysis to examine the effect

of the EODB factors on FDI at both the composite ASEAN level as well as at the country level of the individual member countries. The use of Factor Analysis addresses the issue of multicollinearity between the 10 factors that make up the EODB index. For a complete analysis of EODB Index components, Pinheiro-Alves et.al. (2012) employed an analysis of the multicollinearity of the 41 variables included in the EODB Index. This methodology is promising because it opens up the examination of FDI at the trading bloc level and allows for the identification of the winners and losers of the member countries within the trading bloc. Similarly, in his study, Vogiatzoglou found that efficient business regulations can lead to an increase in FDI inflow. The result also reveals that the most important factor for both extra-ASEAN and intra-ASEAN countries was related to "entrepreneurial-focused regulatory efficiency". For intra-ASEAN FDI, the model identified the factor related to a "natural resource-based economy" was the most significant.

In an interesting extension of the research, Kofarbai and Bambale (2016) examined the potential mediating role that EODB could play between the investment climate in a country and foreign direct investment. The results of the study support the hypothesis that EODB is related to FDI inflows. As specific policy recommendations, the study suggested that government policymakers should focus on improving power supplies, controlling corruption, and streamlining tax administration. A similar study by Muli and Aduda (2017) examined the mediating effect of the doing business index on the relationship between economic integration and FDI. The research indicated that formation of an economic bloc leads to an increase in FDI inflows. The authors further demonstrated that a favorable business environment is required to attract more FDI.

Using time series data for the period from 2010 to 2014 and deploying analysis of variance and correlation tests, MogesEbero and Begum (2016) attempted to diagnose the degree of

interdependence between the doing business index and FDI inflows into Ethiopia. The study suggested that three of the EODB variables (cost of Starting a Business, cost of Getting Electricity, cost of Registering Property, and the cost of Construction Permits) have a significant negative relationship to FDI inflows. As a positive contribution of the study, the researchers provided a list of recommendations and reforms for the government of Ethiopia to ensure a friendly business environment for entrepreneurs.

In a study designed to assess the relative importance of the separate components of the EODB Index, Hossain et al. (2018) also examined the empirical relationship between doing business and FDI inflows for a sample of 177 countries for the period from 2011 to 2015. The researchers made use of a least squares regression model and studied five main components of the Index. The study revealed that the Enforcing Contracts component of EODB had a positive and significant influence on FDI inflow, whereas the components of Starting a Business and Paying Taxes were found to have no significant impact on FDI.

Singh and Jaiswal (2018) documented the success of the "A Vision of Make in India" program launched by Prime Minister Modhi in 2014 by referring to the improvement in the EOBD ranking from 142 in 2014 to 100 in 2017. It is presumed, but not stated, that this improved ranking will lead to long-term improvements in the economy and to an increase in FDI into India. The study is noteworthy because it shows that the relationship between EODB and FDI is widely accepted and is used by policy makers to drive economic reforms in a country. However, in order to contribute to the existing body of knowledge, it would be interesting if the authors would set up a long-term time series analysis to track the EODB Index with FDI in India. The results of such study could provide concrete evidence of the value of marginal changes in the EODB Index on FDI.

In another recent study, Amponsah and Sarpong (2020) analyzed the correlation between selected EODB parameters and foreign direct investment in sub-Saharan Africa. The researchers deployed a generalized method of moments estimation technique for a sample size of 45 countries from the period 2004 to 2018. The investigation revealed that Ease of Doing Business factors play a significant and positive role in boosting FDI inflow. The predictive model developed in the study showed that a percentage point enhancement in Starting a Business can lead to a 0.79 percentage point increase in FDI flows.

In addition to the EODB Index, the World Bank also publishes an annual EODB ranking of all countries in the survey. Some researchers (see Cubbage et.al., 2010) have attempted to include this ranking as a measure of country risk in a calculation of a risk-related return on investment. However, because the ranking is just an ordinal measurement, all that can be concluded is that one country is more or less risker than another country. The difference cannot be quantified to provide an operational measure of risk required for a risk/return tradeoff to be estimated. Harvey (2004 and 2012) provides a detailed discussion of alternative measures of risk applied to the investment decision as part of a detailed discussion of the application to the Norwegian government investment diversification decision.

| **Title & Author** | **Objective** | **Key Finding** |
|---|---|---|
| "Does the 'Ease of Doing Business' In a Country Influence its Foreign Direct Investment Inflows?" Piwonski (2010) | Investigate the connection between Doing Business and foreign investment. *(Regression Model)* | Every one level increase in country's doing business ranking leads to additional FDI inflow of about USD 44 million |
| "Determinants of Foreign Direct Investment in Developing Countries: A Comparative Analysis" Mottaleb & Kalirajan (2010) | Test the relationship between business-friendly environment and FDI *(Correlation Coefficient Test)* | The research suggested that business friendly environment can helps in attracting FDI. |
| "Improvements in the World Bank's Ease of Doing Business Rankings: Do They Translate into Greater Foreign Direct Investment Inflows?" Jayasuriya (2011) | Explore the impact of higher EODB ranking on foreign direct investment inflows *(Arellano-Bond dynamic panel estimators)* | The findings reveal that an improvement in the doing business ranking for average country is likely to boost FID inflow. But the result is insignificant for developing countries |

| | | |
|---|---|---|
| "Ease of doing business and FDI inflow to Sub-Saharan Africa and Asian countries"<br>Morris and Aziz (2011) | Examine the correlation between factors that influence conducting business and FDI<br>*(Correlation Coefficient Test)* | The Study found only partial support: only two factors (registering property and trading across borders) found to be significantly correlated and related to FDI |
| "The influence of Doing Business' institutional variables in Foreign Direct Investment"<br>Olaval (2012) | Test the relationship between Doing Business factors and FDI for developed and developing countries<br>*(Fixed Effects Method)* | Higher doing business ranking is required for attracting greater FDI particularly for developing countries |
| "Foreign Direct Investment and Investment Climate"<br>Bayraktar (2013) | Assess the relation between institutional variables of Doing Business and FDI<br>*(Correlation Coefficient Test)* | Countries with better doing business records tend to attract more FDI |
| "Relationships between Doing Business Indexes and FDI Net Inflows: Empirical Evidence from Six Asian Countries (Afghanistan, Bangladesh, India, Iran, Pakistan and Sri Lanka)"<br>Shahadan, Sarmidi, & Faizi, (2014) | Study the relationships between Ease of Doing Business indexes and FDI inflow<br>*(Random Effect Method)* | Better business environment is more likely to boost FDI inflow |
| "Foreign direct FDI inflow to Sub-Saharan Africa and Asian investment and the ease of doing business"<br>Corcoran and Gillanders (2014) | Assess the prelateship between doing business and FDI in middle income and poor countries<br>*(Cross-Sectional Analysis)* | No evidence linking an improvement in the EODB and FDI for poor countries but there is a positive relationship between EODB and FDI for middle income economies |
| "Relationship between ease of doing business and foreign direct investment"<br>Singh (2015) | Analyse the correlation between six variables of Ease of Doing Business and FDI<br>*(Johansen's Co-Integration Test and Granger Causality Test)* | The empirical results showed no relationship in the short run, but there is a long run relationship between EODB and FDI |
| "Ease of Doing Business and FDI Inflows in ASEAN"<br>Vogiatzoglou (2016) | Examine the effect of the EODB factors on FDI<br>*(Factor Analysis and Regression Analysis* | Efficient business regulations can lead to an increase in FID inflow |
| "Investment Climate and Foreign Direct Investment in Nigeria: The Mediating Role of Ease of Doing Business"<br>Kofarbai and Bambale (2016) | Test the mediating role of EODB between investment climate and FDI<br>*(Explanatory Research Design)* | Support the hypothesis that EODB is one of the important factors for higher FDI inflow |
| "The desirability of Doing Business and Flow of Foreign Direct Investment nexus: The Case of Ethiopia"<br>MogesEbero and Begum (2016) | Diagnose the degree of interdependence between doing business index and FDI inflow<br>*(Analysis of Variance and Correlation Tests)* | Cost of Starting a Business, cost of Getting Electricity, cost Registering Property, and cost of Construction Permit have a significant negative relation to the FDI inflow |
| "The Mediating Effect of Ease of Doing Business on the Relationship between Economic Integration and Foreign Direct Investment in the East African Community"<br>Muli and Aduda (2017) | Explore the mediating effect of doing business index on the relationship between economic integration and FDI<br>*(Explanatory Research Design)* | Favorable business environment is required to attract more FDI |

| | | |
|---|---|---|
| "Ease of Doing Business and Its Impact on Inward FD" Hossain, Hassan, Shafiq, and Basit, (2018). | Investigate the relationship between doing business and FDI (L*east Square Regression Model)* | Contracts component of EODB have a positive significant influence on FDI inflow. Whereas, Starting a Business and Paying Taxes were insignificant |
| "Ease of Doing Business and Foreign Direct Investment: Case of Sub-Saharan Africa" Amponsah and Sarpong (2020) | Study the correlation between selected EODB parameters and FDI (Generalized Method of Moments Estimation Technique) | EODB factors play a significant role in boosting FDI inflow |

**Table 2.1. Summary of research studies of the relationship between Ease of doing Business and FDI**

## 2.4 Gravity Models and FDI

Before proceeding with the focus of this thesis, it is useful to review the evolution of the theoretical gravity models. These models have been successfully applied to the analysis of international trade in the recent few decades and have become a standard tool for researchers. This review helps to extend the FDI Theories developed for this thesis and adds perspective for the expected contribution of this thesis to the existing literature. After reviewing the historical development of the Gravity Model and summarizing the extensive literature devoted to its empirical testing, the Structural Gravity Model will be described and evaluated as a necessary tool for analyzing trade policy in a multi-country environment.

### *2.4.1 Gravity Model*

The Gravity Model used for research in international trade can trace its roots back to discoveries in theoretical physics. The analogy and idea for the model is based on Newton's Law of Universal Gravitation first proposed in 1686. Formally, the Law can be expressed as follows:

$$F_{A,B}=G\left[\frac{m_A m_B}{r^2}\right]$$

Where;
$F_{A,B}$ = gravitational force acting between two objects
$m_A$ and $m_B$ = mass of object 1 and object 2
r = distance between the center of each of the objects

The Law states that the force of attraction between any two objects depends directly on the mass of each object and inversely on the distance between the objects. Of particular interest for our purposes is the recognition that the force of attraction decreases dramatically (i.e., it is inversely proportional to the square of the distance between the two objects) as the objects are moved apart.

About three centuries later, while trying to model the effect of distance on trade flows, Tinbergen (1962) recognized the analogy to the Law of Gravitation and formulated the following Gravity Model of Trade.

$$X_{AB}=\widetilde{G}\left[\frac{Y_A E_B}{T_{AB}}\right]$$

$X_{AB}$ = exports from countries A and B
$\widetilde{G}$ = inverse of world production
$= \frac{1}{Y}$
$Y_A$ = country A's domestic production
$E_B$ = country B's aggregate expenditure
$T_{AB}$ = total trade costs between countries A and B

The Gravity Model of Trade states that exports between two countries depend on (1) the relative size of the GDP of each country and (2) the distance between the countries as measured by total trade costs between each of the country pairs. Of particular interest is the analogy to the Law of Gravity and the recognition that trade decreases as the distance between the countries increases. Applying the concept of Newton's Law to international trade, the trade between countries is mutually attracted in proportion to their respective market size (e.g. Gross Domestic Product, GDP) and proximity. Following the publication of the Gravity Model of Trade, extensive empirical testing over more than 50 years has consistently confirmed the main prediction that distance and market size are key determinants in the volume of trade between countries.

Despite its remarkable empirical performance and explanatory power for explaining trade flows, it was not until the early 2000s that the gravity model of trade started to make an impact on professional researchers. There were two reasons for this delayed reaction of researchers. First, it was not taken seriously because of the fact that it is an "atheoretical" model of trade. This means that there did not exist a theoretical foundation for the model predictions. It just happened to fit the data very well. Second, although it was shown to be accurate for predicting trade volumes, it could not be used to analyze trade policies across countries. Although the application of the gravity model has shown remarkable empirical validation in explaining international trade, it has been criticized because of its inability to deal with the heteroskedasticity issue that arises when examining trade data. In an interesting recent criticism, Anderson and Van Wincoop (2003) have argued that the lack of a theoretical foundation for the gravity equations may result in "omitted variables" bias. In order to address this deficiency in the model, they then developed a method that can efficiently estimate a theoretical gravity equation and properly compute the comparative statics of trade frictions.

*2.4.2 Structural Gravity Model*

It was not until Anderson (1979) and Bergstrand (1985) successfully extended the Gravity Model by providing a solid theoretical foundation that researchers were attracted to test the model. In particular, researchers have been provided with the necessary analytical framework required to deepen the analysis of trade flows across countries to include trade policies. This reformulated model is known as the Structural Gravity Model and can be formally summarized as follows:

$$X_{AB}=\left[\frac{Y_A E_B}{Y}\right]\left[\frac{t_{AB}}{\Pi_A P_B}\right]^{1-\sigma}$$

$$= [\text{Size Term}][\text{Trade Cost Term}]$$

$\left[\frac{Y_A E_B}{Y}\right]$ = Size Term is a function of

1. Country A's Domestic Production
2. Country B's Aggregate Expenditure
3. World Production (Y)

$\left[\frac{t_{AB}}{\Pi_A P_B}\right]$ = Trade Cost Term is a function of

1. Bilateral trade frictions
2. Ease of exports from A
3. Ease of imports into B
4. Elasticity of substitution from one country to another

This formulation of the Gravity Model is critical for this thesis. In the FDI context, for instance, it predicts that larger economies (as measured by GDP) should be home for more FDI activity, whereas wider geographical distance should be linked with less FDI activity.

Recently the structural gravity model has grown to become the preferred method for researchers to study the potential importance of various possible determinants of FDI flows (Buch, Kokta and Piazolo; 2003). Based on interfaces between the different potential sources across countries, the model further created the empirical framework required to examine FDI flows and identify its determinants between nations (Bevan and Estrin, 2004). In the gravity model of trade, distance plays a key role in determining the strength of attraction of the host country for FDI inflows. Although the original formulation of the model relates distance to FDI flows, researchers have extended the concept of distance so that it can also be interpreted as a proxy for information costs. As a general model of the flow of assets between countries, the structural gravity model can even be extended to model the determinants of the transfer of human capital (the dependent variable in place of FDI) between countries.

In a recent development, it has been shown that the Structural Gravity (SG) model can be formulated as a special case of the broader class of New Quantitative Trade (NQT) models

(Bekkers, 2017). Building on this structure, a significant extension in the SG model has been developed that makes it possible to differentiate between FDI flows between countries for physical capital and for technology capital. This distinction is important because it makes it possible to estimate the gains from FDI both to the host country and to all of its trading partners. Whereas physical capital is assumed to benefit only the host country, the benefit from technology capital (i.e., intangibles such as patents and management skills) also extends to all the trading partners of the host country. Since technology capital also has the further characteristic of being non-rival (i.e., as soon as a country creates technology capital, it can be used anywhere in the world at no additional cost), it is not incorporated into this version of the SG model. With FDI now being defined as technology capital, it is possible to develop a theoretical model that includes FDI as a separate factor of production. Thus, this extension of the SG model provides a theoretical foundation for the examination of a country's openness (i.e., liberal FDI policy) as a determinant of FDI inflows (Anderson et. al., 2016). In addition, with the link to the NQT literature, there is the additional benefit of being able to estimate the magnitude and distribution of the benefits from FDI.

In one application of this SG model with FDI defined as technology capital, Anderson et. al. (2016) examined the relationship between trade liberalization and FDI. The key element of this study was the separation of the Multilateral Resistance Term (MRT) common to SG models into inward and outward resistance terms. The Inward Multilateral Resistance (IMR) is a index of relative consumer prices between the host country and it trading partners, while Outward Multilateral Resistance (OMR) is an index of producer prices for the same trading group. The hypothesis is that there is a negative relationship between IMR in the country of origin and FDI flows to the host country. The intuition for this hypothesis is that if consumer prices are high in the Home country,

profits will also be high and there will little incentive to invest abroad. Because the marginal cost of technology capital to the origin country is zero, the OMR term is not relevant and is not included in the model. While the gravity estimates of this FDI model are generally consistent with standard trade models, there are some differences that are significant for this thesis. First, the negative effect of geographical distance is significantly higher for the trade model, presumably because it is more difficult to control physical capital from a distance. Second, the FDI model does not exhibit a non-linear decrease in the negative effect of geographical distance, presumably because the cost of transportation is not significant for technology capital. Third, the positive relationship between language and former colonial ties is significantly higher for the FDI model. Finally, there is a positive and statistically significant relationship between Bilateral Investment Treaties (BIT) in the FDI model.

Many of the existing empirical studies regarding FDI determinants have used Structural Gravity Model as explanatory factors and suggested that there is a significant relationship between the size of the host market and the volume of FDI (Agarwal, 1980; Wheeler and Mody, 1992). As a direct test of the gravity model, Grosse and Trevino (1996) investigated FDI inflows to the United States using data available from country of origin for FDI flows from 1980 to 1992. Using the gravity model framework, the study showed that there is a positive relationship between FDI and both home country's exports to the US and the market size. The investigation also indicated that there is a negative relationship between FDI and both home country's imports from the US and geographic distances.

Using the general form of the gravity equation of trade, Stone and Jeon (1999) examined the bilateral FDI flows within the Asia-Pacific region using data from the period of 1987-1993. The results indicated that FDI flows into the Asia-Pacific region were largely driven by the relative

market size of the home country and had less to do with the environmental factors existing in the host country.

In an examination of the "North-South" hypothesis, Bénassy-Quéré et al. (2007) applied the gravity model to explain the effect of bilateral FDI flows between 14 OECD nations (the "North") and more than 40 developing nations (the "South"). The empirical results illustrated that the quality of institutions existing in the host country is a significant determinant of FDI inflows. For this study, institutional quality was defined to include such attributes as the lack of corruption, the ease of creating a company, the clarity of the tax system, the enforcement of contract law, the transparency of government institutions, the efficiency of justice system, and the security of property rights. In addition, the study also revealed new avenues of research by highlighting that capital availability in the host country has a significant positive impact on FDI inflows.

To extend the analysis to include a regional perspective, Elafif (2008) focused on the determinants of Intra-Arab FDI flows during the period from 1985 to 2005. Deploying a gravity model of trade using panel data, the results of the study showed that there is a significant positive relationship between both the GDP of the source and the host countries and Intra-Arab FDI flows. This positive relationship exists for FDI inflows to both the host country as well as to the host country. The author further identified the importance that political stability plays in explaining the FDI decision.

### 2.5 Summary

As a research area in international economics that is of interest to both academics and politicians, it would be difficult to identify an area that has received more attention than the sources and determinants of Foreign Direct Investment. As shown by the previous literature review, academic interest has grown and branched into many areas of specialization (e.g., Heckscher-Ohlin models,

the OLI Paradigm, Modern Portfolio Theory). Combined with this theoretical background, the development of the increasingly refined quantitative methods (e.g., the Structural Gravity Model) has made it possible to explore increasingly more complex research questions. For politicians, the overwhelming evidence of the positive effects of FDI (e.g., economic growth, positive spillover effects for human capital development, technology transfer) have made it imperative that policy makers have a good understanding of what drives the FDI decision. Luckily for policy makers, significant progress has been made to advance the understanding of the relationship between FDI flows and both the quantitative factors (e.g., GDP, inflation) and the qualitative factors (e.g., trade openness, business friendliness), so that it is now possible to make firm recommendations of policy reforms required to attract FDI.

For this thesis, the continuing development of the Gravity Model methodology and especially of the Structural Gravity Model has been critical. Because of this development, it has been possible to refine the FDI analysis to include the determinants that are important to an MNC for the decision regarding the target sectors for FDI in a host country. If successful, this extension of the research into the determinants that are relevant for the FDI decision will aid policy makers in the development of industrial policy for their country. The following chapter provides a summary of the scope of this thesis and an indication of the potentially significant contributions that can be expected from the research.

# Chapter 3
# Conceptual Framework

# Chapter 3: Conceptual Framework

## 3.1 Introduction

The focus of this chapter is to outline the complete description of the research conceptual framework as well as to provide the full elucidation of the conceptual model development that is the foundation of this thesis. On an abstract level, the conceptual framework can be viewed as a "network of interlinked concepts that together provide a comprehensive understanding of a phenomenon" (Jabareen, 2009). This thesis is based on the theoretical framework of the Dunning OLI Paradigm. This paradigm was carefully selected as it explicitly recognizes the key role played by multinational corporations (MNCs). The explanatory framework of Ownership (O), Location (L) and Internalization (I) provides a useful explanation for the determinants used by MNCs in the foreign direct investment (FDI) decision process. The structural gravity model will be applied to model the significant determinants for the FDI investment decision. In order to focus the research plan and provide a roadmap for the understanding of this thesis, a conceptual framework was constructed and elaborated in this chapter. Based on the Dunning OLI Paradigm, a robust research methodology was developed to ensure sufficient data collection to address different determinants and the multiple relationships with the moderators needed to explain the FDI.

## 3.2 Research Conceptual Framework

The overarching purpose of this thesis is to extend the existing research on the determinants of FDI. More specifically, this thesis is designed to conduct a more fundamental and detailed analysis of the moderating impact of Ease of Doing Business Index on the relationship between four different dimensions of distance and FDI stock in Singapore. Based on the Literature Review, the

structure of this thesis was refined to address the issues identified in previous research. With this focus, the current chapter is designed to provide a basis for the preliminary evaluation of the originality of this thesis in terms of focus and the expected new insights.

The conceptual framework of this thesis is organized around four different dimensions of distance as potential determinants of FDI flows. In addition, a critical element of the research design is the inclusion of EODB as a potential moderator for each of the four measures of distance. The EODB Index, as reported by World Bank, affects both the individual FDI determinants as well as the absolute level of FDI inflows. One of the contributions of this thesis to the existing literature is the recognition and measurement of the existence of moderators that are required to better understand the FDI flows. The research model and the overview of the content of this chapter is demonstrated in the following figure (Figure 1).

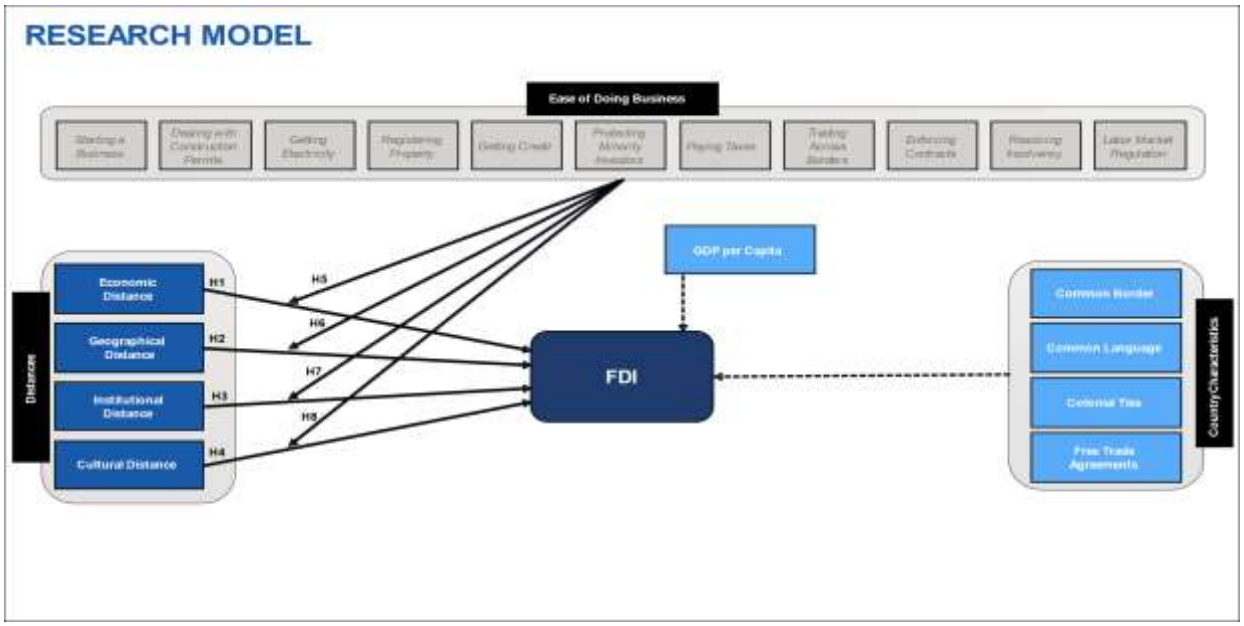


**Figure (1) The Research Model**

## 3.3 FDI Determinants

As documented in the Literature Review, Dunning is credited with extending the Neoclassical Theory of FDI by introducing the Multinational Enterprises (MNE) as the driving force behind the FDI decisions. With his OLI Paradigm, he identified ownership, location and internalization as the three main pillars that motivate MNEs in the FDI decision. In empirical tests of the theory, researchers have identified numerous advantages of a target country (e.g., cost efficiencies, abundant of natural resources, large potential market) that MNEs consider before deciding to invest in another country (Mina, 2007). Building on the Dunning theory, this thesis begins by examining the four different dimensions of distance that are generally accepted as having an effect on the level of FDI inflows: economic distance, geographic distance, institutional distance and cultural distance. In the following sections, each of these dimensions of distance will be explained in more detail by giving the operational definition used in this thesis as well as by stating explicitly the expected relationship of each determinant on the FDI inflows.

### *3.3.1 Economic Distance*

The economic distance between two countries is defined as the difference between the GDP per capita in USD between a home country i and the target country j. As a measure of the wealth created in a country during a year, GDP is a proxy for the level of a country's economic development and can be interpreted as the wealth or income of a country's consumers. Empirical studies generally support the "North North Trade Paradigm" (i.e., rich countries tend to engage in relatively more cross-border trade and investment with each other than with poor countries), but the data also indicate that poor countries are more likely to engage in cross-border economic activity with rich countries than with other poor countries. This "South North" Trade phenomenon

was unexpected when it was first discovered and led researchers to examine the reasons that "South South" Trade is not more prevalent.

The detailed examination of the relationship between economic distance and FDI flows can be traced to the work of Dunning (1980). In one of the first tests of the OLI Paradigm, he used data from U.S. domiciled companies to examine the "Ownership" and "Location" determinants predicted by the paradigm. His results showed that relative market size, relative profitability and the availability of a skilled labor force were all significant factors influencing the level of FDI inflows into a country.

For purposes of this thesis, the key conclusion of the Dunning work is that for an MNE interested in entering a country with a large target market it is important to measure the income level of the consumers in order to assess the affordability of the products. For this assessment, the "flows" definition of economic distance is particularly suited. For this thesis, the World Development Indicators databases was used to obtain data on the sample countries income "flows" (i.e., GDP). The testable hypothesis is that there is an expected positive relationship between economic distance and DI inflow.

### *3.3.2 Geographic Distance*

The geographic distance is commonly defined either narrowly as the spatial distance between two locations or more broadly as the ease of accessibility (e.g., a common border or a large port to a navigable river or an ocean) between two countries. Using the spatial distance definition, the geographic distance between two countries can be viewed from at least three different perspectives (Ragozzino, 2009). First, there is the obvious spatial perspective combined with ease of accessibility (e.g., port facilities). Second, there is the control perspective (e.g., unstable

communication networks and coordination over many time zones). Finally, geographic distance can also be used as a proxy for information asymmetry. For all three of these perspectives, the working hypothesis is that there is a direct relationship between geographic distance and the cost (e.g. logistical and transportation) to an MNE of an investment in the Host country (Memedovic et.al., 2008; Nachum et.al., 2005).

Following the publication of Dunning's OLI Paradigm (Dunning, 1979) and the initial positive empirical results, researchers have focused on identifying the multiple factors related to "Location" in the OLI Paradigm. These potential explanatory factors range from the cultural, to the political, to the geographical distance between the Investor Country and the Host Country (Bailey, et.al., 2015). In tests of the relationship between cross-border investments and geographical distance, results indicate a strong negative relationship between the level of investments and geographical distance. In that context, a foreign investor can be expected to prefer investments close to home to distant investments. For this study, geographical distance is measured as the difference in kilometers between the capital cities of two countries. For this thesis, the testable hypothesis is that there is an expected negative relationship between geographical distance and FDI.

### *3.3.3 Institutional Distance*

The institutional distance between two countries captures the difficulties and risks that MNEs encounter due to the differences between the legal and financial systems that exist in different countries. As defined by North (1991), institutions are "humanly devised constraints that structure political, economic and social interaction". From an MNE perspective, such institutions as a common currency (e.g., the EURO), common membership in a political association (e.g., membership in NAFTA) or even historical ties (e.g., former colony-colonist relationships such as

Antilles, the former Dutch colony in the Caribbean) all have the potential to shorten the institutional distance between two countries. However, even if two countries share a common trait, it does not necessarily mean that institutional distance will be moderated, e.g., the existence of a common heritage does not always serve to shorten institutional distance. For example, despite a shared colonial history, a common border and linguistic connections, trade between the India and Pakistan is virtually nonexistent due to the mutual animosity that developed when the country of Pakistan was formed out of the partition of the British Indian Empire. Location advantages in the OLI Paradigm also refer to political and institutional motives that create an attractive business environment.

For this thesis, institutional distance is defined as the difference between the World Governance Index (WGI) between a home country i and the target country j. The WGI was chosen because of its breadth of data (time-series information beginning in 1996 from more than 30 data sources covering various measures of institutional quality from more than 200 countries). The composite WGI can also be disaggregated into six individual governance indicators: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. Because it is published by the World Bank and publicly available, it represents an objective source of data for researchers worldwide. For this thesis, the testable hypothesis is that here is an expected negative relationship between institutional distance and FDI flows between countries.

### *3.3.4 Cultural Distance*

In the social sciences, a common working definition of culture is a society's system of shared values, beliefs, norms, and symbols. The analysis of culture is especially complex due to its

multidimensional nature (Siegel, Licht, and Schwartz, 2013). The aesthetic dimension includes all factors that give enjoyment to people such as language, cuisine, literature, and shared festivals. The moral dimension includes factors that guide how people live together such as values, laws and the society's ethical framework. The explanatory dimension captures how people view the world based on shared myths and the scientific view of the world prevalent in the common culture. Whereas institutions describe the environment that affects how people formally agree to live together, culture describes the set of values and beliefs that impose informal constraints on the individual decision makers. For an MNC to be successful in a foreign country, the investment must be structured to take into account both the formal institutions in a country as well as the informal rules that govern the interactions of the population.

Cultural factors can significantly increase or decrease perceived distance between two countries, which in turn can strongly affect the FDI decision. Because these factors are so subtle, decision makers may not even be aware of their influence on the decision-making process. To illustrate the importance of these subtle factors, Ghemawat (2001) provides the example of the preference for small cars and appliances in Japan due to the social norm to conserve on space in a country with a dense population. The subtle influence of culture carries over to the investment decision as well. Empirically, countries with a common language are significantly more likely to have cross-border investments with each other.

In the literature, the cultural distance between two countries is usually defined with reference to the approach originally outlined by Kogut and Singh (1988). Using this approach in combination with the extensive culture data collected by Hofstede, the cultural distance between two countries can be measured as a composite index of six dimensions of culture (power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence). As described

previously, cultural motives provide one of the indicators underpinning the Location advantages of the Dunning's OLI framework. For this thesis, the testable hypothesis is that there is an expected negative relationship between cultural distance and FDI inflow.

## 3.4 Ease of Doing Business

### *3.4.1 Ease of Doing Business and FDI*

The main purpose of the Doing Business Index is to provide an overall measure of the "business friendliness" of an economy. Although primarily focused on the factors important to Small- and Medium-sized Enterprises (SMEs), the EODB Index has come to be viewed by policy makers and researchers as a proxy for the regulatory quality of the entire economy. For policy makers, the use of the EODB Index to measure the current state of the economy as well as to track the development of the economy across time has many advantages. First, it offers objective policy prescriptions for changes required in order to attract Foreign Direct Investment (FDI). Second, because of the extensive empirical research linking the EODB Index with FDI inflows, there is an assurance that actions taken to improve the EODB Index will lead to FDI. It is true that much of the empirical research involves cross-country correlation between the EOBD Index and levels of FDI, which does not necessarily mean causation. However, there is general support for the conclusion that there is a causal relationship running from the EODB Index to FDI.

For researchers, the Doing Business Index has become a standard tool for studies designed to provide recommendations to policymakers. Using the Doing Business 2013 as one example, it is estimated that a 1% change in regulatory quality between two countries implies a difference of USD 250-500 million per year in FDI inflows. In addition to promoting FDI, research supports the hypothesis that there is a positive relationship between the EODB Index and domestic investment

and GDP growth (Eifert, 2009). Therefore, by focusing on improvements in the EODB Index, policymakers are creating an investment environment that is conducive to both domestic investment and GDP growth, both of which have a positive effect on FDI inflows. In addition, since GDP growth has been shown to be a significant factor for the MNC decision to invest in a country, by focusing on the EODB Index, policymakers are creating a virtuous circle of investment in their country. In summary, from the perspective of researchers, the EODB Index provides a proxy for regulatory quality that can be used on two levels. On the direct level, research into the determinants of FDI can use the index to test for a direct effect of regulatory quality on levels of FDI inflows into a country. On a secondary level, regulatory quality can be viewed as a moderator, i.e., it enhances determinants that have a positive effect on FDI and dampens the determinants that have a negative effect on FDI.

### *3.4.2 Ease of Doing Business Measure*

A motivation for using the World Bank EODB Index is because the overall construction of the Doing Business Index is designed to mirror the hypothetical decision framework followed by MNCs when making the foreign investment decision. Beginning with the analysis of the costs of setting up a business in a foreign country and continuing through the issues related to the location of the business, the availability of domestic financing, the control of daily operations and the hurdles created by the regulatory environment. The advantage of the EODB Index is that it provides a single number that captures all of the factors used by MNCs to rank countries for potential investments. Because the EODB Index is constructed using a bottom-up approach, researchers have the option of choosing from one of the following 3 levels of detail to conduct the analysis: level 1 is the composite index, level 2 is the decomposition of the index into five factors related to starting and running a business (the "Operating Factors"), and level 3 is the

decomposition of the “Operating Factors” into eleven important characteristics related to the business environment (the “Environmental Factors”).

The Ease of Doing Business Measure is based on the World Bank Doing Business report. This Doing Business report is based on three related aggregate measures of “business friendliness” that can be used to incorporate the index into studies involving cross-country comparisons of FDI. First, Business Ranging (BR) from 0 (the lowest) to 190 (the highest). The BR sorts the individual country and calculated on the basis of each country’s BS from smallest to largest and provides a relative standing of the regulatory performance of individual countries at a specific point in time. Second, Business Score (BS) is measured on a scale from 0 (the worst regulatory performance) to 100 (the best regulatory performance) and provides an absolute aggregate measure of the regulatory environment at a point in time. The Business Score (BS) is published annually, this measure also shows how the regulatory environment has changed in absolute terms across time. Third, the EODB Index ranking and the distance to frontier scoring. The distance to frontier is an absolute measure that provides a benchmark for each country relative to the best performance for the entire sample on each of the 41disaggregated indicators for the 10 components of the EODB Index. With the distance to frontier measure, it is possible for researchers to make conclusions regarding the amount and direction of changes in the regulatory environment over time. Furthermore, it is possible to investigate not just the relative ranking of two countries, but also it is possible to draw conclusions about the absolute differences between two countries.

Because of the increased accuracy provided, this research used Business Score (BS). The following Figure (2) from the World Bank 2019 Doing Business Report shows clearly the 5 Operating Factors and the 10 Environmental Factors included in the EODB Index. A key contribution of this

thesis is the analysis of the hypothesis that these 10 Environmental Factors, working jointly, act as a moderating factor on the four different dimensions of distance discussed above.


**Figure (2) What is measured in Doing Business? the World Bank**

In the following sections, each of the Environmental Factors contained in the EODB Index will be treated in turn by explaining what is measured by the factor and describing the potential moderating effect of this factor on the FDI determinants in a country.

*Starting a business*

This Environmental Factor is a proxy for the complexity that an MNC faces in getting a business started in a new country. It is composed of four indicators that together serve to measure the cost of setting up a company in terms of the time required to complete all of the necessary legal procedures and the cost involved for legal fees and the minimum paid-in capital required to start a limited liability company. This factor has an inverse moderating effect on the FDI decision, i.e., a decrease in the complexity of starting a business increases the likelihood of FDI by an MNC.

*Dealing with construction permits*

This Environmental Factor is a proxy for the time required for an MNC to complete the formal legal requirements. It is composed of four indicators that are intended to measure both the hurdles (measured in time and cost) involved in satisfying the bureaucratic requirements to build a standard

warehouse as well as the positive effect that can be derived from an efficient regulatory environment. This factor has a positive moderating effect on the FDI decision, i.e., the faster that a business can complete the formal legal requirements increases the likelihood of FDI by an MNC.

*Getting electricity*

This Environmental Factor is a proxy for the utilities (e.g., gas, water, electricity) required to make a factory operational. It specifically measures the cost of bureaucracy (measured in time, money, transparency of tariff structure and reliability) of establishing and maintaining a supply of electricity. This factor has an inverse moderating effect on the FDI decision, i.e., a decrease in the bureaucracy involved in ensuring the required utilities to a business increases the likelihood of FDI by an MNC.

*Registering property*

This Environmental Factor is a proxy for the risk associated with registering or owning property. In addition to measuring the cost (measured in days, money and the number of procedural steps) involved in buying, renting and selling property. This factor also includes a subjective measure of the quality of the public land registry system. This factor has an inverse moderating effect on the FDI decision, i.e., a decrease in the risk of owning ore renting property increases the likelihood of FDI by an MNC.

*Getting credit*

This Environmental Factor is a proxy for the possibility of the business owner to increase the return on equity of the investment by taking advantage of bank financing. It measures the maturity of the financial regulations in the country by assessing the extent that movable property can be used as collateral for a loan. Because of the positive effect on the financial returns to business owners of

financial leverage, this factor has a direct effect on the ease of getting financing and the likelihood of FDI by an MNC.

*Protecting minority investors*

This Environmental Factor is a proxy for the possibility of the business owner to share the risk of the investment by working with additional equity partners, either as a majority or a minority investor. It measures both the rights and responsibilities of the company directors and the shareholders in the corporate governance of the company. This factor measures the positive effect from risk reduction for the foreign investors gained from taking on local partners. It shows that there is a direct effect between the strength of protection given to minority investors and the likelihood of FDI by an MNC.

*Paying taxes*

This Environmental Factor is a proxy for the tax burden imposed on a business (measured in terms of time, money and compliance complexity). Although there are positive benefits from government services funded by taxes, this factor indicates that there will be a direct effect between a low tax environment and the likelihood of FDI by an MNC.

*Trading across borders*

This Environmental Factor is a proxy for the competitiveness of the country in the international markets. It measures the cost (in terms of documentation requirements and border compliance) of conducting import and export activities in the country. Although one motivation for an MNC to make an investment into a country is to avoid trade barriers, it is expected the primary reason for FDI is to produce products that are competitive in the world market. In that case, an open market is an advantage for the MNC. Therefore, this factor indicates that there will be a direct effect

between the ease of conducting international trading operations and the likelihood of FDI by an MNC.

*Enforcing contracts*

This Environmental Factor is a proxy for the maturity and integrity of the legal system. In addition to measuring the cost (in terms of time and money) of resolving a commercial dispute in the courts, there is also a quality measure of the judicial system as a whole. Because a well-functioning legal system reduces uncertainty and the associated risk, it is expected that there is direct effect between the maturity and integrity of the legal system and the likelihood of FDI by an MNC.

*Resolving insolvency*

This Environmental Factor is a proxy for the cost of shutting down a business. For a foreign investor, the ease of exiting a market (as measured by expected recovery rates and the strength of the insolvency framework) represents a potential risk. Therefore, this factor indicates that lowering the cost of shutting down a business will have an inverse moderating effect on the FDI decision, i.e., a decrease in this risk to the foreign investor will increase the likelihood of FDI by an MNC.

*Labor market regulation*

This Environmental Factor is a proxy for the flexibility that employers have to negotiate employment contracts with a country's labor force. It takes into account both the regulatory environment as well as subjective measures of job quality. This factor measures that the ability to negotiate enforceable employment contracts is an advantage for the foreign investor and, therefore, there is a direct relationship between flexibility and the likelihood of FDI by an MNC.

Although the EODB report has the backing of the World Bank and has been extremely well received by researchers for research resulting in thousands of articles published in refereed

journals, it has been criticized for various reasons. Though very transparent, the algorithm used to calculate the Business Score (BS) has been criticized. For the calculation of the BS, there is a two-step procedure. First, calculate an equally-weighted average for each topic area included in a broader indicator of regulatory performance. Second, calculate an equally-weighted average for each of the broad indicators for the final summary measure (the BS). In this way, the following 10 disparate topics are aggregated into a single measure: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency (Doing Business, 2020). According to Ravaillon (2010), "In any case, the consolidated indicator ('Ease of doing business'), which is based on the simple average of 'rankings', has serious methodological issues. This process of 'no weights' has received considerable criticism, in particular from the research area of the World Bank." Although simple, the EODB calculation of the Business Score (BS) can be accused of being simplistic because of the equal weighting applied both within each topic and across all of the topics. For instance, starting a business is weighted exactly the same as getting electricity. In reality, however, the cost and the time spent to start a business is considered to be the single most important factor for an investor to go overseas.

Furthermore, the EOBD methodology is based on a set of indicators that form the basis for the Ease of Doing Business (EODB) index used in our study as a proxy for the level of business friendliness in a particular country. In order to provide a consistent basis for data collection across countries, these indicators are developed using a defined set of assumptions that are applied to standardized case scenarios. To illustrate the potential bias inherent in these standardized scenarios, the assumption is that a business is located in the largest city in the country. For large economies with significant regional differences (e.g., China), this assumption may not be valid

given the variation in business regulations and the related enforcement across the different regions. Hence, it is not possible to conclude that our results apply equally well to different regions or cities within a country. Another weakness of the EODB index is the implicit assumption that all market participants in a country have perfect knowledge about the applicable business regulations of the country. While this may be realistic for the large multinational companies that were the focus of our research, it is questionable whether the assumption is valid for entrepreneurs, which represent a potential important target for FDI flows.

### 3.5 Control Variables

Control Variables (dummy variables) are included in the gravity equations in order to measure the importance of a country-specific factor for FDI inflow to Singapore. By taking a value of either 0 or 1, the dummy variable captures whether the specific categorical (noncontinuous) factor is included (value of 1) or not included (value of 0) in the estimation of the model coefficients. Hence, four country characteristics (i.e., common border, common language, colonial ties, and the existence of a free trade agreement) were added to the model as control measures.

Specifically, the dummy variables for the country characteristics included in the model were defined as follows. In order to measure a common border (contiguity), the dummy variable was 1 if the countries share a common border with Singapore and 0 if there was no common border. For the measurement of a common language the dummy variable was 1 if the trading partners with Singapore shared a common language and 0 if there was no common language. In order to measure former colonial ties, the dummy variable is 1 if the investing country was a former colony of Singapore and 0 otherwise. Similarly, if a Free Trade Agreement (FTA) exists between the investing country and Singapore, the FTA dummy variable is included as a measure of the

significance of this categorical variable for FDI inflows. For the FTA dummy variable, the value is 1 if an FTA exists with the investing country and 0 otherwise. For all measures of these dummy variables, the source of data is the Dynamic Gravity dataset. For researchers, this dataset is a pair-wise comparison of countries at a specific point in time and includes multiple cross-country estimates of the key factors influencing the investment decision as well as the important interaction effects between the individual countries.

## 3.6 Research Hypotheses

With reference to the detailed Literature Review presented earlier as well as the Conceptual Framework developed in this chapter, four Direct Hypotheses linking the four different dimensions of distance to FDI in a country were identified. In addition, four Moderating Hypotheses were developed. The links between the Direct Hypotheses, the Moderating Hypotheses and FDI are shown in figure (1) the research model. The following sections relate to the model and provide a concise formulation of the hypotheses developed for this thesis.

### *3.6.1 Direct Hypotheses*

Hypothesis 1: Economic Distance

**H1:** There is a positive relationship between economic distance and FDI flows.

Hypothesis 2: Geographical Distance

**H2:** There is a negative relationship between geographical distance and FDI flows.

Hypothesis 3: Institutional Distance

**H3:** There is a negative relationship between institutional distance and FDI flows.

Hypothesis 4: Cultural Distance

**H4:** There is a negative relationship between cultural distance and FDI flows.

### *3.6.2 Moderating Hypotheses*

Hypothesis 5: EODB and Economic Distance

**H5:** Higher MEODB scoring has a positive moderating influence on the relationship between economic distance and FDI flows.

Hypothesis 6: EODB and Geographical Distance

**H6:** Higher MEODB scoring has a positive moderating influence on the relationship between geographical distance and FDI flows.

Hypothesis 7: EODB and Institutional Distance

**H7:** Higher MEODB scoring has a positive moderating influence on the relationship between institutional distance and FDI flows.

Hypothesis 8: EODB and Cultural Distance

**H8:** Higher MEODB scoring has a positive moderating influence on the relationship between cultural distance and FDI flows.

### 3.7 Summary

This chapter elaborated the Conceptual Framework developed to focus the research plan for this thesis. Using the Dunning OLI Paradigm as a foundation, a Conceptual Model was created to link four different dimensions of distance and FDI. It is known that geographical distance has a strong negative effect on the economics of the transportation industry, but this negative effect may be offset to a certain extent by have a good business environment. In addition, the Conceptual Model was expanded to include the Ease of Doing Business (EODB) Index as a Moderator on the FDI determinants. To guide efficient data collection, operational definitions were developed for each of the measures of distance. Furthermore, to better understand the EODB Index, the individual components were described in detail. Finally, to clarify the complex links between the FDI Determinants, the Moderating Determinants and FDI inflows into a country, a diagram (see figure (1) the research model) was developed and the hypotheses to be examined in the thesis were stated concisely.

# Chapter 4
# Methodology

## 4.1 Introduction

Over the last three decades the topic of Globalization and the role of Multinational Enterprises (MNEs) in this process has captured the attention of both academics and politicians. For academics, the inclusion of MNEs in the traditional explanatory models of overseas investment flows has been particularly fruitful. In this regard, the decisions of MNEs regarding Foreign Direct Investment (FDI) is of particular importance for this thesis. Namely, what factors motivate MNEs to invest abroad rather than to rely on trade to access international markets? For politicians, the growth of globalization has made it clearly apparent that ignoring MNEs and the related FDI can have significant negative consequences for a country's economic growth. For this reason, the inclusion of the Ease of Doing Business (EODB) as a possible moderating factor on the other FDI determinants is of particular importance. Because EODB is a proxy measure for "business friendliness", if a positive relationship between EODB and FDI determinants can be established, the disaggregated EODB Index provides a list of 41 factors for politicians to focus on to improve a country's "business friendliness" and attract FDI.

The main purpose of this thesis is to investigate the extent to which distance determinants and EODB are determinants of FDI. In addition, the study is designed to provide evidence of the potential for EODB to shorten each of following four measures of distance included in this study: economic distance, geographic distance, institutional distance and cultural distance. In this case, the scope of the study is broadened to include the possible existence of a moderating effect of EODB on the distance determinants, i.e., does EODB influence the relationship between the four different dimensions of distance and FDI flows? This chapter discusses the empirical framework of this thesis. Sections 4.2 and 4.3 show the research approach and research philosophy

respectively. Section 4.4 includes the gravity model theory and challenges. Section 4.5 explains the model specification. Section 4.6 introduces the data and variables used, followed by summary.

### 4.2 Research Approach

Research in economics generally follows one of two primary paradigms: qualitative or quantitative research method. However, qualitative research is an inductive approach to identifying general laws governing the phenomenon of interest. As such, because the researcher is the focal point for collecting, describing and interpreting specific details about the phenomenon of interest, there exists an inevitable subjectivity regarding this research method (Burrell and Morgan, 1979). The viewpoint is that the nature of the world is made up of multiple subjective experiences and that the role of the researcher is to document, classify and generalize these experiences into "laws" that can be applied by analogy to similar situations arising in the future. The case method used in teaching business principles and medical diagnostics are examples of this approach. On the other hand, quantitative research is based on numerical data which are analyzed using statistical methods in order to identify cause-and-effect relationships or to empirically test predictions based on theory (Creswell,1994). Quantitative method is the dominant approach applied in mainstream economics. As opposed to the qualitative approach, the quantitative approach is value-free, i.e., the focus is on credible data and facts and the objective is to identify causality and law-like generalizations. Because the researcher is independent of the data, the research results are objective and, ideally, are reproducible by independent researchers.

For this thesis, the method of quantitative research will be followed for several reasons. First, because the analysis of the data is undertaken using well established statistical techniques, there is an objective rigor to the analysis that is not possible using qualitative research methods. Because of this rigor, quantitative research has the second advantage of reproducibility, namely the

possibility that successive independent researchers will obtain the same results when the research is conducted on new additional data sets, thus validating the original research. Third, as evidence accumulates, the multiple research results can lead to the identification of general "laws", i.e., generalizability. Whereas qualitative research can be characterized as an attempt to generate general theories from individual datasets, quantitative research is more appropriate for this thesis because of its orientation towards the testing and verification of an existing theory.

### 4.3 Research Philosophy

The research philosophy, although frequently implicit in published research, is an important part of the entire methodology because it describes the researcher's' view of the world. This underlying set of fundamental beliefs about how the world is perceived serves as a thinking framework and guides the researcher's behavior (Jonker and Pennink 2010). Thus, the research philosophy directly affects the way that data is collected, analyzed and used.

For research in the social sciences, the two primary philosophical dimensions are ontology and epistemology. Whereas ontology is concerned with the nature of knowledge and how reality is perceived, epistemology refers to how knowledge is developed (Wahyuni, 2012). The researcher has two fundamental methods available for collecting the data. Positivism (also called Objectivism) is the view that only data gathered from observation is valid and that the role of the researcher is limited to data collection and interpretation. On the other hand, Interpretivism (also called Constructivism) views reality as a complex social construction based on such factors as language, shared symbols and shared culture. In this case, the researcher plays an active role in gathering data through interviews, observations and secondary research. The following table summarizes research possibilities combining both the philosophical dimension as well as the available data collection methods.

| | Data Collection Method | |
|---|---|---|
| Philosophical Dimension | Positivism (Objectivism) | Interpretivism (Constructivism) |
| Ontology | External, objective and independent of social actors | Socially constructed, subjective, may change depending on the researcher |
| Epistemology | Only observable phenomena can provide credible data. Focus on causality and law-like generalizations | Subjective meanings and social phenomena. Focus on the details of situation, the reality behind these details, the subjective meanings and the motivating actions |
| Research Methodology | Quantitative | Qualitative |

**Table 4.1. Data Collection Method**

The research methodology chosen for this thesis is quantitative. The reason for this is the ontological view that only observable, measurable data reflects reality and that the researcher should be objective and independent of the data collection process. Epistemologically, the focus of the thesis is to identify general laws of cause and effect based on the analysis of data.

## 4.4 Data Analysis Methods

To test economic theories, the first step is to develop testable hypotheses that have been proposed to explain an economic phenomenon and collect relevant data for analysis (Judd 2009). This data analysis comprises the choice of relevant mathematical tools and software required to turn the raw data into useful information for interpreting and explaining whether or not the data supports the hypothesis (Flick 2006). The following sections provide additional details on descriptive analysis, regression analysis, Gravity Model - Poisson pseudo-Maximum Likelihood estimation (PPML), and the Structural Gravity Model - Multilateral Resistance Terms (MRT). These methodologies applied in this dissertation to analyze the data, test the developed hypothesis, and attain the objectives of this research.

### *4.4.1 Descriptive Analysis*

In order to avoid the misrepresentation of research results, good research practice dictates that a systematic approach be followed when reporting the relevant descriptive and preliminary analysis.

Because these statistics are the basis for meaningful comparisons of the variables, they are a critical component of the data analysis design. To convert raw data into information that can be used to evaluate the validity of an economic hypothesis, a necessary first step is to develop a set of descriptive statistics. These summary statistics help to describe and summarize the data in a way that makes it possible to identify underlying patterns in the raw data. Although it is not possible to draw valid conclusions based solely on descriptive statistics, they are a critical initial step in the data analysis for data visualization and interpretation. Typical descriptive statistics include the mean, median, mode (measures of central tendency); the range, standard deviation (measures of variability); percentiles, z-scores (measures of relative position); and frequency distributions, graphs (visualization techniques).

### *4.4.2 Regression Analysis*

Regression analysis is the branch of statistics dedicated to analyzing possible linear relationships that may exist between a dependent (predicted) variable and one or more independent (predictive) variables. If there is a single independent variable, then the appropriate statistical model is Simple Linear Regression. If there are many independent variables included in the predictive model, then Multiple Linear Regression is used. For any two variables in the empirical data, a first-cut analysis involves a test for correlation to see if there is a statistical relationship (i.e., positive, negative or none) between the two variables. However, correlation does not necessarily mean causality. In order to test predictions based on theory, regression analysis is applied. This tool is fundamental to the establishment of a cause/effect relationship between the dependent (predicted) and the independent (predictive) variables (Bryman, 2008). For more sophisticated analysis, multiple regression is a tool that provides for many independent variables. At a high level, Multiple Regression provides a measure of the overall applicability of the model, but with additional

information regarding the relative importance of the many predictive variables included in the model. An important "reality check" when using multiple regression is (1) to critically evaluate the economic relationship proposed between the dependent and independent variables and (2) to confirm that the assumptions of the Multiple Regression Model actually apply. If the assumptions do not apply, then the conclusions are not be valid.

In order to be valid, any analysis using a multiple regression model must critically examine if the following key assumptions apply. First, the predicted (dependent) variable is measured on a continuous (i.e., not discrete) scale. Second, there are at least two independent (predictive) variables. Third, there must exist a linear relationship between the dependent and the independent variables. Fourth, for every estimate of the predicted value along the line-of-best fit, the underlying variance of the independent variable is constant (homoscedasticity). Fifth, there is no evidence of collinearity in the data (i.e., the independent variables are not correlated). Sixth, there are no significant outliers or high leverage points in the data set. Sixth, the model error terms (residuals) must be approximately normally distributed with an expected mean of zero.

### *4.4.3 Gravity Model*

The Gravity Model used for research in international economics has its foundation in theoretical physics and Newton's Law of Universal Gravitation from 1686. This Law of Gravity states that two objects are attracted to each other based on two factors, the relative mass of each object and the distance separating the objects. About 300 years later, Tinbergen (1962) recognized that distance between two countries could also be used as an explanatory variable for the volume of trade flows between two countries. The result of this insight was developed into the Gravity Model of Trade which posits that there is a relationship between trade and the relative size of countries and the distance between the countries. This model of international trade has proven to be very

popular with researchers since the early 2000s because of its empirical performance and explanatory power. In the hundreds of papers employing the gravity model to identify and analyze determinants of international trade, the empirical tests of the model have consistently confirmed that distance and market size are related to trade volume between two countries.

Although widely accepted, Tinbergen's Gravity Model was initially criticized by researchers due to several weaknesses. First, although the empirical relationships predicted by the model were strongly supported by tests using actual trade data, there did not exist a theoretical basis for the predictions. As an "atheoretical" model of trade, the Gravity Model could be viewed as a case of "data mining" rather than as a "cause and effect" description of reality. Second, although the model proved to be a useful tool for the analysis of trade volumes, it was not suitable for analyzing the effect of trade policies on trade volumes between countries. Thus, the Gravity Model could be used to explain trade flows, but could not be used by policy makers as a prescriptive tool for improving international trade. Third, the model's inability to deal with heteroskedasticity in the data limited the conclusions that could be drawn from tests of the results. Finally, without a theoretical foundation, the model was open to the "omitted variables" bias. This weakness was addressed by Anderson and Van Wincoop (2003) when they developed alternative methods to estimate the gravity equation with strong theoretical foundation and compute comparative measures of trade frictions.

To address the limitation of the Gravity Model to the analysis of trade flows, Anderson (1979) and Bergstrand (1985) developed a theoretical foundation for the model and provided the model extensions required to make it possible for researchers to investigate the relationship between trade policies and trade volumes between countries. Known as the Structural Gravity Model, this version of the Gravity Model provides a general equilibrium model linking sectors and countries to enable

the simultaneous analysis of changes in trade policies on multiple entities (e.g., firms, industries, countries). As a general equilibrium model, the Structural Gravity Model shows how changes in trade policies ripple through the linked economies of the world. In addition, the model is flexible enough to be easily integrated into more comprehensive equilibrium models to extend the analysis of international trade to include such factors as labor markets or monetary policy (Yotov et al. 2016). With this model, it is possible to investigate various determinants of FDI (Buch, Kokta and Piazolo, 2003), to separate the potential sources and targets of FDI by country (Bevan and Estrin, 2004), and to compare the behavior of large groups of people, goods, and trade across countries (Kahouli and Maktouf, 2014).

### 4.5 Model Specification

This thesis develops a set of hypotheses to investigate the moderating impact of EODB Index on four different dimensions of distance and FDI stock in Singapore. In order to conduct this research, a Gravity Model of International Trade is used to specify the relationship between different FDI determinants and FDI flows between countries. This class of models is well suited for researchers interested in examining trade flows between countries that are conditional on multiple factors that may either enhance or hinder trade flows (Zwinkels and Beugelsdijk, 2010). The fundamental Gravity Model is specified as follows:

$$FDI_{ijt} = CY_{it}^{\alpha} Y_{jt}^{\beta} D_{ij}^{-\mu} \varepsilon_{ijt} \quad (1)$$

where:

$FDI_{ijt}$ is the FDI from country i to country j at time t

C is a constant parameter

$Y_{it}$ and $Y_{jt}$ are the economic size of country i and j (measured by GDP) respectively,

$D_{ij}$ is the geographical distance between country i and country j (measured in kilometers),

α, β and μ are parameters related to country size and distance between country i and j,

and $\varepsilon_{ijt}$is the error term.

Following Lahrech et al. (2018), dummy variables are added to equation (1) related to bilateral trade resistance terms, e.g., common border, common language, colonial ties, and Free Trade Agreements. Thus, equation (1) is restated as follows:

$$FDI_{ijt} = CY_{it}^{\alpha} Y_{jt}^{\beta} D_{ij}^{-\mu} \exp(\theta Z_{ij}) \varepsilon_{ijt} \qquad (2)$$

where:
θ is a vector of parameters to be estimated,
and $Z_{ij}$ are bilateral trade costs.

As formulated above, the gravity model has been widely used by researchers to establish strong empirical relationships between country size, distance and FDI. However, to employ the model, researchers must be aware of both modelling issues (e.g., multilateral resistance and zero trade volumes) and econometric issues (e.g., heteroscedasticity) that must be taken into account in order to ensure the reliability of the conclusions. The discussion of these issues and the mitigation procedures used in this thesis follows.

Implementing the gravity model could lead to various modelling issues. The first modelling issue is Multilateral Resistance, which Baldwin and Taglioni (2006) have labelled the "Gold Medal Mistake" and have identified as the biggest mistake that is commonly made in research in terms of the consequences involved in the misrepresentation of the research results. By definition, the Multilateral Resistance Term (MRT) recognizes that trade between two countries cannot be studied in isolation because of the significant effect that a third country can have on the terms of trade between the country-pair understudy. This effect is not readily observable from the data, but can be estimated by a careful researcher. Anderson and van Wincoop (2003) have characterized Multilateral Resistance as the "omitted variable bias". To correct for this bias, Anderson and van

Wincoop (2003), Feenstra (2004) and Head and Mayer (2014) have proposed the addition of an additional variable to account for importer-exporter fixed effects. However, this correction has been criticized because it would eliminate all variables in the model that are time-invariant factors, (e.g., dummy variables and distance). In order to correct for Multilateral Resistance while retaining time-related variables, Baier and Bergstrand (2009) have shown that the MRT can be included by transforming them using a the first-order log-linear Taylor-series expansion before their inclusion in the Gravity Model. For this thesis, the following formulation of the Gravity Model (Anderson and van Wincoop, 2003) was chosen:

$$\mathrm{FDI_{ij}} = \left[\frac{\mathrm{Y_i Y_j}}{Y_{world}}\right]\left[\frac{\tau_{\mathrm{ij}}}{P_{\mathrm{i}}\mathrm{P_j}}\right]^{1-\sigma} \qquad (3)$$

where:
$FDI_{ij}$ is the FDI volume from country $i$ to country $j$,
$Y_i$ and $Y_j$ are the GDP of country $i$ and $j$ respectively,
$Y_{world}$ is the world GDP,
$P_i$ and $P_j$ are price indices,
and $\tau_{\mathrm{ij}}$ is the bilateral costs associated from $i$ to $j$.

To estimate the bilateral trade costs $\tau_{\mathrm{ij}}$ in the above model, the following proxy is used (Lahrech et al. 2018):

$$\tau_{ij} = Dist._{ij}^{\rho}\, e^{Dumij} \qquad (4)$$

where:
$\tau_{\mathrm{ij}}$ is the bilateral cost between country $i$ and country $j$,
$Dist._{ij}$ is the bilateral distance between country $i$ and country $j$,
$Dum_{ij}$ are the dummy variables (such as colonial ties, common border, and common language).

Taking the log of Equation (3) we arrive at the following:

$$\left[In\, FDI_{ijt} = \; -In\, Y_{world} + InY_{it} + InY_{jt} + (1 - \sigma)\left[In_{ij} - \left(InP_i + InP_j\right)\right]\right. \qquad (5)$$

This Equation 5 is currently the most popular formulation of the gravity model in the literature on international trade for analyzing multiple potential determinants of bilateral trade and FDI. Following Baier and Bergstrand (2009), equation (5) is transformed using a first-order log-linear Taylor-series expansion of the MRTs $P_i$ and $P_j$ to arrive at the following formula:

$$MRT_{ij} = InP_i + InP_j = (\sum_k \theta_k \ In\ \tau_{ik}) + \left(\sum_n \theta_n \ In\tau_{nj}\right) - (\sum_k \sum_n \theta_k \theta_n \ In\ \tau_{nk}) \quad (6)$$

and

$$In\ \tau_{ij} = \rho\ InDist._{ij} + \gamma Dum_{ij} \quad (7)$$

Substituting equations (6) and (7) into (5), we obtain the following equation:

$$InFDI_{ijt} = -InY_{world} + InY_{it} + InY_{jt} + (1 - \sigma)\left[\rho MRT_{Distij} - \gamma MRT_{Dumij}\right] \quad (8)$$

where:

$$MRT_{Distij} = InDist_{ij} - (\sum_k \theta_k \ InDist_{ik}) - \left(\sum_n \theta_n \ InDist_{nj}\right) + (\sum_k \sum_n \theta_k \theta_n \ InDist_{nk}) \quad (9)$$

and

$$MRT_{Dumij} = Dum_{ij} - (\sum_k \theta_k \ Dum_{ik}) - \left(\sum_n \theta_n \ Dum_{nj}\right) + (\sum_k \sum_n \theta_k \theta_n \ Dum_{nk}) \quad (10)$$

The second modelling issue that can have a significant negative effect on the estimation of the gravity model involves zero trade flows. Since the original formulation of the model (Tinbergen, 1962), the ordinary least-squares (OLS) estimation procedure has been used to estimate the parameters of the Gravity Model. The problem arises when the gravity equation is estimated using data sets that have been transformed into logarithms with all zero trade flows truncated in order to have only positive trade flows in the data set. This elimination of all zero trade flows leads to a model misspecification that increases as the trade data gets more disaggregated, with the effect especially pronounced for trade in sectoral services. Following Santos Silva, et al. (2006) this thesis uses the Poisson Pseudo Maximum Likelihood (PPML) estimator because it makes use of the information contained in the zero trade flows.

Another issue arising in the estimation of the Gravity Model is the econometric issue of heteroscedasticity. The issue arises because both trade and FDI data are known to have significant heteroscedasticity. When this is combined with log-linearized models estimated using OLS procedures, the resulting estimates exhibit biased estimates of the true parameters. Following Santos Silva, et al. (2006), the issue of heteroscedasticity is resolved by using the PPML estimator together with a gravity model that is expressed in multiplicative form instead of the log-linear form more commonly used.

To overcome these challenges, this thesis uses Poisson Pseudo Maximum Likelihood (PPML) estimator. By using PPML to estimate the model parameters, it is ensured that the gravity fixed effects are identical to their corresponding structural terms (Arvis and Shepherd, 2013; Fally, 2015). In addition, the use of the PPML estimators ensures that the measurement the general equilibrium effects of trade policies are consistent with theory (Anderson et al., 2015b; Larch and Yotov, 2016b). By including dummy variables (i.e., common border, common language, colonial ties, and free trade agreement), we have the following functional form of the gravity model used in this thesis:

$$FDI_{ijt} = Exp\left(b_0 + b_1 InGDPperCap_{it} + b_2 InGDPperCap_{jt} + b_3 InEco.D_{ijt} + b_4 MRTGeo.D_{ij} + b_5 InIns.D_{ijt} + b_6 InCul.D_{ij} + b_7 MRT_{border.ij} + b_8 MRT_{language.ij} + b_9 MRT_{colonial.ij} + b_{10} MRT_{FTA.ij}\right)\varepsilon_{ijt} \quad (11)$$

where:
t: time;
$i$: host country (Singapore);
$j$: Investor;
$FDI_{ijt}$: FDI volume from j to i;
$GDPperCap_{it}$: Singapore's GDP per Capita in year t;
$GDPperCap_{jt}$: Investor's GDP per Capita in year t;
$Eco.D_{ijt}$: Economic distance between Singapore and country $j$;

$MRTGeo.D_{ij}$: Geographic distance between Singapore and country $j$;

$Ins.D_{ijt}$: Institutional distance between Singapore and country $j$;

$Cul.D_{ij}$: Cultural distance between Singapore and country $j$;

$MRT_{border.ij}$: Dummy variable equals 1 if county $j$ borders Singapore, 0 otherwise;

$MRT_{language.ij}$: Dummy variable equals 1 if Singapore and county $j$ has common language, 0 otherwise;

$MRT_{colonial.ij}$: Dummy variable equals 1 if Singapore has colonial tie with country $j$, 0 otherwise;

$b_{13}MRT_{FTA.ij}$: Dummy variable equals 1 if Singapore has free trade agreement with country $j$, 0 otherwise;

and $\varepsilon_{ijt}$; Error term.

When including the moderator, we arrive at the following equation:

$$FDI_{ijt} = Exp\left(b_0 + b_1 InGDPperCap_{it} + b_2 InGDPperCap_{jt} + b_3 InEco.D_{ijt} + b_4 MRTGeo.D_{ij} + b_5 InIns.D_{ijt} + b_6 InCul.D_{ij} + b_7 MRT_{border.ij} + b_8 MRT_{language.ij} + b_9 MRT_{colonial.ij} + b_{10} MRT_{FTA.ij} + b_{11}(lnMEODB_{it} * X)\right)\varepsilon_{ijt} \quad (12)$$

Substituting X with the four different measures of distance ($Eco.D_{ijt}, Geo.D_{ij}, Ins.D_{ijt}$, and $Cul.D_{ij}$).

Finally, it is important to highlight the issue of endogeneity and how it has been addressed in this thesis. This is necessary in order to ensure the validity of the conclusions linking the model determinants studied with their effect on FDI flows (causality). The problem is best illustrated with an example from our research design. Assume that a predictive model shows a very high $R^2$ using Institutional Distance (ID) as the independent variable and FDI as the dependent variable. Assume further that the estimated coefficient for ID is very significant and that the sign has a plausible economic interpretation. If endogeneity is present, then neither the sign nor the estimated coefficient has any meaning. The true sign could be the opposite and the true coefficient could be higher or lower. One reason for this is that there could be an omitted variable that is strongly related to both ID and FDI. To control for the potential bias arising from omitted variables, this thesis measured the coefficients with and without including Multilateral Resistance Terms. The objective

was to detect the effect on FDI flows when data from all trading partners are included, even if there were no FDI flows. In addition to potential bias arising from omitted variables, a second source of endogeneity arises when two variables simultaneously cause each other (two-way causality). To illustrate this with an example related to this thesis, simultaneity could occur if large economies (GDP) attracted FDI, but at the same time FDI causes economies to grow. To control for simultaneity, this thesis used panel data.

### 4.6 Data and Variables

This thesis deploys the structure gravity model to investigate the impact of four different measures of distance on Singapore FDI inflows from its 30 largest investors for the period from 2006 to 2018. This thesis examines the moderating influence of EODB on each of the four distance measures included in the research model. Finally, in order to account for possible bilateral trade resistance, four dummy variables have been included to complete the research model. Measures and sources of data for FDI and for both direct and moderating determinants of FDI are described in the following sections along with a discussion of the dummy variables included in the research model. The source of FDI data is from Singapore Department of Statistics.

The research model includes independent variables (four measures of distance) in order to develop a comprehensive description of the possible determinants of FDI. Economic distance is taken from the World Development Indicators database. For geographic distance, the CEPII database is used and kilometers are the unit of measure. To measure institutional distance between countries, the following equation was implemented:

$$WGID_{ij} = \sqrt{\sum_{i=1}^{n} \left(I_{ij} - I_{iHOME}\right)^2}$$

where $I_{ij}$ refers to the host country j's score on the World Governance Index (WGID) and $I_{iHOME}$ refers to the home country's score on the World Governance Index. Finally, cultural distance is based on Hofstede's data on national culture and is measured using the following equation:

$$CULT_{ij} = \sum_{k=1}^{6} \left\{ \frac{\left(I_{ki} - I_{kj}\right)^2}{V_k} \right\} \Big/ 6$$

where $I_{ki}$ refers to the value of the cultural dimension k for country i; $I_{kj}$ refers to the value of the cultural dimension k for country j; and $V_k$ refers to the variance of the score per cultural dimension k.

Ease of Doing Business (EODB) is modeled as a potential moderator of each of the four measures of distance. The EODB Score is provided by the World Bank database and is measured on a scale from 0 to 100. To complete the picture, four dummy variables common border, common language, former colonial ties and Free Trade Agreements have been added to measure the importance of a country-specific factor for FDI inflow to Singapore. By taking a value of either 0 or 1, the dummy variable captures whether the specific categorical (noncontinuous) factor is included (value of 1) or not included (value of 0) in the estimation of the model coefficients. The following Table summarizes the source and measurement units for each of the variables used in the research model:

| **Variables** | **Source** | **Units** |
|---|---|---|
| FDI Stock | Singapore Department of Statistics | United States Dollar |
| Economic Distance | World Development Indicators Database | United States Dollar |
| Geographic Distance | Platform "DistanceFromTo.net" | Kilometers |
| Cultural Distance | Hofstede's Cultural Database | See CULT equation |
| EODB Score | World Bank | EODB Score |
| Common Border | Dynamic Gravity dataset | 0 or 1 |
| Common Language | Dynamic Gravity dataset | 0 or 1 |

| | | |
|---|---|---|
| Colonial Ties | Dynamic Gravity dataset | 0 or 1 |
| Free Trade Agreements | Dynamic Gravity dataset | 0 or 1 |

**Table 4.2 Data Sources**

## 4.7 Summary

This thesis is designed to test four measures of distance as possible determinants of FDI. In addition, the results of the study will shed light on the potential moderating effects of EODB, i.e., the potential to shorten the distance measures and amplify the effect of each on FDI. The quantitative research methodology employed makes use of objective data obtained from independent data sources such as the World Bank. The predictive model used to analyze the data and identify the possible relationships between FDI, distance and EODB is the structural gravity model. Because of the consistent results of empirical research showing the high degree of explanatory fit between aggregate and sectoral data and trade flows, this model is a favorite among researchers interested in modeling determinants of international trade. In addition, because the model framework is flexible enough to be able to incorporate variables related to trade policy in a multi-county environment, the results of the research can also provide normative statements about trade policy alternatives and thus are of particular interest to policy makers interested in improving FDI inflows.

# Chapter 5
# Empirical Findings

# Chapter 5: Empirical Findings

## 5.1 Introduction

The primary purpose of this thesis is to employ the structural gravity model to conduct fundamental and detailed analysis of the moderating impact of the Modified Ease of Doing Business Index on the relationship between four different dimensions of distance and FDI flows. This Chapter presents the empirical findings of the research conducted for this thesis. First, brief descriptive statistics and a preliminary analysis of the data are presented. Second, the results of the base model containing the four dimensions of distance and FDI are shown. Third, development of Modified Ease of Doing Business (MEODB) is presented. Fourth, the moderating effect of the Modified Ease of Doing Business variable on the base model is described. Finally, a summary of the key findings of the study are illustrated and linked to the research questions, objectives, and hypotheses.

## 5.2 Descriptive and Preliminary Analysis

### *5.2.1 Descriptive Analysis*

Despite the relatively small size of the country, Singapore is among the top ranked countries in the world in terms of GDP per capita. One of the reasons for the strong economy is the consistently high inflow of FDI (usually ranking among the top 5 in the world) from a broad base of investing countries. For statistical reporting, FDI is defined as the acquisition by a foreign investor of 10% or more of a Singapore enterprise. Using this definition, Foreign Direct Investment (FDI) in Singapore reached $1,568 billion at the end of 2017 and USD1,736.8 billion at the end of 2018.

| List of Countries Investing (FDI) into Singapore (MUSD) | | | | | |
|---|---|---|---|---|---|
| **No.** | **Country Name** | **Ave. FDI per. Year** | **No.** | **Country Name** | **Ave. FDI per. Year** |
| 1 | USA | 108,650.11 | 16 | Thailand | 3,280.21 |
| 2 | Netherlands | 59,113.89 | 17 | Indonesia | 2,403.03 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Switzerland | 26,318.61 | 18 | New Zealand | 2,171.30 |
| 4 | United Kingdom | 45,053.07 | 19 | Philippines | 2,031.62 |
| 5 | Japan | 54,736.29 | 20 | Brunei Darussalam | 250.36 |
| 6 | France | 9,052.57 | 21 | Israel | 2,829.14 |
| 7 | Hong Kong | 24,225.46 | 22 | Austria | 1,368.82 |
| 8 | Germany | 11,192.17 | 23 | Belgium | 2,149.22 |
| 9 | Malaysia | 18,918.47 | 24 | Denmark | 7,002.64 |
| 10 | Norway | 14,614.00 | 25 | Finland | 1,632.25 |
| 11 | China | 13,038.00 | 26 | Ireland | 8,002.89 |
| 12 | Australia | 7,951.95 | 27 | Luxembourg | 25,867.89 |
| 13 | South Korea | 5,269.95 | 28 | Bahamas | 13,097.76 |
| 14 | Canada | 5,676.09 | 29 | Bermuda | 27,679.62 |
| 15 | India | 15,383.76 | 30 | Mauritius | 11,754.48 |

**Table 5.1. List of Countries Investing (FDI) into Singapore**

As is shown in Table 5.1, for the period 2006-2018, average annual FDI inflows were highest for the United States followed by the Netherlands and Japan. From a regional perspective, the USA was the source of more than 90% of FDI from North American. Collectively, four countries (Germany, Luxembourg, the Netherlands and Switzerland) accounted for more than 60% of FDI from Europe. From Asia, Japan was the single largest source of FDI and accounted for more than a third of Asian FDI flows to Singapore. As an indicator of the broad interest from investors, FDI inflows to Singapore originating from Offshore Financial Centers (Bahamas, Bermuda, Luxembourg, and Mauritius) averaged more than $79 billion per year over this same period.

It is important to note that Panel data is employed for this research. Also known as longitudinal data, panel data is a combination of cross-sectional and time-series data. Panel data provides the researcher with a larger set of data points, thus increasing the Degrees of Freedom (DoF) for the model coefficient estimates while at the same time reducing the problem of collinearity among the explanatory variables. This methodology was employed in order to improve the efficiency of the coefficient estimates of the model.

| Descriptive Summary | | | | | |
|---|---|---|---|---|---|
| **Variable** | **Obs** | **Mean** | **Std. Dev.** | **Min** | **Max** |
| FDI | 390 | 17,690.52 | 27,714.01 | 197.43 | 251,632.00 |
| lnFDI | 390 | 8.91 | 1.44 | 5.29 | 12.44 |
| lnMEODB | 390 | 4.46 | 0.02 | 4.43 | 4.48 |
| lnEcoDist | 390 | 12.17 | 2.14 | 5.10 | 17.03 |
| lnGeoDist | 390 | 8.75 | 0.78 | 6.88 | 9.75 |
| lnInstDist | 390 | 0.86 | 0.42 | (0.14) | 1.75 |
| lnCultDist | 338 | 0.76 | 0.63 | (0.68) | 1.53 |
| lnGDPperCapSG | 390 | 11.26 | 0.17 | 11.01 | 11.53 |
| lnGDPperCapJ | 390 | 10.40 | 0.71 | 8.11 | 11.64 |
| ComnBoarder | 390 | 0.07 | 0.25 | 0.0 | 1 |
| ComnLanguage | 390 | 0.57 | 0.50 | 0.0 | 1 |
| Colonialties | 390 | 0.03 | 0.18 | 0.0 | 1 |
| FTA | 390 | 0.36 | 0.48 | 0.0 | 1 |

**Table 5.2. Descriptive Summary**

Table 5.2 is the summary of the collected data. The summary table presents the number of observations, the mean, the standard deviation as well as the minimum and maximum values for the variables (including the dependent, independent, and dummy variables). A sample size of 390 observations (30 Countries x 13 years) is utilized for this research. The FDI variable has a mean of 17,690, a standard deviation of 27,714, a minimum of 197, and a maximum of 251,632. Values for the dummy variable are restricted to 0 or 1.

### *5.2.2 Preliminary Analysis*

#### *Normality Test*

In order to validate conclusions based on a regression model, it is critical to test the assumption of normality of the errors of the residual terms. There are both theoretical and methodological reasons for this test. From a theoretical point of view, the normality assumption is the basis for all inference procedures, tests of model coefficients and forecasting models. Methodologically, violations of

the normality assumption call into question the estimated model coefficients and testing procedures. In cases where the normality assumption is violated, the researcher must investigate potential transformations of the data to approximate a normal distribution or evaluate more robust evaluation procedures that are not dependent on the assumption of a normal distribution of the error terms.

As previously discussed, this study relies on panel data. Because panel data is two-dimensional, the standard Jarque-Bera "goodness-of-fit" test for skewness and kurtosis of sample data is not applicable because it is not able to separate deviations from normality into the separate error term components. To address this deficiency in the Jarque-Bera test, Galvao et.al. (2013) developed tests for skewness and kurtosis that make it possible to measure both the individual-specific and the temporal-specific components of the error terms. For these tests, the error term is decomposed into a between-residuals and a within-residuals component. These components are then transformed for the third and fourth moments to derive moment conditions to test for skewness and kurtosis. In practice, to implement these tests a bootstrap procedure is utilized.

The results of using Stata to estimate the two components of the error term are shown in table 5.3. Column 1 shows the observed coefficients for the individual-specific and the temporal-specific components of the skewness and kurtosis error terms. Using a bootstrap procedure, the standard errors, z-scores and p-values for each of the error terms were calculated and are shown in Columns 2, 3 and 4, respectively. Assuming that the components are approximately normally distributed, the 95% confidence intervals are shown in Columns 5 and 6. The results of the joint tests for normality for skewness and kurtosis for the separate components of the error term together with the related p-values are shown in the second half of the results table. Since the p-values for both

components are greater than 0.05, we do not reject the null hypothesis and conclude that the panel data is normally distributed.

| | Observed Coef. | Bootstrap Std. Err. | z | P>z | Normal [95% Conf. | based Interval] |
|---|---|---|---|---|---|---|
| Skewness_e | -0.039202 | 0.023941 | -1.64 | 0.102 | -0.086125 | 0.0077206 |
| Kurtosis_e | 0.05064 | 0.029187 | 1.73 | 0.083 | -0.006566 | 0.1078462 |
| Skewness_u | 0.1188424 | 0.200728 | 0.59 | 0.554 | -0.274578 | 0.5122629 |
| Kurtosis_u | -0.250695 | 0.330335 | -0.76 | 0.448 | -0.898139 | 0.3967495 |
| Note: One or more parameters could not be estimated in 20 bootstrap replicates; standard-error estimates include only complete replications. | | | | | | |
| Joint | test for Normality on e: | chi2(2) = 5.69 | Prob > chi2 = 0.0581 | | | |
| Joint | test for Normality on u: | chi2(2) = 0.93 | Prob > chi2 = 0.6292 | | | |

**Table 5.3 Tests for skewness and kurtosis**

*Heteroskedasticity Test*

A second assumption that must be tested in order to validate conclusions based on a regression model is the assumption of equal variance (homoscedasticity) of the variance of the errors of the residual terms. Heteroscedasticity, i.e., absence of homoscedasticity assumption, occurs when the variance of the error terms changes for different values of the independent variable or for different time periods. If heteroscedasticity is indicated, then the coefficient estimates calculated using regression analysis are likely to be biased and must be interpreted carefully. If the coefficient estimates diverge from the true population values, then the p-values will be lower than predicted using the Ordinary Least Squares (OLS) methodology. Because the OLS methodology does not detect the increased variance of the coefficient estimates due to heteroscedasticity, the calculated t-values and F-values will be overstated. This overstatement can lead to the erroneous conclusion that a variable is significant when, in fact, it isn't.

| |
|---|
| H0: sigma(i)^2 = sigma^2 for all i |
| chi2 (26) = 1097.89 |
| Prob>chi2 = 0.0000 |

**Table 5.4 Wald test for Heteroskedasticity**

Table 5.4 presents the results of the Wald test for heteroskedasticity. Based on these results, we reject the null hypothesis of homoskedasticity in the error terms and conclude that heteroskedasticity is present in the data. In order to address this issue, the "Robust" standard errors technique was utilized in order to obtain the required unbiased standard errors for the OLS coefficients. In addition, the issue of heteroscedasticity was addressed by utilizing the Poisson Pseudo Maximum Likelihood (PPML) estimator in the multiplicative form of the gravity model used in this study.

*Independence Test*

A third key assumption of the OLS model is that of the independence of the errors of the residual terms. This is a significant issue for panel data because the data are collected across time, which can result in errors from a specific time period being correlated to those from a previous time period. The resulting impact of the cross-sectional dependence of the error terms can have many causes (e.g., the absolute magnitude of cross-sectional correlations or the ultimate source of the cross-sectional dependence). For dynamic panel estimators, this cross-sectional dependence is comparatively more significant. In the presence of significant cross-sectional dependence in the data, a frequent error of researchers is to ignore this characteristic of the data, which can result in the estimates obtained using a pooled-least-squares estimator being only marginally better than those calculated using the standard OLS methodology. Therefore, even if a population of cross-sectional data is homogenous with respect to the slope parameters, it is not possible to conclude that there is an efficiency gain from using pooled-data instead of running individual OLS regressions. For this reason, it is critical to test for cross-sectional dependence for all estimators in the panel data models. For this thesis, the Pesaran Cross-sectional Dependence test was used to

test for correlation in the residuals (see Table 5.5 for the results). For the Pesaran Cross-sectional Dependence test, the null hypothesis is that the error terms are not correlated.

```
xtcsd, pesaran abs
Pesaran's test of cross sectional independence = -0.952, Pr = 0.3409
Average absolute value of the off-diagonal elements = 0.653
```

**Table 5.5 Pesaran CD test of Cross-Sectional Independence**

*Multicollinearity Test*

Another key assumption is that there is no correlation between the independent (predictor) variables in the regression model. If this assumption is violated (i.e., multicollinearity is present), then both the "goodness-of-fit" of the model and the interpretation of the results of the data analysis are questionable. Because they can vary widely depending on which independent variables are included in the model, the coefficient estimates of the individual variables are very sensitive to small changes in the model. The presence of multicollinearity reduces the predictive power of the multiple regression model, i.e., significance tests of the p-values may be misleading.

For linear panel-data models, it is important to test for serial correlation to ensure that the standard errors are unbiased and that the reported results are efficient. For this thesis, the Variance Inflation Factor (VIF) was calculated to test for the existence and significance of multicollinearity in the independent variables. If the calculated VIF value is equal to 1, it can be concluded that the independent variables are uncorrelated. For VIF values in the range of 1 to 5, only weak multicollinearity is indicated, making it unnecessary to take corrective measures. For all VIF values >5, severe multicollinearity is indicated and corrective measures are required in order to ensure that the coefficient estimates are efficient and that the calculated p-values are reliable. Based on the VIF values shown in Table 5.6, we are able to conclude that severe multicollinearity is not present in our data.

| Variable | VIF | 1/VIF |
|---|---|---|
| lnGGDPpcj | 7.97 | 0.125423 |
| lnInstDist | 4.95 | 0.20199 |
| lnGeoDist | 3.62 | 0.276073 |
| lnCultDist | 2.56 | 0.391328 |
| tradeagree~s | 2.16 | 0.462072 |
| commonborder | 1.78 | 0.561855 |
| lnEcoDist | 1.73 | 0.57715 |
| lnGGDPpcSi~e | 1.34 | 0.746192 |
| commonlang~e | 1.31 | 0.764833 |
| colonialties | 1.24 | 0.804972 |
| Mean VIF | 2.87 | |

**Table 5.6 Variance Inflation Factor**

### 5.3 Base Model Findings

In order to test the developed hypothesis, we initially developed a base model containing the four different dimensions of distance, namely economic distance (EcoDist), geographical distance (GeoDist), institutional distance (InstDist), and cultural distance (CultDist) with Foreign Direct Investment (FDI) as the dependent variable. Four country characteristics (including common border, common language, colonial ties, and free trade agreement) were added to the model as control measures.

The findings for the base model for both the OLS and PPML estimation methods are shown in Table 5.7. For the four measures of distance included in the base model, the results largely confirmed expectations. However, in general, the results of OLS estimations are less favorable and a noticeable improvement can be seen when estimating using PPML. It is immediately apparent that the R-squared of 0.639 indicates good explanatory power for the PPML model. First looking at the variables of interest, the coefficient of EcoDist is positive and strongly significant when estimating by both OLS and PPML. In line with previous studies, this suggests that economic distance is significantly related to FDI. An increase in economic distance by 1% will lead to an increase of 0.2% in FDI inflow. This finding supports the hypothesis of resource exploitation as

the key motivation for FDI. Geographical distance is positive and is statistically significant at 5% under OLS and at 1% under PPML. A closer inspection of the data indicates that this result is due to the significance of non-Asian countries (e.g. United States, Netherlands, Switzerland, and United Kingdom, etc.) in the sample for the majority of FDI inflows into Singapore. In addition, the geographic distance between Singapore and these non-Asian countries is larger. Hence, GeoDist dimensions shows a positive sign. As expected, institutional distance is strictly negative in all estimations. The coefficient of InstDist is an example of the divergence of results using the PPML model (1% significance level) compared to the OLS model (not significant). In H4 we stated that there is a negative relationship between cultural distance and FDI inflows. The expected negative effect of cultural distance on FDI was generally confirmed by the findings. The negative coefficient of CultDist is statistically significant at 1% when estimating by both OLS and PPML models. The magnitude of the cultural effect is also larger than that for economic distance with a coefficient indicating that an increase in cultural distance by 1% will lead to a decrease of 0.9% in FDI inflow. Therefore, the assumption of a negative relationship between cultural distance and FDI inflows is fully supported by our findings.

| **OLS & PPML - Base Model** | | | | |
|---|---|---|---|---|
| **Estimator** | **OLS** | | **PPML** | |
| Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. |
| lnEcoDist | 0.200 | *** | 0.095 | *** |
| lnGeoDist | 0.328 | ** | 0.952 | *** |
| lnInstDist | 0.051 | | -0.696 | *** |
| lnCultDist | -0.929 | *** | -0.911 | *** |
| ComnBorder | -0.376 | * | 0.559 | ** |
| ComnLanguage | 0.321 | ** | -0.168 | |
| Colonialties | 1.319 | *** | 1.286 | *** |
| FTA | 1.098 | *** | 1.796 | *** |
| lnGDPperCapSG | 1.178 | *** | 1.638 | *** |
| lnGDPperCapJ | 1.607 | *** | 1.285 | *** |

| | | | | |
|---|---|---|---|---|
| Constant | -26.273 | *** | -31.362 | *** |
| R-squared | 0.472 | | 0.639 | |
| *** Indicate statistical significance at 1% / ** Indicate statistical significance at 5% / * Indicate statistical significance at 10% | | | | |

**Table 5.7. OLS & PPML Base Model**

Moving to the control variables, a common border is statistically significant at 10% under OLS and at 5% when estimated using PPML. In keeping with expectations, a common language is only marginally significant. Because there are at least three official languages in Singapore in addition to English, the potential for a common language to be a barrier for potential investors is significantly reduced. The dummy variable for colonial ties included in the model is positive and statistically significant at 1%, indicating that the FDI flows from countries with previous colonial ties to Singapore are significantly higher than those from countries with no previous colonial ties. Similarly, the dummy variable included to account for free trade agreements is positive and statistically significant at 1% as estimated by both the OLS and PPML models. This outcome will be discussed in greater detail in the following chapter. Finally, the results show a positive and significant relationship between per-capita Gross Domestic Product (GDP) and FDI inflow. Of all the variables, GDP per capita is shown to be the most significant, with a 1% increase in GDP per capita being associated with a 1.6% increase in FDI inflows. As pointed out in the literature review chapter above, this outcome reconfirms the fact that most foreign investment migrates to economies with a high GDP per-capita and a large market size.

Table 5.8 shows the OLS and PPML estimation methods with Multilateral Resistance Terms (MRTs) included by transforming the distance and control variables using a first-order log-linear Taylor-series expansion before their inclusion in the Gravity Model. As mentioned in the methodology chapter, MRT recognizes that trade and FDI between two countries cannot be studied

in isolation because of the significant effect that a third country can have on the terms of trade between the country-pairs under study.

The empirical results presented in table 5.8 provide good support for the theoretical predictions of the model. With respect to each of the main determinants, the results show that economic distance has a positive relationship to FDI flows and is statistically significant at 1% with the coefficient slightly higher compared to the earlier findings presented in Table 5.7. EcoDist displays a positive sign in most of the specifications. This finding might reflect the fact that many MNCs use proprietary resources to gain an advantage in less developed countries which is known as resource exploitation. The geographical distance dimension (GeoDist) is a positive indicator for FDI inflows and is statistically significant. The positive sign of GeoDist is due to the larger amount of FDI inflows from non-Asian countries that are geographically distant. Furthermore, there is a growing consensus that it is now possible for countries to be close economically and culturally without being geographically close. As such, geographic distance as a determinant of trade and investment will continue to decrease.

In H3 we hypothesized that there is a negative relationship between institutional distance and FDI inflows. Although largely insignificant under the OLS estimation method, the institutional distance variable (InstDist) exhibits a negative and statistically significant coefficient under PPML. The coefficient is also larger in absolute value in comparison to the comparable values shown in Table 5.7. In other words, the coefficient is even higher using a first-order log-linear Taylor-series expansion before their inclusion in the Gravity Model. This outcome suggests that political stability, government effectiveness, absence of violence, and control of corruption are all significant determinants of FDI into Singapore. The implication of this result will be deliberated in the next chapter. Cultural distance is statistically significant at 1% under both OLS and PPML

with the expected negative sign which correctly mirrors theoretical expectations. This result indicates that investment is preferred when the cultural distance (e.g., religious beliefs, language, social norms) is small.

| MRT (OLS & PPML) - Base Model | | | | |
|---|---|---|---|---|
| **Estimator** | **OLS** | | **PPML** | |
| Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. |
| lnEcoDist | 0.217 | *** | 0.096 | *** |
| MRTGeoDist | 0.266 | * | 1.018 | *** |
| lnInstDist | -0.078 | | -0.760 | *** |
| lnCultDist | -0.899 | *** | -0.956 | *** |
| MRTComnBorder | -0.446 | * | 0.584 | ** |
| MRTComnLanguage | 0.179 | *** | -0.242 | * |
| MRTColonialties | 1.499 | *** | 1.403 | *** |
| MRTFTA | 1.177 | *** | 1.926 | *** |
| lnGDPperCapSG | 1.123 | *** | 1.623 | *** |
| lnGDPperCapJ | 1.524 | *** | 1.261 | *** |
| Constant | 10.656 | | 85.007 | *** |
| R-squared | 0.472 | | 0.639 | |
| *** Indicate statistical significance at 1% / ** Indicate statistical significance at 5% / * Indicate statistical significance at 10% | | | | |

**Table 5.8 MRT (OLS & PPML) OLS & PPML Base Model**

Starting with ComnBorder, the model indicates a negative relationship to FDI (10% significance) using OLS, but reverses to a positive relationship (5% significance) using PPML. With the inclusion of the MRT, however, the significance of common language increases to 1% for the OLS model and to 10% for the PPML model.

For the colonial-ties variable, the relationship to FDI is positive (at a significance of 1%) for both the base model and the modified-base model. This provides additional support for the hypothesis that FDI inflows to Singapore from countries with former colonial ties are a significant indicator for FDI inflows. With respect to free trade agreements, the relationship to FDI is positive (at a significance of 1%). Thus, the model predict that the existence of FTA promotes FDI. With respect

to per capita income (GDPperCap), both the OLS and PPML models indicate with statistically significant results (1%) that the wealth of a country encourages FDI inflows. As with the base model, GDP is shown to be the most significant of all the variables in the model, with a 1% increase in GDP per capita being associated with a 1.5% increase in FDI inflows.

In short, the results of the base model (without the moderator) are typically in line with our expectations. Using PPML with MRT estimation, we found that all four main variables (EcoDist, GeoDist, InstDist and CultDist) were statistically significant at 1%. With the exception of GeoDist, all main distance variables exhibited their expected signs. The unexpected positive sign for the GeoDist dimension can be attributed to the combination of large FDI inflows from non-Asian countries combined with the close proximity of the Asian countries with Singapore. Most of the control variables were also in line with our expectations. Common language is only marginally significant due to the existence for four official languages in Singapore.

### 5.4 Modified Ease of Doing Business

Although the EODB report has the backing of the World Bank and has been extremely well received by researchers for research resulting in thousands of articles published in refereed journals, it has been criticized for various reasons. For researchers, the EODB report is the source of two summary measures of the level of business regulation in an economy for 190 countries in the world. Published annually, the EODB provides both a Business Score (BS) and a Business Ranking (BR). The Business Score is an absolute measure summarizing the performance of a country on each of the components of regulatory best practice for each of the indicators included in the EODB report. For a specific country, the BS is measured on a scale from 0 (the worst regulatory performance) to 100 (the best regulatory performance) and provides an absolute aggregate measure of how the regulatory environment has changed across time for local

entrepreneurs in a country. Researchers, however, are interested in evaluating not only absolute performance, but also performance relative to other countries in the world. In order to perform country comparisons, the Business Ranking is calculated on the basis of each country's BS. Ranging from 0 (the lowest) to 190 (the highest), the BR sorts the individual country Business Scores from smallest to largest and provides a relative standing of the regulatory performance of individual countries at different points in time.

Although very transparent, the algorithm used to calculate the Business Score (BS) has been criticized. For the calculation of the BS, there is a two-step procedure. First, calculate an equally-weighted average for each topic area included in a broader indicator of regulatory performance. Second, calculate an equally-weighted average for each of the broad indicators for the final summary measure (the BS). In this way, the following 10 disparate topics are aggregated into a single measure: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency (Doing Business, 2020). According to Ravaillon (2010), "In any case, the consolidated indicator ('Ease of doing business'), which is based on the simple average of 'rankings', has serious methodological issues. This process of 'no weights' has received considerable criticism, in particular from the research area of the World Bank." Although simple, the EODB calculation of the Business Score (BS) can be accused of being simplistic because of the equal weighting applied both within each topic and across all of the topics. For instance, starting a business is weighted exactly the same as getting electricity. In reality, however, the cost and the time spent to start a business is considered to be the single most important factor for an investor to go overseas.

In an effort to address this methodological gap of using equal weights, principal component analysis is used to develop a new and enhanced version of Ease of Doing Business called Modified Ease of Doing Business (MEODB). Using factor analysis, the MEODB calculates an optimal measure of the importance of each of the variables included in a model, thus providing a theoretical basis for weighting each of the variables. To develop the MEODB using the same factors included in the EODB, panel data was employed to calculate model coefficients for 139 economies using data for the period 2006 and 2018. To calculate the required factor weights, the exploratory factor analysis method was employed (see OECD Handbook, 2008, for constructing composite indicators). This method, Exploratory Factor Analysis, uses a marginal contribution approach to calculate the importance of each indicator based on the change in variance for each corresponding factor chosen using Principal Component Analysis (PCA). Following the identification of the key factors, Varimax rotation was employed to reduce redundancy among the factors and ensure that any specific factor is not overweighted compared to the remaining factors (Lahrech, 2019). Having identified the significant factors using Varimax, the square of the weights of each rotated factor is calculated, which can be interpreted as the percentage of variance of each single indicator explained by the corresponding factor. Finally, the weight of each indicator is calculated as the square of the weights of each rotated factor divided by the total variance. The result of this final calculation represents the total variance explained by the specific factor.

The outcome of the principal component analysis is illustrated in the following tables (5.9-5.11). Table 5.9 displays that there is one component being selected. Table 5.10 is a transformation of the variables included in Table 5.9. The result of this transformation is an array of squared rotated factor loadings that sum to 1. Thus, the values in Table 5.10 represent the marginal contribution of each individual factor to the composite factor score. Table 5.11 presents the final weights scaled

to sum to 1, which are the results of weighting the values in table 5.10 based on their proportion of variance of the corresponding factor.

| Factors | Component |
|---|---|
| Starting a business Score | 0.796 |
| Getting Credit Score | 0.796 |
| Resolving Insolvency Score | 0.761 |
| Trading Across Borders Score | 0.761 |
| Dealing with Construction Permits Score | 0.676 |
| Enforcing Contracts Score | 0.674 |
| Protecting Minority Investors Score | 0.671 |
| Paying Taxes Score | 0.634 |
| Registering Property Score | 0.617 |
| Explained Variance | 4.570 |

**Table 5.9 Rotated Component Matrix**

| Factors | Component |
|---|---|
| Starting a business Score | 0.105 |
| Getting Credit Score | 0.105 |
| Resolving Insolvency Score | 0.101 |
| Trading Across Borders Score | 0.100 |
| Dealing with Construction Permits Score | 0.089 |
| Enforcing Contracts Score | 0.089 |
| Protecting Minority Investors Score | 0.089 |
| Paying Taxes Score | 0.084 |
| Registering Property Score | 0.081 |

**Table 5.10 Squared rotated factor loadings scaled to sum to 1**

| Factors | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Ave. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Starting a business Score | 0.118 | 0.119 | 0.119 | 0.119 | 0.119 | 0.118 | 0.118 | 0.118 | 0.117 | 0.115 | 0.115 | 0.116 | 0.116 | 0.117 |
| Getting Credit Score | 0.118 | 0.117 | 0.116 | 0.117 | 0.116 | 0.115 | 0.113 | 0.114 | 0.114 | 0.113 | 0.114 | 0.116 | 0.116 | 0.115 |
| Resolving Insolvency Score | 0.115 | 0.116 | 0.115 | 0.113 | 0.113 | 0.112 | 0.112 | 0.113 | 0.114 | 0.112 | 0.113 | 0.113 | 0.113 | 0.113 |
| Trading Across Borders Score | 0.115 | 0.114 | 0.113 | 0.113 | 0.112 | 0.112 | 0.111 | 0.112 | 0.113 | 0.112 | 0.113 | 0.113 | 0.113 | 0.113 |
| Dealing with Construction Permits Score | 0.109 | 0.110 | 0.110 | 0.111 | 0.111 | 0.111 | 0.111 | 0.111 | 0.112 | 0.111 | 0.111 | 0.111 | 0.112 | 0.111 |
| Enforcing Contracts Score | 0.108 | 0.109 | 0.109 | 0.109 | 0.110 | 0.111 | 0.111 | 0.110 | 0.110 | 0.111 | 0.111 | 0.111 | 0.112 | 0.110 |
| Protecting Minority Investors Score | 0.108 | 0.107 | 0.107 | 0.109 | 0.108 | 0.109 | 0.110 | 0.110 | 0.110 | 0.111 | 0.110 | 0.110 | 0.111 | 0.109 |
| Paying Taxes Score | 0.105 | 0.107 | 0.107 | 0.107 | 0.107 | 0.107 | 0.108 | 0.109 | 0.106 | 0.108 | 0.109 | 0.108 | 0.108 | 0.107 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Registering Property Score | 0.104 | 0.102 | 0.103 | 0.102 | 0.105 | 0.106 | 0.106 | 0.103 | 0.105 | 0.106 | 0.104 | 0.102 | 0.098 | 0.103 |

**Table 5.11 Resulting weights scaled to sum to 1 for 2006–2018**

## 5.5 Modified Model Findings

The scope of the study was broadened to include the possible existence of a moderating effect of the Modified Ease of Doing Business (MEODB) on the distance determinants and FDI. As such, the MEODB was included in the modified model as a moderator. As discussed in the previous section, the predictions of the base model for the distance dimensions generally agree with expectations. However, the results of the modified-model (based on the MEODB) are novel and lead to additional insights regarding the determinants of FDI.

Tables 5.12 to 5.15 present each of the four different dimensions of distance (economic distance, geographic distance, institutional distance, and cultural distance) as possible determinants of FDI with MEODB as a moderator under OLS and PPML estimators. For comparison, tables 5.16 to 5.19 present the same dimensions of distance transformed with a first-order Taylor approximation of Multilateral Resistance Terms (MRTs). For tables 5.12 to 5.19, as has been previously observed, the PPML estimations are significantly better than those of the OLS model and are generally more favorable. The results presented in table 5.12 to 5.15 provide additional support for the superiority of the PPML estimator compared to the OLS Model, while tables 5.16 to 5.19 provide evidence for the additional improvement achieved when using PPML with MRT.

In H5 we hypothesized that higher MEODB scoring positively moderates the relationship between economic distance and FDI inflows. Support for this hypothesis is presented in table 5.12. In this table, the interaction cross-term (EcoDist x MEODB) is positive and statistically significant at 1% under PPML with a coefficient of 3.83. Hence, doing business is effective in enhancing the positive

influence of economic distance on FDI inflow. For every unit increase in doing business scoring will enhance the effect of economic distance on FDI by 3.83% The estimates for the intercept under both OLS and PPML add further support for the PPML model (5% significance level). The other distance measures are partially significant under OLS and statistically significant at 1% when using PPML.

| **OLS & PPML With MEODB** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Estimator** | **OLS** | | **PPML** | | **Estimator** | **OLS** | | **PPML** | |
| Dependent Variable | lnFDI | | FDI | | Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. | | Coef. | Sig. | Coef. | Sig. |
| ~~lnMEODB~~ | ~~-25.543~~ | ~~-~~ | ~~-50.941~~ | ~~***~~ | ~~lnMEODB~~ | ~~47.865~~ | ~~-~~ | ~~74.718~~ | ~~**~~ |
| lnEcoDist x lnMEODB | 2.476 | * | 3.832 | *** | lnGeoDist x lnMEODB | -4.796 | | -8.602 | ** |
| lnEcoDist | -10.854 | * | -16.995 | *** | lnEcoDist | 0.205 | *** | 0.101 | *** |
| lnGeoDist | 0.320 | * | 0.975 | *** | lnGeoDist | 21.731 | | 39.326 | ** |
| lnInstDist | 0.117 | | -0.783 | *** | lnInstDist | 0.142 | | -0.735 | *** |
| lnCultDist | -0.947 | *** | -0.942 | *** | lnCultDist | -0.941 | *** | -0.935 | *** |
| ComnBorder | -0.407 | * | 0.568 | ** | ComnBorder | -0.401 | * | 0.581 | ** |
| ComnLanguage | 0.333 | *** | -0.185 | | ComnLanguage | 0.335 | *** | -0.174 | |
| Colonialties | 1.320 | *** | 1.295 | *** | Colonialties | 1.308 | *** | 1.275 | *** |
| FTA | 1.107 | *** | 1.818 | *** | FTA | 1.098 | *** | 1.807 | *** |
| lnGDPperCapSG | 1.559 | *** | 1.369 | *** | lnGDPperCapSG | 1.575 | *** | 1.388 | *** |
| lnGDPperCapJ | 1.662 | *** | 1.216 | *** | lnGDPperCapJ | 1.678 | *** | 1.287 | *** |
| Constant | 82.919 | | 199.456 | *** | Constant | -245.221 | * | -361.935 | ** |
| R-squared | 0.478 | | 0.681 | | R-squared | 0.476 | | 0.666 | |
| **Table 5.12** (EcoDist x MEODB) | | | | | **Table 5.13** (GeoDist x MEODB) | | | | |
| **Estimator** | **OLS** | | **PPML** | | **Estimator** | **OLS** | | **PPML** | |
| Dependent Variable | lnFDI | | FDI | | Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. | | Coef. | Sig. | Coef. | Sig. |
| ~~lnMEODB~~ | ~~-6.642~~ | ~~-~~ | ~~-11.591~~ | ~~*~~ | ~~lnMEODB~~ | ~~8.973~~ | ~~*~~ | ~~2.325~~ | ~~-~~ |
| lnInstDist x lnMEODB | 15.359 | ** | 14.1387 | ** | lnCultDist x lnMEODB | -3.920 | | -5.417 | |
| lnEcoDist | 0.203 | *** | 0.09659 | *** | lnEcoDist | 0.204 | *** | 0.100 | *** |
| lnGeoDist | 0.321 | ** | 0.97096 | *** | lnGeoDist | 0.321 | ** | 0.965 | *** |
| lnInstDist | -68.415 | ** | -63.743 | ** | lnInstDist | 0.150 | | -0.708 | *** |
| lnCultDist | -0.948 | *** | -0.9251 | *** | lnCultDist | 16.559 | | 23.225 | |
| ComnBorder | -0.411 | ** | 0.57525 | ** | ComnBorder | -0.403 | * | 0.576 | ** |
| ComnLanguage | 0.332 | *** | -0.1726 | | ComnLanguage | 0.336 | *** | -0.167 | |
| Colonialties | 1.319 | *** | 1.28707 | *** | Colonialties | 1.309 | *** | 1.275 | *** |
| FTA | 1.107 | *** | 1.80189 | *** | FTA | 1.100 | *** | 1.803 | *** |
| lnGDPperCapSG | 1.647 | *** | 1.5151 | *** | lnGDPperCapSG | 1.575 | *** | 1.395 | *** |
| lnGDPperCapJ | 1.696 | *** | 1.28777 | *** | lnGDPperCapJ | 1.682 | *** | 1.296 | *** |
| Constant | -2.868 | | 21.5049 | | Constant | -71.653 | ** | -39.251 | * |
| R-squared | 0.481 | | 0.643 | | R-squared | 0.4751 | | 0.648 | |
| **Table 5.14** (InstDist x MEODB) | | | | | **Table 5.15** (CultDist x MEODB) | | | | |

*** Indicate statistical significance at 1% / ** Indicate statistical significance at 5% / * Indicate statistical significance at 10%

**Tables 5.12 – 5.15 OLS & PPML with MEODB**

With regards to the control variables, with the exception of common language, all are significant (at levels of 1% and 5%). As previously mentioned, the common language variable is less relevant to this study because there are four official languages in Singapore (including English). As expected, the significance and positive sign of GDP per capita confirms that FDI flows are into wealthy economies. The results are also consistent with the conclusion that GDP per capita has a multiplier effect on FDI flows (i.e., a 1% increase in GDP per capita increases FDI by 1.6%). In H6 it was stated that higher MEODB scoring reduces the negative impact of geographic distance and promotes FDI. We found that the moderating effect of MEODB (term lnGeoDist x lnMEODB) is negatively significant with a coefficient of -8.602 (see results in table 5.13). This finding is contradicting our theoretical assumptions. After a closer inspection of the data indicates that this result is due to the significance of non-Asian countries (e.g., United States, Netherlands, Switzerland, and United Kingdom, etc.) in the sample for the majority of FDI inflows into Singapore. In addition, the geographic distance between Singapore and these non-Asian countries is larger. In terms of significance, GDP per capita has the largest affect on FDI flows, with a 1% increase translating into an increase of 1.7% in FDI. The remaining variables more or less identical with the previous findings.

The moderating effect of MEOBD on institutional distance was the subject of H7. The empirical results of tests of this hypothesis reveal that there is a significant moderating effect of MEOBD on the relationship between institutional distance and FDI inflows (see results in Table 5.14). The interaction term InstDist x MEODB is positive and significant at 5% under OLS and PPML. Thus, higher MEODB reduce the negative effects of institutional distance for FDI. For every unit improvement in doing business scoring will enhance the impact of institutional distance on FDI

by 14.13%. The results also show a significant and positive connection between former colonial ties and FDI, with an increase of 1% associated with a 1.3% in FDI. The subject of H8 was the potential moderating effect of a better business environment (cost, quality, law and other regulations) on cultural distance. Interestingly, our findings do not support this hypothesis. The interaction term (CultDist x MEODB) was found to be insignificant under both OLS and PPML estimation methods (see results in Table 5.15). This result indicates that MEODB scoring does not moderate the relationship between cultural distance and FDI inflow.

| MRT (OLS & PPML) With MEODB | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Estimator** | **OLS** | | **PPML** | | **Estimator** | **OLS** | | **PPML** | |
| Dependent Variable | lnFDI | | FDI | | Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. | | Coef. | Sig. | Coef. | Sig. |
| ~~lnMEODB~~ | ~~-25.543~~ | | ~~-50.941~~ | ~~***~~ | ~~lnMEODB~~ | ~~47.67901~~ | | ~~-4.376~~ | |
| lnEcoDist x lnMEODB | 2.476 | * | 3.832 | *** | lnGeoDist x lnMEODB | -4.77475 | | -0.215 | *** |
| lnEcoDist | -10.854 | * | -16.995 | *** | lnEcoDist | 0.20453 | *** | 0.093 | *** |
| MRTGeoDist | 0.331 | ** | 1.009 | *** | MRTGeoDist | -4.798 | | -8.612 | ** |
| lnInstDist | 0.117 | | -0.783 | *** | lnInstDist | 0.141784 | | -0.736 | *** |
| lnCultDist | -0.947 | *** | -0.942 | *** | lnCultDist | -0.94113 | *** | -0.913 | *** |
| MRTComnBorder | -0.421 | * | 0.588 | ** | MRTComnBorder | -0.41487 | * | 0.588 | ** |
| MRTComnLanguage | 0.344 | *** | -0.191 | | MRTComnLanguage | 0.34668 | *** | -0.183 | |
| MRTColonialties | 1.365 | *** | 1.340 | *** | MRTColonialties | 1.353225 | *** | 1.336 | *** |
| MRTFTA | 1.145 | *** | 1.881 | *** | MRTFTA | 1.135485 | *** | 1.861 | *** |
| lnGDPperCapSG | 1.559 | *** | 1.369 | *** | lnGDPperCapSG | 1.574786 | *** | 1.437 | *** |
| lnGDPperCapJ | 1.662 | *** | 1.216 | *** | lnGDPperCapJ | 1.678027 | *** | 1.256 | *** |
| Constant | 127.148 | | 318.578 | *** | Constant | 2224.234 | | -1.146 | |
| R-squared | 0.478 | | 0.681 | | R-squared | 0.476 | | 0.641 | |

**Table 5.16** (EcoDist x MEODB)

| **Estimator** | **OLS** | | **PPML** | |
|---|---|---|---|---|
| Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. |
| ~~lnMEODB~~ | ~~-6.642~~ | | ~~-11.591~~ | ~~*~~ |
| lnInstDist x lnMEODB | 15.359 | ** | 14.139 | ** |
| lnEcoDist | 0.203 | *** | 0.097 | *** |
| MRTGeoDist | 0.332 | ** | 1.004 | *** |
| lnInstDist | -68.415 | ** | -63.742 | ** |
| lnCultDist | -0.948 | *** | -0.925 | *** |
| MRTComnBorder | -0.425 | ** | 0.595 | ** |
| MRTComnLanguage | 0.344 | *** | -0.179 | |
| MRTColonialties | 1.364 | *** | 1.331 | *** |
| MRTFTA | 1.145 | *** | 1.864 | *** |
| lnGDPperCapSG | 1.647 | *** | 1.515 | *** |
| lnGDPperCapJ | 1.696 | *** | 1.288 | *** |

**Table 5.17** (GeoDist x MEODB)

| **Estimator** | **OLS** | | **PPML** | |
|---|---|---|---|---|
| Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. |
| ~~lnMEODB~~ | ~~8.973~~ | ~~*~~ | ~~2.325~~ | |
| lnCultDist x lnMEODB | -3.920 | | -5.417 | |
| lnEcoDist | 0.204 | *** | 0.100 | *** |
| MRTGeoDist | 0.332 | ** | 0.998 | *** |
| lnInstDist | 0.150 | | -0.708 | *** |
| lnCultDist | 16.559 | | 23.225 | |
| MRTComnBorder | -0.417 | * | 0.596 | ** |
| MRTComnLanguage | 0.347 | *** | -0.172 | |
| MRTColonialties | 1.354 | *** | 1.319 | *** |
| MRTFTA | 1.137 | *** | 1.866 | *** |
| lnGDPperCapSG | 1.575 | *** | 1.395 | *** |
| lnGDPperCapJ | 1.682 | *** | 1.296 | *** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Constant | 41.448 | | 140.132 | *** | Constant | -27.288 | | 78.737 | *** |
| R-squared | 0.481 | | 0.643 | | R-squared | 0.4751 | | 0.648 | |
| **Table 5.18** (InstDist x MEODB) | | | | | **Table 5.19** (CultDist x MEODB) | | | | |
| *** Indicate statistical significance at 1% / ** Indicate statistical significance at 5% / * Indicate statistical significance at 10% | | | | | | | | | |

**Tables 5.16 – 5.19 MRT (OLS & PPML) With MEODB**

Tables 5.16 to 5.19 present each of the four different dimensions of distance as determinants of FDI with MEODB as a moderator using OLS and PPML estimators with a first-order Taylor approximation of Multilateral Resistance Terms (MRTs). The results are largely consistent with those shown in Tables 5.12 to 5.14 from models with coefficients generated without an MRT term. In terms of importance for policy makers, GDP per capita is again shown to have the largest effect on FDI, with a 1% increase leading to an increase in FDI on the order of 1.6%.

*Removal of tax haven countries.*

As previously noted in the discussion of the Linder effect, a significant motivation for FDI flows is to profit from the transfer of knowledge capital (i.e., intellectual property). Although data is available for cross-border flows for intellectual property (IP), there is a risk that the data is distorted due to the relative level of taxes in each country. Namely, trade data available for countries with low tax rates ("tax havens") may not reflect real economic activity and thus could significantly distort the analysis of FDI based on this data (Neubig et. al, 2018). Because this thesis contains four tax haven countries (Bahamas, Bermuda, Brunei, Mauritius), it was necessary to conduct a further test of the robustness of findings by excluding the data from the tax haven countries and then rerunning the OLS and PPML models. The results are shown in Tables 5.20 to 5.24.

When compared with the the Base Case containing the full data set (Table 5.7), the Modified Base Case excluding the tax havens from the data set (Table 5.20) proves to be very robust with few notable differences in the findings. In both cases, the explanatory power ($R^2$) of the two models is equivalent (0.64 vs. 0.66). In addition, the signs of the coefficients are the same for both models

and there are no changes in the independent variables that are statistically significant at 1%, the single exception being Institutional Distance which is not significant in the Modified Base Case. A possible explanation for this difference is that Institutions are only important for FDI flows motivated by tax optimization strategies. When the moderating effect of EODB is included (Tables 5.21 to 5.24), the Base Case continues to prove to be robust in terms of explanatory power, i.e., the $R^2$ values are largely the unchanged. Interestingly, when the tax haven countries are excluded from the data (Table 5.21), the sign of the Economic Distance coefficient changes to positive which is consistent with Hypothesis 1 of this thesis. Thus, the inclusion of tax-haven countries in the Base Case model does not have a material effect on the estimated coefficients.

| **OLS & PPML - Base Model** | | | | |
|---|---|---|---|---|
| **Estimator** | **OLS** | | **PPML** | |
| Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. |
| lnEcoDist | 0.206 | *** | 0.098 | *** |
| lnGeoDist | 0.321 | *** | 0.939 | *** |
| lnInstDist | -0.009 | | -0.475 | * |
| lnCultDist | -0.900 | *** | -0.995 | *** |
| ComnBorder | -0.350 | * | 0.536 | ** |
| ComnLanguage | 0.333 | *** | -0.215 | * |
| Colonialties | 1.301 | *** | 1.318 | *** |
| FTA | 1.090 | *** | 1.815 | *** |
| lnGDPperCapSG | 1.080 | *** | 1.266 | *** |
| lnGDPperCapJ | 1.559 | *** | 1.585 | *** |
| Constant | -24.676 | *** | -30.323 | *** |
| R-squared | 0.463 | | 0.658 | |
| *** Indicate statistical significance at 1% / ** Indicate statistical significance at 5% / * Indicate statistical significance at 10% | | | | |

**Table 5.20 (OLS & PPML) Base Model - Tax Haven Countries**

| **OLS & PPML With MEODB (EcoDist x MEODB)** | | | | | **OLS & PPML With MEODB (GeoDist x MEODB)** | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Estimator** | **OLS** | | **PPML** | | **Estimator** | **OLS** | | **PPML** | |
| Dependent Variable | lnFDI | | FDI | | Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. | | 39.63828 | Sig. | Coef. | Sig. |
| lnMEODB | -18.458 | | -15.802 | *** | lnMEODB | -3.857 | | 0.105 | *** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| lnEcoDist x lnMEODB | 1.906 | | -46.647 | *** | lnGeoDist x lnMEODB | 0.209 | | 71.329 | ** |
| lnEcoDist | -8.303 | | 3.565 | *** | lnEcoDist | 17.536 | *** | -8.071 | ** |
| lnGeoDist | 0.316 | *** | 0.954 | *** | lnGeoDist | 0.098 | | 36.942 | ** |
| lnInstDist | 0.083 | | -0.525 | * | lnInstDist | -0.919 | | -0.482 | * |
| lnCultDist | -0.925 | *** | -1.020 | *** | lnCultDist | -0.382 | *** | -1.016 | *** |
| ComnBorder | -0.387 | * | 0.529 | ** | ComnBorder | 0.344 | * | 0.552 | ** |
| ComnLanguage | 0.342 | *** | -0.224 | * | ComnLanguage | 1.295 | *** | -0.214 | * |
| Colonialties | 1.304 | *** | 1.325 | *** | Colonialties | 1.091 | *** | 1.305 | *** |
| FTA | 1.098 | *** | 1.833 | *** | FTA | 1.473 | *** | 1.823 | *** |
| lnGDPperCapSG | 1.460 | *** | 1.127 | *** | lnGDPperCapSG | 1.643 | *** | 1.136 | ** |
| lnGDPperCapJ | 1.632 | *** | 1.532 | *** | lnGDPperCapJ | -206.986 | *** | 1.609 | *** |
| Constant | 52.692 | | 179.765 | *** | Constant | -245.221 | * | -347.337 | *** |
| R-squared | 0.468 | | 0.698 | | R-squared | 0.476 | | 0.666 | |

**Table 5.21** (EcoDist x MEODB) **Table 5.22** (GeoDist x MEODB)

| **OLS & PPML With MEODB (InstDist x MEODB)** | | | | | **OLS & PPML With MEODB (CultDist x MEODB)** | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Estimator** | **OLS** | | **PPML** | | **Estimator** | **OLS** | | **PPML** | |
| Dependent Variable | lnFDI | | FDI | | Dependent Variable | lnFDI | | FDI | |
| | Coef. | Sig. | Coef. | Sig. | | Coef. | Sig. | Coef. | Sig. |
| lnMEODB | -5.999 | | 0.1011 | *** | lnMEODB | 8.934 | * | 0.106 | *** |
| lnInstDist x lnMEODB | 14.549 | *** | -10.463 | * | lnCultDist x lnMEODB | -3.788 | | 4.617 | |
| lnEcoDist | 0.208 | *** | 14.658 | *** | lnEcoDist | 0.210 | *** | -6.267 | *** |
| lnGeoDist | 0.316 | *** | 0.9515 | *** | lnGeoDist | 0.316 | *** | 0.945 | *** |
| lnInstDist | -64.830 | *** | -65.806 | *** | lnInstDist | 0.109 | | -0.446 | * |
| lnCultDist | -0.930 | *** | -1.0075 | *** | lnCultDist | 15.990 | | 26.929 | * |
| ComnBorder | -0.396 | * | 0.5432 | ** | ComnBorder | -0.385 | * | 0.545 | ** |
| ComnLanguage | 0.341 | *** | -0.2137 | * | ComnLanguage | 0.345 | *** | -0.206 | * |
| Colonialties | 1.304 | *** | 1.3158 | *** | Colonialties | 1.295 | *** | 1.301 | *** |
| FTA | 1.102 | *** | 1.8188 | *** | FTA | 1.094 | *** | 1.821 | *** |
| lnGDPperCapSG | 1.533 | *** | 1.2601 | *** | lnGDPperCapSG | 1.469 | *** | 1.129 | ** |
| lnGDPperCapJ | 1.670 | *** | 1.6142 | *** | lnGDPperCapJ | 1.651 | *** | 1.635 | *** |
| Constant | -4.206 | | 15.939 | | Constant | -69.981 | *** | -50.041 | ** |
| R-squared | 0.472 | | 0.662 | | R-squared | 0.4661 | | 0.669 | |

**Table 5.23** (InstDist x MEODB) **Table 5.24** (CultDist x MEODB)

*** Indicate statistical significance at 1% / ** Indicate statistical significance at 5% / * Indicate statistical significance at 10%

**Tables 5.21 – 5.24 MRT (OLS & PPML) With MEODB**

### 5.6 Summary of Findings

The aim of this research was to expand on existing research by conducting a more fundamental and detailed analysis of the moderating impact of Ease of Doing Business Index (EDBI) on the relationship between various dimensions of distance and FDI inflows into Singapore using a Structural Gravity Model. The findings for the relationship between the four different dimensions of distance and FDI are generally agree with expectations. However, the results of the moderating effect of EODB are novel and lead to additional insights regarding the determinants of FDI. To following table summarizes our findings and illustrates the accomplishment of the research objectives.

| **Research Questions (Q) - Objectives (O)- Hypotheses (H)** | **Findings** |
|---|---|
| Q1. What is the relationship between economic distance and FDI flows?<br>O1. To study the relationship between economic distance and FDI flows.<br>H1. There is a positive relationship between economic distance and FDI flows. | The findings reveal that there is a positive and significant correlation between economic distance and FDI flows.<br>*(Supported)* |
| Q2. What is the impact of geographical distance on FDI flows?<br>O2. To examine the impact of geographical distance on FDI flows.<br>H2. There is a negative relationship between geographical distance and FDI flows. | The findings reveal that there is a positive and significant correlation between geographical distance and FDI flows.<br>*(Not Supported)* |

| | |
|---|---|
| Q3. What is the influence of institutional distance on FDI flows?<br>O3. To test the influence of institutional distance on FDI flows.<br>H3: There is a negative relationship between institutional distance and FDI flows. | The findings reveal that there is a negative and significant correlation between institutional distance and FDI flows.<br>*(Supported)* |
| Q4. What is the effect of cultural distance on FDI flows?<br>O4. To investigate the effect of cultural distance on FDI flows.<br>H4: There is a negative relationship between cultural distance and FDI flows. | The findings reveal that there is a negative and significant correlation between Cultural distance and FDI flows.<br>*(Supported)* |
| Q5. What is the moderating impact of EODB on the relationship between economic distance and FDI flows?<br>O5. To examine the moderating effect of EODB on the relationship between economic distance and FDI flows.<br>H5: Higher MEODB scoring has a positive moderating influence on the relationship between economic distance and FDI flows. | The findings reveal that there is a positive moderating effect of EODB on the relationship between economic distance and FDI flows.<br>*(Supported)* |
| Q6. What is the moderating effect of EODB on the relationship between geographical distance and FDI flows?<br>O6. To study the moderating impact of EODB on the relationship between geographical distance and FDI flows.<br>H6: Higher MEODB scoring has a positive moderating influence on the relationship between geographical distance and FDI flows. | The findings reveal that there is a negative moderating effect of EODB on the relationship between geographical distance and FDI flows.<br>*(Not Supported)* |

| | |
|---|---|
| Q7. What is the moderating impact of EODB on the relationship between institutional distance and FDI flows?<br>O7. To investigate the moderating impact of EODB on the relationship between institutional distance and FDI flows.<br>H7: Higher MEODB scoring has a positive moderating influence on the relationship between institutional distance and FDI flows. | The findings reveal that there is a positive moderating effect of EODB on the relationship between institutional distance and FDI flows.<br>*(Supported)* |
| Q8. What is the moderating effect of EODB on the relationship between cultural distance and FDI flows?<br>O8. To test the moderating effect of EODB on the relationship between cultural distance and FDI flows.<br>H8: Higher MEODB scoring has a positive moderating influence on the relationship between cultural distance and FDI flows. | The findings reveal that there is insignificant moderating effect of EODB on the relationship between cultural distance and FDI flows.<br>*(Not Supported)* |

**Table 5.25 Summary of Findings**

# Chapter 6
# Discussion

# Chapter 6: Discussion

## 6.1 Introduction

This thesis was designed to test several key predictions of the Dunning model regarding the determinants of Foreign Direct Investment (FDI). The theoretical framework is based on the Dunning OLI Paradigm which was carefully selected as it explicitly recognizes the key role played by multinational corporations (MNCs). Among the many unique contributions of the research structure employed in this thesis is the use of the structural gravity model to test the importance of four alternative dimensions of distance as potential determinants of FDI flows. To control for potential distortions of the test results due solely to bilateral factors, four country characteristics (i.e., common border, common language, colonial ties, and the existence of a free trade agreement) were added to the model. Finally, in order to test the potential moderating effect that a positive business environment could have on each of the measures of distance, a unique measure of "business friendliness" was developed based on the well-known Ease of Doing Business Index published by the World Bank. This chapter consists of 5 main sections. First, discussion of economic distance and FDI. Second, discussion of geographical distance and FDI. Third, discussion of institutional distance and FDI. Fourth, discussion of cultural distance and FDI. Fifth discussion of Ease of Doing Business and FDI. In each of the following main sections of this chapter, a detailed discussion of the research findings is provided for each of the four distance dimensions as well as for the moderating impact of "business friendliness" using the Modified Ease of Doing Business Index developed for this thesis.

### 6.2 Discussion of Economic Distance and FDI

This section discusses the relationship between economic distance and foreign direct investment (FDI) and compares our findings with those reported in the literature review chapter. After a thorough review of literature, it is evident that scholars are not in agreement regarding a testable definition of this distance measure. For example, Ghemawat (2001) defined economic distance in terms of differences in consumer wealth and level of knowledge (i.e., technological capability). He argued that differences in income levels between consumers in different countries is the defining factor that determines economic distance. However, broader definitions that include such variables as relative income, wealth or the cost of natural and human resources have also been proposed (Barro, 1991). Finally, in recognition of the fact that economies in general are transitioning away from manufacturing to services, Child and Markóczy (1993) provide evidence that economic distance can be measured in terms of soft factors such as the relative skills in technology, management and marketing. We believe that these different methods for operationalizing economic distance are one possible explanation for the divergent results of research undertaken to test for a relationship between economic distance and FDI inflows. For our research, building on the extension of the OLI Paradigm of Dunning to include "relative economic development", the economic distance between two countries is defined as the Euclidean distance of the GDP per capita in constant USD between Singapore and its 30 largest FDI investors.

Before discussing our findings regarding the relationship between economic distance and FDI, it is important to understand the three methods most frequently used to operationalize the concept of economic distance. When Dunning (1980) first introduced the proposition that "location" is a significant determinant of FDI flows, research focused on measuring differences in countries based on differences between such factors as market size, wages or skilled employment. When it was

later recognized that a country's macroeconomic policies are arguably the most significant determinant of FDI inflows to a host country (Dunning, 2009), researchers began to focus on Gross Domestic Product (GDP) as a proxy for a country's market size and therefore the factor most likely to be related to FDI flows. For example, Uddin and Boateng (2011) found that the larger the market size in terms of the Gross Domestic Product (GDP), the higher the FDI inflows. While absolute GDP is useful for testing the significance of market size for FDI inflows, it is only a simple measure of the economic distance between two countries. A significant refinement involves the use of GDP per capita to measure the relative economic distance between two countries. For example, Tsang & Yip (2007) used this measure to estimate FDI hazard rates in different host countries.

In H1 we stated that there is a positive relationship between economic distance and FDI inflows. For the model used in our study, the coefficient of economic distance is positive and strongly significant at the 1% level of significance ($p<0.01$) when estimating by both OLS and PPML. This result is consistent with existing studies that suggest a significant positive relationship between economic distance (e.g., differences in per capita GDP between the host and the home countries) and FDI inflows. This positive relationship is confirmed by multiple studies (e.g., Estrin and Bevan, 2004; Boateng at al., 2015; Uddin and Boateng 2011) that provide evidence showing that large markets (measured in terms of GDP per capita) attract proportionally larger FDI. In a study employing gravity models to analyze FDI flows between G5 countries and emerging markets (Frenkel et al., 2004), further support is provided for the proposition that large markets attract FDI. These results are consistent with the conclusion that large markets represent significantly larger opportunities that serve to attract FDI in order to meet local demand.

In addition, our research revealed that a large difference in GDP per capita between Singapore and its FDI investor partners (i.e., higher economic distance) leads to an increase in FDI inflow. Effectively, when the economic distance is low the interpretation is that there is less strategic advantage for the source country MNC to invest in the host country. In other words, in cases where economic distance is significant, MNCs select host countries in order to benefit from location-specific advantages. If the host country is more developed (i.e., richer), then the purpose of the FDI flows is for the purpose of resource exploration (i.e., seeking brand names or technology). Alternatively, for less developed host countries, the purpose is to take advantage of cheap raw materials or cheap labor (i.e., resource exploitation). Therefore, we argue that if both the host and the home countries exhibit similar levels of economic development, MNCs are discouraged from entering a foreign market.

Our findings are in line with those of Halaszovich and Kinra (2018) who found that there is a positive ($p<0.01$) and significant relationship between economic distance and FDI inflows. The authors deployed a traditional gravity model to investigate the discrepancies of FDI flows between South Asia (the weakest region within the Asian sub-regions) and the composite Asian Region. However, it is worth noting that the traditional gravity model has several major shortfalls. The first shortfall is the fact that the traditional gravity model is an “atheoretical” model, which means that there does not exist a theoretical foundation for the model predictions. It just happens that the model happens to fit the data well. Second, unlike structural gravity models, traditional gravity models do not account for Multilateral Resistance Terms (MRTs) which might lead to biases in the results. Even when these shortfalls are accounted for, our study shows that when economic distance increases by 1%, the result is an increase in FDI inflows. Therefore, we conclude that an

increase in per capita GDP between the host and the home countries indicates future opportunities in the target host country and a motivation for FDI.

Our research shows a significant ($p<0.01$) positive relationship between economic distance and FDI inflows to Singapore from less wealthy countries (e.g., Indonesia, Philippines, Thailand), thus providing support for the OLI Model prediction of resource exploration as the motive for the investment decision. However, it can be argued that this relationship does not hold for industries where efficiency is the key decision determinant (e.g., where there are thin margins). In this case, FDI decisions are based on the intention to avoid countries with high GDP per capita as wages are likely to be relatively high. The majority of the existing research is unidirectional (i.e., it assumes that higher GDP attracts FDI). For example, Abumangosha (2014) tested for absolute GDP as a determinant for attracting FDI inflows and found a significant ($p<0.01$) positive relationship. It was later expanded to incorporate the possible positive bi-directional effects of FDI between the home and host countries. Our study is one of the few that operationalizes the concept of economic distance by including a distance measure (Euclidean distance) to weight the GDP per capita in constant USD between a home country and the target host country. Similarly, in a study specifically designed to test the role that absorptive capacity plays for attracting FDI inflows, Bodman & Le (2013) used GDP per capita as the economic distance measure and found that FDI inflows increase the absorptive capacity of a country by increasing the human capital of the country.

As an alternative view of the importance of GDP, Encinas-Ferrer and Villegas-Zermeño (2015) suggested that GDP growth rates in a host country do not attract FDI inflows. This result supports the “Liability of Foreignness” (LOF) hypothesis that the advantages enjoyed by foreign MNCs are negated because of the high costs of adapting to local markets. Contrary to this conclusion, our

research results indicate a significant ($p<0.01$) positive relationship between economic distance and FDI. This is consistent with the hypothesis that MNCs target countries that have a similar economic environment for their foreign investments (Malhotra et. al., 2009). This preference can be interpreted as an attempt by MNCs to facilitate knowledge transfer to the host countries and take advantage of economies of scale. As the experience in foreign markets grows, the authors suggest that over time the MNC will become more comfortable in working in foreign markets and will extend its activities to countries with different economic environments. The experience gained from this gradual extension of FDI activities serves to reduce the uncertainty associated with foreign markets, which makes an investment in a country with a significantly different economic environment more attractive.

Finally, from the perspective of portfolio theory, an MNC is motivated to invest in foreign countries in order to diversify risk. In a test of this theory using data for FDI flows from Japan to four Asian countries that were geographically close but economically distant, Dennis and Laincz (2005) reported a significant ($p<0.10$) positive relationship for FDI flows to countries that provide a partial hedge to business cycle risk. In this light, the positive relationship reported in our study for FDI flows from North America and Europe to Singapore are also consistent with the prediction from portfolio theory that MNCs are motivated to diversify risk by spreading investments geographically even if the economic distance between the countries is not large.

### 6.3 Discussion of Geographical Distance and FDI

This section discusses the relationship between geographical distance and foreign direct investment (FDI) and compares our findings with those reported in the literature review chapter. Of the many distance measures included in the FDI literature, geographical distance is generally

considered to be a significant barrier to FDI. As the most intuitive measure of distance related to the FDI decision, geographical distance stands out as the most obvious dimension of distance. Initially, researchers commonly defined geographic distance as the difference in kilometers between the capital cities of two countries (the home and the host country). Although easy to measure using readily available data sources, the definition can lead to a distortion of test results for large countries with a capital city near a coast (e.g., the U.S. or China). Therefore, to adjust for this potential bias, geographic distance is defined for our research using the concept of the "great circle distance" between the geographic center of Singapore (the host country) and the respective geographic centers of the home countries included in this study. Based on a broad range of studies using alternative measures of geographic distance, the general consensus of researchers is that FDI inflows to a host country are much more significant when the home country (i.e., the investor) is close. Although the consensus view of the negative relationship is persuasive, this conclusion is not undisputed and our findings provide a unique view on the relationship between geographic distance and FDI inflow into Singapore.

In H2 we stated that there is a negative relationship between geographical distance and FDI inflows. Many reasons have been proposed for this negative correlation between geographic distance and FDI. Perhaps the most apparent reason is that transportation time and costs are directly related to geographic distance. Hence, investors are reluctant to choose locations far from the home country. From a management control perspective, geographic distance magnifies the negative effects of sub-standard communication networks and the difficulty of working internationally across multiple time zones (i.e., communication costs). Finally, various studies have documented the additional costs arising for an MNE due to the time required to respond to discrimination and lawsuits in the host country (Hennart et. al., 2002; Mezias, 2002).

But somewhat surprisingly, this hypothesis is not supported by our results. At the start of our research, our expectations were strongly influenced by the consensus view regarding the role of geographic distance. Our results, however, showed a positive sign for geographic distance (see Table 5.8 for the result). After a detailed inspection of the raw data, we noticed that significant amounts of FDI came from non-Asian countries (e.g., United States, Netherlands, Switzerland, and United Kingdom). From a regional perspective, the USA was the source of more than 90% of FDI from North America. Collectively, four countries (Germany, Luxembourg, the Netherlands and Switzerland) accounted for more than 60% of FDI from Europe. Significantly, these FDI flows were from non-Asian countries located far from Singapore. Hence, the combination of large FDI inflows from distant non-Asian countries and modest FDI inflows from Asian countries in close proximity with Singapore resulted in a positive sign for geographic distance. These results clearly indicate that foreign investors are not deterred from making significant investments into Singapore despite the additional costs associated with geographic distance.

Although noteworthy, we are not alone in finding a positive relationship between geographic distance and FDI. In an interesting recent article employing a traditional Gravity Model, Halaszovich and Kinra (2018) found geographical distance to be positively related to FDI flows, although the coefficient was only partially significant. In contrast, our findings of a positive sign are significant at the 1% level. We attribute this improvement to the use of a Structural Gravity Model (SGM). In addition to having a solid theoretical foundation, the SGM accounts for the issue of multilateral resistance terms (MRT) which increases the robustness of our findings. Our findings lend further support to the prediction that globalization will continue to decrease the importance of geographic distance as a determinant of FDI flows (see Mazurek, 2012). Our findings are also in line with those of Bailey and Li (2015) that provide evidence that the size of the market in the

host country has a significant mitigating effect on the disadvantages of large distances between the Home and the Host countries. If the size of the market in the Host country has a significant influence on the FDI decision, then an additional interpretation of our findings is that American and European MNEs are actually competing with each other to be part of the promising economy of Singapore. Support for the unique attractiveness of the Singapore market is provided by a study on the determinants of FDI inflows into Indonesia and Singapore. Although the GDP of Indonesia is more than double that of Singapore, the study found that market size has a significant positive influence in Singapore, but not in Indonesia (Mah and Yoon, 2010).

Because geographic distance is frequently used as a proxy for "psychic distance", it is important to present our findings in light of the Uppsala Internationalization Model (see Johanson and Vahlne, 1977). This model predicts that MNEs will view investments in host countries that are psychically distant as being riskier and will therefore choose a market entry strategy that minimizes investments (e.g., exports). Therefore, the model predicts that FDI flows from the United States and Europe that are geographically distant (and consequently psychically distant) will have a negative sign. Instead of FDI, investors from these markets will delay the FDI decision and focus initially on market entry strategies with less commitment such as an export strategy. From this perspective, our finding of a positive relationship between geographic distance and FDI flows would seem to contradict the Uppsala model. While the Uppsala model may hold for the original data of Swedish MNEs investing in foreign markets over time, we maintain that this "time-dependent" process as a determinant of the mode of entry no longer holds in the current global market. Specifically, we believe that the Uppsala Model overestimates the effect of psychic distance because it is rooted in fixed measures of geographic distance, which overemphasize transportation costs and are much less important in the current period of globalization (Axinn et.al.,

2002). Contrary to the Uppsala Model, we maintain that significant FDI demand in a host country can mitigate at least partially the negative impact of geographic distance on foreign investors. This demand-side perspective emphasizes that the FDI decision is driven by the ultimate objective of value creation, which highlights the importance of consumer demand for strategic FDI decision-making. Following Bailey and Li (2015), our research builds on the mitigating effect that the demand-side has on the FDI decision. However, whereas they found a negative relationship between geographic distance and FDI at a significance level ($p<0.05$), our results show a positive relationship ($p<0.05$) using OLS estimators in our Base Model. By focusing on a single Host country (i.e., Singapore), our research is able to isolate the "pull effect" that an attractive investment climate has on FDI. Because the MRT term measures the influence that competing countries have on the FDI decision, our results are consistent with the proposition that Singapore stands out in the competition for FDI. Thus, we conclude that the data indicate that MNEs are well aware that high local demand effectively offsets many of the negative characteristics of geographic distance. Taken together, the significant economic growth of Singapore as well as the existing high FDI demand drives foreign investors to compete for FDI into Singapore, which effectively negates the negative costs related to psychic distance. This clearly indicates that foreign investors target investments into Singapore based on local demand, contrary to the high costs associated with psychic distance.

As noted above, a further reason given for the consensus view that there is a negative relationship between geographic distance and FDI is the difficulty that multinational enterprises (MNEs) encounter when the distance between the home and host countries is large. Because of the additional costs related to managing from a distance, the likelihood of FDI flows to distant countries is expected to be lower (Flores and Aguilera, 2007; Kogut and Singh, 1988). This

proposition first appeared in the highly cited work of Hymer (1976) in which he proposed that a foreign MNE operating in a distant host country will find it more difficult to respond to management problems and social conflicts that can arise in the local work environment. Now generally referred to as the "liability of foreignness" (LOF), these difficulties are the source of additional costs to the MNE compared to similar companies based in the host country (Berry, 2010; Johanson and Vahlne, 2009). Product adaptation costs are a specific example of LOF costs that exist only in the foreign market. Interestingly, there is evidence that the magnitude of these adaptation costs decreases as the degree of competition in the local market increases (Miller and Eden, 2004). Insofar as geographical distance is a proxy for LOF, the significant ($p<0.01$) positive relationship shown in our study contradicts the consensus prediction of a negative relationship. On the other hand, our research findings lend support to recent research findings that "foreignness" can be an asset as well as a liability (Siegel, Pyun and Cheon, 2010).

In an interesting extension of this line of research, Boeh and Beamish (2012) added the concept of "dyad travel time" to the FDI literature. This concept states that when decision makers are making firm governance and FDI location decisions, they are more concerned about the time that it takes to commute between a parent company and a distant subsidiary than they are about the actual distance travelled. As a further refinement, Adler (1986) stated that a subtle example of the liability of foreignness (LOF) is the difference in communication styles prevalent in the home and host countries. Because effective communication depends on both verbal and non-verbal signals, misunderstandings between the parent company and a distant subsidiary can negatively affect performance, which represents a deterrent to FDI. For our research, we argue that because there are at least three official languages in Singapore in addition to English, the potential for communication styles differences to be a barrier for potential investors is significantly reduced.

Even within a single country, it is possible for communication styles to affect the FDI decision. In a test of this hypothesis based on MNE investments in three distinct economic regions within China, Kuo and Fang (2008) included a measure for the international experience of the top management of the MNE. The test results confirmed the negative influence that psychic distance has on the investment location decision, but showed that this negative effect was mitigated by international management experience of the MNE, indicating that international experience helps to close the communication gap. In summary, we conclude that the effect of geographical distance is not always negative.

Of the control variables included in this research, a common border is positive and statistically significant at 95% level of confidence when using Poisson Pseudo Maximum Likelihood (PPML) estimators. This outcome indicates that FDI tends to flow more between countries that share borders. This finding reconfirms those of Halaszovich and Kinra (2018); Buch and Lipponer (2004) and supports the conclusion that a common border is a significant predictor of FDI inflows.

### 6.4 Discussion of Institutional Distance and FDI

This section discusses the relationship between institutional distance and foreign direct investment (FDI) and compares our findings with those reported in the literature review chapter. One way to identify the key drivers for the MNC decision to enter a foreign market using FDI is to use a “hard or soft” factors. Because hard factors are more easily quantified, initial research on the determinants of FDI focused on factors such as different economic indicators or geographic distance. Although it has long been recognized that soft factors such as social peace play a significant role in the FDI decision, it was not until relatively recently that research has expanded to include these soft factors as potential determinants of FDI flows. For our research, institutional

distance was included in the research design in order to contribute to the literature relating soft factors to the FDI decision. This soft factor, the institutional distance between two countries, captures the difficulties and risks that MNEs encounter due to the differences between the countries legal and financial systems.

The critical role of institutions for the development and growth of an economy was identified by North as long ago as 1990. However, it was not until recently that this theoretical insight has been examined critically in the FDI literature. In a test of the proposition that there is a positive relationship between institutional quality and FDI flows to a host country, Bénassy-Quéré et. al. (2005) employed the IP (Institutional Profile) database supported by the French Ministry of Finance to examine FDI flows to 52 countries. Using a Gravity Model, they found a positive and significant ($p<0.01$) relationship between FDI flows and countries with a high level of efficiency in the Public Sector. However, although the data indicate that the existence of "good" institutions lead to increased FDI, the results relating to institutional distance (i.e., the difference in institutional quality between the two countries) were inconclusive. In contrast to these findings, our research benefited from a more robust research design. Our results showed a significant ($p<0.01$) negative relationship for institutional distance. This result clearly indicates that relative differences between the institutional quality of the Home and Host countries is the deciding determinant for the FDI decision.

In addition to employing different estimation procedures, a possible source of the conflicting results noted above is that Bénassy-Quéré et. al. (2005) made use of the IP database for the calculation of institutional distance. For our research, institutional distance is defined as the difference in the World Governance Index (WGI) between Singapore and its top 30 FDI investors weighted by the Euclidean distance between the respective countries. The advantage of the WGI

is that it provides an aggregate measure of the following six dimensions of institutional distance: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption. In a related study using this definition, Halaszovich and Kinra (2018) employed a Gravity Model and found a significant ($p<0.01$) negative relationship between institutional distance and FDI. While our results agree with respect to the negative direction and the level of significance, our research contributes to the literature by employing the more robust PPML procedure to estimate the coefficients and by transforming it with a first-order Taylor approximation of Multilateral Resistance Terms (MRTs) to account for possible influences of 3rd countries on the estimates.

One reason for our H3 hypothesis that there is a negative relationship between FDI flows and institutional distance is the assumption that an MNC faces additional costs and complexity when entering an environment with significantly different institutions. One important measure of the institutional differences between two countries is the level of corruption. In an early study using 5 years of panel data covering 7 home countries and 89 host countries, Habib and Zurawicki (2002) found a negative relationship between FDI flows and the corruption distance between two countries. Similarly, using 6 years of panel data (2004-2009) with a Gravity Model, Cezar and Escobar (2015) report a somewhat significant ($p<0.05$) negative relationship between institutional distance and FDI flows from 125 developing countries to 31 OECD (presumably less corrupt) countries. Our research updates and extends the results of the above studies by using 13 years (2006-2018) of panel data covering 30 home countries and a single host country (Singapore). Because Singapore is among the least corrupt countries in the world according to Transparency International, our study tracks FDI flows from more corrupt home countries to a less corrupt host country. The results of our Structural Gravity Model term show a significant ($p<0.01$) negative

relationship between institutional distance and FDI flows. The inclusion of an MRT term in our model is particularly important because it accounts for possible interaction effects between investing countries. This finding suggests that MNCs prefer to operate in foreign markets exhibiting similar levels of corruption because it is easier for them to adapt to a similar environment.

Although widely employed in the research literature, the WGI does have the disadvantage of being a composite index of six different dimensions of institutional distance. In a study designed to identify the relative importance of the different dimensions of institutional distance for FDI flows from OECD countries to Latin America, Daude and Stein (2007) found that government effectiveness is the component with the largest positive impact on the FDI decision. Government effectiveness is a composite measure that includes such factors as the competence of civil servants and the quality of public services. In comparison, our study of FDI inflows into Singapore shows a significant ($p<0.01$) negative relationship between institutional distance and FDI. Because Singapore is an acknowledged leader in government effectiveness, our study provides evidence that MNCs from home countries with strong institutions prefer to invest into countries with equally solid institutional infrastructures. However, because Singapore also has one of the highest standards of living in the world, an alternative interpretation of our results is that good institutions attract FDI, which leads to positive economic development. Thus, because of our research design, we are in a position to recommend unambiguously to government policymakers that improvements in the quality of institutions is a proven strategy for attracting FDI and generating positive externalities.

Our recommendation to government policymakers that “more is better” with respect to improving the quality of institutions raises the question, “Is there a cutoff threshold for institutional quality?”.

Globerman and Shapiro (2003) provide an answer to this question in their study of the importance of corporate governance as a determinate of FDI flows. Corporate governance is a key component of institutional quality and covers such factors as legislation protecting property rights and transparency of government and legal processes. Their study provides evidence that FDI flows from MNCs based in the U.S. are unlikely unless minimum thresholds of corporate governance ae attained. Because we concentrated on Singapore as the target for FDI investment, we have successfully isolated the "Gold Standard" for institutional quality and concluded that a country with strong institutions attracts FDI. Our study contributes an avenue for future research to identify the lower boundary of institutional quality required for a country to have a chance of attracting FDI.

Although our results indicate that FDI flows to countries with similar institutional quality standards, there exists an alternative line of research that suggests that MNCs from developing countries are not deterred from investing in countries with low institutional quality standards. That's because low institutional quality usually means less protection for the existing local firm. For example, a MNC may prefer to invest in host countries with weak institutional infrastructure because it leads to less protection from foreign investors (i.e., there is a first-mover advantage). As reported by Choi, et. al., (2014), it is not necessary for bad institutions to improve in order to attract FDI investors. Similarly, in a study of Chinese outward direct investment, Buckley et al. (2007) show that when choosing an investment location Chinese firms prefer countries with higher political risk. Thus, while our research indicates that institutional distance is a deterrent to FDI flows, a high-risk country may be preferred if the MNC can reduce adaptation costs, either because of experience gained from many similar investments around the world or because the investor has already gained the experience in its own high-risk home country.

Of the control variables included in this research, we included a Free Trade Agreement (FTA) to the model as a control measure. We believe that FDI and trade are complementary modes of entry into foreign markets. According to New Trade Theory, the production factors of a country are mobile because of the existence of MNCs. An MNC can enter an attractive foreign market through trade or by investing in the market alongside with National Enterprises (NEs). If FDI and trade are complements, then there will be a positive relationship between the trade between countries and FDI flows. In a test of this prediction using a Gravity Model, Africano and Magalhaes (2005) found a significant ($p<0.01$) positive relationship between stocks of FDI in Portugal and imports from OECD countries and Brazil. By including the existence of a Free Trade Agreement (FTA) as a control variable, we test a potential policy variable of interest to decision makers. Our result shows that the existence of an FTA has a significant ($p<0.01$) positive relationship with FDI suggests that policymakers can attract FDI by targeted promotion of bilateral trade with investing countries.

A complimentary relationship between trade and FDI is normally identified with vertical FDI. If there is free trade between countries, then MNCs take advantage of economies of scale to minimize costs by organizing production across a value chain extending across countries. In a test of the relationship between Regional Trade Agreements (RTAs) and FDI for 14 years of panel data (1995-2018) covering 11 Latin American countries using a Structural Gravity Model, Bengoa et. al. (2020) found that the existence of an RTA had a significant ($p<0.01$) positive impact on FDI into a country. Interestingly, their study also included a proxy for institutional quality in a country (i.e., the quality of existing Bilateral Investment Agreements) and found a significant ($p<0.01$) positive relationship between institutional quality for middle-income countries, but not for low-income countries. Our research complements and extends this result in several ways. First, by

employing a Structural Gravity Model for a similar time period (2006-2018), our research design is directly comparable. Second, by focusing on a single high-income country (Singapore) for FDI inflows, we extend the research results beyond middle- and low-income countries to include high-income countries. Third, we report a significant ($p<0.01$) positive relationship between the existence of an FTA and FDI inflows to a high-income country. Taken together, the results of the above research unambiguously recommend that policymakers in high- and middle-income countries enter into both RTAs (if available) and FTAs (for countries targeted as sources of FDI inflows).

### 6.5 Discussion of Cultural Distance and FDI

This section discusses the relationship between cultural distance and foreign direct investment (FDI) and compares our findings with those reported in the literature review chapter. Despite the centrality of the concept of culture for academic studies ranging from anthropology to global marketing, there is no general model of how to theorize and operationalize culture. Even within the field of organizational theory, there are multiple theories regarding such things as the dynamic nature of culture, the importance of culture as an input to the decision-making process or the symbiotic relationship between a country's culture and institutions. For the purposes of our research, cultural motives provide one of the indicators underpinning the location advantages contained in Dunning's OLI framework (1979). Because of its multi-cultural environment and proven success at attracting FDI inflows over a long period of time from source countries with a wide variety of cultural distances, Singapore is ideal for our study of the relationship between culture and FDI.

As research has expanded, operational definitions of cultural distance have evolved to include multiple dimensions of culture. At the forefront of this evolution has been Hofstede (1984) and his description of culture in terms of a shared mindset that serves to bind a group of people to achieve a common goal. Because this shared mindset is multidimensional, it opens the door to researchers to examine an extensive list of cultural components (e.g., spoken language, institutional framework, etc.) that can affect the decision-making process. Expanding on this idea, Ghemawat (2001) argued that some cultural attributes (e.g., language) are easily understood, while others (e.g., social norms) are more nuanced. For current research in the FDI literature, measures of cultural distance are still heavily dependent on Hofstede's Six Dimensions of Culture (Hofstede, 1980; Hofstede, 1988; Hofstede and Minkov, 2010). This paradigm has also been employed for our research in order to measure the cultural distance between Singapore and its 30 largest investors. In H4 we stated that there is a negative relationship between cultural distance and FDI inflows. Our findings confirm a significant ($p<0.01$) negative relationship between Cultural Distance and FDI inflows to Singapore. Because our model coefficients are significant using PPML estimation, our results extend the findings of Kogut and Singh (1988) and provide a basis for our conclusion that there is a negative relationship between cultural distance and FDI inflows. More importantly, our study revealed that an increase in cultural distance by 1 % will lead to a decrease of 0.91% in FDI inflow.

There are multiple studies that support our conclusion of a negative relationship between cultural distance and FDI. For example, using data from FDI inflows into China from six major FDI investor countries, Du et.al. (2012) found that cultural distance was a significant ($p<0.01$) negative factor for the location decisions of MNCs in the various regions of China. In addition, this study found that cultural distance was found to be a mitigator of the negative influence of cultural

differences between the MNC investor and the various regions. In order to measure cultural distance, this study used the Hofstede Cultural Values Index to calculate the difference between the investor countries and China. The results of our study confirmed the significant ($p<0.01$) negative relationship of cultural distance with FDI. As an additional test, we disaggregated the data of our study by source country as a proxy for ethnicity (i.e., cultural distance) and identified that China, Hong Kong, India and Malaysia accounted for a disproportionate positive share of FDI flows to Singapore. This provides additional support for the conclusion that FDI flows are greater between countries with similar cultures.

Despite the general impression from reported research that there is a negative relationship between cultural distance and FDI flows, the conclusion has been challenged by alternative studies. For example, in a detailed study of FDI flows to India (i.e., a country with diverse identifiable cultures), Sathe and Handley-Schachler (2006) was not able to identify a significant relationship between various measures of culture and FDI flows to different regions in India. This study is especially important because it controlled for such factors as the degree of urbanization and religious tolerance, which are not captured by the Hofstede model. They concluded that the degree of urbanization of the investment target outweighs the cultural environment, i.e., cities attract investment to such a degree that cultural distance is essentially negated. The results of our research contradict this result. Despite the well-documented diverse cultural environment and high degree of urbanization in Singapore, cultural distance has a significant ($p<0.01$) negative relationship with FDI flows. The fact that researchers come to different conclusions regarding the importance of cultural distance was highlighted by Ghemawat (2001). Because cultural distance is an aggregate measure of such diverse factors as common language, social norms and religious beliefs, it is very

likely that research results will differ simply because of variations in the data sets and the analytical methodologies employed.

In order to test for the importance of two important measures of culture, we included dummy variables for common language and former colonial ties. Common language was included because empirical research generally concludes that this has a positive relationship to FDI. For example, Tang (2011) supplemented the Hofstede measures of culture by including a dummy variable for a common language between the Home and Host countries and reported a significant ($p<0.01$) positive relationship with FDI. To measure the significance of language for the FDI decision, our study included a dummy variable for common language. For our base model using an OLS estimator, our result is somewhat significant ($p<0.05$) with a positive sign. We interpret this level of significance to the fact that Singapore has four official languages (English, Malay, Mandarin Chinese and Tamil). In this multilingual environment, potential investors are less likely to be deterred by a language barrier.

Another important dummy variable included in our study is the existence of former colonial ties. This measure is a proxy for all of the informal connections that lead to common understanding and shared expectations between the people in different countries. As evidence of the importance of this variable, Ghemawat (2001) stated that international trade is nine times more likely to occur between countries with former colonial ties. Our study was designed to test if this factor ("former colonial ties") is equally significant as a driver for the FDI decision. Our results show that the dummy variable measuring former colonial ties has a significant ($p<0.01$) and positive relationship to FDI flows between countries. This result is robust and holds even when the PPML estimates are included along with an MRT estimator.

The prevalence of former colonial ties as a determinant of FDI is not always obvious when examining the data. For example, in the case of Vietnam there are three identifiable periods related to colonial ties, i.e., during the Chinese occupation, in the time of the French colonization, and during the period of the Comecon economic union. In a study of the importance of cultural distance using this example, Makino and Tsang (2011) employed the Hofstede measures of culture to test for the significance of various determinants for FDI flows to Vietnam from 1989 to 1999. While the authors expected to find a strong positive relation to FDI flows from Chinese and French investors, the somewhat surprising result was that the former Comecon countries (e.g., Russia and Hungary) were significant early investors as soon as the Vietnamese market was opened to foreign investors. Given the geographic distances and cultural differences between the countries, the most plausible explanation for this result is that the previous informal ties established during the time of common membership in Comecon acted as a mitigator for other distance measures. An examination of our data shows that two of the largest sources of FDI (i.e., the United Kingdom and Malaysia) have a long history of colonial ties with Singapore, which provides additional support for the hypothesis that FDI flows are positively related to countries with a former colonial relationship.

Having established that cultural distance in general has a negative relationship with FDI, it is interesting to review the selected dimensions of a country's culture as they relate to the MNC strategic investment decision. Research suggests that one important dimension is uncertainty in the host country, both in the institutional environment and in the population. In a recent study, Siegel et. al. (2013) used the cultural attribute of egalitarianism to capture the uncertainty facing a foreign investor due to the systematic exploitation of political or market power in a country. Using the Schwartz Value Survey (see Schwartz, 2004), the authors found a significant ($p<0.01$) negative

relationship between egalitarianism distance and FDI flows. They further conclude that the egalitarianism is conceptually correlated with multiple decisions that an MNC makes when investing internationally. This conclusion is supported by Tahir and Larimo (2004). In their study of investments by Finnish MNCs in a set of Asian host countries, they found that MNCs preferred greenfield investments (i.e., wholly-owned subsidiaries) in low-risk host countries, but preferred to share risk and minimize the cost of asymmetric market information by entering into Joint Ventures (JVs) in high-risk countries. The use of a JV as a mode of entry is an effective tool for an MNC to streamline communications with local subsidiaries and efficiently bridge cultural distance to adapt to the host country environment (Chen & Hu 2002; Madhok, 1997; Pak & Park 2004; Randoy & Dibrell 2002). Thus, the cultural orientation that does not tolerate corruption or abuses of market power (i.e., egalitarianism) has been shown to affect not just FDI flows, but also the form that FDI takes in the host country.

The addition of the concept of egalitarianism as an attribute of cultural distance that describes attitudes that people in different countries have regarding certain behaviors (e.g., corruption). In a study of the mode of entry employed by an MNC, Quer et.al. (2012) provided evidence of the significance of the inclusion of egalitarianism in the measurement of cultural distance. When they measured cultural distance using the familiar Kogut-Singh index (1988), there was no relationship between cultural distance and the mode of entry decision of Chinese MNCs. However, when they employed an alternative measure of cultural distance including an attribute of egalitarianism, they found a somewhat significant ($p<0.1$) positive relationship with the mode of entry chosen for the investment. In a related study using Hofstede's model of national culture to measure cultural distance, Moalla and Mayrhofer (2020) presented evidence that the impact of cultural distance is not significant for the choice of market entry mode. Thus, it is not possible to conclude

unambiguously that the MNC entry mode decision is influenced by cultural differences (Tihanyi, et al. 2005). We concluded that, although our results show a significant ($p<0.01$) negative relationship between cultural distance and FDI flows, there is evidence that cultural differences are not significant for specific decisions (e.g., mode of entry) that MNCs make when entering a foreign market.

### 6.6 Discussion of Ease of Doing Business and FDI

This section discusses the moderating role of a favorable business environment on the relationship between four different dimensions of distance and foreign direct investment (FDI) inflow and compares our findings with those reported in the literature review chapter. There are four principal ways that the distance between two countries is measured in the FDI literature: economic, geographic, institutional, and cultural. The impact of these distance measures on FDI is frequently readily apparent, but at other times can be quite subtle. For example, it is intuitive that geographic distance increases transportation and communications costs. It is perhaps less obvious that institutional distance imposes additional adaptation costs. At the extreme, cultural distance captures the very real, but subtle differences in consumer preferences that a foreign investor must take into account before entering a country. In order to overcome the negative impact of distance on FDI, a possible response from governments is to acknowledge the importance of cultivating a business-friendly environment through appropriate regulatory reforms.

The last three decades have witnessed extensive worldwide economic reforms that have served to integrate the world economies and create a global economic system. While these developments have made it much easier for Multinational Companies (MNCs) to invest abroad, they have also increased the complexity related to the choice of target country and type of investment. In order to

provide a trustworthy source of information on the business environment and regulations for the countries of the world, the World Bank created the Doing Business project in 2002 and began the annual publication of the Ease of Doing Business Index (EODB). For our research, the EODB was used as a proxy for the moderating effect that a favorable business environment can have on four different dimensions of distance and FDI inflows into Singapore. The following sub-sections discuss the moderating role of EODB on each of the four selected measures of distance.

*6.6.1 Ease of Doing Business and Economic Distance*

Much research has been done to test if there is a relationship between the Doing Business rankings and FDI inflows to a country. For our study, we also view these rankings as a proxy for a favorable investment climate, which presumably has a positive relationship with FDI inflows. Hence, In H5 we stated the hypothesis that our modified measure of EODB (MEODB) scoring has a significant moderating effect on the relationship between economic distance and FDI inflows. In Table 5.12 we present significant support for this hypothesis. Our PPML estimator of the coefficient for the interaction cross-term (EcoDist x MEODB) is positive and statistically significant ($p<0.01$). Even when we account for MRT to control for the potential interaction of FDI flows from 3$^{rd}$ countries, the interaction cross-term remains positive and statistically significant. We therefore conclude that MEODB amplifies the positive relationship between economic distance and FDI flows.

The direct relationship between EODB and FDI inflows to a host country has been investigated using a variety of methodologies and datasets. While there is general agreement of a positive relationship between business friendliness environment and FDI, there are significant exceptions to this general conclusion. Divergent research methodologies are the likely cause of these results. For example, for research based on simple correlation tests (e.g., Bayraktar 2013; Morris and Aziz,

2011; Mottaleb and Kalirajan, 2010), the general conclusion is that the relationship is slightly positive. As researchers began to use regression analysis to investigate causal relationships between business friendliness and FDI flows (e. g., Piwonski, 2010; Hossain et. al., 2018), the positive causal relationship was confirmed. In order to refine the results, later researchers used panel data with both fixed effects and random effects models (e.g., Jayasuriya, 2011; Olaval, 2012; Shahadan et. al., 2014) in order to confirm the positive relationship.

For our research, we extended the definition of EODB based on principal component analysis in order to develop a new and enhanced version of Ease of Doing Business called Modified Ease of Doing Business (MEODB). To the best of our knowledge, no research to date has included a similar refinement of the EODB index in the research design. This measure is an advance over the existing EODB literature because it incorporates an optimal measure of the importance of each of the 10 variables included in the EODB. Using this measure, we found that MEODB has a significant moderating effect on the correlation between economic distance and FDI flows.

Although many researchers have examined the possible relationship between business friendliness (as measured by the EODB index) and FDI inflows, to the best of our knowledge no paper has yet examined the potential moderating effect that EODB has on the various distance measures influencing the FDI decision. Following Baron and Kenny (1986), we are careful to distinguish between EODB as a moderator and EODB as a mediator. For its role as mediator, we did identify two studies (Kofarbai and Bambale, 2016; Muli and Aduda, 2017) that provide evidence of EODB as a mediator, but both of these studies are restricted to the mediating effect for a single determinant of FDI inflows (see table 2.1). To the best of our knowledge no paper has employed a Structural Gravity Model (SGM) to test the relationship between EODB and FDI. In this light, our finding of a significant ($p<0.01$) positive relationship between economic distance and FDI is of particular

importance for policymakers because it highlights the importance of having favorable investment environment for MNCs.

*6.6.2 Ease of Doing Business and Geographic Distance*

Beginning with the recognition by Tinbergen (1962) that trade flows between countries can be modeled with a Gravity Model based on the principal that "likes attract", international trade theory has explored the possible relationship between geographic distance and volume of trade and FDI between countries. For our study, we expand on this foundation by employing a Structural Gravity Model (SGM) to account for interaction factors between countries. In H6 we stated the hypothesis that our modified EODB scoring (MEODB) serves as a moderator for the negative effect that geographic distance has on FDI inflows into Singapore. When the moderating effect of MEODB on geographic distance (lnGeoDist x lnMEODB) was measured, the result showed a somewhat significant ($p<0.05$) negative moderating effect. This finding contradicts our initial expectation. Upon closer inspection of the data, it became clear that this result is due to the unexpected sign between geographic distance and FDI flows due to the significant FDI flows to Singapore from North America and European countries that are located far.

As has been previously noted, the majority of existing research claims the existence of a positive relationship between business friendliness and FDI flows. However, the evidence resulting from this research suffers in many cases because of the data sets and research methodologies employed in the research design. To use an extreme example, Mottaleb and Kalirajan (2010) employ an OLS regression model and report a significant ($p<0.01$) and positive relationship between a business friendly environment and FDI inflows based solely on three years of data for a single measure of the business environment ("days to start a business"). Likewise, the general claim that there exists

an absolute negative relationship between geographic distance and FDI can be challenged. For example, because of possible moderating effects, it is possible that geographic distance serves to reduce the risks associated with other determinants of FDI inflows. Support for this conclusion comes from a study designed to identify the determinants of the mode of entry used by an MNC in different countries (Ragozzino, 2009). This study concluded that geographic distance is a significant moderator of the risk associated with both cultural distance ($p<0.05$) and political risk ($p<0.001$). On the other hand, this moderating effect is bi-directional. In a study designed to test for potential moderators of the geographical risk for FDI, Bailey and Li (2015) found a significant ($p<0.05$) positive moderating effect of Host Country Local Demand on geographical distance. As a final example, using a gravity model to analyze MNC investing behavior to developing countries in Asia for the years 2007, 2010 and 2012, Halaszovich and Kinra (2018) found that the in-country logistics infrastructure (i.e., roads) has a significant ($p<0.05$) and positive moderating effect on the risk associated with geographical distance.

As the above studies show, a recent direction in the FDI literature is to search for possible moderating factors for the risks inherent in the various measures of risk. Our finding that EODB has a significant ($p<0.05$) and positive moderating effect on the risk associated with geographic distance should encourage additional research to investigate EODB not only as a potential determinant of FDI, but also as a potential moderator of the multiple risks facing foreign investors.

*6.6.3 Ease of Doing Business and Institutional Distance*

Of all of the distance measures evaluated in this thesis, institutional distance (ID) is the one most closely aligned conceptually with our measure for business friendliness (i.e., MEODB). As documented by Kostova et. al. (2019), the World Governance Indicators (WGI) published by the

World Bank is the most frequently cited regulatory measure of institutional distance (ID) appearing in the economics literature. Of particular importance for our thesis is the finding (Bota-Avram, 2014) that EODB is somewhat correlated with the WGI and that, for wealthy host countries, government effectiveness and control of corruption are the most important factors influencing the FDI decision. In H7 we stated the hypothesis that there is a moderating influence between the modified EODB scoring and the risk associated with institutional distance and FDI inflows. For our study, as expected there is a significant ($p<0.05$) negative relationship between institutional distance and FDI. However, when the moderating effect of MEODB (lnInstDist x lnMEODB) is included in the model, the result is a significant ($p<0.05$) moderating effect on the risk associated with institutional distance (see results in table 5.14). We therefore conclude that MEODB moderates the relationship between institutional distance and FDI. Of importance to policymakers, we report that for every unit improvement (measured in %) in MEODB, the marginal increase in FDI is 14.13%.

Although there are differences in the datasets and methodology used, a comparison of the results of this thesis with comparable studies is useful to put our research results in perspective. For example, Bailey and Li (2015) showed that the local demand in a host country is a significant ($p<0.01$) positive mitigator of administrative (i.e., institutional) distance. Similarly, in an examination of the determinants of FDI to less-developed countries in Latin America using an OLS model and panel data for the period 1996-2008, Amal et. al. (2010) concluded that institutional and political stability exhibit a significant ($p<0.05$) and positive relationship to FDI. In order to track the effect of changes in the components of the EODB Index across time, one study (Bayraktar, 2013) employed correlation analysis to examine the relationship between the EODB index and FDI flows. This study is significant for our research because it concludes that positive

improvements in the investment climate of developing countries over time leads to increasing FDI inflows. In comparison, our study shows that FDI inflows also increase over time for a highly developed country (Singapore) with consistently high EODB Index. We conclude from these results that countries with high quality institutions and political stability attract FDI, but equally important is the conclusion that FDI flows to countries that show continual improvements over time in the quality of their institutions.

As the above studies show, the FDI literature has expanded to include the moderating effect of local demand and political stability on the risks associated with institutional distance. In addition, there is some evidence that the continual improvement in the investment climate is positively related to FDI inflows. Our finding that EODB has a significant ($p<0.05$) and positive moderating effect on the risk associated with institutional distance adds an additional moderator of this risk to the FDI literature.

*6.6.4 Ease of Doing Business and Cultural Distance*

As early as 1980, Hofstede highlighted that differences in culture can have a profound effect on the decision-making processes within an organization. For a MNC evaluating an investment in a foreign country, cultural differences can present significant barriers to entry due to the costs related to adapting to the local culture. For our study, H8 proposed that there is a moderating effect between the existence of a business-friendly environment in a country and the barrier that cultural distance imposes on FDI. Somewhat surprisingly, the result indicates that the MEODB index does not moderate the relationship between cultural distance and FDI inflow. Specifically, using both OLS and PPML estimators, our results show no significance ($p>0.10$) between the interaction term

(CultDist x MEODB). This result (see table 5.15) indicates that business friendliness does not have a moderating effect on the risks associated with cultural distance.

For our research, the key driver was the seminal meta-analysis studying the associations of cultural distance with entry mode choice, global diversification, and MNE performance using data from 66 samples by Tihanyi et. al. (2005). Although this analysis concluded that there is no significant effect of cultural distance on international diversification and entry mode choice, it highlighted that further research would benefit from the investigation of potential moderators that could be potential causes of this effect (e.g., the home country of the investor, the industry targeted in the host country). In an article following up on this suggestion, Siegel et.al. (2013) focused on a single measure of cultural distance (egalitarianism distance) and reported a negative relationship between this component and FDI inflows to a host country. In contrast, of particular importance for our thesis is the conclusion from a later study (Shenkar et. al., 2016) that the effect of cultural distance is asymmetric. For FDI flows from wealthy countries to developing countries, cultural distance is not relevant. However, for FDI flows from developing countries to wealthy countries, reductions in cultural distance have a significant positive effect on FDI inflows. We interpret this result as a "flight to quality" between countries with a similar culture.

Our study extends this line of research by including "business friendliness" as a potential moderator of the risks associated with the cultural distance separating the Home and Host countries. Our results do not indicate a moderating effect of MEODB on the relationship between business friendliness climate and to FDI inflows using either OLS or PPML estimators.

### 6.7 Summary of Discussion

In order to highlight the contributions of our findings to the existing literature, throughout this section relevant comparisons are made between our findings and the prior research discussed in the review of literature chapter. This thesis introduces a theoretical framework that draws heavily on the Dunning OLI Paradigm which is fundamental to this thesis because of the key role that it assigns to multinational corporations (MNCs) in the FDI decision process. The central role that a business-friendly environment plays in the decision making process is the unifying theme of this thesis, with the unique contribution being the moderating effect that this has on four different distance measures affecting the investment decision. To this end, a novel measurement of the relative favorability of a country's business climate (MEODB) was created using the World Bank's Ease of Doing Business Index (EODB). Because this measure weights the components of the EODB according to their relative importance, it is important for the detailed policy recommendations resulting from our thesis conclusions. At a macro-level, we provide evidence that a favorable business climate has significant moderating effects on the risk that an MNC must take into account when investing in countries with different levels of economic development. As an additional contribution, we provide evidence that this moderating effect carries over to the risks arising from different legal and financial systems in the host country. This thesis further indicates that a favorable business environment does not mitigate the negative effect of cultural distance. These conclusions are supported by a research design constructed around a structural gravity model employing. Based on this robust design structure, the recommendation to policymakers that policies designed to improve "business friendliness" will attract FDI flows and the associated benefits to the host country.

# Chapter 7
# Conclusion and Future Directions

# Chapter 7: Conclusion and Future Directions

## 7.1 Introduction

This chapter summarizes the key findings and contributions of this research and outlines an agenda for future research. The next section presents the key findings of this research. Section three presents the theoretical and practical contributions. The fourth section highlights the research limitations. The fifth section provides recommendations for further research directions.

## 7.2 Key Research Findings

The primary objective of this thesis is to extend the existing research literature by conducting a more fundamental and detailed analysis of the relationship between four different dimensions of distance (economic distance, geographic distance, institutional distance, and cultural distance) and Foreign Direct Investment stock in Singapore. Using the Ease of Doing Business Index (EODB) as a proxy for a favorable business environment, the thesis scope was broadened to include the possible existence of a moderating role played by EODB on each of the distance determinants and FDI flows. This research deployed the Structural Gravity Model to examine FDI flows into Singapore from its 30 largest investors for the period from 2006 to 2018.

With respect to each of the four main FDI determinants included in the model and in line with previous studies, the findings suggest that each of the four different dimensions of distance are significantly related to FDI. With the exception of geographical distance, all of the independent variables related to distance exhibited the expected signs. The results show that economic distance has a positive and significant relationship with FDI flows. The unexpected positive sign for the geographical distance can be attributed to the combination of large FDI flows from non-Asian countries combined with the close proximity of the Asian countries with Singapore. The results

also indicate that institutional distance has a negative and statistically significant relationship with FDI flows. The study further finds a negative and significant relationship between cultural distance and FDI.

With regard to the moderating role played by EODB, the research results show that the moderating effect of EODB are novel and lead to additional insights for the determinants of FDI. With regards to its moderating role, the ease of doing business is effective in enhancing the positive influence of economic distance on FDI flows. The empirical results also revealed that there is a significant moderating effect of EODB on the relationship between institutional distance and FDI flows. In contrast to our theoretical assumptions, we found that the moderating effect of the ease of doing business index on the relationship between geographical distance and FDI is negatively significant. Interestingly, the research results further indicate that the EODB index does not moderate the relationship between cultural distance and FDI flows.

Four country characteristics (including common border, common language, colonial ties, and the existence of a bilateral free trade agreement) were added to the model as independent variables to control for differences between the FDI source countries. The results show that the coefficient for a Common Border is positive and statistically significant when estimated using PPML. On the other hand, the existence of a Common Language is only marginally significant. Regarding Colonial Ties, the coefficient is positive and statistically significant. Finally, the dummy variable included to account for Free Trade Agreements is positive and statistically significant. For the characteristic related to the wealth of the country, the results show a positive and significant relationship between per-capita Gross Domestic Product (GDP) and FDI flows.

### 7.3 Key Research Contributions

This research made significant theoretical and practical contributions within the field of FDI literature. The unifying theme of this thesis is the role that a business friendly environment plays as a moderator of the risks associated with four different measures of distance. This thesis picks up where the Dunning theory (OLI paradigm) left off. From a theoretical viewpoint, a novel way to measure the degree to which a country exhibits a favorable business climate was created in order to weight the individual components of the World Bank's Ease of Doing Business Index (EODB) according to their relative importance. Using this measure, our results show that a favorable business climate has a significant moderating effect on the risks that a MNC faces when investing in countries with significantly different wealth levels. In addition, this moderating effect is also evident for the risks associated with operating in countries with different legal and financial systems. Of equal importance for researchers is the contribution that a favorable business climate does not appear to exhibit a moderating effect for the risks associated with the cultural distance to the target country. In order to ensure that these results are reliable, a robust research design based on a structural gravity model using panel data of FDI flows was employed. From a practical viewpoint, this study provides strong evidence to policymakers that improving the business friendliness of a country attracts FDI due to the moderating effect that it has on the risks associated with economic distance and institutional distance.

### 7.4 Research Limitations

As with any research, this study is subject to a few limitations. One limitation of our research design is the restriction to one particular geographic area (Singapore) as the target for FDI flows. Although Singapore is a good example of a wealthy country with a business friendly environment,

it is not the only country that meets these conditions. In order to be able to generalize our conclusions, it would be necessary to investigate whether similar results are achieved for data using FDI flows to different countries (e.g., Hong Kong or Switzerland). Similarly, our results are limited to a single region (i.e., Southeast Asia) and may not be relevant for policymakers in other regions such as North America or Europe. With respect to our choice of host country, perhaps the most significant limitation is the focus on a wealthy country. This, however, may not be the most appropriate for developing countries.

A second set of limitations in our research design is the methodology underlying the Doing Business indicators. This methodology is based on a set of indicators that form the basis for the Ease of Doing Business (EODB) index used in our study as a proxy for the level of business friendliness in a particular country. In order to provide a consistent basis for data collection across countries, these indicators are developed using a defined set of assumptions that are applied to standardized case scenarios. To illustrate the potential bias inherent in these standardized scenarios, the assumption is that a business is located in the largest city in the country. For large economies with significant regional differences (e.g., China), this assumption may not be valid given the variation in business regulations and the related enforcement across the different regions. Hence, it is not possible to conclude that our results apply equally well to different regions or cities within a country. A second weakness of the EODB index is the implicit assumption that all market participants in a country have perfect knowledge about the applicable business regulations of the country. While this may be realistic for the large multinational companies that were the focus of our research, it is questionable whether the assumption is valid for entrepreneurs, which represent a potential important target for FDI flows.

There are many reasons for the extensive use of the Structural Gravity Model (SGM) in research related to Foreign Direct Investment (FDI) and Foreign Trade Relations (FTR). First, there is confidence in the model due to its rigorous theoretical foundation. Second, there is the consistent success that the model exhibits when using empirical data related to FDI and FTR for research. However, despite the popularity of the model, as with any methodology, there are some limitations associated with the appropriate model specifications as well as the "econometric estimation technique(s)" chosen to provide unbiased estimates in cases where the data exhibit a significant number of zeros for the dependent variable. Of particular importance for this thesis is the detailed analysis provided by Burger et al. (2009) that focused on the limitations related to the use of PPML estimates in the model. They noted that an excess of zero flows to the dependent variable can lead to problems with the model estimators due to the resulting significant variations in the empirical data related to the dependent variable. They conclude that a limitation of the gravity model is that only considers observed heterogeneity and not unobserved ones. Moreover, Martinez-Zarzoso (2013) suggested that PPML is not constantly the best estimator as its estimates are outperformed by the Ordinary Least Squares regression (OLS). While the challenge is valid, the standard PPML estimators are still considered to be valid model even though there may be special cases where alternative estimation procedures provide superior results (Santos Silva and Tenreyro, 2008). While our decision to use PPML estimates is a limitation of our research design, we believe that this the most appropriate procedure for our dataset.

### 7.5 Recommendations for Further Research Directions

While our research contributed new evidence of the significance of a favorable business environment to the FDI literature, it is also apparent that future research is required in order to evaluate if our conclusions can be generalized beyond the limitations of our research design. Our

study focused on a single wealthy country (Singapore). One recommendation would be to apply our research design to a few similar wealthy host countries (e.g., Hong Kong or Switzerland). Potentially, the results of this research would make it possible to highlight the importance of EODB for wealthy countries in general, not just for Singapore. Similarly, future research could change the geographic focus from a single country to a region (e.g., Southeast Asia or Latin America) to investigate if there are regional differences in the significance of EODB. In this case, the results would provide a valuable input for the establishment of policy at the regional level. In addition, in order to provide policymakers with a prioritized list of factors affecting EODB, the research design would have to be modified to examine EODB at the factor level (e.g., Starting a Business, Protecting Minority Investors, Paying Taxes etc.). Because of the growing importance of service industries in the economies of developed countries, further research is required to study Foreign Direct Investment (FDI) flows by industry (i.e., service vs. manufacturing). This would provide policymakers with evidence of the relative importance of EODB for the service and manufacturing sectors of an economy. Finally, our research can be further modified by using the new revised Gravity Model, i.e., Poisson Pseudo-Maximum Likelihood with High-dimensional Fixed Effects (PPMLHDFE). This is one of the most recent extensions of the gravity model in the gravity literature. Collectively, the research agenda proposed above would create a firm foundation of evidence regarding the significance of EODB as both a determinant and a moderator in multiple environments.

### 7.6 Summary

The determinants of Foreign Direct Investment (FDI) flows has long remained an interesting question to academics and practitioners. During the last few decades, significant progress has been made to solidify the theoretical foundation used to identify the determinants of FDI into a country.

In parallel, empirical research has expanded and accelerated to test the theories, with the result that there now exists an extensive body of knowledge covering a wide range of determinants and geographical regions.

The overarching purpose of this thesis is to extend the existing research on the determinants of FDI. More specifically, this thesis is designed to conduct a more fundamental and detailed analysis of the moderating impact of Ease of Doing Business Index on the relationship between four different dimensions of distance and FDI flows. Based on the Literature Review, the structure of this thesis was refined to address the issues identified in previous research. Four country characteristics (including common border, common language, colonial ties, and free trade agreement) were added to the model as control measures. This research deployed the Structural Gravity Model to examine FDI flows into Singapore from its 30 largest investors for the period of 13 years (2006 to 2018).

The findings for testing the relationship between four different dimensions of distance (economic, geographic, institutional, and cultural) and FDI largely confirmed expectations. Yet, the results of the moderating effect of a business friendly environment are new and lead to additional insights for the determinants of foreign direct investment. Regarding the main four distance variables, with the exception of geographic distance, all are significant and exhibit their expected signs. The unexpected positive sign for the GeoDist dimension can be attributed to the combination of large FDI inflows from non-Asian countries combined with the close proximity of the Asian countries with Singapore.

With regards to its moderating role, the ease of doing business (EODB) is effective in enhancing the positive influence of economic distance on FDI inflow. The empirical result also revealed that

there is a significant moderating effect of doing business on the relationship between institutional distance and FDI inflows. In contrast to our theoretical assumptions, we found that the moderating effect of the ease of doing business index on the relationship between geographical distance and FDI is negatively significant. Interestingly, the result further indicates that the ease of doing business scoring does not moderate the relationship between cultural distance and FDI inflow.

The unifying theme of this thesis is the role that a business friendly environment plays as a moderator of the risks associated with four different measures of distance. Using Ease of Doing Business Index (EODB) measure, our findings show that a favorable business climate has a significant moderating effect on the risks that a MNC faces when investing in countries with significantly different wealth levels. Furthermore, this moderating effect is also evident for the risks associated with operating in countries with different legal and financial systems. This research further shows that a favorable business climate does not seem to exhibit a moderating effect for the risks associated with the cultural distance to the target country.

## 8. References


Abumangosha, S.M. (2014). Determinants of foreign direct investment in MENA region (*Doctoral dissertation, Bournemouth University).*

Acemoglu, D. Johnson, S. & Robinson, J.A. (2005). Institutions as a fundamental cause of long-run growth. *Handbook of economic growth*, vol. *1*, pp.385-472.

Adler, N.J. (1986). Communicating across cultural barriers. In: Adler, N. (Ed.), *International Dimensions of Organizational Behavior*. pp. 50–75.

Africano, A.P. & Magalhães, M. (2005). FDI and Trade in Portugal: a gravity analysis. *Research Work in Progress*, vol.174, pp.1-24.

Agarwal, J.P. (1980). Determinants of foreign direct investment: A survey. *Weltwirtschaftliches Archiv*, vol. 116 (4), pp.739-773.

Aizenman, J. & Marion, N. (2004). The merits of horizontal versus vertical FDI in the presence of uncertainty. *Journal of International economics*, vol. 62 (1), pp.125-148.

Aizenman, J., & Marion, N. (2004). The Merits of Horizontal versus Vertical FDI in the Presence of Uncertainty. *Journal of International Economics*, vol. 62(1), pp. 125.

Akerlof, G. (1970). the market for lemons: Qualitative uncertainty and the market mechanismv. *Quarterly Journal of Economics*, vol. 84 (3).

Alalaya, M.M. (2010). ARDL models applied for Jordan trade, FDI and GDP series. *European Journal of Social Sciences*, vol. 13 (4), pp.605-616.

Alam, A. & Bagchi, P.K. (2011). Supply chain capability as a determinant of FDI. *Multinational Business Review*. vol. 19 (3), 229–249.

Aleksynska, M. & Havrylchyk, O. (2013). FDI from the south: The role of institutional distance and natural resources. *European Journal of Political Economy*, vol. *29*, pp.38-53.

Almeida, P. (1996). Knowledge sourcing by foreign multinationals: Patent citation analysis in the US semiconductor industry. *Strategic management journal*, vol. *17*(S2), pp.155-165.

Amal, M. Tomio, B.T. & Raboch, H. (2010). Determinants of foreign direct investment in Latin America. GCG: revista de globalización, competitividad y gobernabilidad, vol.4 (3), pp.116-133.

Ambos, B. & Håkanson, L. (2014). The concept of distance in international management research. *Journal of International Management*, vol. 20 (1), pp.1-7.

Ambos, B. & Håkanson, L. (2014). The concept of distance in international management research. *Journal of International Management*, vol. *20* (1), pp.1-7.

Ambos, T.C. & Ambos, B. (2009). The impact of distance on knowledge transfer effectiveness in multinational corporations. *Journal of International Management*, vol. 15 (1), pp.1-14.

Anderson, J. & Gonzalez, A. (2013). Does Doing Business Matter for Foreign Direct Investment?. *Doing Business.*

Anderson, J. Sutherland, D. & Severe, S. (2015). An event study of home and host country patent generation in Chinese MNEs undertaking strategic asset acquisitions in developed markets. *International Business Review*, vol. *24* (5), pp.758-771.

Anderson, J.E. & Van Wincoop, E. (2003). Gravity with gravitas: a solution to the border puzzle. *American economic review*, vol. 93 (1), pp.170-192.

Anderson, J.E. (1979). A theoretical foundation for the gravity equation. *The American Economic Review*, vol. 69 (1), pp.106-116.

Anderson, J.E. Larch, M. & Yotov, Y. (2015b). Estimating general equilibrium trade policy effects: GE PPML.

Anderson, J.E., Larch, M. & Yotov, Y.V. (2016). Trade liberalization, growth, and FDI: A structural estimation framework. Boston College and NBER, 77.

Angué, K. & Mayrhofer, U. (2010). International R&D cooperation: the effects of distance on the choice of the country of partners. *M@n@gement*, pp.1-37.

Arslan, A. Tarba, S.Y. & Larimo, J. (2015). FDI entry strategies and the impacts of economic freedom distance: Evidence from Nordic FDIs in transitional periphery of CIS and SEE. *International Business Review*, vol. 24(6), pp.997-1008.

Arvis, J.F. & Shepherd, B. (2013). The Poisson quasi-maximum likelihood estimator: a solution to the 'adding up'problem in gravity models. *Applied Economics Letters*, vol. 20 (6), pp.515-519.

Axinn, C.N. & Matthyssens, P. (2002). Limits of internationalization theories in an unlimited world. *International marketing review*.

Aykut, D. & Ratha, D. (2004). RESEARCH NOTE South-South FDI flows: how big are they?.

Baier, S.L. & Bergstrand, J.H. (2009). Estimating the effects of free trade agreements on international trade flows using matching econometrics. *Journal of international Economics*, vol. 77 (1), pp.63-76.

Bailey, N. and Li, S. (2015). Cross-national distance and FDI: The moderating role of host country local demand. *Journal of International Management*, vol. 21 (4), pp.267-276.

Baldwin, R. & Taglioni, D. (2006). Gravity for dummies and dummies for gravity equations (No. w12516). *National bureau of economic research.*

Baldwin, R.E. (2006). Multilateralising regionalism: spaghetti bowls as building blocs on the path to global free trade. *World Economy*, vol. 29 (11), pp.1451-1518.

Baltagi, B.H., Egger, P. & Pfaffermayr, M. (2003). A generalized design for bilateral trade flow models. *Economics letters*, vol. 80 (3), pp.391-397.

Barkema, H.G. & Vermeulen, F. (1998). International expansion through start-up or acquisition: A learning perspective. *Academy of Management journal*, vol. 41(1), pp.7-26.

Barro, R.J. (1991). Economic growth in a cross section of countries. *The quarterly journal of economics*, vol. 106(2), pp.407-443.

Bayraktar, N. (2013). Foreign direct investment and investment climate. *Procedia Economics and Finance*, vol. 5, pp.83-92.

Belloumi, M. (2014). The relationship between trade, FDI and economic growth in Tunisia: An application of the autoregressive distributed lag model. *Economic systems*, vol. 38 (2), pp.269-287.

Bénassy-Quéré, A. Coupet, M. & Mayer, T. (2007). Institutional determinants of foreign direct investment. *World economy*, vol. 30 (5), pp.764-782.

Bénassy-Quéré, A. Coupet, M. & Mayer, T. (2007). Institutional determinants of foreign direct investment. *World economy*, vol. 30(5), pp.764-782.

Bénassy-Quéré, A. Fontagné, L. & Lahrèche-Révil, A. (2005). How does FDI react to corporate taxation?. *International Tax and Public Finance*, vol.12 (5), pp.583-603.

Bergstrand, J.H. (1985). The gravity equation in international trade: some microeconomic foundations and empirical evidence. *The review of economics and statistics*, vol. 67 (3), pp.474-481.

Berry, H. Guillén, M.F. & Zhou, N. (2010). An institutional approach to cross-national distance. *Journal of International Business Studies*, vol. *41*(9), pp.1460-1480.

Beugelsdijk, S. Groot, H.D. Linders, G.J. & Slangen, A. (2004). Cultural distance, institutional distance and international trade.

Beugelsdijk, S., Kostova, T., Kunst, V.E., Spadafora, E. & Van Essen, M. (2018). Cultural distance and firm internationalization: A meta-analytical review and theoretical implications. *Journal of Management*, vol. 44 (1), pp.89-130.

Bevan, A.A. & Estrin, S. (2004). The determinants of foreign direct investment into European transition economies. *Journal of comparative economics*, vol. *32*(4), pp.775-787.

Bevan, A.A. & Estrin, S. (2004). The determinants of foreign direct investment into European transition economies. *Journal of comparative economics*, vol. 32 (4), pp.775-787.

Bhanushali, D.K. (2015). Ease of Doing Business and Foreign Direct Investment: Relationship Assessment. Ease of Doing Business: Contemporary, Issues, Challenges & Future Scope, pp.74-80.

Blomström, M. and Kokko, A. (1996). The impact of foreign investment on host countries: a review of the empirical evidence. *Policy Research Working Paper*, 1745.

Blonigen, B.A. (2005). A review of the empirical literature on FDI determinants. *Atlantic economic journal*, vol. 33(4), pp.383-403.

Boateng, A. Hua, X. Nisar, S. & Wu, J. (2015). Examining the determinants of inward FDI: Evidence from Norway. *Economic Modelling*, vol. 47, pp.118-127.

Bodman, P. & Le, T. (2013). Assessing the roles that absorptive capacity and economic distance play in the foreign direct investment-productivity growth nexus. *Applied Economics*, vol. 45(8), pp.1027-1039.

Boeh, K.K. & Beamish, P.W. (2012). Travel time and the liability of distance in foreign direct investment: Location choice and entry mode. *Journal of International Business Studies*, vol. 43 (5), pp.525-535.

Brenton, P. Di Mauro, F. & Lücke, M. (1999). Economic integration and FDI: An empirical analysis of foreign investment in the EU and in Central and Eastern Europe. *Empirica*, vol. 26 (2), pp.95-121.

Brouthers, K.D. & Brouthers, L.E. (2001) 'Explaining the National Cultural Distance Paradox', *Journal of International Business Studies*, vol. 32, pp. 177–189.

Brouthers, K.D. & Brouthers, L.E. (2001). Explaining the national cultural distance paradox. *Journal of international business studies*, vol. 32 (1), pp.177-189.

Brouthers, K.D. & Hennart, J.F. (2007). Boundaries of the firm: Insights from international entry mode research. *Journal of management*, vol. 33 (3), pp.395-425.

Bryman, A. (2008). Of methods and methodology. Qualitative Research in Organizations and Management: *An International Journal*.

Buch, C. Kokta, R. & Piazolo, D. (2001). Does the East get what would otherwise flow to the South? FDI diversion in Europe.

Buch, C. M. Kokta, R. M. & Piazolo, D. (2003). Foreign direct investment in Europe: Is there redirection form the south to the east? *Journal of Comparative Economics*, vol. 31 (1), pp.94–109.

Buch, C.M. and Lipponer, A. (2004). FDI versus cross-border financial services: The globalisation of German banks. *Deutsche Bundesbank Economic Research Centre Discussion Paper*, (05).

Buckley, P.J. & Casson, M.C. (1976). The Future of the Multinational Enterprise, Homes & Meier: *London.*

Buckley, P.J. Devinney, T.M. & Louviere, J.J. (2007). Do managers behave the way theory suggests? A choice-theoretic examination of foreign direct investment location decision-making. *Journal of international business studies*, vol.38 (7), pp.1069-1094.

Burger, M. Van Oort, F. & Linders, G.J. (2009). On the specification of the gravity model of trade: zeros, excess zeros and zero-inflated estimation. *Spatial Economic Analysis*, vol.4 (2), pp.167-190.

Burrell, G. & Morgan. G. (1979). Sociological paradigms and organizational analysis. London:

Busse, M. & Hefeker, C. (2007). Political risk, institutions and foreign direct investment. *European journal of political economy*, vol. 23 (2), pp.397-415.

Campos, N.F. & Kinoshita, Y. (2003). Why does FDI go where it goes? New evidence from the transition economies.

Cezar, R. & Escobar, R. (2015). Institutional distance and foreign direct investment. *Review of World Economics*, vol. *151*(4), pp.713-733.

Chang, S. J. (1995). International expansion strategy of Japanese firms: Capability building through sequen tial entry. *Academy of Management Journal*, vol. 38: 383-407.

CHANG, Y.C. KUO, A. KAO, M.S. & CHIU, C.F. Family firms' radicalness in entry mode choice: Evidence from Taiwanese companies' FDI in China.Chawla, K. & Rohra, N. (2015). Determinants of FDI: A Literature Review. *International Journal of Business and Management,* vol. 3 (3).

Chao, M.C.H. & Kumar, V. (2010). The impact of institutional distance on the international diversity–performance relationship. *Journal of World Business*, vol. 45 (1), pp.93-103.

Chen, H. & Hu, M. Y. (2002). An analysis of entry mode and its impact on performance. *International Business Review*, vol. 11(2), pp. 193–210.

Child, J. & Markoczy, L. (1993). Host-country managerial behaviour and learning in Chinese and Hungarian joint ventures. *Journal of Management Studies*, vol. *30*(4), pp.611-631.

Child, J., Rodrigues, S.B. & Frynas, J.G. (2009). Psychic distance, its impact and coping modes. *Management International Review*, vol. 49 (2), pp.199-224.

Chin-Lung, K. & Wen-Chang, F. (2009). Psychic distance and FDI location choice: Empirical examination of Taiwanese firms in China. *Asia Pacific Management Review*, vol. 14 (1).

Chin-Lung, K. & Wen-Chang, F. (2009). Psychic distance and FDI location choice: Empirical examination of Taiwanese firms in China. *Asia Pacific Management Review*, vol. 14 (1).

Choi, J.J. Lee, S.M. & Shoham, A. (2016). The effects of institutional distance on FDI inflow: General environmental institutions (GEI) versus minority investor protection institutions (MIP). *International Business Review*, vol. 25(1), pp.114-123.

Cieślik, A. (2020). Determinants of foreign direct investment from OECD countries in Poland. *Eurasian Economic Review*, vol. 10 (1), pp.9-25.

Claessens, S. & Van Horen, N. (2008). Location decisions of foreign banks and institutional competitive advantage. *Available at SSRN 904332*.

Coase, R.H. (1937). The nature of the firm. *Economica*. vol. 4 (16), pp.386-405.

Cole, M.A. Elliott, R.J. & Zhang, L. (2017). Foreign direct investment and the environment. *Annual Review of Environment and Resources*, vol. 42, pp.465-487.

Corcoran, A. & Gillanders, R. (2015). Foreign direct investment and the ease of doing business. *Review of World Economics*, vol. 151 (1), pp.103-126.

Creswell, J.W. (1994). Research design: Qualitative & quantitative approaches. *Thousand Oaks, CA: Sage*

Cubbage, F. Koesbandana, S. Mac Donagh, P. Rubilar, R. Balmelli, G. Olmos, V.M. De La Torre, R. Murara, M. Hoeflich, V.A. Kotze, H. and Gonzalez, R. (2010). Global timber investments, wood costs, regulation, and risk. *biomass and bioenergy*, vol. 34 (12), pp.1667-1678.

Cuervo-Cazurra, A. (2006). Who cares about corruption?. *Journal of international business studies*, vol. 37(6), pp.807-822.

Cui, L. & Jiang, F. (2009b). Ownership decisions in Chinese outward FDI: An integrated research framework and research agenda. *Asian Business & Management*, vol. 8(3), pp. 301-324.

Cui, L. & Jiang, F. (2010). Behind ownership decision of Chinese outward FDI: Resources and institutions. *Asia Pacific Journal of Management*, vol. 27(4), pp.751-774.

Darby, J. Desbordes, R. & Wooton, I. (2009). Does public governance always matter? How experience of poor institutional quality influences FDI to the South Paper Series No. 7533.

Daude, C. & Stein, E. (2007). The quality of institutions and foreign direct investment. *Economics & Politics*, vol.19 (3), pp.317-344.

Dennis, B. & Laincz, C. (2005). *A portfolio diversification motive for FDI: Theory and evidence*, University of Pacific. 3601, pp.1-63.

Dhrifi, A. Jaziri, R. & Alnahdi, S. (2020). Does foreign direct investment and environmental degradation matter for poverty? Evidence from developing countries. *Structural Change and Economic Dynamics*, vol.52, pp.13-21.

Djankov, S. La Porta, R. Lopez-de-Silanes, F. & Shleifer, A. (2002). The regulation of entry. *The quarterly Journal of economics*, vol. 117 (1), pp.1-37.

Dow, D. & Ferencikova, S. (2010). More than just national cultural distance: Testing new distance scales on FDI in Slovakia. *International Business Review*, vol. *19*(1), pp.46-58.

Dow, D. & Ferencikova, S. (2010). More than just national cultural distance: Testing new distance scales on FDI in Slovakia. *International Business Review*, vol. 19 (1), pp.46-58.

Dow, D. & Karunaratna, A. (2006). Developing a multidimensional instrument to measure psychic distance stimuli. *Journal of international business studies*, vol. 37 (5), pp.578-602.

Du, J. Lu, Y. & Tao, Z. (2012). Institutions and FDI location choice: The role of cultural distances. *Journal of Asian Economics*, vol. *23*(3), pp.210-223.

Duanmu, J.L. (2011). The effect of corruption distance and market orientation on the ownership choice of MNEs: Evidence from China. *Journal of International Management*, vol. 17 (2), pp.162-174.

Dunning, J.H. & Lundan, S.M. (2008). Institutions and the OLI paradigm of the multinational enterprise. *Asia Pacific Journal of Management*, vol. *25*(4), pp.573-593.

Dunning, J.H. (1973). The determinants of international production. *Oxford economic papers*, vol. 25 (3), pp.289-336.

Dunning, J.H. (1979). Explaining changing patterns of international production: in defence of the eclectic theory. *Oxford bulletin of economics and statistics*, vol. 41 (4), pp.269-295.

Dunning, J.H. (1980). Toward an eclectic theory of international production: Some empirical tests. *Journal of international business studies*, vol. 11 (1), pp.9-31.

Dunning, J.H. (1997). The European internal market programme and inbound foreign direct investment. JCMS: *Journal of Common Market Studies*, vol. 35 (2), pp.189-223.

Dunning, J.H. (2000). The eclectic paradigm as an envelope for economic and business theories of MNE activity. *International business review*, vol. 9 (2), pp.163-190.

East, R.M. (2009). *Doing Business 2020*.

Eifert, B. (2009). Do regulatory reforms stimulate investment and growth? Evidence from the Doing Business data, 2003-07.

Elafif, M. (2008). The Economic Integration of Arab Countries: An Intra-Capital Flows Approach. *International Journal of Global Business*, vol. 1 (1), pp.276-299.

Encinas-Ferrer, C. & Villegas-Zermeño, E. (2015). Foreign direct investment and gross domestic product growth. *Procedia Economics and Finance*, vol. 24, pp.198-207.

Estrin, S. Ionascu, D. & Meyer, K.E. (2007). Formal and informal institutional distance, and international entry strategies.

Fally, T. (2015). Structural gravity and fixed effects. *Journal of International Economics*, vol. 97 (1), pp.76-85.

Faras, R.Y. & Ghali, K.H. (2009). Foreign direct investment and economic growth: the case of the GCC countries. *International Research Journal of finance and economics*, vol. 29 (1), pp.134-145.

Feenstra, R.C. (2015). Advanced international trade: theory and evidence. *Princeton university press.*

Flores, R.G. & Aguilera, R.V. (2007). Globalization and location choice: an analysis of US multinational firms in 1980 and 2000. *Journal of international business studies*, vol. *38*(7), pp.1187-1210.

Frenkel, M. Funke, K. & Stadtmann, G. (2004). A panel analysis of bilateral FDI flows to emerging economies. *Economic systems*, vol. 28 (3), pp.281-300.

Ghemawat, P. (2001). Distance still matters. *Harvard business review*, vol. 79 (8), pp.137-147.

Globerman, S. & Shapiro, D. (2003). Governance infrastructure and US foreign direct investment. *Journal of International Business Studies*, vol.34 (1), pp.19-39.

Godinez, J.R. & Liu, L. (2015). Corruption distance and FDI flows into Latin America. *International Business Review*, vol. 24(1), pp.33-42.

Gray, K.R. (2002). Foreign direct investment and environmental impacts-Is the debate over. *Rev. Eur. Comp. & Int'l Envtl. L.*, vol. 11, pp.306.

Grosse, R. & Goldberg, L.G.1(991). Foreign bank activity in the United States: An analysis by country of origin. *Journal of Banking & Finance*, vol. *15*(6), pp.1093-1112.

Grosse, R. & Trevino, L.J. (1996). Foreign direct investment in the United States: An analysis by country of origin. *Journal of international business studies*, vol. 27 (1), pp.139-155.

Gurevich, T. & Herman, P. (2018). The dynamic gravity dataset: 1948–2016. US International Trade Commission. *Office of Economics Working Paper.*

Habib, M. & Zurawicki, L. (2002). Corruption and foreign direct investment. *Journal of international business studies*, vol. *33*(2), pp.291-307.

Halaszovich, T.F. & Kinra, A. (2018). The impact of distance, national transportation systems and logistics performance on FDI and international trade patterns: *Results from Asian global value chains. Transport Policy.*

Harrison, A. & Rodríguez-Clare, A. (2010). Trade, foreign investment, and industrial policy for developing countries. *In Handbook of development economics*, vol. 5, pp. 4039-4214.

Harvey, C.R. (2004). Country risk components, the cost of capital, and returns in emerging markets.

Harvey, C.R. (2012). Allocation to Emerging Markets in a Globally Diversified Portfolio. Duke University, Durham, NC, 27708.

Hassan, Z. & Basit, A. (2018). Ease of doing business and its impact on inward FDI. Hossain, MT, Hassan, Z., Shafiq, S., & Basit, A.(2018). Ease of Doing Business and Its Impact on Inward FDI. *Indonesian Journal of Management and Business Economics*, vol.1 (1), pp.52-65.

Hassan, Z. Shafiq, S. & Basit, A. (2018). Ease of Doing Business and Its Impact on Inward FDI. *Indonesian Journal of Management and Business Economics*, vol. 1 (1), pp.52-65.

Hattari, R. & Rajan, R.S. (2008). Sources of FDI flows to developing Asia: The roles of distance and time zones.

Head, K. & Mayer, T. (2014). Gravity equations: Workhorse, toolkit, and cookbook. *In Handbook of international economics*, vol. 4, pp. 131-195.

Helpman, E., 1984. A simple theory of international trade with multinational corporations. *Journal of political economy*, vol. 92(3), pp.451-471.

Helpman, E., Grossman, G.M. & Fajgelbaum, P., (2011). A Linder Hypothesis for Foreign Direct Investment.

Hennart, J.F. & Slangen, A.H. (2015). Yes, we really do need more entry mode studies! A commentary on Shaver. *Journal of International Business Studies*, vol. 46 (1), pp.114-122.

Hennart, J.F. (1982): A theory of multinational enterprise, *University of Michigan Press.* Hennart, J.F. Roehl, T. & Zeng, M. (2002). Do exits proxy a liability of foreignness?: The case of Japanese exits from the US. *Journal of International Management*, vol. *8*(3), pp.241-264.

Hofman, B. Rodrick-Jones, E. & Thee, K.W. (2004). Indonesia: Rapid growth, weak institutions. *In World Bank Shanghai* [online]. Available at: http://www. world bank. org/wbi/reducing poverty/case-Indone sia-PovertyReduction.

Hofstede, G. & Bond, M.H. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational dynamics*, vol. 16 (4), pp.5-21.

Hofstede, G. & Minkov, M. (2010). Long-versus short-term orientation: new perspectives. *Asia Pacific business review*, vol. *16*(4), pp.493-504.

Hofstede, G. (1980). Culture and organizations. *International Studies of Management & Organization*, vol. 10(4), pp.15-41.

Hofstede, G. (1984). Cultural dimensions in management and planning. *Asia Pacific journal of management*, vol. *1*(2), pp.81-99.

Hofstede, G. (1984). The cultural relativity of the quality of life concept. *Academy of Management Review*, vol. 9, pp.389-398.

Hofstede, G. (2001). Culture's recent consequences: Using dimension scores in theory and research. *International Journal of cross cultural management*, vol. 1(1), pp.11-17.

Hymer, S.H. (1976). International operations of national firms: A Study of Direct Investment. *MIT press, Cambridge, MA.*

Iamsiraroj, S. & Ulubaşoğlu, M.A. (2015). Foreign direct investment and economic growth: A real relationship or wishful thinking?. *Economic Modelling*, vol. 51, pp.200-213.

IMF. (1993). Balance of Payments Manual. Washington: International Monetary Fund.

Jabareen, Y. (2009). Building a conceptual framework: philosophy, definitions, and procedure. *International Journal of qualitative methods*, vol. 8 (4), pp.49-62.

Jadhav, P. & Katti, V. (2012). Institutional and political determinants of foreign direct investment: evidence from BRICS economies. *Poverty & Public Policy*, vol. *4*(3), pp.49-57.

Jansen, W.J. & Stokman, A.C. (2004). Foreign direct investment and international business cycle comovement. *Frankfurt, Germany: European Central Bank*, pp. 401.

Jayasuriya, D. (2011). Improvements in the World Bank's ease of doing business rankings: do they translate into greater foreign direct investment inflows?. *The World Bank*.

Johanson, J. & Vahlne, J.E. (1977). The internationalization process of the firm—a model of knowledge development and increasing foreign market commitments. *Journal of international business studies*, vol. *8*(1), pp.23-32.

Johanson, J. & Vahlne, J.E. (2009). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. *Journal of international business studies*, vol. *40*(9), pp.1411-1431.

John H. Dunning, Emeritus Esmee Fairbairn Professor of International Investment and Business Studies, University of Reading, United Kingdom and Emeritus State of New Jersey Professor of International Business, Rutgers University, United States, vol. 13(1), p.149.

Jonker, J. & Pennink, B. (2010). The essence of research methodology: A concise guide for master and PhD students in management science. *Springer Science & Business Media*.

Kahouli, B. & Maktouf, S. (2014). The link between regional integration agreements, trade flows and economic crisis: A static and dynamic gravity model. *International Journal of Development Issues*, vol. 13 (1), pp.35-58.

Kahouli, B. & Maktouf, S. (2015). The determinants of FDI and the impact of the economic crisis on the implementation of RTAs: A static and dynamic gravity model. *International Business Review*, vol. 24 (3), pp.518-529.

Kim, W.C.& Hwang, P. (1992). Global strategy and multinationals' entry mode choice. *Journal of International Business Studies*, vol. 23(1), pp.29-53.

Kofarbai, H.Z. & Bambale, A.J.A. (2016). Investment Climate and Foreign Direct Investment in Nigeria: The Mediating Role of Ease of Doing Business. *Journal of Energy and Economic Development*, vol. 2 (2), p.10.

Kogut, B. & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of international business studies*, vol. 19 (3), pp.411-432.

Kok, R. & Ersoy, B.A. (2009). Analyses of FDI determinants in developing countries. *International Journal of Social Economics*.

Kostova, T. (1999). Transnational transfer of strategic organizational practices: A contextual perspective. *Academy of management review*, vol. 24 (2), pp.308-324.

Kraay, A. & Kaufmann, D. (2002). *Growth without governance*. *The World Bank*, vol. 3(2), pp.169-229.

Krugman, P. & Venables, A.J. (1995). Globalization and the Inequality of Nations. *The quarterly journal of economics*, vol. 110 (4), pp.857-880.

Lahrech, A. Faribi, A. Al-Malkawi, H.A.N. & Sylwester, K. (2018). The impact of the global financial crisis on Moroccan exports: a gravity model approach. *African Journal of Economic and Management Studies*, vol. 10 (1), pp.102-115.

Lahrech, A. Juusola, K. & AlAnsaari, M.E. (2020). Toward more rigorous country brand assessments: the modified country brand strength index. *International Marketing Review*.

Larch, M. and Yotov, Y. (2016b). General equilibrium trade policy analysis with structural gravity.

Levy-Yeyati, E.L., Stein, E. & Daude, C., 2003. Regional Integration and the Location of FDI.

Lim, J. Makhija, A.K. & Shenkar, O. (2016). The asymmetric relationship between national cultural distance and target premiums in cross-border M&A. *Journal of Corporate Finance*, vol.41, pp.542-571.

Linneman, H. (1966). An Econometric Study of International Trade Flows, *The Economic Journal*, vol (77), pp.366-368.

Lu, J. Liu, X. & Wang, H. (2011). Motives for outward FDI of Chinese private firms: Firm resources, industry dynamics, and government policies. *Management and organization review*, vol. 7(2), pp.223-248.

Lucas, R.E. (1990). Why doesn't capital flow from rich to poor countries? *The American Economic Review*, vol. 80 (2), pp.92-96.

Madhok, A. (1997). Cost, value and foreign market entry mode: The transaction and the firm. *Strategic Management Journal*, vol. 18(1), pp. 39–61.

Mah, J.S. & Yoon, S.C. (2010). Determinants of FDI Flows into Indonesia and Singapore. *International Area Review*, vol. 13 (1), pp.63-73.

Makino, S. & Tsang, E.W. (2011). Historical ties and foreign direct investment: An exploratory study.

Makino, S. Lau, C.M. & Yeh, R.S. (2002). Asset-exploitation versus asset-seeking: Implications for location choice of foreign direct investment from newly industrialized economies. *Journal of international business studies*, vol. *33*(3), pp.403-421.

Malhotra, S. Sivakumar, K. & Zhu, P. (2009). Distance factors and target market selection: the moderating effect of market potential. *International marketing review.*

Mallampally, P. & Sauvant, K.P. (1999). Foreign direct investment in developing countries. *Finance and Development*, vol. 36, pp.34-37.

Markusen, J.R. & Maskus, K.E. (2001). Multinational firms: reconciling theory and evidence. *In Topics in empirical international economics: A festschrift in honor of Robert E. Lipsey*, pp. 71-98.

Markusen, J.R. (1984). Multinationals, multi-plant economies, and the gains from trade. *Journal of international economics*, vol. 16 (3-4), pp.205-226.

Martín, C. & Velázquez, F.J. (1997). The determining factors of foreign direct investment in Spain and the rest of the OECD: lessons for CEECs (No. 1637). CEPR Discussion Papers.

Martinez-Zarzoso, I. (2013) "The log of Gravity Revisited", *Applied Economics*, vol.45 (3): 311- 327.

Maseland, R. Dow, D. & Steel, P. (2018). The Kogut and Singh national cultural distance index: Time to start using it as a springboard rather than a crutch. *Journal of International Business Studies*, vol. 49 (9), pp.1154-1166.

Mayrhofer, U. (2004). The influence of national origin and uncertainty on the choice between cooperation and merger-acquisition: an analysis of French and German firms. *International Business Review*, vol. 13 (1), pp.83-99.

Mayrhofer, U. (2004). The influence of national origin and uncertainty on the choice between cooperation and merger-acquisition: an analysis of French and German firms. *International Business Review*, vol. 13 (1), pp.83-99.

Mazurek, J. (2012). The evaluation of an economic distance among countries: a novel approach. *Prague Economic Papers*, pp.277-290.

Mehlum, H. Moene, K. Torvik, R. (2006). Institutions and the resource curse. *The economic journal*, vol. *116* (508), pp.1-20.

Memedovic, O. Ojala, L. Rodrigue, J.P. & Naula, T. (2008). Fuelling the global value chains: what role for logistics capabilities?. *International Journal of Technological Learning, Innovation and Development*, vol. 1 (3), pp.353-374.

Memedovic, O. Ojala, L. Rodrigue, J.P. & Naula, T. (2008). Fuelling the global value chains: what role for logistics capabilities?. *International Journal of Technological Learning, Innovation and Development*, vol. *1* (3), pp.353-374.

Mezias, J.M. (2002). Identifying liabilities of foreignness and strategies to minimize their effects: The case of labor lawsuit judgments in the United States. *Strategic Management Journal*, vol. 23(3), pp.229-244.

Miller, S.R. & Eden, L. (2004). Local density and foreign subsidiary performance. *Academy of Management journal*, vol. *49*(2), pp.341-355.

Mina, W. (2007). The location determinants of FDI in the GCC countries. *Journal of Multinational Financial Management*, vol. 17 (4), pp.336-348.

Mina, W. (2014). United Arab Emirates FDI Outlook. *The World Economy*, vol. 37 (12), pp.1716-1730.

Moalla, E. & Mayrhofer, U. (2020). How does distance affect market entry mode choice? Evidence from French companies. *European Management Journal*, vol.38 (1), pp.135-145.

MogesEbero, E. & Begum, M. (2016). The desirability of doing business and flow of foreign direct investment nexus: the case of Ethiopia. world, vol. 114, pp.37-81.

Morris, R. & Aziz, A. (2011). Ease of doing business and FDI inflow to Sub-Saharan Africa and Asian countries. *Cross Cultural Management: An International Journal*, vol. *18*(4), pp.400-411.

Morschett, D. Schramm-Klein, H. & Swoboda, B. (2010). Decades of research on market entry modes: What do we really know about external antecedents of entry mode choice?. *Journal of International Management*, vol. 16(1), pp.60-77.

Mottaleb, K.A. & Kalirajan, K. (2010). Determinants of foreign direct investment in developing countries: A comparative analysis. Margin: *The Journal of Applied Economic Research*, vol. 4 (4), pp.369-404.

Muli, W. & Aduda, J. (2017). The mediating effect of ease of doing business on the relationship between economic integration and foreign direct investment in the east African community. *Journal of Finance and Investment Analysis*, vol. 6 (4), pp.21-54.

Murray, J.Y. & Kotabe, M. (2005). Performance implica tions of strategic fit between alliance attributes and alliance forms. *Journal of Rusiness Research*, vol. 58: 1525-2533.

Nachum, L. & Wymbs, C. (2005). Product differentiation, external economies and MNE location choices: M&As in global cities. *Journal of International Business Studies*, vol. 36 (4), pp.415-434.

Naudé, W.A. & Krugell, W.F. (2007). Investigating geography and institutions as determinants of foreign direct investment in Africa using panel data. *Applied economics*, vol. 39(10), pp.1223-1233.

Neubig, T. & Wunsch-Vincent, S. (2018.) Tax distortions in cross-border flows of intangible assets. *International Journal of Innovation Studies*, vol. 2 (3), pp.101-121.

Nketiah-Amponsah, E. & Sarpong, B. (2020). Ease of Doing Business and Foreign Direct Investment: Case of Sub-Saharan Africa. *International Advances in Economic Research*, vol. 26 (3), pp.209-223.

North, D.C. (1991). Institutions. *Journal of economic perspectives*, vol. 5 (1), pp.97-112.

Ohlin, B. (1933). International and interregional trade. *Harvard Economic Studies*, Cambridge, MA.

Olival, A. (2012). The influence of Doing Business' institutional variables in Foreign Direct Investment (Doctoral dissertation).

Pak, Y. S. & Park, Y. R. (2004). Global ownership strategy of Japanese multinational enterprises: A test of internalization theory. *Management International Review*, vol. 44(1), pp. 3–21.

Pinheiro-Alves, R. & Zambujal-Oliveira, J. (2012). The Ease of Doing Business Index as a tool for investment location decisions. *Economics Letters*, vol. 117 (1), pp.66-70.

Piwonski, K. (2010). Does the 'Ease of Doing Business' In a Country Influence its Foreign Direct Investment Inflows?

Pusterla, F. & Resmini, L. (2007). Where do foreign firms locate in transition countries? An empirical investigation. *The Annals of Regional Science*, vol. *41*(4), pp.835-856.

Quer, D. Claver, E. & Rienda, L. (2012). Political risk, cultural distance, and outward foreign direct investment: Empirical evidence from large Chinese firms. *Asia Pacific journal of management*, vol. 29 (4), pp.1089-1104.

Ragozzino, R. (2009). The effects of geographic distance on the foreign acquisition activity of US firms. *Management International Review*, vol. 49 (4), p.509.

Randoy, T. & Dibrell, C. C. (2002). How and why Norwegian MNCs commit resources abroad: Beyond choice of entry mode. *Management International Review*, vol. 42(2), pp. 119–140.

Rao, K.S. & Dhar, B. (2018). India's Recent Inward Foreign Direct Investment: An Assessment. *India's Recent Inward Foreign Direct Investment: An Assessment (2018)*.

Ravallion, M. (2010). Mashup indices of development. *The World Bank*.

Resmini, L. (2000). The determinants of foreign direct investment in the CEECs: New evidence from sectoral patterns. *Economics of transition*, vol. *8*(3), pp.665-689.

Ricardo, D. (1817). On the principles of political economy and taxation.

Rodrigue, J.P. (2012). The geography of global supply chains: Evidence from third-party logistics. *Journal of Supply Chain Management*, vol. *48* (3), pp.15-23.

Rodrik, D., Subramanian, A. & Trebbi, F. (2004). Institutions rule: the primacy of institutions over geography and integration in economic development. *Journal of economic growth*, vol. *9*(2), pp.131-165.

Rugman, M. (2005). A further comment on the myth of globalization. *Journal of International Management*, vol. *11*(3), pp.441-445.

Rutherford, M. (2001). Institutional economics: then and now. *Journal of Economic Perspectives*, vol. 15 (3), pp.173-194.

Samuelson, P.A. (1948). International trade and the equalisation of factor prices. *The Economic Journal*, vol. 58 (230), pp.163-184.

Sánchez-Martín, M.E. De Arce, R. & Escribano, G. (2014). Do changes in the rules of the game affect FDI flows in Latin America? A look at the macroeconomic, institutional and regional integration determinants of FDI. *European Journal of Political Economy*, vol. 34, pp.279-299.

Sathe, S. & Handley-Schachler, M. (2006). Social and cultural factors in FDI flows: evidence from the Indian states. *World Review of Entrepreneurship, Management and Sustainable Development*, vol. *2*(4), pp.323-334.

Schwartz, S.H. (1999). A theory of cultural values and some implications for work. *Applied psychology*, vol. 48 (1), pp.23-47.

Sebastian, R. (2014). On the Effect of Doing Business on Foreign Direct Investment.

Shahadan, F. Sarmidi, T. & Faizi, F.J. (2014). Relationships between doing business indexes and FDI net inflows: empirical evidence from six Asian countries (Afghanistan, Bangladesh, India, Iran, Pakistan and Sri Lanka). Prosiding Persidangan Kebangsaan Ekonomi Malaysia ke-9.

Shan, W. & Song, J. (1997). Foreign direct investment and the sourcing of technological advantage: Evidence from the biotechnological industry. *Journal of International Rusiness Studies*, vol. 28: 267-284.

Shapiro, D. & Globerman, S. (2003). Foreign investment policies and capital flows in Canada: a sectoral analysis. *Journal of Business Research*, vol.56 (10), pp.779-790.

Shatz, H.J. & Venables, A. (2000). The geography of international investment. *World Bank Publications*, vol. 23338.

Shaver, J.M. (2013). Do we really need more entry mode studies?. *Journal of International Business Studies*, vol. 44 (1), pp.23-27.

Shleifer, A. & Vishny, R.W. (1993). Corruption. *The quarterly journal of economics*, vol. 108(3), pp.599-617.

Siegel, J. Pyun, L. & Cheon, B.Y. (2010). Multinational Firms, Labor Market Discrimination, and the Capture of Competitive Advantage by Exploiting the Social Divide, Harvard Business School. Working Paper 11-011.

Siegel, J.I. Licht, A.N. & Schwartz, S.H. (2013). Egalitarianism, cultural distance, and foreign direct investment: A new approach. *Organization Science*, vol. 24 (4), pp.1174-1194.

Silva, J.S. & Tenreyro, S. (2006). The log of gravity. *The Review of Economics and statistics*, vol. 88 (4), pp.641-658.

Silva, J.S. & Tenreyro, S. (2008). Comments on "The log of gravity revised".

Simionescu, M. (2016). The relation between economic growth and foreign direct investment during the economic crisis in the European Union. *Zbornik radova Ekonomskog fakulteta u Rijeci: časopis za ekonomsku teoriju i praksu*, vol. 34 (1), pp.187-213.

Singh, A. & Jaiswal, K.K. (2018). Ease of Doing Business in India: A Vision of Make in India. *Economic Affairs*, vol. 63 (1), pp.129-135.

Singh, G. (2015). Relationship between doing business index and foreign direct investment. In International Conference on Ease of Doing Business.

Slangen, A.H. & Van Tulder, R.J. (2009). Cultural distance, political risk, or governance quality? Towards a more accurate conceptualization and measurement of external uncertainty in foreign entry mode research. *International business review*, vol. 18 (3), pp.276-291.

Slangen, A.H. Beugelsdijk, S. & Hennart, J.F. (2011). The impact of cultural distance on bilateral arm's length exports. *Management International Review*, vol. *51*(6), pp.875-896.

Smith, A. (1776). An inquiry into the nature and causes of the wealth of nations.

Srivastava, R.K. & Green, R.T. (1986). Determinants of bilateral trade flows. *Journal of Business, 59*(4), vol. pp.623-640.

Stone, S.F. & Jeon, B.N. (1999). Gravity-model specification for foreign direct investment: A case of the Asia-Pacific economies. *The Journal of Business and Economic Studies*, vol. 5 (1), p.33.

Tabova, A. (2013). Portfolio diversification and the cross-sectional distribution of foreign investment.

Tahir, R. & Larimo, J. (2004). 'Understanding the location strategies of the European firms in Asian countries', *Journal of American Academy of Business*, vol. 5, pp.102-109.

Tang, T. (2011). Marketing higher education across borders: a cross-cultural analysis of university websites in the US and China. *Chinese Journal of Communication*, vol.4 (4), pp.417-429.

Tashman, P. Marano, V. & Kostova, T. (2019). Walking the walk or talking the talk? Corporate social responsibility decoupling in emerging market multinationals. *Journal of International Business Studies*, vol.50 (2), pp.153-171.

Te Velde, D.W. & Bezemer, D. (2006). Regional integration and foreign direct investment in developing countries. *Transnational Corporations*, vol. 15 (2), pp.41-70.

Tihanyi, L. Griffith, D.A. & Russell, C.J. (2005). The effect of cultural distance on entry mode choice, international diversification, and MNE performance: A meta-analysis. *Journal of International Business Studies*, vol. 36(3), pp.270-283.

Tihanyi, L., Griffith, D.A. & Russell, C.J. (2005). The effect of cultural distance on entry mode choice, international diversification, and MNE performance: A meta-analysis. *Journal of international business studies*, vol. 36 (3), pp.270-283.

Tinbergen, J. (1962). Shaping the World Economy. Suggestions for an International Economic Policy. *The Twentieth Century Fund.*

Tsang, E.W. & Yip, P.S. (2007). Economic distance and the survival of foreign direct investments. *Academy of Management Journal*, vol. *50* (5), pp.1156-1168.

Tsang, E.W. & Yip, P.S. (2007). Economic distance and the survival of foreign direct investments. *Academy of Management Journal*, vol. 50 (5), pp.1156-1168.

Uddin, M. and Boateng, A. (2011). Explaining the trends in the UK cross-border mergers & acquisitions: An analysis of macro-economic factors. *International Business Review*, vol. 20 (5), pp.547-556.

UNCTAD (2012). World Investment Report 2012: Towards a New Generation of Investment Policies. United Nations Conference on Trade and Development (UNCTAD). New York and Geneva: United Nations publication.

Venables, A.J. (2003). Winners and losers from regional integration agreements. *The Economic Journal*, vol. 113 (490), pp.747-761.

Vogiatzoglou, K. (2016). Ease of doing business and FDI inflows in ASEAN. *Journal of Southeast Asian Economies (JSEAE)*, vol. 33 (3), pp.343-363.

Wahyuni, D. (2012). The research design maze: Understanding paradigms, cases, methods and methodologies.

Wheeler, D. & Mody, A. (1992). International investment location decisions: The case of US firms. *Journal of international economics*, vol. 33 (1-2), pp.57-76.

Wu, Z. & Salomon, R. (2016). Does imitation reduce the liability of foreignness? L inking distance, isomorphism, and performance. *Strategic Management Journal*, vol. 37 (12), pp.2441-2462.

Wu, Z. & Salomon, R. (2017). Deconstructing the liability of foreignness: Regulatory enforcement actions against foreign banks. *Journal of International Business Studies*, vol. 48 (7), pp.837-861.

Xu, D. & Shenkar, O. (2002). Institutional distance and the multinational enterprise. *The Academy of Management review*, vol. 27 (4) pp. 608-618.

Xu, D. & Shenkar, O. (2002). Note: Institutional distance and the multinational enterprise. *Academy of Management review*, vol. 27 (4), pp.608-618.

Xu, D., Pan, Y. & Beamish, P.W. (2004). The effect of regulative and normative distances on MNE ownership and expatriate strategies. MIR: *Management international review*, pp.285-307.

Yotov, Y.V. Piermartini, R. Monteiro, J.A. & Larch, M. (2016). An advanced guide to trade policy analysis: The structural gravity model. *Geneva, Switzerland: World Trade Organization*.

Zaheer, S., Schomaker, M.S. & Nachum, L. (2012). Distance without direction: Restoring credibility to a much-loved construct. *Journal of International Business Studies*, vol. 43 (1), pp.18-27.

Zhao, H., Luo, Y. & Suh, T. (2004). Transaction cost determinants and ownership-based entry mode choice: A meta-analytical review. *Journal of international business studies*, vol. 35 (6), pp.524-544.

Zwinkels, R.C. & Beugelsdijk, S. (2010). Gravity equations: Workhorse or Trojan horse in explaining trade and FDI patterns across time and space?. *International Business Review*, vol. 19 (1), pp.102-115.

Zwinkels, R.C. Beugelsdijk, S. (2010). Gravity equations: Workhorse or Trojan horse in explaining trade and FDI patterns across time and space?. International Business Review, vol. 19 (1), pp.102-115.

# 9. Appendices

| Year | Code | Name | FDI | EODB | M.EODB | Eco. D. | Inst. D. | Geo. D. | Cult. D. |
|---|---|---|---|---|---|---|---|---|---|
| 2006 | 1 | USA | 24,993.48 | 88.0094 | 87.9684 | 14446.72 | 1.9713 | 14914 | 3.3568 |
| 2007 | 1 | USA | 35,873.89 | 88.0223 | 87.9817 | 17254.14 | 2.0412 | 14914 | 3.3568 |
| 2008 | 1 | USA | 36,705.57 | 87.6020 | 87.6151 | 15848.08 | 2.0478 | 14914 | 3.3568 |
| 2009 | 1 | USA | 42,006.91 | 87.4155 | 87.4494 | 15773.51 | 1.9713 | 14914 | 3.3568 |
| 2010 | 1 | USA | 52,378.62 | 87.5824 | 87.6298 | 23099.18 | 1.9351 | 14914 | 3.3568 |
| 2011 | 1 | USA | 57,574.01 | 88.2837 | 88.3577 | 26151.22 | 1.7589 | 14914 | 3.3568 |
| 2012 | 1 | USA | 86,070.22 | 88.2879 | 88.3622 | 27375.33 | 1.7712 | 14914 | 3.3568 |
| 2013 | 1 | USA | 102,923.46 | 88.2614 | 88.3360 | 29774.5 | 1.7599 | 14914 | 3.3568 |
| 2014 | 1 | USA | 145,227.98 | 86.3206 | 86.3392 | 31578.56 | 1.9184 | 14914 | 3.3568 |
| 2015 | 1 | USA | 171,664.17 | 85.1883 | 85.1947 | 32203.99 | 2.0387 | 14914 | 3.3568 |
| 2016 | 1 | USA | 193,241.90 | 84.1896 | 84.2044 | 33547.84 | 2.0822 | 14914 | 3.3568 |
| 2017 | 1 | USA | 251,631.97 | 84.7877 | 84.7885 | 36624.67 | 2.0981 | 14914 | 3.3568 |
| 2018 | 1 | USA | 212,159.29 | 84.9328 | 84.9336 | 38737.04 | 1.9714 | 14914 | 3.3568 |
| 2006 | 2 | Netherlands | 31,714.49 | 88.0094 | 87.9684 | 402357.4 | 2.0188 | 10437 | 2.9305 |
| 2007 | 2 | Netherlands | 35,781.89 | 88.0223 | 87.9817 | 419788.2 | 2.0422 | 10437 | 2.9305 |
| 2008 | 2 | Netherlands | 42,440.71 | 87.6020 | 87.6151 | 452570.3 | 2.0333 | 10437 | 2.9305 |
| 2009 | 2 | Netherlands | 43,818.36 | 87.4155 | 87.4494 | 423108.1 | 1.8158 | 10437 | 2.9305 |
| 2010 | 2 | Netherlands | 48,305.23 | 87.5824 | 87.6298 | 385041.2 | 1.7636 | 10437 | 2.9305 |
| 2011 | 2 | Netherlands | 55,265.02 | 88.2837 | 88.3577 | 383742.6 | 1.6883 | 10437 | 2.9305 |
| 2012 | 2 | Netherlands | 74,127.50 | 88.2879 | 88.3622 | 372472.3 | 1.6216 | 10437 | 2.9305 |
| 2013 | 2 | Netherlands | 67,256.03 | 88.2614 | 88.3360 | 379985.6 | 1.5960 | 10437 | 2.9305 |
| 2014 | 2 | Netherlands | 52,908.97 | 86.3206 | 86.3392 | 356577.5 | 1.7632 | 10437 | 2.9305 |
| 2015 | 2 | Netherlands | 70,499.46 | 85.1883 | 85.1947 | 359456.7 | 1.8852 | 10437 | 2.9305 |
| 2016 | 2 | Netherlands | 70,604.37 | 84.1896 | 84.2044 | 361514.5 | 1.8480 | 10437 | 2.9305 |
| 2017 | 2 | Netherlands | 86,161.56 | 84.7877 | 84.7885 | 391830.8 | 1.9279 | 10437 | 2.9305 |
| 2018 | 2 | Netherlands | 89,596.96 | 84.9328 | 84.9336 | 398101 | 1.8274 | 10437 | 2.9305 |
| 2006 | 3 | Switzerland | 17,682.08 | 88.0094 | 87.9684 | 70210.52 | 1.9433 | 10337 | 2.4905 |
| 2007 | 3 | Switzerland | 19,104.65 | 88.0223 | 87.9817 | 76326 | 1.9208 | 10337 | 2.4905 |
| 2008 | 3 | Switzerland | 16,353.14 | 87.6020 | 87.6151 | 91313.42 | 1.9383 | 10337 | 2.4905 |
| 2009 | 3 | Switzerland | 19,127.89 | 87.4155 | 87.4494 | 87304.48 | 1.8500 | 10337 | 2.4905 |
| 2010 | 3 | Switzerland | 21,150.67 | 87.5824 | 87.6298 | 51928.72 | 1.8478 | 10337 | 2.4905 |
| 2011 | 3 | Switzerland | 22,017.59 | 88.2837 | 88.3577 | 50410.49 | 1.7255 | 10337 | 2.4905 |
| 2012 | 3 | Switzerland | 26,480.69 | 88.2879 | 88.3622 | 43044.97 | 1.6429 | 10337 | 2.4905 |
| 2013 | 3 | Switzerland | 31,397.69 | 88.2614 | 88.3360 | 38748.47 | 1.6530 | 10337 | 2.4905 |
| 2014 | 3 | Switzerland | 33,490.43 | 86.3206 | 86.3392 | 33153.74 | 1.7375 | 10337 | 2.4905 |
| 2015 | 3 | Switzerland | 34,185.75 | 85.1883 | 85.1947 | 36911.56 | 1.8183 | 10337 | 2.4905 |
| 2016 | 3 | Switzerland | 27,692.05 | 84.1896 | 84.2044 | 25808.48 | 1.7326 | 10337 | 2.4905 |
| 2017 | 3 | Switzerland | 28,928.37 | 84.7877 | 84.7885 | 19289.52 | 1.7933 | 10337 | 2.4905 |
| 2018 | 3 | Switzerland | 44,530.92 | 84.9328 | 84.9336 | 7139.964 | 1.7406 | 10337 | 2.4905 |

| Year | Code | Name | FDI | EODB | M.EODB | Eco. D. | Inst. D. | Geo. D. | Cult. D. |
|---|---|---|---|---|---|---|---|---|---|
| 2006 | 4 | United Kingdom | 36039.98 | 88.009 | 87.9684 | 1848099 | 1.98769 | 10961 | 2.740615 |
| 2007 | 4 | United Kingdom | 43512.37 | 88.022 | 87.9817 | 1883765 | 2.01051 | 10961 | 2.740615 |
| 2008 | 4 | United Kingdom | 33095.34 | 87.602 | 87.6151 | 1955019 | 2.10519 | 10961 | 2.740615 |
| 2009 | 4 | United Kingdom | 35261.30 | 87.415 | 87.4494 | 1866301 | 2.11377 | 10961 | 2.740615 |
| 2010 | 4 | United Kingdom | 38461.53 | 87.582 | 87.6298 | 1917654 | 1.9042 | 10961 | 2.740615 |
| 2011 | 4 | United Kingdom | 43115.93 | 88.284 | 88.3577 | 1956657 | 1.81125 | 10961 | 2.740615 |
| 2012 | 4 | United Kingdom | 40186.24 | 88.288 | 88.3622 | 2020906 | 1.80967 | 10961 | 2.740615 |
| 2013 | 4 | United Kingdom | 46750.29 | 88.261 | 88.336 | 2115781 | 1.73243 | 10961 | 2.740615 |
| 2014 | 4 | United Kingdom | 46957.34 | 86.321 | 86.3392 | 2192133 | 1.75318 | 10961 | 2.740615 |
| 2015 | 4 | United Kingdom | 42475.85 | 85.188 | 85.1947 | 2275964 | 1.79519 | 10961 | 2.740615 |
| 2016 | 4 | United Kingdom | 46193.33 | 84.19 | 84.2044 | 2343469 | 1.99318 | 10961 | 2.740615 |
| 2017 | 4 | United Kingdom | 63482.52 | 84.788 | 84.7885 | 2455807 | 2.19498 | 10961 | 2.740615 |
| 2018 | 4 | United Kingdom | 70157.95 | 84.933 | 84.9336 | 2484233 | 2.30445 | 10961 | 2.740615 |
| 2006 | 5 | Japan | 29327.31 | 88.009 | 87.9684 | 3963351 | 1.7959 | 5321 | 3.665727 |
| 2007 | 5 | Japan | 33082.94 | 88.022 | 87.9817 | 4116913 | 2.05167 | 5321 | 3.665727 |
| 2008 | 5 | Japan | 35097.04 | 87.602 | 87.6151 | 4145597 | 2.06438 | 5321 | 3.665727 |
| 2009 | 5 | Japan | 35985.06 | 87.415 | 87.4494 | 3937397 | 1.87778 | 5321 | 3.665727 |
| 2010 | 5 | Japan | 43648.87 | 87.582 | 87.6298 | 4117463 | 1.7936 | 5321 | 3.665727 |
| 2011 | 5 | Japan | 42682.76 | 88.284 | 88.3577 | 4179049 | 1.67734 | 5321 | 3.665727 |
| 2012 | 5 | Japan | 49171.34 | 88.288 | 88.3622 | 4327129 | 1.70301 | 5321 | 3.665727 |
| 2013 | 5 | Japan | 57230.47 | 88.261 | 88.336 | 4519561 | 1.57438 | 5321 | 3.665727 |
| 2014 | 5 | Japan | 83148.70 | 86.321 | 86.3392 | 4512825 | 1.68917 | 5321 | 3.665727 |
| 2015 | 5 | Japan | 81394.68 | 85.188 | 85.1947 | 4643362 | 1.74231 | 5321 | 3.665727 |
| 2016 | 5 | Japan | 63363.99 | 84.19 | 84.2044 | 4708973 | 1.65929 | 5321 | 3.665727 |
| 2017 | 5 | Japan | 73087.87 | 84.788 | 84.7885 | 4777923 | 1.72959 | 5321 | 3.665727 |
| 2018 | 5 | Japan | 84350.77 | 84.933 | 84.9336 | 4842620 | 1.72757 | 5321 | 3.665727 |
| 2006 | 6 | France | 5276.25 | 88.009 | 87.9684 | 1796188 | 2.09799 | 10808 | 2.798557 |
| 2007 | 6 | France | 7627.69 | 88.022 | 87.9817 | 1882893 | 2.17238 | 10808 | 2.798557 |
| 2008 | 6 | France | 6614.48 | 87.602 | 87.6151 | 1948420 | 2.26164 | 10808 | 2.798557 |
| 2009 | 6 | France | 5772.74 | 87.415 | 87.4494 | 1930789 | 2.04727 | 10808 | 2.798557 |
| 2010 | 6 | France | 6285.56 | 87.582 | 87.6298 | 1971169 | 1.90627 | 10808 | 2.798557 |
| 2011 | 6 | France | 8182.95 | 88.284 | 88.3577 | 2052337 | 1.83761 | 10808 | 2.798557 |
| 2012 | 6 | France | 10310.31 | 88.288 | 88.3622 | 2054434 | 1.99221 | 10808 | 2.798557 |
| 2013 | 6 | France | 10198.65 | 88.261 | 88.336 | 2161032 | 1.98245 | 10808 | 2.798557 |
| 2014 | 6 | France | 11246.72 | 86.321 | 86.3392 | 2188292 | 2.27034 | 10808 | 2.798557 |
| 2015 | 6 | France | 11033.86 | 85.188 | 85.1947 | 2226567 | 2.4541 | 10808 | 2.798557 |
| 2016 | 6 | France | 10614.25 | 84.19 | 84.2044 | 2298474 | 2.58902 | 10808 | 2.798557 |
| 2017 | 6 | France | 11940.53 | 84.788 | 84.7885 | 2417302 | 2.47101 | 10808 | 2.798557 |
| 2018 | 6 | France | 12579.47 | 84.933 | 84.9336 | 2464858 | 2.42474 | 10808 | 2.798557 |

| Year | Code | Name | Border | Lang | Colonial | Trd. Agr. | Sing GDP | Sing Pop | Cont. (j) GDP | Cont. (j) Pop |
|---|---|---|---|---|---|---|---|---|---|---|
| 2006 | 1 | USA | 0 | 1 | 0 | 1 | 267362 | 4401365 | 13814611.41 | 298379912 |
| 2007 | 1 | USA | 0 | 1 | 0 | 1 | 299314 | 4588599 | 14451858.65 | 301231207 |
| 2008 | 1 | USA | 0 | 1 | 0 | 1 | 310837 | 4839396 | 14712844.08 | 304093966 |
| 2009 | 1 | USA | 0 | 1 | 0 | 1 | 313586 | 4987573 | 14448933.03 | 306771529 |
| 2010 | 1 | USA | 0 | 1 | 0 | 1 | 363321 | 5076732 | 14992052.73 | 309326085 |
| 2011 | 1 | USA | 0 | 1 | 0 | 1 | 394138 | 5183688 | 15542581.1 | 311580009 |
| 2012 | 1 | USA | 0 | 1 | 0 | 1 | 419570 | 5312437 | 16197007.35 | 313874218 |
| 2013 | 1 | USA | 0 | 1 | 0 | 1 | 447490 | 5399162 | 16784849.19 | 316057727 |
| 2014 | 1 | USA | 0 | 1 | 0 | 1 | 473741 | 5469724 | 17521746.53 | 318386421 |
| 2015 | 1 | USA | 0 | 1 | 0 | 1 | 492656 | 5535002 | 18219297.58 | 320742673 |
| 2016 | 1 | USA | 0 | 1 | 0 | 1 | 512797 | 5607283 | 18707188.24 | 323071342 |
| 2017 | 1 | USA | 0 | 1 | 0 | 1 | 541877 | 5612253 | 19485393.85 | 325147121 |
| 2018 | 1 | USA | 0 | 1 | 0 | 1 | 572503 | 5638676 | 20544343.46 | 327167434 |
| 2006 | 2 | Netherlands | 0 | 0 | 0 | 0 | 267362 | 4401365 | 669720.3665 | 16346101 |
| 2007 | 2 | Netherlands | 0 | 0 | 0 | 0 | 299314 | 4588599 | 719103.0288 | 16381696 |
| 2008 | 2 | Netherlands | 0 | 0 | 0 | 0 | 310837 | 4839396 | 763407.7438 | 16445593 |
| 2009 | 2 | Netherlands | 0 | 0 | 0 | 0 | 313586 | 4987573 | 736694.2948 | 16530388 |
| 2010 | 2 | Netherlands | 0 | 0 | 0 | 0 | 363321 | 5076732 | 748362.6307 | 16615394 |
| 2011 | 2 | Netherlands | 0 | 0 | 0 | 0 | 394138 | 5183688 | 777880.9064 | 16693074 |
| 2012 | 2 | Netherlands | 0 | 0 | 0 | 0 | 419570 | 5312437 | 792042.2897 | 16754962 |
| 2013 | 2 | Netherlands | 0 | 0 | 0 | 0 | 447490 | 5399162 | 827475.7381 | 16804432 |
| 2014 | 2 | Netherlands | 0 | 0 | 0 | 0 | 473741 | 5469724 | 830318.5715 | 16865008 |
| 2015 | 2 | Netherlands | 0 | 0 | 0 | 0 | 492656 | 5535002 | 852113.1544 | 16939923 |
| 2016 | 2 | Netherlands | 0 | 0 | 0 | 0 | 512797 | 5607283 | 874312.0229 | 17030314 |
| 2017 | 2 | Netherlands | 0 | 0 | 0 | 0 | 541877 | 5612253 | 933708.4294 | 17131296 |
| 2018 | 2 | Netherlands | 0 | 0 | 0 | 0 | 572503 | 5638676 | 970604.9423 | 17231017 |
| 2006 | 3 | Switzerland | 0 | 0 | 0 | 0 | 267362 | 4401365 | 337573.4454 | 7483934 |
| 2007 | 3 | Switzerland | 0 | 0 | 0 | 0 | 299314 | 4588599 | 375640.8066 | 7551117 |
| 2008 | 3 | Switzerland | 0 | 0 | 0 | 0 | 310837 | 4839396 | 402150.9006 | 7647675 |
| 2009 | 3 | Switzerland | 0 | 0 | 0 | 0 | 313586 | 4987573 | 400890.6216 | 7743831 |
| 2010 | 3 | Switzerland | 0 | 0 | 0 | 0 | 363321 | 5076732 | 415250.1161 | 7824909 |
| 2011 | 3 | Switzerland | 0 | 0 | 0 | 0 | 394138 | 5183688 | 444548.7579 | 7912398 |
| 2012 | 3 | Switzerland | 0 | 0 | 0 | 0 | 419570 | 5312437 | 462614.9865 | 7996861 |
| 2013 | 3 | Switzerland | 0 | 0 | 0 | 0 | 447490 | 5399162 | 486238.616 | 8089346 |
| 2014 | 3 | Switzerland | 0 | 0 | 0 | 0 | 473741 | 5469724 | 506894.8111 | 8188649 |
| 2015 | 3 | Switzerland | 0 | 0 | 0 | 0 | 492656 | 5535002 | 529568.0299 | 8282396 |
| 2016 | 3 | Switzerland | 0 | 0 | 0 | 0 | 512797 | 5607283 | 538605.9675 | 8373338 |
| 2017 | 3 | Switzerland | 0 | 0 | 0 | 0 | 541877 | 5612253 | 561167.1545 | 8451840 |
| 2018 | 3 | Switzerland | 0 | 0 | 0 | 0 | 572503 | 5638676 | 579643.931 | 8516543 |

| Year | Code | Name | Border | Lang | Colonial | Trd. Agr. | Sing GDP | Sing Pop | Cont. (j) GDP | Cont. (j) Pop |
|---|---|---|---|---|---|---|---|---|---|---|
| 2006 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 267362.9 | 4401365 | 2115461.46 | 60846820 |
| 2007 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 299314.8 | 4588599 | 2183080.161 | 61322463 |
| 2008 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 310837.5 | 4839396 | 2265856.338 | 61806995 |
| 2009 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 313586.1 | 4987573 | 2179887.256 | 62276270 |
| 2010 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 363321.4 | 5076732 | 2280975.767 | 62766365 |
| 2011 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 394138.3 | 5183688 | 2350795.692 | 63258918 |
| 2012 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 419570 | 5312437 | 2440476.089 | 63700300 |
| 2013 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 447490.1 | 5399162 | 2563270.948 | 64128226 |
| 2014 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 473741.1 | 5469724 | 2665874.429 | 64613160 |
| 2015 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 492656.5 | 5535002 | 2768620.598 | 65128861 |
| 2016 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 512797.5 | 5607283 | 2856266.246 | 65595565 |
| 2017 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 541877.6 | 5612253 | 2997684.813 | 66058859 |
| 2018 | 4 | United Kingdom | 0 | 1 | 1 | 0 | 572504 | 5638676 | 3056736.515 | 66488991 |
| 2006 | 5 | Japan | 0 | 0 | 0 | 1 | 267362.9 | 4401365 | 4230713.952 | 127854000 |
| 2007 | 5 | Japan | 0 | 0 | 0 | 1 | 299314.8 | 4588599 | 4416227.655 | 128001000 |
| 2008 | 5 | Japan | 0 | 0 | 0 | 1 | 310837.5 | 4839396 | 4456434.357 | 128063000 |
| 2009 | 5 | Japan | 0 | 0 | 0 | 1 | 313586.1 | 4987573 | 4250983.197 | 128047000 |
| 2010 | 5 | Japan | 0 | 0 | 0 | 1 | 363321.4 | 5076732 | 4480784.391 | 128070000 |
| 2011 | 5 | Japan | 0 | 0 | 0 | 1 | 394138.3 | 5183688 | 4573186.805 | 127833000 |
| 2012 | 5 | Japan | 0 | 0 | 0 | 1 | 419570 | 5312437 | 4746699.397 | 127629000 |
| 2013 | 5 | Japan | 0 | 0 | 0 | 1 | 447490.1 | 5399162 | 4967051.56 | 127445000 |
| 2014 | 5 | Japan | 0 | 0 | 0 | 1 | 473741.1 | 5469724 | 4986566.209 | 127276000 |
| 2015 | 5 | Japan | 0 | 0 | 0 | 1 | 492656.5 | 5535002 | 5136018.758 | 127141000 |
| 2016 | 5 | Japan | 0 | 0 | 0 | 1 | 512797.5 | 5607283 | 5221770.214 | 126994511 |
| 2017 | 5 | Japan | 0 | 0 | 0 | 1 | 541877.6 | 5612253 | 5319800.458 | 126785797 |
| 2018 | 5 | Japan | 0 | 0 | 0 | 1 | 572504 | 5638676 | 5415123.908 | 126529100 |
| 2006 | 6 | France | 0 | 0 | 0 | 0 | 267362.9 | 4401365 | 2063550.603 | 63621381 |
| 2007 | 6 | France | 0 | 0 | 0 | 0 | 299314.8 | 4588599 | 2182208.129 | 64016225 |
| 2008 | 6 | France | 0 | 0 | 0 | 0 | 310837.5 | 4839396 | 2259256.991 | 64374984 |
| 2009 | 6 | France | 0 | 0 | 0 | 0 | 313586.1 | 4987573 | 2244374.928 | 64707040 |
| 2010 | 6 | France | 0 | 0 | 0 | 0 | 363321.4 | 5076732 | 2334490.464 | 65027507 |
| 2011 | 6 | France | 0 | 0 | 0 | 0 | 394138.3 | 5183688 | 2446475.413 | 65342780 |
| 2012 | 6 | France | 0 | 0 | 0 | 0 | 419570 | 5312437 | 2474003.939 | 65659809 |
| 2013 | 6 | France | 0 | 0 | 0 | 0 | 447490.1 | 5399162 | 2608522.466 | 65998687 |
| 2014 | 6 | France | 0 | 0 | 0 | 0 | 473741.1 | 5469724 | 2662033.397 | 66316100 |
| 2015 | 6 | France | 0 | 0 | 0 | 0 | 492656.5 | 5535002 | 2719223.034 | 66593366 |
| 2016 | 6 | France | 0 | 0 | 0 | 0 | 512797.5 | 5607283 | 2811271.87 | 66859768 |
| 2017 | 6 | France | 0 | 0 | 0 | 0 | 541877.6 | 5612253 | 2959179.911 | 66865144 |
| 2018 | 6 | France | 0 | 0 | 0 | 0 | 572504 | 5638676 | 3037362.127 | 66987244 |

## Appendix A: Descriptive Analysis

| Summarize | | | | | |
|---|---|---|---|---|---|
| Variable | Obs | Mean | Std. Dev. | Min | Max |
| FDI | 390 | 17,690.52 | 27,714.01 | 197.43 | 251,632.00 |
| lnFDI | 390 | 8.91 | 1.44 | 5.29 | 12.44 |
| lnMEODB | 390 | 4.46 | 0.02 | 4.43 | 4.48 |
| lnEcoDist | 390 | 12.17 | 2.14 | 5.10 | 17.03 |
| lnGeoDist | 390 | 8.75 | 0.78 | 6.88 | 9.75 |
| lnInstDist | 390 | 0.86 | 0.42 | (0.14) | 1.75 |
| lnCultDist | 338 | 0.76 | 0.63 | (0.68) | 1.53 |
| lnGDPperCapSG | 390 | 11.26 | 0.17 | 11.01 | 11.53 |
| lnGDPperCapJ | 390 | 10.40 | 0.71 | 8.11 | 11.64 |
| ComnBorder | 390 | 0.07 | 0.25 | - | 1 |
| ComnLanguage | 390 | 0.57 | 0.50 | - | 1 |
| Colonialties | 390 | 0.03 | 0.18 | - | 1 |
| FTA | 390 | 0.36 | 0.48 | - | 1 |

| List of Countries Investing (FDI) Into Singapore (MUSD) | | | | | |
|---|---|---|---|---|---|
| **No.** | **Country Name** | **Ave. FDI per. Year** | **No.** | **Country Name** | **Ave. FDI per. Year** |
| 1 | USA | 108,650.11 | 16 | Thailand | 3,280.21 |
| 2 | Netherlands | 59,113.89 | 17 | Indonesia | 2,403.03 |
| 3 | Switzerland | 26,318.61 | 18 | New Zealand | 2,171.30 |
| 4 | United Kingdom | 45,053.07 | 19 | Philippines | 2,031.62 |
| 5 | Japan | 54,736.29 | 20 | Brunei Darussalam | 250.36 |
| 6 | France | 9,052.57 | 21 | Israel | 2,829.14 |
| 7 | Hong Kong | 24,225.46 | 22 | Austria | 1,368.82 |
| 8 | Germany | 11,192.17 | 23 | Belgium | 2,149.22 |
| 9 | Malaysia | 18,918.47 | 24 | Denmark | 7,002.64 |
| 10 | Norway | 14,614.00 | 25 | Finland | 1,632.25 |
| 11 | China | 13,038.00 | 26 | Ireland | 8,002.89 |
| 12 | Australia | 7,951.95 | 27 | Luxembourg | 25,867.89 |
| 13 | South Korea | 5,269.95 | 28 | Bahamas | 13,097.76 |
| 14 | Canada | 5,676.09 | 29 | Bermuda | 27,679.62 |
| 15 | India | 15,383.76 | 30 | Mauritius | 11,754.48 |

## Appendix B: OLS, PPML and MRT without the Moderator Results

Appendix B.1: Ordinary Least Squares without the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnEcoDist | 0.1998818 | 0.0285917 | 6.99 | 0.000 | 0.143635 | 0.2561286 |
| lnGeoDist | 0.3280274 | 0.1264822 | 2.59 | 0.010 | 0.0792059 | 0.5768489 |
| lnInstDist | 0.0514569 | 0.2649756 | 0.19 | 0.846 | -0.4698152 | 0.5727289 |
| lnCultDist | -0.9294118 | 0.1042398 | -8.92 | 0.000 | -1.134477 | -0.7243466 |
| commonborder | -0.375786 | 0.2093535 | -1.79 | 0.074 | -0.7876357 | 0.0360636 |
| commonlanguage | 0.3205117 | 0.1199657 | 2.67 | 0.008 | 0.0845097 | 0.5565137 |
| colonialties | 1.318745 | 0.1370874 | 9.62 | 0.000 | 1.049061 | 1.58843 |
| tradeagreements | 1.09842 | 0.212816 | 5.16 | 0.000 | 0.6797584 | 1.517081 |
| lnGGDPpcSingapore | 1.178173 | 0.4031837 | 2.92 | 0.004 | 0.3850117 | 1.971334 |
| lnGGDPpcj | 1.606963 | 0.2161624 | 7.43 | 0.000 | 1.181719 | 2.032207 |
| _cons | -26.27299 | 4.027719 | -6.52 | 0.000 | -34.1965 | -18.34948 |

Appendix B.2: Poisson Pseudo-Maximum Likelihood without the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | 0.0947403 | 0.0282935 | 3.35 | 0.001 | 0.0392861 | 0.1501945 |
| lnGeoDist | 0.951843 | 0.1422021 | 6.69 | 0.000 | 0.6731321 | 1.230554 |
| lnInstDist | -0.6962756 | 0.1933486 | -3.6 | 0.000 | -1.075232 | -0.3173192 |
| lnCultDist | -0.9106426 | 0.0975743 | -9.33 | 0.000 | -1.101885 | -0.7194005 |
| commonborder | 0.558707 | 0.2723816 | 2.05 | 0.040 | 0.0248489 | 1.092565 |
| commonlanguage | -0.1675325 | 0.1131085 | -1.48 | 0.139 | -0.3892211 | 0.054156 |
| colonialties | 1.285874 | 0.1451027 | 8.86 | 0.000 | 1.001478 | 1.57027 |
| tradeagreements | 1.795729 | 0.1376152 | 13.05 | 0.000 | 1.526008 | 2.06545 |
| lnGGDPpcSingapore | 1.637595 | 0.3951087 | 4.14 | 0.000 | 0.8631965 | 2.411994 |
| lnGGDPpcj | 1.284663 | 0.2465672 | 5.21 | 0.000 | 0.8014007 | 1.767926 |
| _cons | -31.36231 | 4.193156 | -7.48 | 0.000 | -39.58074 | -23.14387 |

Appendix B.3: Multilateral Resistance Terms (OLS) without the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnEcoDist | 0.1998819 | 0.0285917 | 6.99 | 0.000 | 0.1436351 | 0.2561287 |
| mrtgeodist | 0.3393335 | 0.1308437 | 2.59 | 0.010 | 0.0819319 | 0.5967351 |
| lnInstDist | 0.0514573 | 0.2649756 | 0.19 | 0.846 | -0.4698146 | 0.5727292 |
| lnCultDist | -0.92941 | 0.1042397 | -8.92 | 0.000 | -1.134475 | -0.7243449 |
| mrtcommonborder | -0.3887491 | 0.2165723 | -1.8 | 0.074 | -0.8147999 | 0.0373017 |
| mrtcommonlanguage | 0.3315638 | 0.1241025 | 2.67 | 0.008 | 0.0874239 | 0.5757038 |
| mrtcolonialties | 1.36422 | 0.1418146 | 9.62 | 0.000 | 1.085236 | 1.643204 |
| mrttradeagreements | 1.136294 | 0.2201546 | 5.16 | 0.000 | 0.7031958 | 1.569392 |
| lnGGDPpcSingapore | 1.178172 | 0.4031837 | 2.92 | 0.004 | 0.3850105 | 1.971 |
| lnGGDPpcj | 1.606964 | 0.2161624 | 7.43 | 0.000 | 1.18172 | 2.032 |
| _cons | 18.76841 | 14.28104 | 1.31 | 0.190 | -9.325897 | 46.863 |

Appendix B.4: Multilateral Resistance Terms (PPML) without the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | 0.09474 | 0.0282934 | 3.35 | 0.001 | 0.039 | 0.1501942 |
| mrtgeodist | 0.9846588 | 0.1471053 | 6.69 | 0.000 | 0.696 | 1.27298 |
| lnInstDist | -0.6962708 | 0.1933485 | -3.6 | 0.000 | -1.075 | -0.3173146 |
| lnCultDist | -0.91064 | 0.0975742 | -9.33 | 0.000 | -1.102 | -0.7193981 |
| mrtcommonborder | 0.5779632 | 0.2817733 | 2.05 | 0.040 | 0.026 | 1.130229 |
| mrtcommonlanguage | -0.1733085 | 0.1170087 | -1.48 | 0.139 | -0.403 | 0.0560243 |
| mrtcolonialties | 1.330215 | 0.1501062 | 8.86 | 0.000 | 1.036 | 1.624418 |
| mrttradeagreements | 1.857649 | 0.1423609 | 13.05 | 0.000 | 1.579 | 2.136671 |
| lnGGDPpcSingapore | 1.637593 | 0.3951089 | 4.14 | 0.000 | 0.863 | 2.411992 |
| lnGGDPpcj | 1.284667 | 0.2465672 | 5.21 | 0.000 | 0.801 | 1.76793 |
| _cons | 85.08488 | 14.52365 | 5.86 | 0.000 | 56.619 | 113.5507 |

## Appendix C: OLS, PPML with the Moderator

Appendix C.1: OLS (EcoDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnMEODB | -25.54282 | 17.88397 | -1.43 | 0.154 | -60.72578 | 9.640146 |
| interactionlnEcoDistlnMEODB | 2.476246 | 1.367341 | 1.81 | 0.071 | -0.2137102 | 5.166203 |
| lnEcoDist | -10.85398 | 6.105659 | -1.78 | 0.076 | -22.86558 | 1.157626 |
| lnGeoDist | 0.3199815 | 0.1256263 | 2.55 | 0.011 | 0.0728382 | 0.5671249 |
| lnInstDist | 0.1173091 | 0.2743636 | 0.43 | 0.669 | -0.4224437 | 0.6570618 |
| lnCultDist | -0.9474845 | 0.1053131 | -9 | 0.000 | -1.154666 | -0.7403031 |
| commonborder | -0.4068694 | 0.2075624 | -1.96 | 0.051 | -0.8152048 | 0.001466 |
| commonlanguage | 0.3325986 | 0.1200569 | 2.77 | 0.006 | 0.0964119 | 0.5687854 |
| colonialties | 1.319522 | 0.1333646 | 9.89 | 0.000 | 1.057155 | 1.581889 |
| tradeagreements | 1.107115 | 0.2145876 | 5.16 | 0.000 | 0.6849594 | 1.529271 |
| lnGGDPpcSingapore | 1.558632 | 0.5226237 | 2.98 | 0.003 | 0.5304798 | 2.586784 |
| lnGGDPpcj | 1.66206 | 0.2165122 | 7.68 | 0.000 | 1.236118 | 2.088 |
| _cons | 82.91869 | 80.90557 | 1.02 | 0.306 | -76.24603 | 242.083 |

Appendix C.2: PPML (EcoDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | -16.99532 | 3.976411 | -4.27 | 0.000 | -24.78894 | -9.201695 |
| lnMEODB | -50.94091 | 12.15257 | -4.19 | 0.000 | -74.7595 | -27.12232 |
| interactionlnEcoDistlnMEODB | 3.832293 | 0.890247 | 4.3 | 0.000 | 2.087441 | 5.577145 |
| lnGeoDist | 0.9754315 | 0.1385626 | 7.04 | 0.000 | 0.7038539 | 1.247009 |
| lnInstDist | -0.7826939 | 0.1995159 | -3.92 | 0.000 | -1.173738 | -0.3916498 |
| lnCultDist | -0.9422031 | 0.098385 | -9.58 | 0.000 | -1.135034 | -0.749372 |
| commonborder | 0.5684368 | 0.2670851 | 2.13 | 0.033 | 0.0449595 | 1.091914 |
| commonlanguage | -0.1847592 | 0.1134362 | -1.63 | 0.103 | -0.40709 | 0.0375716 |
| colonialties | 1.295167 | 0.1399575 | 9.25 | 0.000 | 1.020856 | 1.569479 |
| tradeagreements | 1.818496 | 0.1308301 | 13.9 | 0.000 | 1.562073 | 2.074918 |
| lnGGDPpcSingapore | 1.368604 | 0.4750465 | 2.88 | 0.004 | 0.43753 | 2.299678 |
| lnGGDPpcj | 1.216463 | 0.2387526 | 5.1 | 0.000 | 0.7485164 | 1.684409 |
| _cons | 199.4558 | 55.94762 | 3.57 | 0.000 | 89.80051 | 309.1111 |

Appendix C.3: OLS (GeoDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnMEODB | 47.86516 | 30.49376 | 1.57 | 0.117 | -12.12492 | 107.8552 |
| interactionlnGeoDistlnMEODB | -4.796026 | 3.542737 | -1.35 | 0.177 | -11.76562 | 2.173566 |
| lnEcoDist | 0.2045399 | 0.0284484 | 7.19 | 0.000 | 0.1485736 | 0.2605062 |
| lnGeoDist | 21.73084 | 15.82095 | 1.37 | 0.171 | -9.39356 | 52.85524 |
| lnInstDist | 0.1418118 | 0.2757904 | 0.51 | 0.607 | -0.4007479 | 0.6843715 |
| lnCultDist | -0.9411249 | 0.1060633 | -8.87 | 0.000 | -1.149782 | -0.7324677 |
| commonborder | -0.4009885 | 0.208652 | -1.92 | 0.056 | -0.8114675 | 0.0094904 |
| commonlanguage | 0.3351481 | 0.1194705 | 2.81 | 0.005 | 0.1001149 | 0.5701813 |
| colonialties | 1.308107 | 0.1399624 | 9.35 | 0.000 | 1.03276 | 1.583453 |
| tradeagreements | 1.097687 | 0.2137541 | 5.14 | 0.000 | 0.6771704 | 1.518203 |
| lnGGDPpcSingapore | 1.574713 | 0.5245137 | 3 | 0.003 | 0.5428426 | 2.606584 |
| lnGGDPpcj | 1.678105 | 0.2208546 | 7.6 | 0.000 | 1.24362 | 2.113 |
| _cons | -245.2214 | 137.2748 | -1.79 | 0.075 | -515.2808 | 24.838 |

Appendix C.4: PPML (GeoDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | 0.1010478 | 0.0277042 | 3.65 | 0.000 | 0.0467486 | 0.1553469 |
| lnMEODB | 74.7181 | 33.02341 | 2.26 | 0.024 | 9.993397 | 139.4428 |
| interactionlnGeoDistlnMEODB | -8.60164 | 3.756272 | -2.29 | 0.022 | -15.9638 | -1.239483 |
| lnGeoDist | 39.32579 | 16.80372 | 2.34 | 0.019 | 6.391093 | 72.26048 |
| lnInstDist | -0.7347287 | 0.2011248 | -3.65 | 0.000 | -1.128926 | -0.3405315 |
| lnCultDist | -0.9350953 | 0.1003461 | -9.32 | 0.000 | -1.13177 | -0.7384205 |
| commonborder | 0.5809462 | 0.2713301 | 2.14 | 0.032 | 0.049149 | 1.112743 |
| commonlanguage | -0.1739405 | 0.1126617 | -1.54 | 0.123 | -0.3947534 | 0.0468724 |
| colonialties | 1.275024 | 0.1512055 | 8.43 | 0.000 | 0.9786669 | 1.571381 |
| tradeagreements | 1.807261 | 0.1323169 | 13.66 | 0.000 | 1.547925 | 2.066598 |
| lnGGDPpcSingapore | 1.388297 | 0.4902483 | 2.83 | 0.005 | 0.4274282 | 2.349166 |
| lnGGDPpcj | 1.286837 | 0.2484641 | 5.18 | 0.000 | 0.7998565 | 1.773818 |
| _cons | -361.9352 | 147.9711 | -2.45 | 0.014 | -651.9531 | -71.91716 |

Appendix C.5: OLS (InstDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnMEODB | -6.642293 | 7.208341 | -0.92 | 0.357 | -20.82319 | 7.538604 |
| interactionlnInstDistlnMEODB | 15.35914 | 6.095651 | 2.52 | 0.012 | 3.367231 | 27.35106 |
| lnEcoDist | 0.2029104 | 0.0282715 | 7.18 | 0.000 | 0.1472922 | 0.2585287 |
| lnGeoDist | 0.3208057 | 0.1265842 | 2.53 | 0.012 | 0.0717779 | 0.5698336 |
| lnInstDist | -68.41493 | 27.23688 | -2.51 | 0.012 | -121.9978 | -14.83208 |
| lnCultDist | -0.9478303 | 0.1038968 | -9.12 | 0.000 | -1.152225 | -0.7434352 |
| commonborder | -0.411142 | 0.2092961 | -1.96 | 0.050 | -0.8228882 | 0.0006042 |
| commonlanguage | 0.3321785 | 0.1176373 | 2.82 | 0.005 | 0.1007517 | 0.5636052 |
| colonialties | 1.318507 | 0.139361 | 9.46 | 0.000 | 1.044344 | 1.592671 |
| tradeagreements | 1.107152 | 0.2137269 | 5.18 | 0.000 | 0.6866893 | 1.527615 |
| lnGGDPpcSingapore | 1.646648 | 0.5243318 | 3.14 | 0.002 | 0.615135 | 2.678161 |
| lnGGDPpcj | 1.696189 | 0.2172441 | 7.81 | 0.000 | 1.268807 | 2.123571 |
| _cons | -2.868343 | 34.90843 | -0.08 | 0.935 | -71.54335 | 65.807 |

Appendix C.6: PPML (InstDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | 0.0965888 | 0.0279431 | 3.46 | 0.001 | 0.0418213 | 0.1513563 |
| lnMEODB | -11.59139 | 6.074957 | -1.91 | 0.056 | -23.49808 | 0.3153088 |
| interactionlnInstDistlnMEODB | 14.13873 | 5.977356 | 2.37 | 0.018 | 2.423325 | 25.85413 |
| lnGeoDist | 0.9709552 | 0.1450958 | 6.69 | 0.000 | 0.6865727 | 1.255338 |
| lnInstDist | -63.74251 | 26.63899 | -2.39 | 0.017 | -115.954 | -11.53105 |
| lnCultDist | -0.9250587 | 0.0974009 | -9.5 | 0.000 | -1.115961 | -0.7341565 |
| commonborder | 0.5752519 | 0.2679566 | 2.15 | 0.032 | 0.0500667 | 1.100437 |
| commonlanguage | -0.1726044 | 0.1110387 | -1.55 | 0.120 | -0.3902363 | 0.0450275 |
| colonialties | 1.287071 | 0.1472151 | 8.74 | 0.000 | 0.9985349 | 1.575607 |
| tradeagreements | 1.801885 | 0.137116 | 13.14 | 0.000 | 1.533143 | 2.070627 |
| lnGGDPpcSingapore | 1.515097 | 0.4955552 | 3.06 | 0.002 | 0.5438269 | 2.486368 |
| lnGGDPpcj | 1.287773 | 0.2444196 | 5.27 | 0.000 | 0.808719 | 1.766826 |

| | | | | | | |
|---|---|---|---|---|---|---|
| _cons | 21.50485 | 29.73057 | 0.72 | 0.469 | -36.766 | 79.7757 |

Appendix C.7: OLS (CultDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnMEODB | 8.973001 | 5.37699 | 1.67 | 0.096 | -1.605098 | 19.5511 |
| interactionlnCultDistlnMEODB | -3.920282 | 4.378773 | -0.9 | 0.371 | -12.5346 | 4.694034 |
| lnEcoDist | 0.2042787 | 0.0286684 | 7.13 | 0.000 | 0.1478796 | 0.2606778 |
| lnGeoDist | 0.3212938 | 0.126355 | 2.54 | 0.011 | 0.0727169 | 0.5698708 |
| lnInstDist | 0.1495145 | 0.2753723 | 0.54 | 0.588 | -0.3922227 | 0.6912517 |
| lnCultDist | 16.5588 | 19.55063 | 0.85 | 0.398 | -21.90296 | 55.02056 |
| commonborder | -0.403053 | 0.2080957 | -1.94 | 0.054 | -0.8124377 | 0.0063317 |
| commonlanguage | 0.3357777 | 0.1203684 | 2.79 | 0.006 | 0.0989781 | 0.5725773 |
| colonialties | 1.309266 | 0.1384741 | 9.45 | 0.000 | 1.036848 | 1.581685 |
| tradeagreements | 1.09951 | 0.2145549 | 5.12 | 0.000 | 0.6774179 | 1.521602 |
| lnGGDPpcSingapore | 1.574715 | 0.5238469 | 3.01 | 0.003 | 0.5441562 | 2.605274 |
| lnGGDPpcj | 1.682268 | 0.2199367 | 7.65 | 0.000 | 1.249588 | 2.114947 |
| _cons | -71.65324 | 28.33771 | -2.53 | 0.012 | -127.4017 | -15.90475 |

Appendix C.8: PPML (CultDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | 0.0998661 | 0.0278253 | 3.59 | 0.000 | 0.0453294 | 0.1544027 |
| lnMEODB | 2.324606 | 4.342765 | 0.54 | 0.592 | -6.187057 | 10.83627 |
| interactionlnCultDistlnMEODB | -5.417429 | 3.436618 | -1.58 | 0.115 | -12.15308 | 1.318218 |
| lnGeoDist | 0.9649296 | 0.1447005 | 6.67 | 0.000 | 0.6813218 | 1.248537 |
| lnInstDist | -0.7082054 | 0.2018566 | -3.51 | 0.000 | -1.103837 | -0.3125737 |
| lnCultDist | 23.22474 | 15.31638 | 1.52 | 0.129 | -6.794811 | 53.24429 |
| commonborder | 0.5758293 | 0.270646 | 2.13 | 0.033 | 0.0453729 | 1.106286 |
| commonlanguage | -0.1666637 | 0.1129035 | -1.48 | 0.140 | -0.3879506 | 0.0546232 |
| colonialties | 1.274765 | 0.1469775 | 8.67 | 0.000 | 0.9866945 | 1.562836 |
| tradeagreements | 1.803427 | 0.1362268 | 13.24 | 0.000 | 1.536427 | 2.070427 |
| lnGGDPpcSingapore | 1.394604 | 0.4954025 | 2.82 | 0.005 | 0.4236331 | 2.365575 |
| lnGGDPpcj | 1.295774 | 0.249618 | 5.19 | 0.000 | 0.806532 | 1.785017 |
| _cons | -39.25119 | 23.29288 | -1.69 | 0.092 | -84.90439 | 6.402006 |

## Appendix D: MRT (OLS & PPML) with the Moderator

Appendix D.1: Multilateral Resistance Terms - OLS (EcoDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnMEODB | -25.54283 | 17.88398 | -1.43 | 0.154 | -60.72581 | 9.640159 |
| interactionlnEcoDistlnMEODB | 2.476247 | 1.367342 | 1.81 | 0.071 | -0.2137105 | 5.166205 |
| lnEcoDist | -10.85398 | 6.105662 | -1.78 | 0.076 | -22.86559 | 1.157628 |
| mrtgeodist | 0.3310102 | 0.1299582 | 2.55 | 0.011 | 0.0753446 | 0.5866757 |
| lnInstDist | 0.1173096 | 0.2743635 | 0.43 | 0.669 | -0.422443 | 0.6570622 |
| lnCultDist | -0.9474826 | 0.105313 | -9 | 0.000 | -1.154664 | -0.7403014 |
| mrtcommonborder | -0.4209043 | 0.2147194 | -1.96 | 0.051 | -0.8433197 | 0.001511 |
| mrtcommonlanguage | 0.3440676 | 0.1241967 | 2.77 | 0.006 | 0.0997365 | 0.5883986 |
| mrtcolonialties | 1.365023 | 0.1379634 | 9.89 | 0.000 | 1.093609 | 1.636437 |
| mrttradeagreements | 1.14529 | 0.2219873 | 5.16 | 0.000 | 0.7085762 | 1.582003 |
| lnGGDPpcSingapore | 1.558631 | 0.5226238 | 2.98 | 0.003 | 0.5304786 | 2.586784 |
| lnGGDPpcj | 1.662062 | 0.2165123 | 7.68 | 0.000 | 1.236119 | 2.088004 |
| _cons | 127.148 | 84.3603 | 1.51 | 0.133 | -38.81317 | 293.1092 |

Appendix D.2: Multilateral Resistance Terms - PPML (EcoDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | -16.99531 | 3.97642 | -4.27 | 0.000 | -24.78895 | -9.201674 |
| lnMEODB | -50.94088 | 12.1526 | -4.19 | 0.000 | -74.75954 | -27.12222 |
| interactionlnEcoDistlnMEODB | 3.832293 | 0.8902491 | 4.3 | 0.000 | 2.087436 | 5.577149 |
| mrtgeodist | 1.009061 | 0.1433403 | 7.04 | 0.000 | 0.7281187 | 1.290002 |
| lnInstDist | -0.7826887 | 0.1995158 | -3.92 | 0.000 | -1.173732 | -0.3916449 |
| lnCultDist | -0.9422003 | 0.0983849 | -9.58 | 0.000 | -1.135031 | -0.7493695 |
| mrtcommonborder | 0.5880282 | 0.2762943 | 2.13 | 0.033 | 0.0465014 | 1.129555 |
| mrtcommonlanguage | -0.1911291 | 0.1173477 | -1.63 | 0.103 | -0.4211264 | 0.0388681 |
| mrtcolonialties | 1.339829 | 0.1447836 | 9.25 | 0.000 | 1.056059 | 1.6236 |
| mrttradeagreements | 1.8812 | 0.1353418 | 13.9 | 0.000 | 1.615935 | 2.146465 |
| lnGGDPpcSingapore | 1.368604 | 0.475047 | 2.88 | 0.004 | 0.4375288 | 2.299679 |
| lnGGDPpcj | 1.216466 | 0.2387526 | 5.1 | 0.000 | 0.7485197 | 1.684413 |
| _cons | 318.5775 | 62.1037 | 5.13 | 0.000 | 196.8565 | 440.2985 |

Appendix D.3: Multilateral Resistance Terms - OLS (GeoDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnMEODB | 47.67901 | 30.49111 | 1.56 | 0.119 | -12.30585 | 107.6639 |
| interactionlnGeoDistlnMEODB | -4.774746 | 3.542469 | -1.35 | 0.179 | -11.74381 | 2.194318 |
| lnEcoDist | 0.2045299 | 0.02845 | 7.19 | 0.000 | 0.1485606 | 0.2604992 |
| mrtgeodist | 22.38192 | 16.36522 | 1.37 | 0.172 | -9.813218 | 54.57706 |
| lnInstDist | 0.141784 | 0.275791 | 0.51 | 0.608 | -0.4007769 | 0.6843449 |
| lnCultDist | -0.9411292 | 0.1060621 | -8.87 | 0.000 | -1.149784 | -0.7324742 |
| mrtcommonborder | -0.4148658 | 0.2158589 | -1.92 | 0.055 | -0.8395229 | 0.0097912 |
| mrtcommonlanguage | 0.3466796 | 0.1235946 | 2.8 | 0.005 | 0.1035332 | 0.589826 |
| mrtcolonialties | 1.353225 | 0.1447727 | 9.35 | 0.000 | 1.068415 | 1.638034 |
| mrttradeagreements | 1.135485 | 0.2211245 | 5.14 | 0.000 | 0.7004687 | 1.570501 |
| lnGGDPpcSingapore | 1.574786 | 0.5245234 | 3 | 0.003 | 0.5428964 | 2.607 |
| lnGGDPpcj | 1.678027 | 0.220869 | 7.6 | 0.000 | 1.243514 | 2.113 |
| _cons | 2224.234 | 1664.834 | 1.34 | 0.182 | -1050.977 | 5499.446 |

Appendix D.4: Multilateral Resistance Terms - PPML (GeoDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | 0.0928643 | 0.0283398 | 3.28 | 0.001 | 0.0373193 | 0.1484094 |
| lnMEODB | -4.376406 | 4.457366 | -0.98 | 0.326 | -13.11268 | 4.359871 |
| interactionlnGeoDistlnMEODB | 0.2152483 | 0.0329828 | 6.53 | 0.000 | 0.1506032 | 0.2798934 |
| mrtgeodist | -0.2151223 | 16.40012 | 1.29 | 0.000 | -9.625513 | 55.32251 |
| lnInstDist | -0.735759 | 0.2004251 | -3.67 | 0.000 | -1.128585 | -0.3429331 |
| lnCultDist | -0.9132472 | 0.0989183 | -9.23 | 0.000 | -1.107124 | -0.7193708 |
| mrtcommonborder | 0.5880519 | 0.285681 | 2.06 | 0.040 | 0.0281275 | 1.147976 |
| mrtcommonlanguage | -0.1830713 | 0.1162806 | -1.57 | 0.115 | -0.4109771 | 0.0448346 |
| mrtcolonialties | 1.335984 | 0.1509283 | 8.85 | 0.000 | 1.04017 | 1.631798 |
| mrttradeagreements | 1.861136 | 0.1432852 | 12.99 | 0.000 | 1.580302 | 2.14197 |
| lnGGDPpcSingapore | 1.436958 | 0.493464 | 2.91 | 0.004 | 0.4697869 | 2.40413 |
| lnGGDPpcj | 1.256473 | 0.2487378 | 5.05 | 0.000 | 0.7689563 | 1.743991 |
| _cons | -1.145687 | 23.78097 | -0.05 | 0.962 | -47.75553 | 45.46415 |

Appendix D.5: Multilateral Resistance Terms - OLS (InstDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnMEODB | -6.642291 | 7.208343 | -0.92 | 0.357 | -20.82319 | 7.53861 |
| interactionlnInstDistlnMEODB | 15.35915 | 6.095653 | 2.52 | 0.012 | 3.367229 | 27.35106 |
| lnEcoDist | 0.2029106 | 0.0282715 | 7.18 | 0.000 | 0.1472924 | 0.2585288 |
| mrtgeodist | 0.3318627 | 0.1309492 | 2.53 | 0.012 | 0.0742477 | 0.5894778 |
| lnInstDist | -68.41493 | 27.23689 | -2.51 | 0.012 | -121.9978 | -14.83207 |
| lnCultDist | -0.9478284 | 0.1038967 | -9.12 | 0.000 | -1.152223 | -0.7434335 |
| mrtcommonborder | -0.4253243 | 0.2165129 | -1.96 | 0.050 | -0.8512681 | 0.0006195 |
| mrtcommonlanguage | 0.3436329 | 0.1216937 | 2.82 | 0.005 | 0.104226 | 0.5830397 |
| mrtcolonialties | 1.363973 | 0.1441665 | 9.46 | 0.000 | 1.080356 | 1.647591 |
| mrttradeagreements | 1.145327 | 0.2210969 | 5.18 | 0.000 | 0.7103657 | 1.580289 |
| lnGGDPpcSingapore | 1.646647 | 0.5243319 | 3.14 | 0.002 | 0.6151339 | 2.67816 |
| lnGGDPpcj | 1.69619 | 0.2172442 | 7.81 | 0.000 | 1.268808 | 2.123573 |
| _cons | 41.44761 | 39.30003 | 1.05 | 0.292 | -35.86695 | 118.7622 |

Appendix D.6: Multilateral Resistance Terms - PPML (InstDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | 0.0965885 | 0.0279431 | 3.46 | 0.001 | 0.041821 | 0.151356 |
| lnMEODB | -11.59136 | 6.074961 | -1.91 | 0.056 | -23.49806 | 0.3153486 |
| interactionlnInstDistlnMEODB | 14.13872 | 5.977356 | 2.37 | 0.018 | 2.423315 | 25.85412 |
| mrtgeodist | 1.00443 | 0.1500988 | 6.69 | 0.000 | 0.7102417 | 1.298618 |
| lnInstDist | -63.74245 | 26.63898 | -2.39 | 0.017 | -115.9539 | -11.531 |
| lnCultDist | -0.9250559 | 0.0974007 | -9.5 | 0.000 | -1.115958 | -0.734154 |
| mrtcommonborder | 0.5950784 | 0.2771957 | 2.15 | 0.032 | 0.0517848 | 1.138372 |
| mrtcommonlanguage | -0.1785552 | 0.1148675 | -1.55 | 0.120 | -0.4036914 | 0.0465811 |
| mrtcolonialties | 1.331454 | 0.1522913 | 8.74 | 0.000 | 1.032968 | 1.629939 |
| mrttradeagreements | 1.864017 | 0.1418445 | 13.14 | 0.000 | 1.586007 | 2.142027 |
| lnGGDPpcSingapore | 1.515097 | 0.4955557 | 3.06 | 0.002 | 0.5438258 | 2.486368 |
| lnGGDPpcj | 1.287776 | 0.2444196 | 5.27 | 0.000 | 0.8087224 | 1.76683 |
| _cons | 140.1318 | 36.50506 | 3.84 | 0.000 | 68.58324 | 211.6805 |

Appendix D.7: Multilateral Resistance Terms - OLS (CultDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| lnFDIstock | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| lnMEODB | 8.973008 | 5.376989 | 1.67 | 0.096 | -1.605088 | 19.55111 |
| interactionlnCultDistlnMEODB | -3.920287 | 4.378771 | -0.9 | 0.371 | -12.5346 | 4.694026 |
| lnEcoDist | 0.2042789 | 0.0286684 | 7.13 | 0.000 | 0.1478798 | 0.2606779 |
| mrtgeodist | 0.3323677 | 0.1307121 | 2.54 | 0.011 | 0.0752192 | 0.5895163 |
| lnInstDist | 0.1495151 | 0.2753722 | 0.54 | 0.588 | -0.392222 | 0.6912521 |
| lnCultDist | 16.55883 | 19.55062 | 0.85 | 0.398 | -21.90292 | 55.02057 |
| mrtcommonborder | -0.4169563 | 0.2152712 | -1.94 | 0.054 | -0.8404572 | 0.0065445 |
| mrtcommonlanguage | 0.3473562 | 0.124519 | 2.79 | 0.006 | 0.1023912 | 0.5923212 |
| mrtcolonialties | 1.354414 | 0.1432491 | 9.45 | 0.000 | 1.072601 | 1.636227 |
| mrttradeagreements | 1.137422 | 0.2219535 | 5.12 | 0.000 | 0.7007746 | 1.574069 |
| lnGGDPpcSingapore | 1.574714 | 0.523847 | 3.01 | 0.003 | 0.544155 | 2.605273 |
| lnGGDPpcj | 1.682269 | 0.2199367 | 7.65 | 0.000 | 1.24959 | 2.114949 |
| _cons | -27.28793 | 32.06728 | -0.85 | 0.395 | -90.37357 | 35.79771 |

Appendix D.8: Multilateral Resistance Terms - PPML (CultDist x MEODB) with the Moderator

| | | Robust | | | | |
|---|---|---|---|---|---|---|
| fdistockmusd | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
| lnEcoDist | 0.0998658 | 0.0278253 | 3.59 | 0.000 | 0.0453292 | 0.1544024 |
| lnMEODB | 2.324629 | 4.342764 | 0.54 | 0.592 | -6.187032 | 10.83629 |
| interactionlnCultDistlnMEODB | -5.417427 | 3.436618 | -1.58 | 0.115 | -12.15307 | 1.318221 |
| mrtgeodist | 0.9981965 | 0.1496899 | 6.67 | 0.000 | 0.7048097 | 1.291583 |
| lnInstDist | -0.7082001 | 0.2018564 | -3.51 | 0.000 | -1.103831 | -0.3125687 |
| lnCultDist | 23.22473 | 15.31638 | 1.52 | 0.129 | -6.79482 | 53.24429 |
| mrtcommonborder | 0.5956757 | 0.2799779 | 2.13 | 0.033 | 0.0469291 | 1.144422 |
| mrtcommonlanguage | -0.1724096 | 0.1167967 | -1.48 | 0.140 | -0.4013269 | 0.0565077 |
| mrtcolonialties | 1.318723 | 0.1520456 | 8.67 | 0.000 | 1.020719 | 1.616727 |
| mrttradeagreements | 1.865612 | 0.1409246 | 13.24 | 0.000 | 1.589405 | 2.141819 |
| lnGGDPpcSingapore | 1.394604 | 0.495403 | 2.82 | 0.005 | 0.4236319 | 2.365576 |
| lnGGDPpcj | 1.295778 | 0.249618 | 5.19 | 0.000 | 0.8065356 | 1.78502 |
| _cons | 78.73663 | 29.39716 | 2.68 | 0.007 | 21.11926 | 136.354 |