CHINA'S OUTWARD FOREIGN DIRECT INVESTMENT

IN COUNTRIES OF THE BELT AND ROAD INITIATIVE

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FACULTY OF BUSINESS AND ECONOMICS
UNIVERSITY OF MALAYA
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ABSTRACT

Foreign direct investment (FDI) from China has attracted the attention of scholars, especially after Chinese president Xi Jinping proposed the Belt and Road Initiative (BRI) in 2013. Investment from China flowing to the BRI countries has been motivated by economic factors amd non-economic factors. This research examined China's outward foreign direct investment (OFDI) in the BRI countries from the perspectives of; characteristics, performance, and motivations using both qualitative and quantitative methods. Case studies have been used to deepen the role of government policy for China's OFDI in the BRI countries.

The main questions of this study concern the characteristics that empower Chinese enterprises to make investment decisions in BRI countries? What are the determinants of China's overseas investments in the BRI countries? Is there any potential for Chinese enterprises to advance overseas investment in those countries? How does the Chinese government affect the direction and decision making of Chinese enterprises in the BRI countries?

This study used micro and macro level data to examine the determinants and motivations of China's OFDI in the BRI countries based on the characteristics of China's overseas investment by using; descriptive analysis, stochastic frontier analysis (SFA), and case studies. The analysis was conducted using primary data collected from; companies' annual reports and released documents, government official documents, and secondary data published by the Ministry of Commerce of the People's Republic of China (MOFCOM) and the American Enterprise Institute (AEI).

In terms of research findings, this research has suggested that the existing mainstream FDI theory can partly explain OFDI from China to BRI countries. Firstly, the descriptive analysis of China's overseas investment in the BRI countries showed that Chinese investment was likely to choose a host country with; abundant natural

resources, a high GDP, and located geographically close to China. Meanwhile, the Chinese government has issued many policies to promote overseas investment to ensure; the security of natural resources, access to advanced technology, and upgrades to industries. Secondly, the empirical analysis suggested that Chinese investment in BRI countries was motivated by; natural resources, markets, and low labour costs. Also, the result implied that China's investment in those countries had the potential to advance by improving the infrastructure of the host country. Thirdly, the case studies of Tsingshan and Huawei showed that government policy affected their investment decisions in the context of the Chinese government proposing the BRI. That China's investment tends to flow to the BRI countries can be explained by government policy intervention.

ABSTRAK

Pelaburan langsung asing (FDI) dari China sering menarik tumpuan dari para penyelidik, terutamanya selepas presiden China Xi Jinping mencadangkan Inisiatif Jaluran Ekonomi Laluan Sutera China (Belt Road Initiative (BRI)) pada tahun 2013. Pelaburan dari China yang mengalir ke negara-negara BRI bukan sahaja didorong oleh faktor ekonomi tetapi juga oleh faktor bukan ekonomi. Justeru itu, penyelidikan ini bertujuan untuk menelitikan pelaburan langsung asing luar negara (OFDI) dari China di negara-negara BRI dari perspektif ciri-ciri, prestasi, dan motivasi pelaburan melalui kaedah kualitatif dan kuantitatif. Selain itu, kajian kes juga digunakan untuk memperincihkan peranan dasar kerajaan China untuk OFDI di negara-negara BRI.

Persoalan utama kajian ini adalah, apakah ciri-ciri yang memperkasakan perusahaan China untuk membuat keputusan pelaburan di negara-negara BRI? Apakah penentu yang mendorong pelaburan langsung asing luar negara dari China di negara-negara BRI? Adakah potensi perusahaan China untuk memajukan pelaburan asing luar negara di negara-negara tersebut? Bagaimana kerajaan China dapat mempengaruhi arah dan pengambilan keputusan perusahaan negara China untuk melabur di negara-negara BRI?

Kajian ini menggunakan data peringkat mikro dan makro untuk memeriksa penentu dan motivasi OFDI China di negara-negara BRI berdasarkan ciri-ciri pelaburan asing dari China dengan menggunakan analisis deskriptif, analisis stokastik (SFA), dan kajian kes. Analisis kajian ini dilakukan dengan menggunakan data utama yang dikumpulkan dari laporan tahunan perusahaan dan dokumen-dokumen yang telah diterbit, dokumen rasmi kerajaan, dan data sekunder yang diterbitkan oleh Kementerian Perdagangan Republik Rakyat China (MOFCOM) dan Institut Perusahaan Amerika (AEI).

Dari segi hasil kajian, penyelidikan ini menunjukkan bahawa sebahagian teori FDI arus perdana yang sedia ada dapat menjelaskan OFDI dari China ke negara-negara BRI. Pertama, analisis deskriptif mengenai pelaburan langsung asing luar negara dari negara China di negara-negara BRI menunjukkan bahawa pelaburan asing China lebih cenderung untuk memilih negara tuan rumah yang kaya dengan sumber daya alam, KDNK yang tinggi, dan kedudukan geografi yang berdekatan dengan sempadan negara China. Sementara itu, kerajaan negara China didapati menggunakan segala keusahaan dan kebolehan untuk memajukan pelaburan langsung asing luar negara demi kekayaan sumber daya alam, teknologi yang lebih canggih, dan meningkatkan prestasi industri tempatan. Kedua, analisis empirik juga menunjukkan bahawa pelaburan China di negara-negara BRI didorong oleh kekayaan sumber semula jadi, pasaran tempatan, dan kos pekerja yang rendah. Hasil kajian ini juga menunjukkan bahawa pelaburan China di negara-negara tersebut berpotensi untuk meningkatkan taraf infrastruktur negara tuan rumah. Ketiga, kajian kes keatas Tsingshan dan Huawei menunjukkan bahawa dasar kerajaan negara China diapati mempengaruhi keputusan pelaburan perushaan, ini adalah kerana BRI merupakan satu konsep yang dicadangankan oleh kerajaan negara China. Disamping itu, dasar kerajaan juga dapat menjelaskan fenomena pelaburan China yang lebih cenderung ke negara-negara BRI.

ACKNOWLEDGEMENTS

I am coming to this part of my thesis, which signifies that my Ph.D. journey is ending. I am feeling excited because, finally, I have completed the thesis, but I am also sad because this unforgettable time in my life is coming to an end.

I would like to express my great gratitude to Professor. Dr. Cheong Kee Cheok and Dr. Goh Lim Thye for their diligent and dedicated supervision. Prof. Cheong is a person who loves academic research dearly. His passion and love for academic research are rare and remarkable. I have gained and learnt so much from his insightful knowledge every time we met. He has made me understand that a researcher has to deal with many challenges and obstacles, and never give up and never back down is the attitude that a successful researcher should have. He also reminded me to enjoy and treasures this bittersweet journey. On the other hand, Dr Goh is a prudent and conscientious supervisor. I always received the encouragement and support that I needed from him every time I met up with him. It is impossible to give up around Dr. Goh, as he kept reminding me how far I have come and how close I am to the finishing line.

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4G	:	Fourth generation of mobile communication technology standards
5G	:	Fifth generation of mobile communication technology standards
ADF	:	Augmented Dickey-Fuller
AOD	:	Argon oxygen decarburization
ASEAN	:	Association of Southeast Asian Nations
BDM	:	Bintang Delapan Mineral
BDT	:	PT Bintang Delapan Terminal
BRI	:	Belt and Road Initiative
CDB	:	China Development Bank
CEPII	:	Centre for International Prospective Studies and Information
CGIT	:	China Global Investment Tracker
CISC	:	Capital Iron and Steel Company
CITIC	:	China International Trust and Investment Company
CNMM	:	China National Metals and Minerals Import and Export Corporation
COCZs	:	Chinese Overseas Cooperation Zones
CPC	:	Communist Party of China
DWT	:	Deadweight tonnage
DXSI	:	PT Dexin Steel Indonesia
EU	:	European Union
FDI	:	Foreign direct investment
GCNS	:	PT Indonesia Guang Ching Nickel and Stainless Steel Industry
GDP	:	Gross domestic product
GNOC	:	Global Network Operation Center
GOIC	:	Guide for Outbound Investment and Cooperation

GSC	:	Global service sharing center
HFDI	:	Horizontal foreign direct investment
HNC	:	PT Huayue Nickel Cobalt
HNI	:	PT Hengjaya Nickel Industry
IFDI	:	Inward foreign direct investment
IMIP	:	PT. Indonesia Morowali Industrial Park
IRNC	:	PT Indonesia Ruipu Nickel and Chrome Alloy
IT	:	Information technology
ITSS	:	PT Indonesia Tsingshan Stainless Steel
M&As	:	Mergers and acquisitions
MIIT	:	Ministry of Industry and Information Technology
MNCs	:	Multinational corporations
MNEs	:	Multinational enterprises
MOFA	:	Ministry of Foreign Affairs
MOFCOM	:	Ministry of Commerce of the People's Republic of China
MOU	:	Memorandum of Understanding
MW	:	Megawatt
NDRC	:	National Development and Reform Commission
NEC	:	Nippon Electric Company
NGN	:	Next-generation network
NIS	:	Network Integration Service
NPI	:	Nickel pig iron
NPO	:	Network Planning and Optimization
OETCZ	:	Overseas Economic and Trade Cooperation Zones
OFDI	:	Outward foreign direct investment
OFIC	:	Outbound Foreign Investment Catalogue

PRC	:	People's Republic of China
QMB	:	PT QMB New Energy Materials
R&D	:	Research and design
RAN	:	Radio access network
RKEF	:	Rotary Kiln-Electric Furnace
RMB	:	Renminbi
RNI	:	PT Ranger Nickel Industry
SCDMA	:	Synchronous Code Division Multiple Access
SFA	:	Stochastic frontier analysis
SINOCHEM	:	China National Chemicals Import and Export Corporation
SOEs	:	Stated owned enterprises
TD-LTE	:	Time Division-Long Term Evolution
TSI	:	PT Tsingshan Steel Indonesia
USA	:	United States of America
USGS	:	United States Geological Survey
VFDI	:	Vertical foreign direct investment
VIF	:	Variance inflation factor

CHAPTER 1: INTRODUCTION

1.1 Background

As a burgeoning superpower, China has always been concerned about how it affects the rest of the world from an economic perspective. Currently, this topic is receiving the attention of international business researchers. About seven hundred years ago, Marco Polo travelled along the Silk Road to China to experience the wealth of the richest country in the world (Burgan, 2002; Li et al., 2015). As capital from China now flows worldwide, people do not need to visit China anymore to obtain the same experience as Marco Polo. In 2018, Chinese companies conducted 433 outward mergers and acquisitions (M&As) in 63 countries, comprising transactions amounting to US$74.23 billion. Chinese M&As were carried out in 18 industrial categories, including; mining, manufacturing, real estate, leasing and business services, information transmission, software and IT services, and the wholesale and retail trade.

Since 1978, the Chinese government has employed various policies to attract foreign capital to develop China's economy. Foreign direct investment (FDI) mainly brings capital inflows and working positions to host countries (Becker et al., 2020). Attracting foreign investment has been the main goal of government officers for a long time. China also obtains advanced management skills, and local workers are trained to become more skilled.

After 40 years of implementing its ‘reform and opening-up’ policy, China has successfully developed its economy. The Chinese government has realised that to keep the high growth rate of its gross domestic product (GDP), Chinese companies should venture abroad to seek natural resources, new markets, and advanced technology to gain advantages when competing with foreign companies.

Along with its rapid economic growth, China's foreign exchange reserves have also increased hugely. After the Asian financial crisis in 1997, China's central government accumulated foreign exchange reserves by implementing a fixed exchange rate and a current account surplus to obtain a stable balance of payments. To maintain the low value of the renminbi (RMB), the People's Bank of China sold RMB and bought US dollars, which increased the volume of the country's foreign exchange reserves. Meanwhile, the RMB's low value helped Chinese exporters by continuously offering a cost advantage for exported goods. As Chinese exporters received foreign currency payments, they exchanged the foreign currency for local currency through the People's Bank of China. This policy prompted the Chinese government to hold huge foreign currency reserves (Figure 1.1).

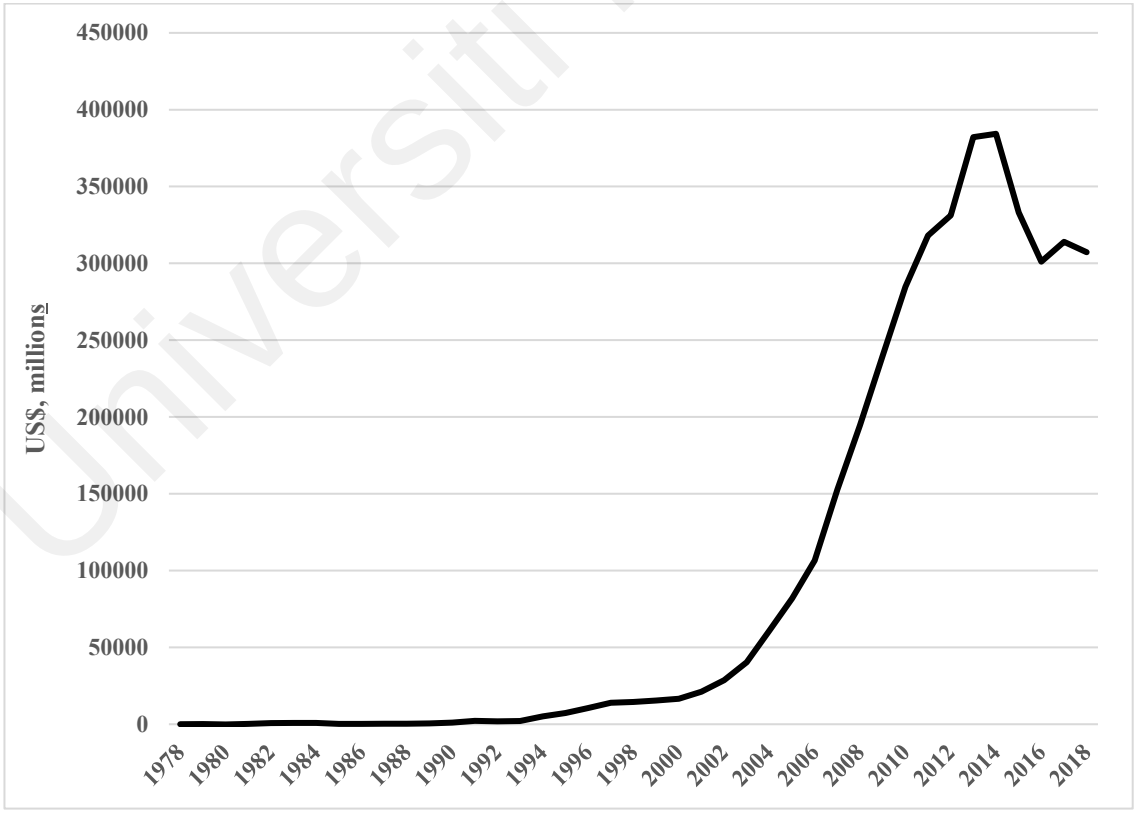

Figure 1.1: China's Foreign Exchange Reserves (US$, millions)

***Source**: China Statistical Yearbook (2019)*

In 2002, the Chinese government implemented it's 'going abroad' policy to encourage Chinese organisations to invest abroad. Consequently, China has acquired substantial natural resources by establishing subsidiaries and factories in host countries. China's local natural resources cannot fulfil the demands of its 1.4 billion people even though it is one of the largest countries in the world. Besides fulfilling the gap between supply and demand for its local population, China still requires a massive amount of raw materials for processing to produce final goods for export (Lin, 2011). As the 'world's factory', China absorbs huge quantities of raw materials for manufacturing and simultaneously disperses final goods to every corner of the world. Although China has vast resources, it still lacks supply capability compared to its huge demand. In recent years, China has rapidly increased oil imports from the Middle East and other countries to fill the gap between its consumption and production (Figure 1.2).

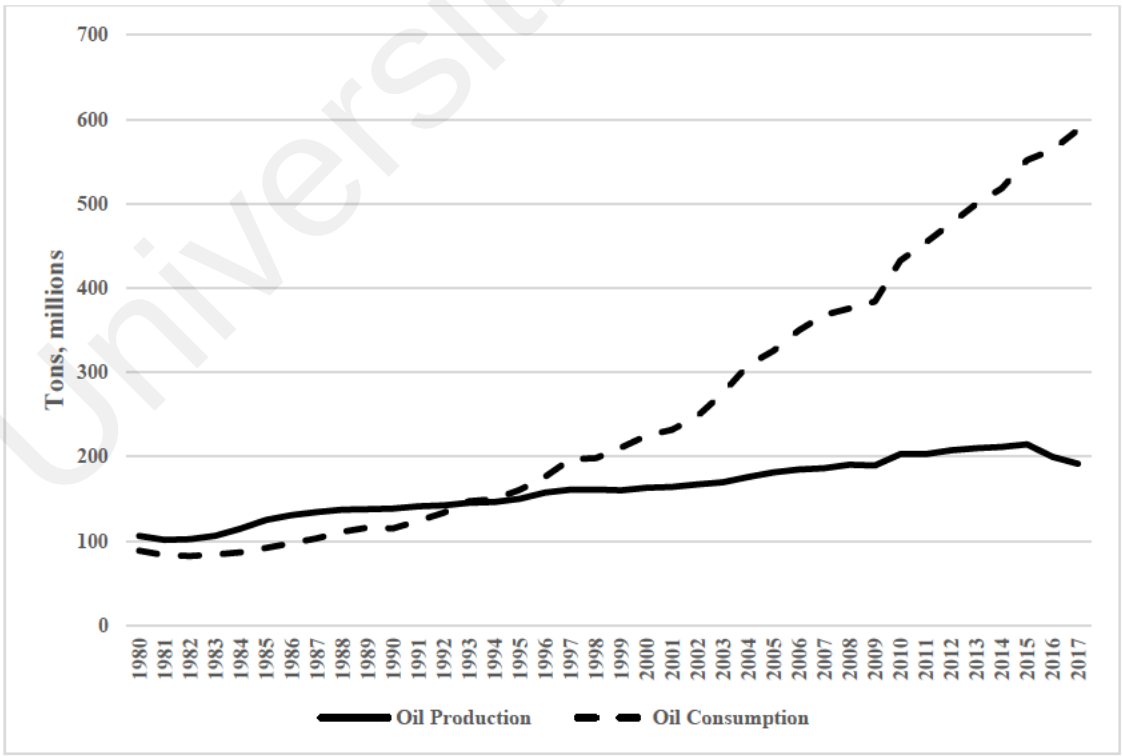

Figure 1.2: China's Oil Production and Consumption (Tons, millions)

***Source**: China Statistical Yearbook (various years)*

Rapid economic growth alerts the demand for natural resources and incentivises the need for high technology. Inward foreign direct investment (IFDI) coming from developed countries will remedy any lack of funds and have an upgrading effect on the economy, such as; transforming technology, improving human resources, and promoting the transformation of institutions. Similar targets can be achieved by changing the investment direction from inward foreign direct investment (IFDI) to outward foreign direct investment (OFDI) through M&As. China has acquired high technology by establishing research and design (R&D) centres and joint venture companies in foreign markets. Thus, OFDI has helped Chinese companies quickly acquire high technology to compete with foreign companies worldwide (Deng, 2007).

Furthermore, after attracting foreign direct investment from developed countries, China has improved its technology and innovation capability, making China capable of exploiting and transferring technology overseas. Looking globally, most of China's outward FDI (OFDI) has flowed into developing countries. In 2018, the stock volume of OFDI that China has invested in developing countries was US$1,708.53 billion, which accounted for 86.2 per cent of China's total OFDI. Meanwhile, US$243.17 billion flowed into developed countries (MOFCOM, 2019). Usually, China makes investments in developing countries by promoting its technology, superior to the host countries.

Rapid economic growth, domestic demand for natural resources, demand for high technology, and the accumulation of foreign exchange reserves have been the core contributors to China's outbound investments. China's overseas investments have indicated that China is trying to be an active player in international business markets, especially in the post-crisis period after the 1997 Asian financial crisis. Since 2003, the' going abroad' policy has filled the gap between inward and outward FDI flows (Figure 1.3).

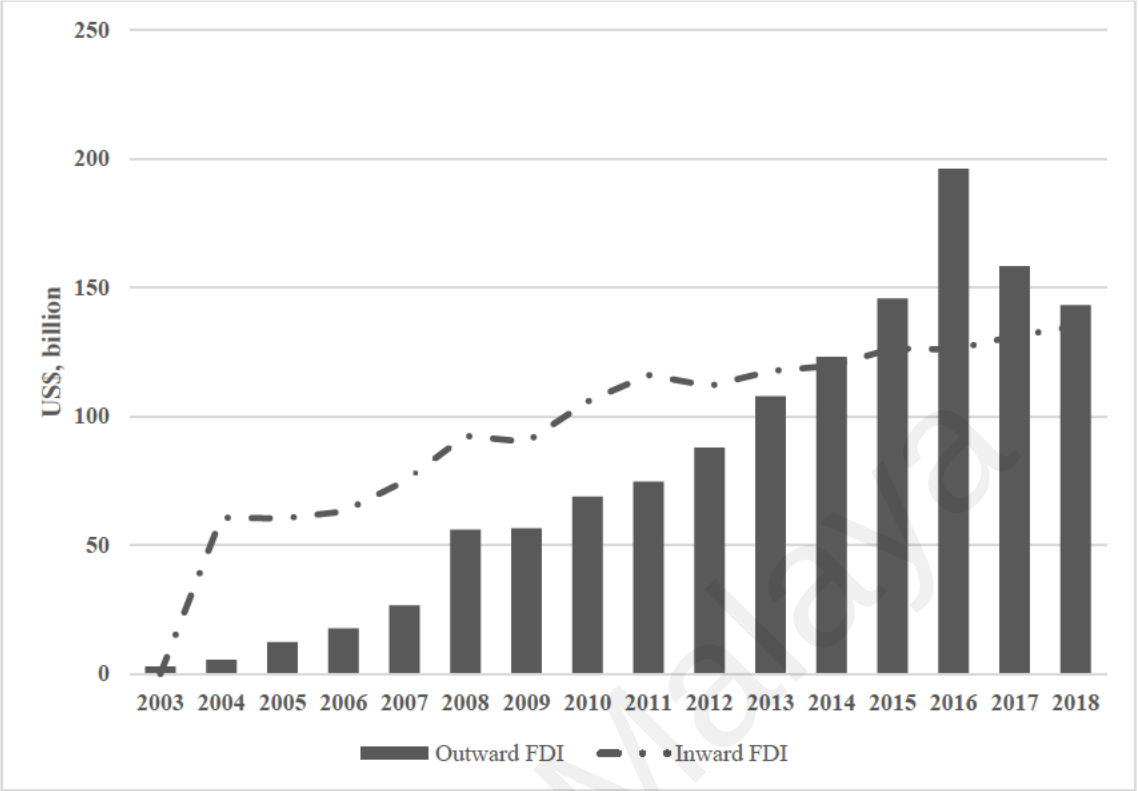

Figure 1.3: China's Inward and Outward Foreign Direct Investment (US$, billion)

***Source**: China Statistical Yearbook (various years)*

In China, State-owned enterprises (SOEs) have contributed at least 60 per cent of the total stock of OFDI. The relationships between multinational corporations (MNCs) and political elites are easy to understand in democratic states. However, the situation in China is different as both government policy and economic reasons are drivers of China's OFDI. China's central government plays a vital role in promoting OFDI from China's economic incentive perspective (Wang, 2002). The institutional support from Chinese central and local governments encourages China's MNCs to compete with other foreign companies and maintain their advantages (Voss et al., 2009).

China's fast economic growth rate, its huge foreign exchange reserves, its need for natural resources and high technology, the comparative advantages of Chinese MNCs,

and government policy incentives have all contributed to the promotion of China's OFDI. Over the last few years, China's economic growth pattern has appeared to reach a bottleneck or a 'new normal', indicating the characteristics of a lower economic growth rate than in previous years. Meanwhile, China's labour costs and other production factors have risen rapidly. Emerging economies and other developing countries have actively participated in the international division of labour through their comparative advantages in labour costs and natural resources, which has led to intensified competition for exporters from China. China has needed to find a new engine to maintain its economy's prosperity; such an engine should lead by innovation rather than resources and low-cost labour (Mi et al., 2018).

The Belt and Road Initiative (BRI) is a regional development initiative based on the Silk Road Economic Belt and the 21st Century Maritime Silk Road. It involves 69 initial participating countries from nine different regions: Eastern Asia (China, Mongolia, Republic of Korea); South-eastern Asia (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam, Timor-Leste); Southern Asia (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri-Lanka); Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan); Central and Eastern Europe (Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Ukraine); Western Asia & Northern Africa (Armenia, Azerbaijan, Bahrain, Egypt, Georgia, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi-Arabia, Syrian Arab Republic, Turkey, United Arab Emirates, Yemen); Eastern Africa (Ethiopia); Southern Africa (South Africa) and Oceania (New Zealand). The BRI has been partly based on the Silk Road Economic Belt, which was proposed in September 2013 when President Xi Jinping made a speech at Nazarbayev University in Kazakhstan. The Silk Road

Economic Belt aimed to build a land channel from the Pacific Ocean to the Baltic Sea by improving cross-border infrastructure and the flow of international trade and capital. Another foundation of the BRI is the 21st Century Maritime Silk Road which was proposed in October of 2013 when President Xi Jinping made a state visit to Indonesia and delivered a speech at the Indonesian Parliament. The 21st Century Maritime Silk Road has connected the Association of Southeast Asian Nations (ASEAN) countries. It has linked other countries from the South China Sea to the Mediterranean Sea and the South Pacific Ocean.

The BRI has aimed to establish and strengthen partnerships among the countries along the Belt and Road through; policy coordination, facility connectivity, unimpeded trade, financial integration, and people-to-people bonds. Countries along the BRI have been encouraged to enhance customs cooperation, such as; information exchange, mutual recognition of regulations, and mutual assistance in law enforcement to realise unimpeded trade. Meanwhile, China has made significant direct investments in the BRI countries to ensure the supply of resources, especially natural resources. The Chinese government has sought to increase cooperation in the exploration and development of; coal, oil, gas, metals, minerals, and other conventional energy sources. Beyond that, the BRI has helped Chinese companies to find and develop new markets to deal with their production overcapacity in the context of the US-China trade relations that are still deteriorating (Freeman, 2020).

1.2 Problem Statement

Existing research has mainly used data from the Chinese government to examine the characteristics of China's OFDI (Buckley et al., 2007; Wang & Huang, 2012). However, this data has limitations. The official data from the Chinese government is aggregate data which makes it easy to check the main destination of China's overseas investments.

However, the official data from China does not provide the distribution of investments by industry in each host country. Existing research has mainly focused on a country or group of countries in a region to explore the distribution by industry of China's OFDI (Clegg & Voss, 2014; Tong, 2021; Yean, 2018; Yeoh et al., 2018). However, even under the BRI, the overall distribution of China's OFDI by industry remains unclear in those countries. Knowing the distribution of China's OFDI by each industry in host countries would better understand the overall characteristics of China's overseas investments. Using firm-level investment volume data to conduct a descriptive analysis would make it easier to detect whether China's OFDI in the BRI countries was natural resources-seeking or technology-seeking. However, using macro and micro-level data would solve the problem of checking a host country's distribution of Chinese OFDI by industry to discover the basic motivations of China's OFDI in the BRI countries.

The determinants of FDI from China has been the focus of many existing works of literature. The endowment of natural resources has played a crucial role in China's overseas investments. China's economic development would not have achieved such great success without natural resources from overseas (Shah et al., 2019). China's OFDI has aimed to maintain a steady supply of cheap natural resources in the long run. The existing empirical research on the impact of resource endowment on China's OFDI has been inconsistent. Buckley et al. (2007) used an empirical model to test China's outbound investment determinants and discovered no significant effect of natural resources on OFDI. Kolstad and Wiig (2012) indicated that China's outbound foreign investment was biased towards countries with large market capacities and rich natural resources but low governance.

The technical level of a host country has been another decisive factor in determining China's overseas investments (Holtbrügge & Kreppel, 2012; Li & Fabuš, 2019). China

has made several M&As in western countries to acquire advanced technology (Athreye & Kapur, 2009; Deng, 2009). Child and Rodrigues (2005) argued that the main motivations for China's overseas investment have been searching for advanced technology, a well-known brand, and cutting-edge management methods. Meanwhile, China's MNCs have made overseas investments in developing countries due to China's relative technological superiority. Nepelski and De Prato (2015) showed that China had a huge deficit in international technology procurement regarding technology that flows from abroad to China, and vice-versa, which is growing fast. The primary motivation behind China's OFDI comprises; seeking technology from advanced countries or transferring technology to developing countries.

In the context of the BRI, it has often been unclear what China has been seeking from those countries, why Chinese outbound investment has focused on the BRI countries, and why the Chinese government has highlighted investments in infrastructure. Thus, an empirical model should be used to test the performance of Chinese investments in the BRI countries, based on the characteristics of China's OFDI in these countries to answer the above questions. Specifically, in this research, the stochastic frontier analysis (SFA) model has been used to examine China's overseas investment determinants and efficiency in the BRI countries. The examination of the determinants has detected the factors that affected investments from China. At the same time, examining China's OFDI in these countries will deepen understanding of the BRI.

The Chinese government has a strategy to encourage Chinese companies to choose a host country and industry regulated by the government. Meanwhile, the Chinese government provides various types of support to encourage Chinese companies to invest overseas (Xue & Han, 2010). Murtha and Lenway (1994) believed that the behaviour of Chinese MNCs was affected by the government. Although multinational corporations

make investment decisions according to their business needs, the Chinese government guides OFDI in the BRI countries. China's overseas investments reflect the expansion of its own economy, and it is unlikely to break away from the Chinese government's industrial policies. Chinese state-owned enterprises are the core contributors to China's overseas investments. Although their degree of contribution has decreased from 81 per cent in 2006 to 50 per cent in 2019, it is still higher than the global average (MOFCOM, 2020). Many scholars have stated that Chinese multinational corporations are agents of the state and that the motivations of China's OFDI reflect China's grand strategy (Stone et al., 2022). Existing research has mainly used descriptive analysis to list the policies that have guided China's OFDI (Xue & Han, 2010). How Chinese government policies have guided outbound investment in the BRI countries are not well understood. Specifically, the relationship between Chinese companies' overseas investment activities in the BRI countries and Chinese government policies must be explored further. As Chinese government policy data is usually gathered verbally, it cannot be analysed econometrically but can be examined with the help of other techniques (Starr, 2014). Case studies have been used for analysing the role of Chinese government policies to fill this gap. Case studies have focused in-depth on a complicated social phenomenon and have provided rich descriptions of specific phenomenon based on multiple data sources (Yin, 2017). These challenges have produced the following research questions.

1.3 Research Questions

This thesis has focused on China's OFDI in the BRI countries, and the issues are summarised as follows:

(1) Given the Chinese government's BRI objectives, what are the characteristics of China's OFDI in BRI countries?

(2) How does China's OFDI perform in the BRI countries?

(3) How does Chinese government policy affect Chinese investments in the BRI countries?

1.4 Research Objectives

The general objectives of this thesis were to measure China's OFDI in the BRI countries. Specifically, the objectives were:

(1) To investigate the pattern and policy of China's OFDI in the BRI countries
(2) To estimate the performance of China's OFDI in the BRI countries
(3) To investigate the role of Chinese government policy on China's OFDI in the BRI countries

1.5 Significance of Study

This thesis has used special data to explain China's outward foreign direct investment among the Belt and Road Initiative countries from economic and noneconomic perspectives.

First, this thesis comprises a comprehensive study concerning China's investments in the BRI countries from both economic and noneconomic perspectives. Based on the characteristics of Chinas' OFDI in the BRI countries, this study has examined the determinants and performance of China's overseas investments. Meanwhile, Chinese government policy has been observed regarding the BRI. Besides, interactions between the Chinese government and enterprises have also been evaluated.

Second, this thesis has used a special data set at both macro and micro levels to achieve its research objectives. It is rare for research to use firm-level investment volume data, especially to explore the distribution by industry of China's OFDI in the BRI countries and examine the basic motivations of China's overseas investments.

Macro-level data reflects the entire story of FDI but cannot reflect the heterogeneity of companies.

Third, this research used mixed methods to investgate China's OFDI in the BRI countries. The case study has examined factors that cannot be easily tested in econometric modelling; it indicated the factors that have affected China's investment decisions in the BRI countries.

1.6 Organisation of the Study

This study comprises eight chapters. Chapter 2 briefly reviews the theoretical and empirical literature related to foreign direct investment from developed and developing countries. Chapter 3 describes the methodologies, variables, and their operationalisation in the context of this research. Chapters 4, 5 & 6 discuss the findings of the study. Chapter 4 discusses the characteristics of China's OFDI in the BRI countries and China's policies for investment in the BRI countries. Chapter 5 reports the performance of Chinese investments in the BRI countries using the stochastic frontier analysis (SFA) model. In contrast, Chapter 6 assesses the role of government policy for China's OFDI in the BRI countries by using case studies. Chapter 7 concludes the study and provides implications of this research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

China's outward foreign direct investment has attracted intense scrutiny since Chinese companies have made massive investments worldwide. These investments have especially been in; Africa, South America, and Australia seeking natural resources to meet their huge demand production demand. Generalised foreign direct investment theories have been used to explain the reasons for China's outflows of foreign direct investment. In addition, the mainstream theories are also discussed.

This part provides a framework for studying China's outward foreign direct investment. Section two comprises an overview of foreign direct investment theory. Section three discusses the FDI from developing countries. Section four contains a review concerning FDI from China. Section five provides critical thinking regarding FDI from China.

2.2 Theoretical Literature Review of Foreign Direct Investment

Most of the existing theories concerning foreign direct investment (FDI) come from research by Western scholars and are based on developed countries' economic phenomena. This section introduces the main theories concerning FDI: monopolistic advantage theory, product life-cycle theory, internalisation theory, eclectic paradigm theory, and the MacDougall–Kemp theory. Elements of these theories will explain the distribution and pattern of Chinese OFDI in the Belt and Road Initiative (BRI) countries.

2.2.1 Monopolistic Advantage Theory

Existing theory concerning traditional international capital flows explains the reason for capital flows with the discrepancies of interest rates between different countries. According to the law of diminishing marginal returns, capital profit is lower in capital-abundant economies than in capital-scarce economies. Thus, developed countries should

be the main sources of FDI. However, this situation does not explain the FDI inflows into advanced countries after World War Two. Specifically, in the United States, the interest rate has been higher than the rest of the world, and American companies continue to borrow from abroad and make investments abroad. Hymer (1976) was the first to explain FDI with the monopolistic advantage theory which supposes that the market is imperfect. Under the perfect market context, each enterprise produces similar products, not affecting the market price, and, thus, it is unnecessary to invest abroad. In contrast, the imperfect market gives multinational enterprises (MNEs) a monopolistic advantage and allows them to compete with local companies in foreign countries. International corporations should own advantage to undertake investment abroad. This special advantage can be transferred from their home country to abroad but cannot be acquired by local companies.

Monopolistic advantage results from; imperfect competition in good markets and factor markets, economies of scale, and government obstacles (Figure 2.1). The imperfection of good markets leads to product differentiation, strong marketing skills, and the right to fix product prices. The characteristics of imperfect competition in factor markets are the emergence of patented technology and the differentiation of access to capital and entrepreneurship. Vertical foreign direct investment is usually based on the external economies of scale theory. Governments usually protect local companies by implementing tariffs, but eventually, such policies encourage foreign firms to enter local markets (Kindleberger, 1969).

FDI is a nonfinancial and intangible capital exchange process, prompting MNEs to utilise their advantage. Hymer (1976) believed that the emergence of FDI was not because of higher interest rates abroad but because of control, which has two benefits. First, investors can ensure the safety of their investments. Second, MNEs remove

competition with other companies by controlling various companies and obtaining higher profits.

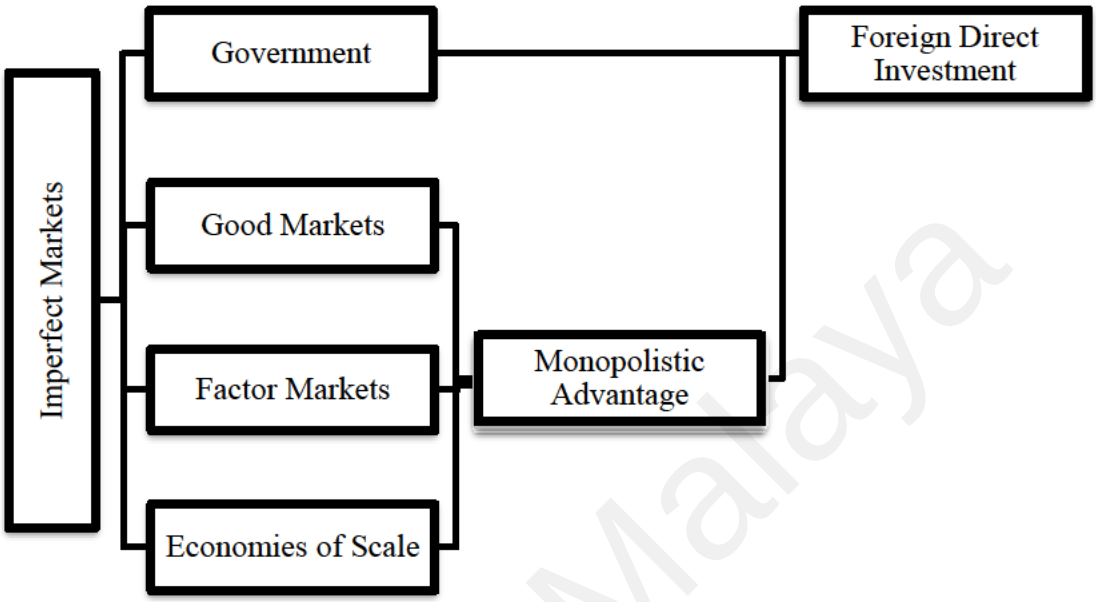

Figure 2.1: Foreign Direct Investment Theory Based on Monopolistic Advantage

Hymer's MNCs theory did not consider structural and cognitive market imperfection differences (Dunning, 1981b). Structural market imperfection helps multinationals earn advantages, as seen in Figure 2.1. Cognitive market imperfection, which is natural and exogenous, results in uncertainty over future market conditions and government policies. MNCs cannot gain any rents in the condition of cognitive market imperfection. Hymer's analysis did not consider Coasian theory and has been limited to only some parts of the industrial organization theory (Dunning & Rugman, 1985).

This theory has explained the motivation and the advantage of FDI. Still, it has not explained FDI from developing countries, which usually do not possess a monopolistic advantage over developed countries. This situation has forced economists to explain FDI by other methods.

2.2.2 Product Life-Cycle Theory

Vernon (1966) propounded the product-life cycle theory to explain why firms substituted foreign direct investment for exporting in the United States. In contrast to the traditional theory based on the free cost of knowledge, the product life-cycle theory assumes the costly flow of knowledge across regions or countries. The dynamic production of new products is a decision process between international trade and international investment. It separates the product life-cycle into three stages: innovation, maturity and standardisation. FDI emerges under the condition of the product life-cycle with the change of production factors and competition factors.

As new products are still not standardised in the product innovation stage, production is usually made in the home country to meet local clients' requirements. The high average income of consumers has stimulated US firms to innovate new products to fulfil their local market's demand. Higher labour costs compared with other countries have led to new labour-saving products, regardless of production input cost. US companies obtain the advantage of capital and market to maintain their position as pioneers in producing new products. Foreign markets don’t demand new products, or exports meet their demands. In this stage, US companies own a monopoly in exporting and are under the condition of no competitive pressure to sell their new products.

The maturing product stage is characterised by weak demand for product flexibility and strong concern concerning production costs. New innovative products meet the needs of domestic high-income consumers and high-income consumers in other advanced countries, such as European countries. For products with high-income elasticity, with the enlarging of demand from local and foreign markets and the standardisation of the product, MNEs will decide whether to invest abroad. Entrepreneurs in the United States will compare the cost of production in the local

market with the production cost in a foreign market. Even if the cost comparison is not easily calculated, entrepreneurs may decide to invest abroad due to transport costs or noneconomic reasons. Threats from local industry rivals competing for the market share, foreign governments controlling imports, and lower labour costs in other countries, cause foreign direct investment to occur eventually. At this stage, FDI appears in other advanced countries, and the needs of less-developed countries are fulfilled by both the US and other advanced countries. (Figure 2.2).

In the standardised product stage, the cost of labour becomes the determining factor that affects the foreign investment decisions of entrepreneurs. Capital costs are not a barrier to international investment. This situation is because the model assumes that foreign investment is focused mainly on industries that need cheap labour. In reality, investors consider the opportunity cost more than capital cost. For less-developed countries, the effects of marketing information on investment will not pose a problem as foreign investors are typically familiar with markets. Thus, low production inputs would be the initial element for attracting foreign investment. Less-developed countries own the absolute advantage of cheap labour costs. US entrepreneurs continue to invest in lower-cost countries to keep their competitive advantage. Labour intensive products, which depend less on external factors, are transferred into developing countries for production first and later are resold to the home country or other advanced countries.

As a cornerstone theory in international investment, the product life-cycle theory has been developed, quoted and examined by several other scholars. Vernon (1974) further linked; production location, international investment and oligopolistic behaviour. Vernon (1979) refined his theory further under increasing investment made by companies and changing national markets. Tsurumi (1984) added the country market as a new element to explain the product life-cycle theory. The first part of the concept was

similar to Vernon's; the difference occurred when US companies made foreign investments in host countries to modify the products to suit the local market, as the US will not import goods with foreign market characteristics. Vernon's research also had something in common with Hirsch (1967), which related factor proportions to the product development period. Updating the trade theory to trade and investment theory was the contribution of Vernon's product life-cycle theory which was considered from oligopolistic elements and production cost perspectives.

Some empirical testing has been conducted to check the availability of the product life-cycle theory in other economies. Hirsch (1967) used data from the electronics industry to trace the trends of exporting and importing manufacturing products. The results were consistent with the forecasting obtained from the product life-cycle theory. Mullor-Sebastian (1983) used data from the US between 1965-1973 grouped by different industries to test the product life-cycle theory. The findings showed that grouped products were consistent with Vernon's theory but not individual products. Wells (1969) used a regression model to test the relationship between US exports and the income elasticity of products. It provided a rigorous test to check the trade pattern.

The product-life cycle theory has contributed much to explaining the link between trade and investment. However, it also has some disadvantages. It seems that the hypotheses of Vernon's theory were not entirely robust. Cantwell (1995) used the US patent data over 100 years to reject the hypothesis that innovations were mostly from the United States, based on historical trends and evidence. Innovation activities are usually locationally dispersed for MNCs. From an international investment perspective, it seems that there has been no relationship between resource development investment and the product life-cycle theory.

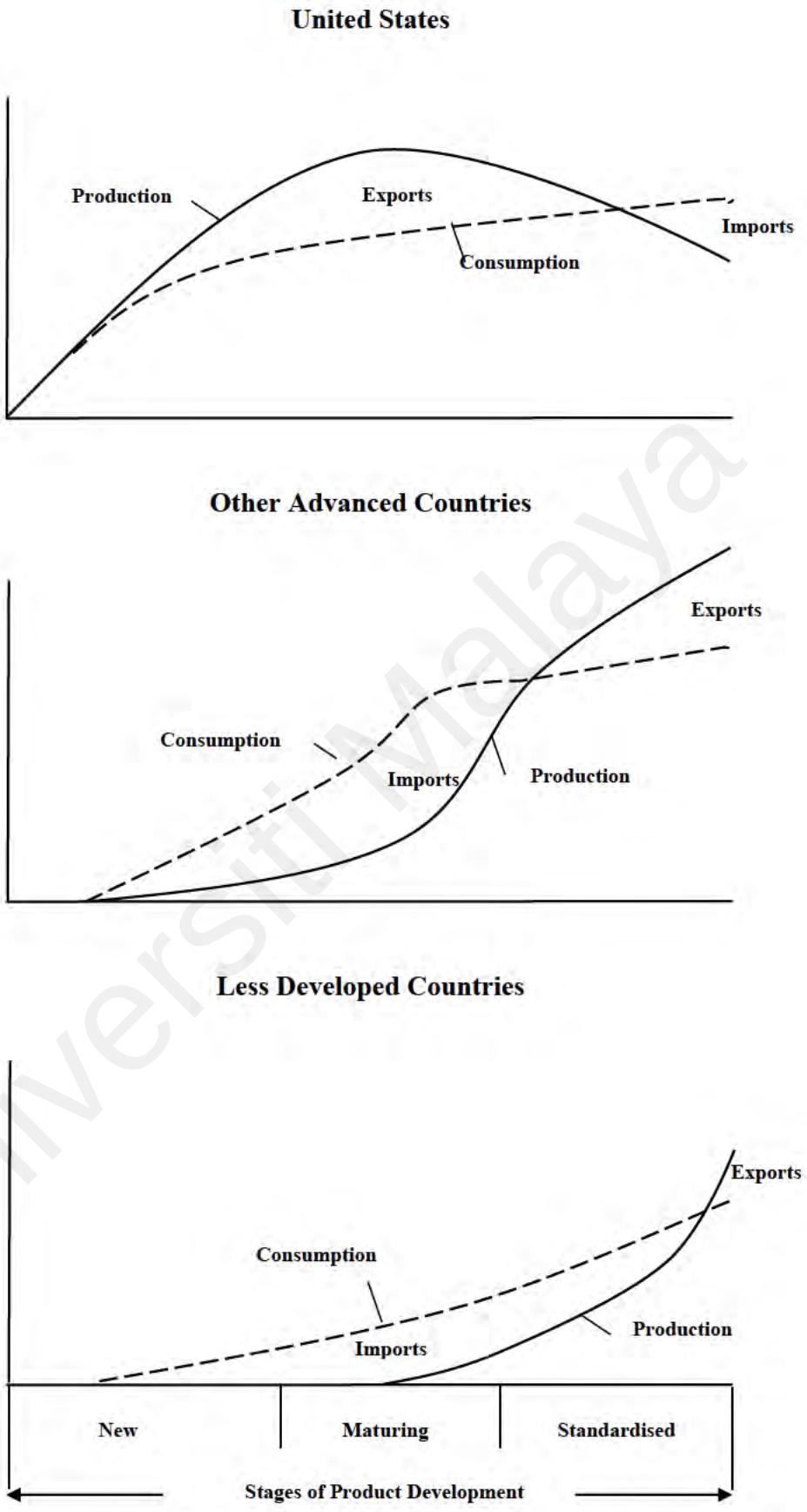

Figure 2.2: Product Life-Cycle Model

Source: Vernon (1966)

2.2.3 Internalization Theory

The internalization theory can be traced back to the pioneering study of (Coase, 1937), which tried to find the reasons for the emergence of firms and the restricted growth of firms. The cost of utilising the price mechanism, which includes discovering relevant prices and negotiation, can be offset by organising transactions within the firm. Entrepreneurs organise transactions within the firm at a lower cost than exchange transactions on the open market. Firms cannot grow in size unlimitedly, mainly because of the decreasing return on efficiency. It stops when the cost of organising one more transaction within the firm is equal to the cost on the open market. Williamson (1981) extended the internalization theory from a transaction cost perspective to analyse production organisation, enlarging the firm's size, and the dynamic change of modern companies. The advantage of internalisation comes from; limited rationality, opportunistic representation, and asset specificity. All these factors contribute to the emergence and growth of enterprises.

Following Coase's theory under a national context, Buckley and Casson (1976) built the internalization theory to explain the determinants and motivation of FDI by researching imperfection in intermediate products. There are two determinants of FDI: imperfect market and specific advantage (Rugman, 1975). Due to imperfect markets, MNEs form an internal market to transfer the deal with foreign markets into the deal with their branches to offset the high exchange fee, resulting from market failure and monopoly. The imperfection of knowledge makes the transformation cost within the firm lower than on the open market. This is how MNEs turn external markets into internal markets through FDI and efficient organisation. Internalisation occurs either because of the imperfect external market of intermediate products or no market for intermediate products. The main motivations for internalisation are offsetting the disadvantages of the external market or optimising profits. Hennart (1982) saw property

rights and agency as a central point to explain the activities of MNCs. Multinational enterprises invest abroad when more benefits are acquired through branches abroad than by exporting. Additionally, investing abroad is attractive when internalisation costs less than transactions with foreigners.

Caves (1971) further developed the internalization theory from the vertical and horizontal investment perspectives by focusing on industrial organisations. Vertical investment means that companies invest abroad to produce the same products, while horizontal investment means producing raw materials for production input. Firms that invest abroad should enjoy some advantage on their assets which is unique and profitable. The motivation behind horizontal investment is proprietary assets characterised by unique, profitable, and low cost flows within firms. While, for vertical investment, the main reasons are to avoid the oligopolistic structure of the market and entry barriers.

The essence of this theory is to specify the effects of an imperfect market on FDI. MNEs use common governance of activities to realise the internalisation advantage, such as; controlling market outlets, capturing economies of internal activities, and avoiding moral hazards. MNEs do not need to possess monopolistic advantages if they have developed more efficient operations and management structures than the external market. Resource flows require internalization and play a vital role in the flexibility of operations and management.

Internalization theory is essential to explain why a firm exists and grows and would be tautological without preconditions (Rugman, 1982). Internalization theory is not an internationalization theory; however, it is a theory to explain the growth of firms that follow the ways of multinational enterprises. As one of the international involvements, FDI is chosen to respond to market imperfection, but the theory doesn't explain why

other international involvements are not chosen, such as exporting and licensing (Parry, 1985). Lack of concern for multinationalism makes internationalisation look like the result of internalisation. In fact, under some circumstances, internationalisation is a result of internalisation. Since the 1950s, externalisation has grown fast in domestic and international markets; internalization theory cannot explain this phenomenon.

2.2.4 Eclectic Paradigm Theory

The eclectic paradigm theory claims that ownership, location and internalisation advantages are the main contributors of FDI. Dunning (1977) suggested that the earlier FDI theory was a one-sided interpretation from a certain angle. An eclectic paradigm should explain the motives of FDI from both the micro and macro levels to comprehensively analyse international investment behaviour. Foreign direct investment and international trade are two types of involvement considered when connecting one state's economic activity with other states. The theory of internationalization considers these two activities in the same process and explain firms' activities from an integration perspective.

The ownership advantage, also known as monopolistic advantage, refers to the assets and ownership that a country's companies own or can acquire, which are not available to other companies. It mainly includes; asset ownership advantage and transactional ownership advantage. Asset ownership advantage refers to the advantages of tangible assets and intangible assets. The former refers to the monopoly advantages in; production equipment, plant, capital, energy, and raw materials. In contrast, the latter refers to the advantages of; patents, proprietary technology, commercial standards, goodwill, technology, development, innovation, management and marketing technology. The advantage of transactional ownership is that a company can reasonably allocate

various resources to avoid various risks and comprehensively reduce the company's transaction costs.

The internalisation advantage refers to the ability of a company to keep its advantages within the company to avoid the influence of the incomplete external market on the company’s interests. Suppose a company has production characteristics at each stage of a product. In that case, suppose these intermediate products' supply and demand processes are carried out in the external market. In that case, the incompleteness of the external market will lead to an increase in production costs. Besides, the intermediate product's external market transactions would become the enterprise's internal relationship. All the processes of product production are completed within the company, and the monopoly advantage of the company can be brought into full play. Therefore, the motivation for multinational companies to internalise the various ownership advantages is to; avoid the negative impact of the incomplete external market on the company. They may also realise the optimal allocation of capital resources and continue to maintain and make full use of the monopoly position of their ownership advantages. The internalisation advantage is a necessary condition, not a sufficient condition of the company’s foreign direct investment. At the same time, companies with specific advantages of ownership and internalisation do not necessarily choose to invest in foreign countries because they can also expand their production scale at home and then export. Therefore, sufficient conditions leading to international direct investment, namely location advantage, must be considered .

Location advantage refers to the favourable conditions of a foreign market relative to the home market in terms of the market environment for a company’s production and operation. It includes direct location advantage and indirect location advantage. The former refers to the location advantage formed by some favourable factors of a host

country, such as; broad product sales market, various preferential investment policies from the government, low factor cost of production, and local availability of raw materials. The latter refers to the geographical advantage formed due to some unfavourable factors of the home country, such as; the high cost of export goods transportation, high cost of production factors, and restrictions through the trade protectionism of the host country. These two kinds of location advantages form the location advantages of MNCs, which determine an enterprise's tendency to engage in international production and determine the; type and sector structure of FDI. Dunning divided FDI into five types: resource development, specialism in production or processing, trade, sales, and service-oriented. Every other type of FDI is determined by combining all the advantages of internalisation and location.

These three factors of FDI are closely related to each other, which in summary can be expressed as, international direct investment equaling the sum of ownership, internalisation, and location advantage. Companies must have ownership, internalisation, and location advantages at the same time to engage in favourable FDI activities. If domestic companies are disadvantaged in all three aspects, it is better to attract foreign direct investment from abroad. The above can also explain the choice of a country's companies to participate in the international economic mode, the choice of three economic activities: exporting, technology transfer, and foreign direct investment (Dunning, 1981a). A company that invests abroad must have three advantages: ownership, internalisation, and location. However, exporting needs to have the advantages of ownership and internalisation only and does not need the location advantage. If a company only has the ownership advantage, it can neither internalise it nor take advantage of its location. Then it had better use the licensing method to conduct technology transfers (Table 2.1).

Dunning's eclectic theory of international production is the most influential in international research on transnational corporations. It integrates international trade, foreign direct investment, and location selection to make international investment research comprehensive. This theory combines the essence of previous theories of MNCs and summarises them. Compared with previous theories, it explains the motivation of international enterprise management more comprehensively, thus, forming a universal theoretical system.

One of the three key elements of the eclectic theory for international production is the ownership advantage. The ownership advantage mainly explains why transnational corporations emerge and why FDI occurs. However, there is an explanation of how transnational corporations form and use advantages. Therefore, its analysis is static. Meanwhile, the ownership advantage cannot be separated from the location advantage, as location factors affect ownership advantage (Itaki, 1991).

The main problem with the eclectic theory is that it contains a very large number of elements and variables which are susceptible to infinite additions (Agarwal & Ramaswami, 1992). It treats the three factors of the eclectic theory equally, and the relationships and change processes of various advantages are not clearly explained. The model focuses too much on transactional market failures rather than structural market failures. Similarly to other proponents of internalisation theory, Dunning falls into the trap of relying too much on exchange rather than on production problems and relationships (Cantwell, 2000). Due to ignoring the structural elements of market failure and emphasising internalisation advantage, Dunning considers foreign investment as a choice of cost-saving and efficiency rather than corporate strategic elements (Dunning, 1981b). This result is the weakest point in his view on international investment.

Table 2.1:Alternative Routes of Servicing Markets

	Advantages		
	Ownership	**Internalisation**	**Location**
FDI	√	√	√
Exports	√	√	×
Contractual resource transfers	√	×	×

***Source**:* Dunning (1981a)

2.2.5 MacDougall–Kemp Theory

MacDougall (1960) and Kemp (1962, 1969) developed a general theoretical model to analyse international capital flows. Specifically, it analyses the impact of international capital flows on the capital import country, capital export country, and the production and distribution of national income globally. It believes that there are no international restrictions on capital flows, and capital can flow freely from countries with abundant capital factors to countries with a shortage of capital factors. The reason for capital flows is that the capital price of the former is lower than that of the latter. The result of the international capital flow will make the capital price of each country more equal through the adjustment of capital stock to improve the utilisation rate of world resources and increase the total output and welfare of each country.

The theory assumes that there are only two countries in the world: country A and country B (Figure 2.3). Country A is abundant in capital, while country B is short of capital. The world capital stock remains unchanged at Q_AQ_B, in which country A is Q_AQ and country B is Q_BQ. Capital can flow freely between the two countries without

barriers. The proceeds from international investment can be distributed fairly between the two countries. The marginal productivity of capital decreases, and country A is $MPK_{A,}$ and country B is MPK_B. The price of capital equals the marginal product of capital.

When no international investment occurs, countries A and B use their respective capital to produce output. In this case, the marginal productivity of the capital of country A (R_A) is significantly lower than country B (R_B). In this case, the capital output of country A is Q_AQDC, country B is Q_BQFG, and the total capital output is Q_AQDC plus Q_BQFG. When international investment occurs, capital flows from country A with low marginal capital productivity to country B with high marginal capital productivity. The cross-border flow of capital will continue under the effect of interest mechanisms and will not stop until the marginal productivity of the two countries' capital is equal to R*, that is, point Q*(Chen, 1983; Kojima, 1978). Such transnational capital flows positively impact the two countries and the world economy.

For country A, as some capital is exported to a foreign country, the marginal productivity of capital is increased, from Q_A R_A to Q_A R*. The total capital gains of country A are reduced from Q_AQDC to Q_A Q*EC due to the reduction of the domestic capital stock. However, the loss is offset by the earnings from foreign investment. The capital income of QQ*EK obtained by country A due to its investment in country B is more significant than QQ*ED due to the reduction of domestic capital. The EDK part is the net income of the foreign investment.

For country B, the inflow of foreign capital makes up for the shortage of domestic capital. Although the marginal productivity of capital declined from Q_B R_B to Q_B R*, the increase of domestic capital stock results in the increase of the total capital output, from Q_BQFG to Q_B Q*EG, increasing QQ*EF. Among them, QQ*EK shall be paid to

foreign investors as the remuneration for foreign investment (namely, the principal and interest of capital). At the same time, EFK is the net income obtained by country B from the introduction of foreign investment.

Globally, the total capital output increases from the previous Q_AQDC plus Q_BQFG to Q_A Q*EC plus Q_B Q*EG, and the increased amount is DEF. The outcome is not the increase of total capital but only the reasonable flow of capital worldwide.

To a certain extent, the MacDougall–Kemp Theory reveals; the general regulation of international capital flows, illustrates the effects of capital flows on total capital output, makes the countries share their interests, and produces domestic income redistribution. Although MacDougall–Kemp Theory's assumptions are much simpler than real life and contrast greatly with real life. However, this theory successfully shows the international movement of capital in terms of motivations and economic benefits.

The MacDougall–Kemp theory focuses on the effect of foreign direct investment and neglects the motivation of international investment. It only explains the flow of capital from one country to another, but not why some companies become MNCs while others do not. In contrast with other theories, it assumes that the market is competitive. This analysis confuses foreign direct investment and foreign portfolio investment, which treats foreign investments as capital flows and does not consider the other elements flowing with international investments, such as knowledge, skills, and management. Finally, the theory is based on a tactical model and does not consider dynamic changes of capital price and technology (Chen, 1983).

Table 2.2: The Theories of Foreign Direct Investment: A Summary

Theories	Approaches	Limitations
Monopolistic Advantage Theory	Monopolistic advantage is a result of imperfect competition in good markets, imperfect competition in factor markets, economies of scale, and obstacles from the government.	This theory explains the motivation and the advantage of FDI, but it cannot explain FDI that comes from developing countries.
Product Life-Cycle Theory	Ownership and location advantages are the main reasons for a company to produce new products and to enlarge the size of the firm. Each new product will experience a new product stage, maturing product stage, and standardised product stage.	The hypotheses of Vernon's theory are not robust. No relationship between resource development investment and the product-life cycle theory.
Internalization Theory	From the transaction cost perspective to analysing the organisation of production and enlarging firms' size. FDI reduces the transaction costs by internalisation as the effects of the imperfect market on FDI.	It doesn't explain why other international involvements are not chosen, such as export and licensing. Lack of concern for multinationalism.
Eclectic Paradigm Theory	Combines previous theories to explain the determinants of FDI from the perspectives of; ownership, location, and internalisation advantages.	Based on a micro level analysis of the FDI pattern and neglecting the macro effects. Too many factors are included.
MacDougall–Kemp Theory	Capital flows from a low return country to a higher one under the assumption of a perfect market. Each country gets more output from capital than a no investment condition. Mainly analyses the welfare effects of FDI on both borrowing and lending countries.	Confuses FDI with foreign portfolio investment and considers the elements that were flowing FDI. Does not explain the motivation of FDI. It is a static model.

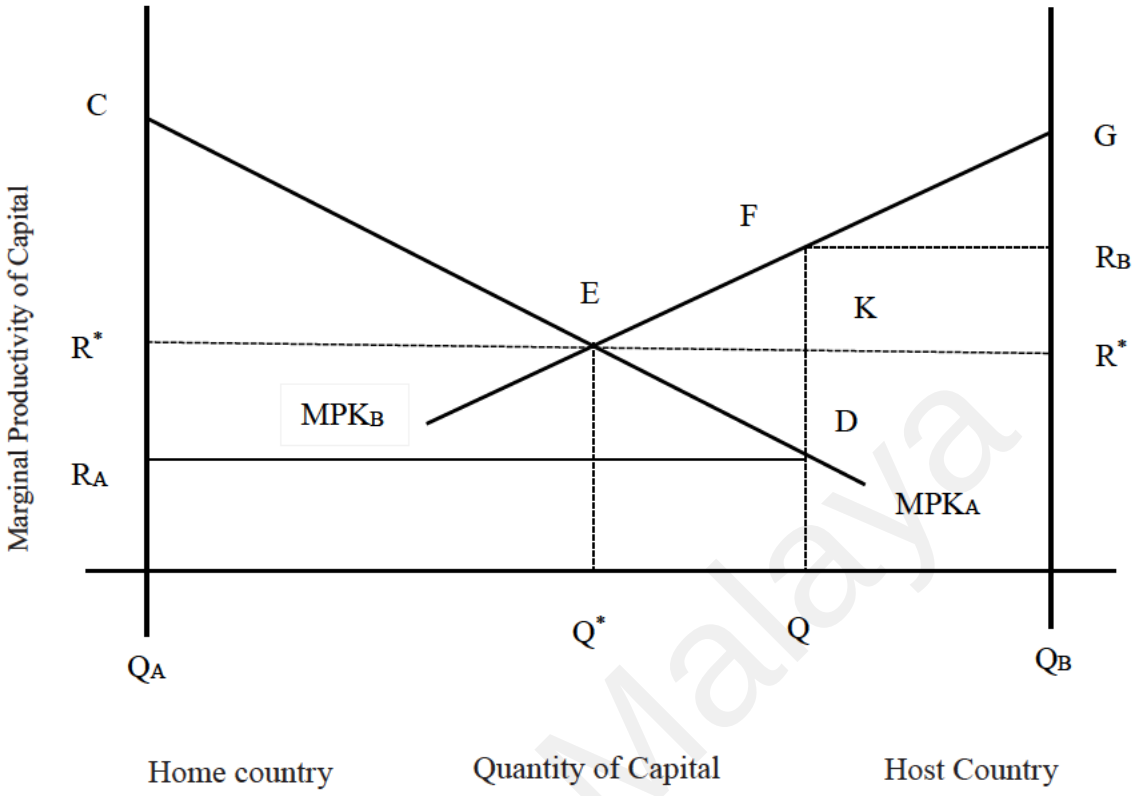

Figure 2.3: Output and Welfare Effects of Capital Flows

2.3 Foreign Direct Investment from Developing Countries

With the development of emerging economies, more scholars have started paying attention to the FDI strategy of companies in emerging markets (Lecraw, 1977). The research concerning FDI from emerging markets mainly focuses; on the new theories, strategic intention, investment path, influence of government, and performance of FDI from developing countries.

2.3.1 New Theories about FDI from developing Countries

Dunning (1981a) argued that along with economic development and increased per capita GNP, a country's net foreign direct investment would change along a particular path with four stages. Later, Dunning added a fifth stage of the investment development

path and comprehensively explained the investment development path theory (Dunning & Narula, 1996). In the first stage, as the economy is in a primary stage of development and a country lacks sufficient geographical advantages to attract foreign capital, the net value of FDI is negative or close to zero. In the second stage, inward FDI increases, while outward FDI remains relatively low, so its net value is less than zero but increases in absolute value. The third stage is marked by a slowdown in the rate of inward FDI and an acceleration in the rate of outward FDI growth, the net value of FDI shifts to positive growth but remains negative. In the fourth stage, the outflow of foreign direct investment is greater than the inflow of foreign direct investment, and the growth rate of the former is higher than that of the latter. In the last stage, a country's outward investment declines first, then will start fluctuating around zero while at the same time maintaining large and efficient capital inflows and outflows. Based on the analysis of international investment of 25 developing countries, Dunning believes that the status of outward FDI from developing countries will still go through; different stages regardless of their economic structure, strategies, and policies adopted by governments . It explains the investment capacity of developing countries accurately. The ownership advantage of companies in developing countries mainly depends on the advantageous factors related to a country's resource endowment. In addition, Dunning emphasised that the speed and direction of the development process of investment in developing countries will also depend on the role of governments in the international economy.

Wells (1983) proposed the small-scale technology theory to systematically analyse the source of competitive advantage of developing countries and studied the motivation and prospect of outward FDI in developing countries. The competitive advantage of developing countries mainly comes from international investments when it is made to less developed countries than its own. Since the market size of manufactured goods in most developing countries is relatively small, if local companies import technology

from developed countries, they may be too large and fail to match the local market size. In cases where the product market is relatively small, the technology used should also be suitable for small-scale manufacturing to increase profits, and the technology available in developing economies meets this requirement. Multinationals in developed countries do not want to waste resources on small-scale production and small markets, so investors from developing countries have the technology advantage to invest abroad. Developing countries will first choose commodity exports and consider FDI activities only when exports are threatened to exaggerate their competitive advantages. They seek lower production costs and cheaper raw materials in foreign markets where product sales are protected through FDI (Wells, 1977).

Lall (1983) pointed out that companies in developing countries can make large-scale adjustments to foreign technologies according to their actual conditions if they are not simply imitating technologies from developed economies. Such a localisation process can give multinational companies in developing countries a competitive advantage based on localised technological innovation theory. He compared the competitive advantage sources of multinationals in developing countries with less developed countries. He found that the advantages of multinationals in developing countries came from the following aspects: easily localised techniques and knowledge, product and market similarities with the same types of country, small-scale technical effects, and products developed specifically for developing countries differing from those of multinational companies. In developing countries, MNCs adapt themselves to local market needs by absorbing and improving the innovation of foreign technology, bringing new competitive advantages to companies and promoting their outward FDI.

Cantwell and Tolentino (1990) explained the FDI activities of developing countries from the perspective of the theory of technological accumulation, thus, making the

process of FDI dynamic. The upgrading of the industrial structure in developing countries illustrates the steady improvement and expansion of the technical capacity of companies, which is the result of the continuous accumulation of technology. The improvement of the technological capacity of companies in developing countries is directly related to the growth of FDI. The existing technical capacity level is a decisive factor affecting their international production activities and affects the form and growth rate of foreign investment of transnational corporations in developing countries. MNCs' foreign direct investment in developing countries is influenced by their domestic industrial structure and endogenous technological innovation capacity. In terms of industrial distribution, vertically integrated production activities mainly focus on natural resources development, and horizontally integrated production activities focus on import substitution and export orientation. In terms of the geographical expansion of overseas operations, multinational corporations in developing countries are largely influenced by physical distance. FDI follows the following development sequence. Firstly, it makes a direct investment in neighbouring countries and uses ethnic connections. Then, with the accumulation of overseas investment, the importance of ethnic factors declines and gradually expands direct investment from neighbouring countries to other developing countries. Finally, based on the accumulation of experience, the industrial structure changes significantly and begins engaging in production and development activities in the high-tech field with the improvement of industrialisation.

2.3.2 Strategy

Some scholars have studied the strategic intention and motivation of FDI from emerging countries. At present, international business researchers are focused on whether the FDI conducted by emerging economies is asset-seeking or asset-exploiting. In the traditional model of international expansion (Child & Rodrigues, 2005; Dunning,

2006b; Mathews, 2006), the typical basic assumption has been that companies already know technology and products. Therefore, their overseas expansion uses their existing knowledge or advantages to meet the needs of foreign markets (Dunning, 1988). Thus, foreign direct investment is regarded as an enterprise cross-border knowledge transfer process, whether based on technology, production marketing, or other activities. However, due to emerging market countries lacking ready-made ownership advantages, companies often need to expand overseas to obtain a competitive advantage. Therefore, foreign direct investment from emerging markets relates more to an asset-seeking strategy (Dunning, 1988, 2006a; Li, 2003; Narula, 2006). Through the asset-seeking overseas expansion, the companies in emerging markets acquire the necessary technology, management experience, and other factors to build their competitive advantages, thus laying a good foundation for realising companies' global strategies. In many cases, the FDI from emerging countries can serve as a starting point for companies' overseas expansions (Mathews, 2006).

According to this view, outward FDI from emerging market countries mainly aims at asset seeking, enabling them to overcome the initial resource barriers caused by the technology gap through overseas expansion and gradually eliminate the disadvantages caused by resource barriers in the international market. Although more and more scholars have begun to pay more attention to the motivation of FDI from emerging countries than from developed countries, the motivations and strategic intentions have not been fully discussed.

2.3.3 Investment Path

When studying the FDI strategy of emerging market companies, the second important topic is the path choice during their overseas expansion period. Research should not be focused on the geographic path but on the ability of path acquisition,

especially the ability to supplement existing defects or enhance the existing advantages of a company. Li (2007) studied three famous multinational companies from less-developed countries and analysed their outward FDI paths in the consumer electronics industry. Li pointed out that in studying the FDI paths of emerging market companies, researchers must integrate the eclectic theory (Dunning, 1977) with the linkage–leverage–learning theory (Mathews, 2002). At the same time, it also emphasises the influence of transaction value (Johanson & Vahlne, 2006) and institutional factors on the choice of overseas expansion path of companies from emerging markets. Luo (2007) believed that the overseas expansion path of companies was not only a path of capacity acquisition but also a springboard with multiple meanings. Through this kind of springboard, companies from emerging countries can; compensate for their competitive disadvantage, reduce the disadvantage of being a global market latecomer, compete against dominant global markets, avoid host country trade barriers, overcome institutional defects in their home country, obtain their support and protection from home country, and take advantage of competitive advantages in developing countries. Cuervo-Cazurra (2007) studied the overseas expansion paths of 20 Latin American multinational companies. The finding was that companies with substantial national location advantages were more likely to conduct FDI by establishing international marketing subsidiaries. In contrast, those companies whose products were difficult to transport or long distances were more likely to establish foreign production subsidiaries.

2.3.4 Influence of Government

On the issue of government influence on the FDI in emerging countries, scholars have also conducted corresponding studies. Government influence on FDI in emerging countries mainly includes the institutional environment and government. When studying the FDI from emerging markets, the influence of institutional factors should be paid attention to (Li, 2007). The trade barriers of host countries and system limitations of the

home country are the important factors that affect the strategic decisions of companies to make a foreign direct investment (Luo, 2007). In addition, the governments of emerging countries encourage their companies to expand their businesses to the rest of the world through subsidies and financial support, which is also a key factor influencing the expansion of companies in emerging countries.

After studying Thai multinational companies before and after the 1997 Asian financial crisis, Pananond (2007) found that the international expansion mode was affected by the change of institutional environment, which led to the dynamic migration of the expansion mode. Traditionally, these companies relied on the competitive advantages of their local social networks to expand outward. Still, after the financial crisis, as the government was more transparent, their competitive advantages became tied to their technological capabilities. Although existing studies have fully discussed the government influence mode, there remains an insufficient understanding of the heterogeneity of enterprise external investment behaviours under the same government influence mode.

2.3.5 Performance of FDI

Scholars have started to pay more attention to the performance of international investment from emerging markets (Hoskisson et al., 2000). Some scholars have explained the impact of international expansion on enterprise performance from resource-based theory and organisational learning theory perspectives (Barkema et al., 1997; Barkema & Vermeulen, 1998; Barney, 1991; Hitt et al., 1997). The theory of organisational learning holds that knowledge and experience are important predictors of enterprise performance, and the degree to which companies acquire knowledge from their experience directly determines whether they are successful or not (Fiol & Lyles, 1985). The resource-based theory holds that the success of an enterprise depends on the

availability of unique valuable and scarce resources, including knowledge (Grant, 1996). For the study of the speed of overseas expansion on the performance of FDI, some scholars have found that companies in emerging markets are generally the latecomers of international investment compared with those in developed countries, which have inherent disadvantages. Therefore, to narrow the gap with companies in developed countries, companies in many emerging markets have begun to expand their investment rapidly (Chang & Rhee, 2011; Cockburn et al., 2000).

Thomas (2005) found that when companies in emerging markets start to expand abroad, performance tends to be poor because of institutional constraints in host countries and cost disadvantages. With the acquisition of knowledge and experience from overseas markets, the performance of company internationalisation will gradually improve, generally showing a u-shaped relationship. Doukas and Lang (2003) concluded that regardless of the industrial structure of a company, non-related investments will cause a negative effect and reduce the company's long-term performance, while the relevant investment will play a positive role in the long- and short-term performance of the company. Specialised and diversified companies will benefit more from FDI related to their core business. Diversified companies benefit more than specialised ones. Therefore, the expansion of core business positively affects shareholders' value. On the contrary, regional expansion of peripheral businesses of a company will negatively affect its performance.

Although studies have emphasised the influence on company performance through the rapid expansion of foreign direct investment, the relationship between strategic asset seeking, behaviour, and performance of emerging market companies remains insufficiently understood. Therefore, the degree of the impact between strategic assets and FDI on company performance remains unsolved.

2.4 Outward Foreign Direct Investment from China

As a typical large emerging country in the developing world, China's rapid growth of outward FDI has attracted researchers' attention to study China's foreign direct investment issues. Early research has mainly focused on; investment areas, industrial distribution, and policy issues. Recently, scholars have begun to pay close attention to the development trend of China's international investment and decision factors (Buckley et al., 2007; He et al., 2015; Morck et al., 2008; Yao et al., 2017; Zhang & Daly, 2011). This section focuses on China's outward FDI from a determinant and institutional perspective.

2.4.1 Determinants

Traditional FDI theory is a good base from which to analyse because most Chinese firms are state-owned, making the capital market in China imperfect. Buckley et al. (2007) analysed factors affecting Chinese investment decisions from the market-seeking, asset-seeking, and resource-seeking perspectives.

A large market size means greater opportunities to utilise resources to expand overseas (Taylor, 2002; Zhang, 2003). MNCs in emerging economies often make market-seeking investments for trade substitution or support reasons. Trade substitution refers to investment in a host country to avoid the host country's quotas or other trade restrictions. Trade support refers to investment in host countries and setting up some business institutions or channels to help expand their products to the market. Market-seeking direct investment may also be directed to countries with preferential quotas or anti-dumping treatments (Schüller & Turner, 2005). Sanfilippo (2010) investigated whether China's investments in Africa have been affected by the special preferential treatment these host countries can enjoy when exporting products, such as textiles and clothing exported to the United States. The empirical results showed that the

preferential treatment offered by the third country to the underdeveloped countries in Africa was an important incentive for attracting Chinese companies to invest. Increased competition in China's domestic market has forced many Chinese companies to diversify their production capacity by expanding overseas. Chinese companies can quickly expand their international markets by acquiring established sales networks and brands in developed countries (Cheng & Stough, 2008). China's OFDI has been positively correlated with small market size and market growth in host countries. The market-seeking incentives can only be explained in developing countries at similar stages of development to China, where Chinese companies can make good use of their home-country specific advantages and have low production costs.

Natural resources have played an important role in China's becoming a world factory (Zhan, 1995). China's resource-seeking investment has mainly gone to countries and regions rich in natural resources, including Africa, the Middle East, Asia, Canada, Latin America and Russia. China's investment in resource-rich countries has secured energy and other resources (Cheung & Qian, 2009; Gonzalez-Vicente, 2012; Huang & Austin, 2011; Jia & Tomasic, 2017; Wang, 2014). Frynas and Paulo (2006) analysed China's investment in the oil industry in Africa. They concluded that China's resource-seeking strategy in Africa was mainly to establish long-term energy relationships with the region through economic integration and investment. Kolstad and Wiig (2012) found a specific link between China's resource-seeking FDI and a host country's institutional environments (Voss et al., 2009). In other words, the worse the institutional environment of the host country, the greater the resource endowment of the host country to attract China's direct investment. The greater the resource endowment of the host country, the less would be the impact of the poor institutional environment of the host country on China's investment. China's overseas investment has been driven by natural resources and home country institutions which are constituent with the descriptive study. However,

Sanfilippo (2010) used data from 1998 to 2007 to test the factors that affect FDI. The finding showed that natural resources had no significant effect on FDI, but the interactions between natural resources and institutions did have a significant effect.

Chinese companies invest abroad to seek technological, brand, and equity to enhance their international market competitiveness (He et al., 2015; Wang et al., 2012). Luo and Tung (2007) pointed out that emerging market MNCs acquired strategic assets by purchasing the key assets of MNCs in developed countries to overcome their weaknesses.

2.4.2 Institutions

Under the framework of new institutional economics, some scholars have put forward the institutional foundation view to explain the diversified investment behaviour of transnational corporations, especially investment from China. Peng et al. (2008) pointed out that the current theories concerning FDI have been based on industry and resource views, ignoring the role of institutional factors and regarding institutions as exogenous variables. However, institutional factors can be indigenous when studying FDI in developing countries. Analysing China's OFDI from the institutional perspective has become a hot topic in academic research over recent years.

Internationalisation is a mechanism for many Chinese companies to avoid various defects and hierarchies in China. The Chinese government's long-term control of the capital market hinders the domestic capital market development. The financial system dominated by the four major state-owned commercial Banks prefers to lend to and provide various preferences to state-owned companies, which leads to China's OFDI being mainly dominated by state-owned companies (Erdener & Shapiro, 2005). China's lack of a system for intellectual property protection is also an important manifestation of the system defects. Weak intellectual property protection will reduce the initiative of

companies in research and development and technological innovation and force companies to acquire the technologies needed for enterprise development through mergers and acquisitions (Luo et al., 2010).

This position of the Chinese government determines that the government can decide what type of FDI to carry out, which means that investment decisions are restricted by a variety of objectives, such as the political economy. Most studies have tried to analyse from a host country perspective to examine the political contribution of China's OFDI. Zhang et al. (2011) used acquisition data from 1982-2009 to check the institutional effect on FDI. Lower political quality and host country security considerations decreased the possibility of China's investment. Tong et al. (2018) used data from 171 host countries and concluded that political and governance significantly affected China's outbound investment. Luo et al. (2010) developed a framework to explain China's overseas investment from the political economy of emerging countries. Few articles from the home country's political, institution, governance perspectives have checked the motivations of China's OFDI.

2.5 Critical Thinking of OFDI from China

As stated above, most of the existing studies have been based on extant theory. They have examined the contribution of; natural resources, market, technology, and institutions on overseas investment from the home and host country perspectives. Their empirical research results have been contradictory, inconsistent, and inconclusive.

China is not as democratic as western countries; the extant theories cannot wholly explain the motivation behind Chinese overseas investment. The government influences the investment decisions of Chinese companies, and government policies are one of the main drivers of foreign direct investment. How the Chinese government wields its power to control investment by multinational corporations remains unclear from both

theoretical and empirical perspectives. The BRI is China's new "going abroad" policy; the only difference is that most destination countries are developing countries. As Chinese President Xi Jinping proposed the initiative in 2013, the Chinese government will pay more attention to overseas investment than Chinese companies. Specifically, China's investment in countries along the BRI has mainly been led by the government and completed by Chinese companies.

Research on China's OFDI in the BRI countries has been limited compared to China's OFDI. Meanwhile, previous studies on China's overseas investment has mainly adopted macro-level data for analysis. Few studies have used firm-level data, which is generally considered a security issue and not available to the public. Hence, this study has used macro and micro-level data from different sources to explore the characteristics of Chinese investment in the BRI countries, as will be seen in Chapter 4. The performance of Chinese investment is examined in Chapter 5 based on the eclectic paradigm theory and the analysis of investment characteristics in Chapter 4. In the end, the role of the government will be studied in depth through the case studies presented in Chapter 6.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprises seven distinct parts. Part two details the descriptive analysis, which is used for checking the characteristics of China's OFDI in the BRI countries. Part three is the stochastic frontier analysis (SFA) used to detect the factors affecting outward foreign direct investment efficiency. Part four is the explanation of the unit root testing. Part five describes the factors that determine OFDI from China by the empirical models. The economic and political factors considered in this thesis mainly derive from the theoretical and empirical works that other scholars have conducted. Part six comprises the detailed model and details the data sources used to check the drivers and determinants of China's OFDI in the BRI countries. Part seven explains the case studies, and it is a supplement for the quantitative analysis in Chapter 5.

3.2 Descriptive Analysis

Descriptive analysis is commonly used when using secondary data to explain Chinese outward investment strategies (Brink, 2015; May, 2015; Wang et al., 2017). The primary purpose of a descriptive analysis is to describe various aspects concerning a phenomenon and answer: what, where, what, and how questions rather than why (Hair et al., 2019). China's outward foreign direct investment in the Belt and Road Initiative (BRI) countries has a concise history, and the existing research has mostly utilised descriptive methods based on macro-level data to identify the motivation of China's investment in the BRI countries (Huang, 2016; Yu, 2017), and the Chinese government policy support (Chen et al., 2019)

Study concerning institutional effects on China's OFDI in the BRI countries remains at an initial phase. The role of an institution on FDI is complex and cannot be

thoroughly analysed using econometric methods. Therefore, this thesis's descriptive analysis has used macro-and micro-level data.

3.3 Stochastic Frontier Analysis Model

For economic theorists and policymakers, one key issue has been how to measure the productive efficiency of a given industry. Although a lot of effort has been made to test the productive efficiency through input and output measurements, they have failed to find a satisfactory way to use these measurements to measure efficiency (Daraio & Simar, 2007; Kumbhakar & Lovell, 2003). The stochastic frontier analysis model can be traced back to the 1950s. The work by Farrell (1957) was the first to measure productive efficiency by an empirical method.

Only two factors are used to produce a single product for a firm under the assumption of constant returns, starting from a simple model to measure the technical efficiency (Figure 3.1). In Figure 3.1, point P represents the combination of two factors when producing one output unit. The isoquant SS' is the different combinations of the X and Y factors when producing one-unit output. Along the isoquant SS', point B produces the same one unit of output as point P but uses fewer input factors. Technical efficiency can be defined as OB/OP. The AA' represents the total cost function determined by the price of factors X and Y and their amounts. From the production cost perspective, when the slope of AA' is equal to the price ratio of two factors (point B'), the optimal production method will be used for the given firm. In this case, the price efficiency of B is equal to OC/OB.

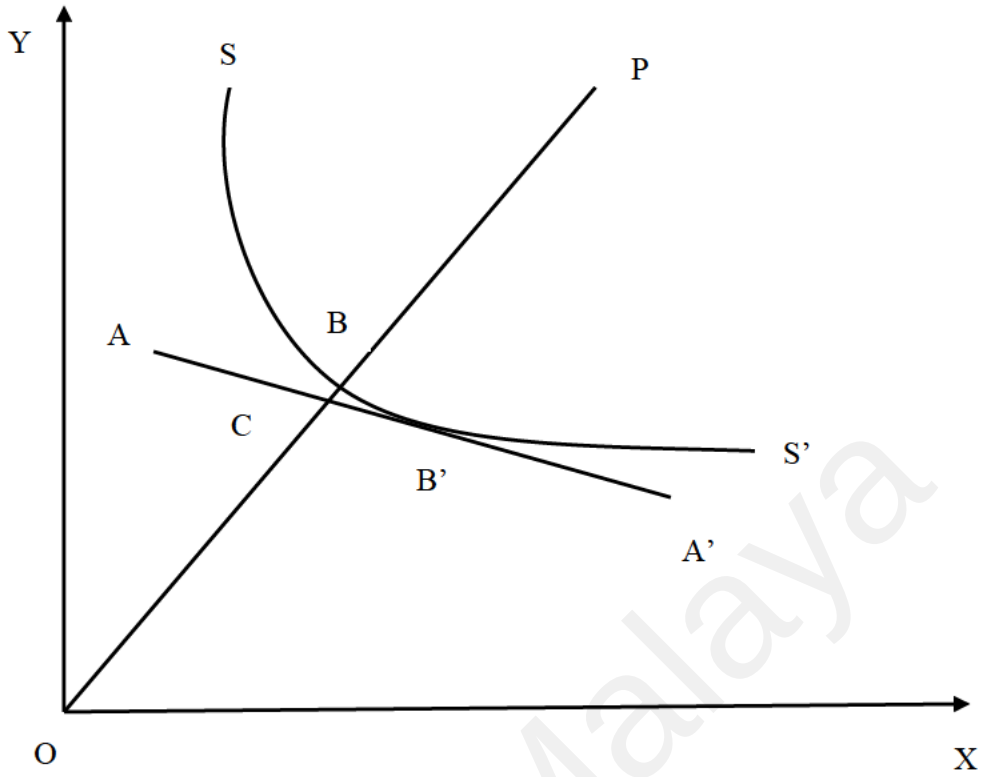

Figure 3.1: Measuring Technical Efficiency with a Simple Model

The contribution of Farrel's work has been that it distinguished the difference between price efficiency and technical efficiency, and it used the linear programming method to show the specific empirical work. For the calculation of technical efficiency, the basic problem has been to find the efficiency production function as follows.

Suppose a set of A points is located in the isoquant SS'. For point $P_i = (x_{i1}, x_{i2})$, $P_j = (x_{j1}, x_{j2})$ and $P_k = (x_{k1}, x_{k2})$ are points in A. λ, and μ is the solution of the equation:

$$\lambda x_{i1} + \mu x_{l1} = x_{k1}$$

$$\lambda x_{i2} + \mu x_{l2} = x_{k2} \qquad \textbf{(3-1)}$$

$P_i P_j$ is part of SS' if and only if $\lambda + \mu \geq 1$ for all P_k in A.

Then the technical efficiency for P_k is equal to :

$$\frac{1}{\lambda + \mu}$$

(3-2)

All of the above constitute the theoretical and empirical origins of later academic research (Boles, 1966; Seitz, 1966; Sitorus, 1966) and indirectly affected the development of the SFA model (Aigner & Chu, 1968; Richmond, 1974; Seitz, 1971; Timmer, 1971). Based on the research of Aigner and Chu (1968), the maximum output for a given firm equals:

$$y_i = f(x_i; \boldsymbol{\beta})$$

(3-3)

Where

y_i= the maximum output

x_i= a vector of inputs

$\boldsymbol{\beta}$= unknown parameter vector to be estimated

The estimation of $\boldsymbol{\beta}$ is fulfilled by mathematical methods to minimise the random shock:

$$\sum_{i=1}^{N} |y_i - f(x_i; \boldsymbol{\beta})|$$

(3-4)

Where $y_i \leq f(x_i; \boldsymbol{\beta})$

To overcome the weakness of extreme sensitivity to outliers, Timmer (1971) developed probabilistic frontiers to estimate technical efficiency. As it allows some observations to be above the frontier, the problem of lacking statistical rationale and accommodating the observations above the frontier with the definition of the frontier still appears. Schmidt (1976) tried to explain Equation (3-3) from a statistical perspective; a one-sided disturbance was added to Equation (3-3):

$$y_i = f(x_i; \boldsymbol{\beta}) + \varepsilon_i \quad \textbf{(3-5)}$$

Where $\varepsilon_i \leq 0$

Based on Equations (3-4), Aigner et al. (1977) propounded the specific stochastic frontier production function models to deal with the technical efficiency problem. The error component is split into two parts:

$$\varepsilon_i = v_i + u_i \quad \textbf{(3-6)}$$

Where

v_i= the symmetric disturbance with $\mathrm{N}(0, \sigma_v^2)$

u_i= the disturbance with $u_i \leq 0$

And technical efficiency is defined as:

$$TE_i = \frac{y_i}{f(x_i; \boldsymbol{\beta}) + v_i} \quad \textbf{(3-7)}$$

If $u_i = 0$, then $\varepsilon_i = v_i$, the error term is symmetric, and there is no technical inefficiency problem. If $u_i < 0$, then ε_i is negatively skewed, and the technical inefficiency problem exists. Usually, before conducting the stochastic frontier analysis, it is first recommended to carry out the ordinary least squares (OLS) test to check the residuals to see whether they have a negatively skewed problem. Schmidt and Lin (1984) suggested using the following formula to test residuals:

$$(b_1)^{\frac{1}{2}} = \frac{m_3}{(m_2)^{\frac{3}{2}}} \quad \textbf{(3-8)}$$

Where

m_2= the second sample moments of the OLS residuals

m_3= the third sample moments of the u_i

Then if $m_3 < 0$, the OLS residuals are negatively skewed, which means the existence of technical inefficiency. If $m_3 > 0$, the OLS residuals are positively skewed, which means no technical inefficiency.

According to Johnson et al. (1995), the density function for f(v), f(u) and f(u, v) f(Ɛ) can be defined as follows:

$$\text{f(v)} = \frac{1}{\sigma_v \sqrt{2\pi}} \cdot exp\left(-\frac{v^2}{2\sigma_v^2}\right) \quad \textbf{(3-9)}$$

$$\text{f(u)} = \frac{2}{\sigma_u \sqrt{2\pi}} \cdot exp\left(-\frac{u^2}{2\sigma_u^2}\right) \quad \textbf{(3-10)}$$

$$\mathrm{f(u,v)} = \frac{1}{\sigma_u\,\sigma_v\pi}\cdot exp\left(-\frac{u^2}{2\sigma_u^2}-\frac{v^2}{2\sigma_v^2}\right)$$

(3-11)

As $\mathrm{\varepsilon} = v + u$, replace v with $\varepsilon - u$ in Equation (3-11)

$$\mathrm{f(u,\varepsilon)} = \frac{1}{\sigma_u\,\sigma_v\pi}\cdot exp\left\{-\frac{u^2}{2\sigma_u^2}-\frac{(\varepsilon-u)^2}{2\sigma_v^2}\right\}$$

(3-12)

The marginal density function of $\mathrm{\varepsilon}$ can be obtained as:

$$\mathrm{f(\varepsilon)} = \int_{-\infty}^{0}\mathrm{f(u,\varepsilon)}du$$

$$= \frac{2}{\sigma\sqrt{2\pi}}\cdot exp\left(-\frac{\varepsilon^2}{2\sigma^2}\right)\cdot\Phi\left(\frac{\varepsilon\lambda}{\sigma}\right)$$

(3-13)

Where

$$\sigma^2 = \sigma_u^2 + \sigma_v^2$$

$$\lambda = \frac{\sigma_u}{\sigma_v}$$

$\Phi(\cdot)$ is the standard normal distribution function

The mean and variance are defined by:

$$\mathrm{E(\varepsilon)} = \mathrm{E}(u) = -\frac{\sqrt{2}}{\sqrt{\pi}}\,\sigma_u$$

(3-14)

$$\mathrm{V}(\varepsilon) = \mathrm{V}(u) + \mathrm{V}(v) = \left(\frac{\pi - 2}{\pi}\right) \sigma_u^2 + \sigma_v^2$$

(3-15)

Comparing $1 - \mathrm{E}(\mathrm{u})$, Lee and Tyler (1978) proposed a better estimator to explain the mean technical efficiency:

$$\mathrm{E}(\exp\{-u\}) = 2\,[1 - \Phi(\sigma_u)]\,\cdot exp\left(\frac{\sigma_u^2}{2}\right)$$

(3-16)

Using Equation (3-13) to form the log-likelihood function for a random sample of N:

$$\ln\mathcal{L} = \text{constant} - \mathrm{N}\ln\sigma + \sum_{i=1}^{N} ln\Phi(\frac{\varepsilon_i \lambda}{\sigma}) - \frac{1}{2\sigma^2}\sum_{i=1}^{N} \varepsilon_i^2$$

(3-17)

Taking derivatives,

$$\frac{\partial \ln\mathcal{L}}{\partial \sigma^2} = -\frac{N}{2\sigma^2} + \frac{1}{2\sigma^4}\sum_{i=1}^{N}(y_i - \boldsymbol{\beta}' x_i)^2 + \frac{\lambda}{2\sigma^3}\sum_{i=1}^{N}\frac{f_i^*}{F_i^*}(y_i - \boldsymbol{\beta}' x_i)$$

(3-18)

$$\frac{\partial \ln\mathcal{L}}{\partial \lambda} = -\frac{1}{\sigma}\sum_{i=1}^{N}\frac{f_i^*}{F_i^*}(y_i - \boldsymbol{\beta}' x_i)$$

(3-19)

$$\frac{\partial \ln\mathcal{L}}{\partial \boldsymbol{\beta}} = \frac{1}{\sigma^2}\sum_{i=1}^{N}(y_i - \boldsymbol{\beta}' x_i)x_i + \frac{\lambda}{\sigma}\sum_{i=1}^{N}\frac{f_i^*}{F_i^*}x_i$$

(3-20)

Where x_i is the elements of X, and f_i^* and F_i^* are standard normal density and distribution function.

According to the Lagrange equation, to get maximum likelihood estimates of parameters, Equation (3-18), (3-19), (3-20) must all equal to zero, that is:

$$-\frac{1}{\sigma}\sum_{i=1}^{N}\frac{f_i^*}{F_i^*}(y_i - \boldsymbol{\beta}' x_i) = 0$$

Which also means:

$$\sum_{i=1}^{N}\frac{f_i^*}{F_i^*}(y_i - \boldsymbol{\beta}' x_i) = 0 \qquad \textbf{(3-21)}$$

Using Equation (3-21), then Equation (3-18) can be rewritten as:

$$-\frac{N}{2\sigma^2} + \frac{1}{2\sigma^4}\sum_{i=1}^{N}(y_i - \boldsymbol{\beta}' x_i)^2 = 0 \qquad \textbf{(3-22)}$$

At last yields:

$$\hat{\sigma}^2 = \frac{1}{N}\sum_{i=1}^{N}(y_i - \boldsymbol{\beta}' x_i)^2 \qquad \textbf{(3-23)}$$

3.4 Unit Root Test

The time series for the variables selected into the model estimation could be nonstationary. A regression considering non-stationary variables could create misleading results in the econometric analysis due to biased standard errors. The results may show

a significant relationship between variables that do not happen in reality. This outcome is also known as spurious regression. Therefore, unit root testing is required on all variables to avoid spurious results.

In this research study, before processing the OLS regression analysis, the stationarity of the variable time series was first tested before being included in the model estimation using the Augmented Dickey-Fuller (ADF) technique. The ADF technique is a generalised auto-regression model formulated in the following regression equation (Dickey & Fuller, 1981), and this equation was estimated for each of the time series:

$$\Delta X_t = a_0 + a_1 t + \beta_0 X_{t-1} + \sum_{i=1}^{k} \beta_1 \Delta X_{t-i} + \varepsilon_t$$

(3-24)

The idea of the ADF test is to have enough lagged dependent variables to rid the residuals of serial correlation. There are a few ways to decide the number of lags to be included. For this research, the lag selection criteria provided in Stata were applied, beginning with a sufficiently large number of lags and then running down until the time series were all significant (Phillips & Perron, 1988). The stationarity of the time series was tested based on the following hypothesis:

H_0: series contains a unit root

H_1: series is stationary

The Fisher type test executes a unit-root test for each panel's series individually in the context of panel data, then aggregates the p-values to provide an overall test of whether the panel series includes a unit root. This type of test is appealing since it is straightforward and reliable based on p values (Banerjee, 1999). Choi (2001) employed

the four approaches to combine the p-values from the panel-specific unit-root tests. Three of the methods differed in that they employed the inverse χ^2 (P), inverse-normal (Z), or inverse-logit transformations (L*) of p-values, while the fourth employed a version of the inverse χ^2 transformation (Pm) that is appropriate when N approaches infinity.

3.5 The Motivations of Chinese OFDI in Countries of the BRI: Hypothesis

MNEs explore foreign markets from different strategic perspectives and with different motivations behind the flow of foreign investment. Foreign investment is an economic behaviour and includes political motivations (Han et al., 2018; Long, 1977; Matthews & Motta, 2015; Mbalyohere & Lawton, 2018; Nigh, 1986; Schneider & Frey, 1985). According to Dunning and Lundan (2008) and Schneider and Frey (1985), the motivations of FDI are mainly characterised by; market-seeking, asset-seeking, government, and politics.

3.5.1 Market-seeking Motivation

MNEs invest in foreign economies to offer goods and services in the local markets of host countries. Foreign companies previously fulfilled those markets by exports. However, with rising tariffs and transport costs, foreign direct investment is the best way to access those markets (Beladi et al., 2009; Brander & Spencer, 1987; Caves, 1971; Kojima, 1978).

Market-seeking investment focuses on sustaining or exploiting a new market. The market size of both home and host country and the prospect for market growth of host economies stimulate capital inflows from outbound investors. The market size difference between the home and host country negatively affects FDI flows, as the big difference between country sizes reduces affiliate sales (Carr et al., 2001). As the supply chain develops, companies in the home country should follow their suppliers to build

foreign factories if they have set up subsidiaries in foreign countries (Dunning, 1993; Dunning et al., 1990; Pavlínek, 2018). Offering products and services from an adjacent facility reduces production and transaction costs. If transport is relatively costly, putting a factory near the consumption centre will yield substantial economies of scale and reduce production costs (Erramilli & Rao, 1993; Hennart, 2009; Portes & Rey, 2005). Thus:

Hypothesis 1: Chinese OFDI among the BRI countries is correlated positively with absolute home country size.

Hypothesis 2: Chinese OFDI among the BRI countries is correlated positively with absolute host country size.

Hypothesis 3: Chinese OFDI among the BRI countries is correlated negatively with the difference between home and host country size.

3.5.2 Asset-seeking Motivation

When investors access frontier technologies and information through mergers and acquisitions, they will upgrade their high-tech production capabilities (Makino et al., 2002; Meyer, 2015). This type of firm includes both existing MNEs aiming with global and regional strategies and newcomers seeking to obtain a competitive advantage in an unknown market.

The motivation behind asset-seeking investment is to obtain; advanced proprietary technology, high-skilled labour, brands, and distribution networks in local markets to strengthen a company's specific advantage or weaken its competitors (Deng, 2013; Dunning, 1995; Hong et al., 2015; Huang & Wang, 2011; Karreman et al., 2017). Asset-seeking investment from developing economies has attracted more attention in recent years. To strengthen their competitiveness, Chinese MNEs have invested in advanced

countries to access intellectual capital by M&As, especially in the European Union (EU) and the United States of America (USA) (Rui & Yip, 2008). This situation is due to the increasing north-south competition, as companies in developing countries must upgrade their firm-specific advantages to survive. The upgrading process usually is fulfilled by injecting part of the M&As activities of the merged company into a company's organisation (Chen & Chen, 1998). The measure of asset-seeking motivation is proxied by the rate of patenting or the endowment of skilled labour in host economies (Buckley et al., 2007; Carr et al., 2001; Han et al., 2014; OECD, 2002). Thus:

Hypothesis 4: Chinese OFDI among the BRI countries correlates positively with the endowments of technology.

3.5.3 Natural Resource-seeking Motivation

In natural resource seeking investment, companies are spurred to invest abroad to procure particular natural resources at lower prices than in the home country. Profit maximisation is the main motivation for companies' investment (De Gregorio, 2005; Safarian, 1976). Those natural resources range from; metal ores, petroleum, and fossil fuels to agricultural products.

According to Dunning and Lundan (2008), cheap and highly motivated unprofessional labour or primary labour is still the key target of natural resource seekers. This type of investment usually comes from a home country with higher labour costs. Since joining the World Trade Organization (WTO) in 2001, China has become the world's factory. Its position has changed from a net oil exporter to a net oil importer (Vivoda & Manicom, 2011). Chinese investment in Africa has mainly focused on natural resources. Unlike the Western country investment model, state-owned enterprises that fulfil Chinese government policies have primarily contributed to China investing in Africa (Corkin, 2007; Kaplinsky & Morris, 2009; Mourao, 2018). Chinese

companies have even invested in advanced countries, such as Australia, to achieve access to an efficient mining sector to guarantee the supply of energy and resources (Drysdale & Findlay, 2009; Wilson, 2011; Yang et al., 2000; Zhou, 2017). Thus:

Hypothesis 5: Chinese OFDI among the BRI countries is correlated positively with host country endowments of natural resources.

3.5.4 Political Risk

Political risk refers to host country governments changing business rules with no advance notice. Any changes in government policies or political institutions will affect foreign investment decisions (Sethi & Luther, 1986). Thus, political risk becomes one of the main determinants affecting MNEs' investment strategy. When a host country experiences higher political risk, MNEs will replace the FDI with relatively safe activities, such as exporting and licensing to avoid losses in the host market (Aguiar et al., 2012; Benacek et al., 2014; Buckley & Casson, 1981; Busse & Hefeker, 2007; Jensen, 2008).

However, some scholars have disagreed with the negative relationship between foreign direct investment and political risk (Buckley et al., 2018). MNEs from emerging countries can overcome political risk and become tolerant of host country risk. The heterogeneous responses to host country risk are due to differences in managers' experiences in the home country. When a manager has good experiences in the home country, the propensity for risk investment increases (Cuervo-Cazurra & Genc, 2008). As most of China's investment is endorsed by the Chinese government, Chinese OFDI prefers destinations with a historically friendly relationship with China. Those countries are mostly developing countries with higher political risk and authoritarian governments (Lu et al., 2017). Thus:

Hypothesis 6: Chinese OFDI among the BRI countries is correlated positively with the host country's increasing political risk.

3.5.5 Geographic Distance

Economic geography, which is usually proxied by geographic distance, is supposed to be an important determinate in the location choice of MNEs (Dunning, 2009; Frost & Zhou, 2000; Johanson & Vahlne, 1977). Firms are more likely to invest in locations near the home market and have a good relationship with the home country. Multinationals from developing countries, such as; Brazil, India, Malaysia and China, have proven the negative relationship between geographic distance and foreign investment (Kumar, 2000).

Initial investments happen in economies that have a homogeneous culture. Using the close ties with overseas Chinese, MNEs from China can easily enter the local market in host countries, for example, Malaysia, Singapore, and Indonesia (Gomez, 2012; Li, 1993; Yean, 2018). Ethnic relationships can reduce investment obstacles and result in firm-specific advantages (Li, 2007).

The ethnic relationship may not play a key role in their international strategy for state-owned companies affected by the government and their supervisory agencies. The key element to consider here is only the geographical distance. Thus:

Hypothesis 7: Chinese OFDI among the BRI countries is correlated negatively with a host country's increasing physical distance.

3.5.6 Trade Cost

Trade and foreign direct investment have a trade-off relationship (Hirsch, 1976; Horst, 1973). In a simple model, MNEs will choose foreign direct investment if the cost

of exporting overseas and producing in the home market is more than the cost of operating and producing in the host market (Hirsch, 1976).

When considering foreign direct investment serving the home country or a third market, the choice of trade and FDI will be similar to the simple model above. MNEs will choose the foreign direct investment strategy if the cost of exporting overseas and producing in the home market is more than the cost of operating and producing in the home market plus the cost of importing to the home country (Agmon & Hirsch, 1979).

The trade costs of the home market and host market have different effects on foreign direct investment. The former makes reimporting from branches cheap, and the latter makes exporting to the host market expensive, which incentives foreign investment (Mukherjee & Suetrong, 2012; Neary, 2009; Oh et al., 2011). Thus:

Hypothesis 8: Chinese OFDI among the BRI countries is correlated positively with host country trade costs.

Hypothesis 9: Chinese OFDI among the BRI countries is correlated negatively with home country trade costs.

3.5.7 Investment Cost

Investment cost refers to the cost of conducting foreign business in a host country. An investment strategy should consider host country restrictions and policies concerning foreign direct investment (Kim & Lyn, 1987; Ključnikov & Junger, 2014; O'Brien, 2008; Sun et al., 2013). Some host countries have regulations and sector investment restrictions, which forbid foreign companies to enter specific industries, such as; agriculture, finance, banking, and high-technology related to national security (Graham & Marchick, 2006; Kirkpatrick et al., 2006).

To attract foreign direct investment, host governments usually issue preferential measures, such as; tax reductions, free land use for a given period, and cash awards (Mudambi, 1999). Thus:

Hypothesis 10: Chinese OFDI among the BRI countries is correlated negatively with investment costs in the host country.

3.5.8 Infrastructure

Infrastructure is one of the key elements determining foreign investment (Khadaroo & Seetanah, 2010; Pradhan et al., 2013). For countries with poor physical infrastructure, a good choice to attract more FDI is to improve their infrastructure (Bakar et al., 2012). Infrastructure includes roads, the internet, and public transport. The relationship between infrastructure and foreign investment is usually positive (Di Giovanni, 2005). Countries with good quality infrastructure will attract more investment inflows as it increases accessibility and decreases transport costs.

Different proxies for infrastructure have been used in previous research. Such proxies have included; the ratio of transport and communication to the GDP (Root & Ahmed, 1978), quality of transport and communications (Wekesa et al., 2016; Wheeler & Mody, 1992), and government expenditure per the GDP. Thus:

Hypothesis 11: Chinese OFDI among the BRI countries is correlated positively with the host country's physical infrastructure.

3.5.9 Government Effectiveness

Government effectiveness captures the capacity of public and civil services. It measures government policy formulation, implementation, and political independence (Kaufmann et al., 2007; Williams & Martinez, 2012). Good governance of the state in host countries matters for foreign direct investment, and it ensures a favourable

environment for business. Government effectiveness ensures the consistency of implementing foreign investment policies and enhances the confidence of foreign investors (Bonnitcha, 2016; Cai et al., 2018; MacKinnon & Phelps, 2001; Mishra & Ratti, 2011). Thus:

Hypothesis 12: Chinese OFDI among the BRI countries is correlated positively with government effectiveness in the host country.

Figure 3.2: The Motivations of China's OFDI in Countries of the BRI

3.6 Model and Date Sources

Based on Carr et al. (2001) and Equations (3-5) and (3-6), the specific model used is as follows:

$$FDI_{ij}^{t} = \beta_0 + \beta_1 GDP_i^t + \beta_2 GDP_j^t + \beta_3 SQDGDP_{ij}^t + \beta_4 DIS_{ij} + \beta_5 Enroll_j^t + \beta_6 DSKILL_{ij}^t + \beta_7 RESOURCE_i^t + \beta_8 \left(DGDP_{ij}^t \times DSKILL_{ij}^t\right) + v_{ij}^t - u_{ij}^t$$

(3-25)

Where

$$u_{ij}^t = \alpha_0 + \alpha_1 TRADECOST_i^t + \alpha_2 TRADECOST_j^t + \alpha_3 INVCOST_j^t + \alpha_4 INFRA_j^t + \beta_5 GOVERNMENT_j^t + \beta_6 POLITICAL_j^t + w_{ij}^t$$

(3-26)

Where

i= home country

j= host country

FDI_{ij}^t represents outward foreign direct investment from China to countries among the BRI (Table 3.1). The cumulative volume of OFDI is used as the dependent variable (Cheng & Kwan, 2000). The data ranged from 2003 to 2017 and came from various years of the *Statistical Bulletin of China's Outward Foreign Direct Investment.*

GDP_i^t and GDP_j^t denote the home country GDP and host country GDP in a given year t, respectively. The data came from the World Bank's World Development Indicators. A positive correlation relationship was expected for both variables (Blonigen & Piger, 2014).

$SQDGDP_{ij}^t$ is the squared difference of the GDP between the home and host countries. It was used to test the similarity of market size. According to Carr et al. (2001), foreign

direct investment reaches the maximum when market size is close to zero. The sign of the correlation was expected to be negative.

DIS_{ij} is the physical distance between the home country's capital city and the host country's capital city. Increasing physical distance increases the transport cost and decreases the flow of foreign investment (Cuyvers et al., 2011). The data were accessed from the Centre for International Prospective Studies and Information (CEPII) and measured in kilometres.

$DSKILL_{ij}^{t}$ measures the skill difference between the home country and host country in year t. According to Voss (2011), the percentage ratio of enrolment in tertiary education represents the skill level of the home country. The data came from the World Bank's World Development Indicators. A positive relationship between skill and FDI was expected.

$RESOURCE_{i}^{t}$ equals the home country's demand for natural resources in a given year t. China's energy imports represent its natural resources-seeking behaviour (Wang, 2014). The data were from various years of the *China Statistic Yearbook*. A positive relationship between natural resources and FDI was expected.

$DGDP_{ij}^{t} \times DSKILL_{ij}^{t}$ is an interaction term between the difference of market size and skill difference. When the home country is relatively small and has abundant skilled labour, foreign investment is the highest (Carr et al., 2001). Thus, the sign of the correlation was expected to be negative.

$INFRA_{j}^{t}$ represents the infrastructure in the host country. Data from the World Bank's World Development Indicators, water, electric power, railway, internet, mobile cellular,

and airports were all included to measure the infrastructure and given the same weight. Thus, the sign of the correlation was expected to be positive.

$TRADECOST_i^t$ and $TRADECOST_j^t$ represent the trade cost of the home and host countries in year t, respectively. Due to data limitations, an indirect method was used to calculate the trade costs by 100 minus trade freedom index. The trade freedom index is a composite measure of tariff and non-tariff barriers that affect the cost of international trade. It includes quantity, price, regulatory, customs restrictions, and direct government intervention for nontariff barriers. The value ranges from 0 to 100. The trade freedom data comes from the Index of Economic Freedom released by the Heritage Foundation. A negative sign for the trade cost of the home country and a positive sign for the trade cost of the host country were expected (Mukherjee & Suetrong, 2012; Neary, 2009; Oh et al., 2011).

$INVCOST_j^t$ means the investment cost in the host country in a given year t. Due to data limitations, an indirect method was used to calculate the trade cost by 100 minus investment freedom. The investment freedom index includes the national treatment of foreign investment, foreign investment code, restrictions on land ownership, sectoral investment restrictions, foreign exchange controls, and capital controls. This value ranges from 0 to 100. The index also comes from the Index of Economic Freedom released by the Heritage Foundation. A negative sign is expected for the relationship between investment cost and FDI.

$GOVERNMENT_j^t$ refers to the government effectiveness of the host country in a given year t. Government effectiveness usually helps foreign companies to invest in the local market effectively (Blonigen & Piger, 2014). The data was obtained from the World Bank's World Development Indicators. A positive correlation relationship was expected for both variables.

$POLITICAL_j^t$ measures the political stability of the host country. It measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. The data was obtained from the World Bank's Governance Indicators. The sign of the correlation was expected to be negative.

3.7 Case Studies

A case study is an empirical enquiry that investigates a contemporary phenomenon within its real-life context (Yin, 2017). An in-depth investigation is used to inspect a phenomenon to explore its underlying principles. Case studies are extensively utilised in economic research, especially when researchers are examining foreign direct investment from China (Deng, 2009; Duysters et al., 2009; Liu & Li, 2002; Rui & Yip, 2008; Wu & Ding, 2009). As discussed in Chapter 1, the aggregate data supplied by the Chinese government can be problematic. Therefore, this research used country-level and firm-level data to analyse the motivation and strategy of Chinese OFDI in the BRI countries.

In the context of this research, determining the extent of government policy has been important to understand institutions' roles in China's OFDI in the BRI countries. However, as already indicated, Chinese government policy is hard to grasp since the policy cannot be quantified. Thus, to conduct an in-depth analysis, it is better to examine the above questions through the lens of specific cases.

According to the sampling theory of cases, cases are chosen because they are unusually illuminating, extreme examples, or opportunities for unusual research (Yin, 2017). According to the descriptive analysis in Chapter 4, the natural resources industry has attracted the most investment from China. In particular, Indonesia, Bangladesh, Mongolia and India have been the main destinations of the steel sector. The empirical analysis in Chapter 5 shows no evidence that Chinese companies have sought technology in the BRI countries in terms of the technology industry. However, the firm-

Table 3.1: Countries among the BRI

Region	Country
East Asia (2)	China (CHN), Mongolia (MNG)
Southeast Asia (11)	Brunei (BRN), Cambodia (KHM), Indonesia (IDN), Laos (LAO), Malaysia (MYS), Myanmar (MMR), the Philippines (PHL), Singapore (SGP), Thailand (THA), Timor-Leste (TLS), Vietnam (VNM)
Central Asia (5)	Kazakhstan (KAZ), Kyrgyzstan (KGZ), Tajikistan (TJK), Turkmenistan (TKM), Uzbekistan (UZB)
Middle East and North Africa (15)	Bahrain (BHR), Egypt (EGY), Iran (IRN), Iraq (IRQ), Israel (ISR), Jordan (JOR), Kuwait (KWT), Lebanon (LBN), Oman (OMN), Palestine (PSE), Qatar (QAT), Saudi Arabia (SAU), Syria (SYR), United Arab Emirates (ARE), Yemen (YEM)
South Asia (8)	Afghanistan (AFG), Bangladesh (BGD), Bhutan (BTN), India (IND), Maldives (MDV), Nepal (NPL), Pakistan (PAK), Sri Lanka (LKA)
Europe (24)	Albania (ALB), Armenia (ARM), Azerbaijan (AZE), Belarus (BLR), Bosnia and Herzegovina (BIH), Bulgaria (BGR), Croatia (HRV), Czech Republic (CZE), Estonia (EST), Georgia (GEO), Hungary (HUN), Latvia (LVA), Lithuania (LTU), Macedonia (MKD), Moldova (MDA), Montenegro (MNE), Poland (POL), Romania (ROU), Russia (RUS), Serbia (SRB), Slovakia (SVK), Slovenia (SVN), Turkey (TUR), Ukraine (UKR)

Table 3.2: Variable Description

Variable	Description	Data Source
Dependent Variable		
FDI_{ij}^{t}	The log of OFDI stock of China in country j	Statistical Bulletin of China's Outward Foreign Direct Investment
Frontier Determinants		
GDP_{i}^{t}	The log of GDP for the home country	World Development Indicators
GDP_{j}^{t}	The log of GDP for the host country	World Development Indicators
$SQDGDP_{ij}^{t}$	The square of the difference between the log of the two countries' GDP:	World Development Indicators
DIS_{ij}	The log of the great circle distance between the capital cities of two countries	CEPII
$RESOURCE_{i}^{t}$	The ratio of enrolment in tertiary education	World Development Indicators
$Enroll_{j}^{t}$	The difference between the log of the two countries' skills level, measured by the ratio of enrolment in tertiary education	World Development Indicators
$DSKILL_{ij}^{t}$	The log of the import of energy	*China Statistic Yearbook*
$DGDP_{ij}^{t}$ $\times DSKILL_{ij}^{t}$	An interaction term between the log of the difference of the GDP and the log of the difference in the skills level	World Development Indicators
Inefficiency Determinants		
$TRADECOST_{i}^{t}$	Trade costs for the home country: 100-Tradefreedom_{it}	Index of Economic Freedom
$TRADECOST_{j}^{t}$	Trade costs for the host country: 100-Tradefreedom_{jt}	Index of Economic Freedom
$INVCOST_{j}^{t}$	Investment costs for the host country: 100- $\text{Investmentfreedom}_{jt}$	Index of Economic Freedom
$POLITICAL_{j}^{t}$	An index related to the road, railways and water	World Development Indicators
$INFRA_{j}^{t}$	The government effectiveness of the host country	Index of Economic Freedom
$GOVERNMENT_{j}^{t}$	The political stability of the host country	Governance Indicators

level data used in Chapter 4 has shown an increasing trend for the technology industry after the Chinese government announced the Belt and Road Initiative. Every year, the top 100 non-financial Chinese MNCs are ranked by outward FDI stock and the data released by the China Ministry of Commerce. Basic information of the listed companies was collected from their official website and annual report. Meanwhile, investment activity data are also collected to confirm whether they have made investments in the BRI countries.

This thesis selected Tsingshan and Huawei as its case studies. Tsingshan is the largest private company making investments in the steel sector in Indonesia with the government's intervention. Previous research has concluded that Huawei has sought strategic assets from developed countries. In the context of the current tense Sino-US relations, Huawei’s foreign direct investment has been hampered, and the sale of its product has also been banned in some countries. It will be interesting to see how Huawei can turn to the BRI countries to seek technology and markets with the government's intervention.

CHAPTER 4: CHINESE OUTWARD FOREIGN DIRECT INVESTMENT IN THE BELT AND ROAD COUNTRIES: DESCRIPTIVE ANALYSIS

4.1 Introduction

As the largest developing country globally, China has employed its "go abroad" policy to encourage local companies to invest in foreign countries since 2002. In the context of China's significantly enhanced economic strength, the scale of Chinese outward foreign direct investment has begun to rise sharply. In 2017, China became the third-largest source country/region for foreign direct investment (UNCTAD, 2019). In 2017, China invested in 6,326 overseas companies from 174 countries/regions (MOFCOM, 2019). China's outward foreign direct investment has become a research hotspot as Chinese capital outflows have increased globally, especially after Chinese president Xi Jinping proclaimed the "Belt and Road Initiative" in 2013.

Compared with developed countries and even some other emerging economies, such as Brazil, Russia and South Africa, the accumulated value of China's outward foreign direct investment is still small. However, from the perspective of the OFDI growth rate, especially in the BRI countries, China has been ranked top in the world OFDI. Even under the context of a slight slowdown in China's OFDI in recent years, the volume of Chinese investment in the BRI countries still keeps increasing. This situation makes it more important to analyse Chinese investment in the BRI countries.

The purpose of this Chapter is to review the characteristics and trends of China's outward investment, especially in the BRI countries, by using both macro-and micro-level data. Meanwhile, this analysis shows the geographical and industrial distribution of China's OFDI, especially in the BRI countries. Chinese government policies for promoting outward investment have been analysed to show the scope of Chinese investment expansion in the BRI countries.

This part is organised as follows. Section 2 reviews Chinese outward FDI globally. Using firm-level data, Section 3 illustrates Chinese outward FDI in the BRI countries from a geographical and industry perspective. Section 4 covers Chinese policies for investment in the BRI countries. Section 5 provides the conclusion.

4.2 China's Outward Foreign Direct Investment

This section provides an overview of OFDI from China, including a brief history and background of China's OFDI (Section 4.2.1) and the characteristics and geographic distribution of China's OFDI (Section 4.2.2).

4.2.1 A Brief History and Background of China's OFDI

As the main sources of Chinese OFDI have come from state-owned and local government-owned companies, government policy rather than economic reasons have mainly driven investments. Since establishing the People's Republic of China (PRC), the nation's entire economy became controlled by the government with no free market. Based on their deep experience in dealing with foreign companies, foreign trade companies were the first allowed to invest in foreign countries. The significance of establishing branches abroad was recognised regarding; securing supplies of natural resources, acquiring advanced technology from developed countries, facilitating exports, and acquiring managerial skills through 'learning by doing'. China's OFDI has experienced four stages (Buckley et al., 2007; Wu & Chen, 2001; Yang, 2005; Zhang, 2003).

4.2.1.1 Cautious Internationalisation Stage (1979-1985)

China's OFDI emerged after 1978 as part of the 'Open Door' policy launch. In August 1979, thirteen measures were applied to open the Chinese economy globally. The State Council announced a measure to set up Chinese companies overseas. Still, such companies had to report to the State Council for examination and approval (Huan,

1986). Driven by this policy, some foreign trade companies and companies with foreign economic cooperation experience engaged in import and export business for a long time. With their rich foreign-business-related experiences and stable import and export channels, they started to invest overseas and built overseas representative offices or overseas trading companies. In November 1979, Beijing friendship commercial service co., Ltd and Tokyo Maruichi company co., Ltd. of Japan jointly set up Jing He co., Ltd in Tokyo. This company was the first joint venture company in a foreign country after China's reform and opening-up policy. In 1980, the China State Shipbuilding Corporation and Hong Kong International Shipping Company jointly set up the International Shipping Investment Corporation, at that time China's largest foreign investment project.

However, in the early stages of reform and opening up, the main target of the "open door" policy was expanding exports and attracting foreign investment for development. At this stage, Chinese companies invested more than US$100 million to set up 113 non-trading companies in foreign countries (Table 4.1). The main foreign investors were central foreign trade companies, local foreign trade companies, and provincial international economic cooperation companies, such as; China National Chemicals Import and Export Corporation (SINOCHEM) and China National Metals and Minerals Import and Export Corporation (CNMM). The investment areas mainly concentrated on; food and beverage, construction projects, consultation services, and trade. The Investment locations were also mainly distributed in Hong Kong, Macao and other developing countries near China.

Table 4.1: China's Outward FDI (1979-1984)

Year	Amount (Flows, US$, billion)	Number of Enterprises (Flows)	Amount (Stock, US$, billion)	Number of Enterprises (Stock)
1979	0.001	4	0.001	4
1980	0.031	13	0.032	17
1981	0.002	13	0.034	30
1982	0.003	13	0.037	43
1983	0.009	33	0.046	76
1984	0.081	37	0.127	113

***Source**: Almanac of China's Foreign Economic Relations and Trade (1980-1985)*

4.2.1.2 The Initial Deregulation Stage (1985-1991)

Although the government promulgated policies to allow investment abroad, it wasn't until September 1992 that Chinese firms' international operations were officially incorporated into China's economic reform strategy (Zhang, 2003).

China's economic growth increased rapidly after Deng Xiaoping's 'South Tour' in 1992, and Chinese investment in foreign countries became plitically accepted. In 1985, the central government issued a regulation on procedures for the approval and management of the establishment of non-trade joint ventures abroad to relax the restrictions on the scope of foreign investment and tried to simplify the approval process of OFDI. According to this regulation, any firm in China could establish a joint venture overseas as long as it had the advantages of technology and management expertise. This policy aimed; to acquire overseas advanced technology and equipment, obtain raw materials and products in short supply at home, increase China's foreign exchange income, and promote overseas labour cooperation and exports.

Several significant manufacturing companies, international trusts and investment companies, and other non-trading companies began participating in OFDI. General investment projects less than US$1 million were examined and approved directly by

local government and ministries and commissions under the State Council. Under the influence of these favourable policies, in 1991, China added 207 companies for overseas investment, and the total amount of outward investment was US$337 million (Table 4.2). The investors extended to large and medium-sized production companies and financial companies, such as; Capital Iron and Steel Company (CISC) and China International Trust and Investment Company (CITIC). The investment industry gradually extended to; natural resources, manufacturing, processing, transportation, and 20 other industries (Salidjanova, 2011).

Table 4.2: China's Outward FDI (1985-1991)

Year	Amount (Flows, US$, billion)	Number of Enterprises (Flows)	Amount (Stock, US$, billion)	Number of Enterprises (Stock)
1985	0.070	76	0.197	189
1986	0.033	88	0.230	277
1987	0.410	108	0.640	385
1988	0.075	141	0.715	526
1989	0.236	119	0.951	645
1990	0.107	156	1.058	801
1991	0.337	207	1.395	1,008

***Source**: Almanac of China's Foreign Economic Relations and Trade (1986-1992)*

4.2.1.3 Steady Adjustment and Encouragement Stage (1992-1998)

Encouraged by Deng Xiaoping's 'South Tour' and internationalisation being incorporated into national economic development strategy, central and local governments promoted the internationalisation of all kinds of companies. However, at the same time, some overseas investment companies had low profits or even losses due to their dizzying development plan. Other companies used the pretext of running a multinational operation to withdraw funds arbitrarily. China's outward foreign direct investment was in danger of entering a state of disorder. Therefore, in 1993, the State

Council issued a Notice on Suspension of Acquisition of Overseas Enterprises and Further Strengthening of Overseas Investment Management to clean up and rectify the unusual outflows of capital from OFDI companies. This action resulted in a strict examination and approval registration system for newly established overseas companies and even prohibited outward FDI for a specific period. With the strict approval process for foreign direct investment by the state, the outflow of FDI decreased sharply.

The 15th national congress of the Communist Party of China (CPC) put forward policies to encourage OFDI to better use domestic and foreign markets. As a result, China's OFDI started to grow again (Table 4.3).

Table 4.3: China's Outward FDI (1992-1998)

Year	Amount (Flows, US$, billion)	Number of Enterprises (Flows)	Amount (Stock, US$, billion)	Number of Enterprises (Stock)
1992	0.196	355	1.591	1,363
1993	0.096	294	1.687	1,657
1994	0.071	106	1.758	1,763
1995	0.100	119	1.858	1,882
1996	0.294	103	2.152	1,985
1997	0.173	145	2.325	2,130
1998	0.259	266	2.584	2,396

***Source**: Almanac of China's Foreign Economic Relations and Trade (1993-1999)*

4.2.1.4 Accelerated Development Stage (since 1999)

The second plenary session of the fifteenth central committee of the CPC pointed out that local companies should actively expand exports. The central government organised several powerful state-owned companies to invest in; Africa, Central Asia, the Middle East, Central Europe, and South America. In 1999, the central government issued another policy encouraging companies, which had relative advantages in; light industry,

textiles, household appliances, and other mechanical electronics, to carry out overseas processing and assembly business mainly in; Africa, Central Asia, the Middle East, Eastern Europe, and South America. The 16th national congress of the CPC further pointed out that China should insist on a combination of encouraging inflows and outflows of foreign direct investment to participate in international economic cooperation and competition by improving the 'opening-up' of markets.

China became the 143rd member of the WTO in late 2001. With its accession to the WTO, China strengthened its legal system, liberalised its markets, and conducted certain reforms in; tariff reductions, foreign exchange regulations, export requirements, and opened nearly all industries to foreign investors. At the same time, President Jiang Zemin formally stated that China would employ its 'going abroad' policy to encourage Chinese firms to invest in foreign countries from 2000. This policy was planned in 1995 and formally adopted in 2001 when the Chinese government passed China's 10th five-year plan (2001-2005). As a further policy of 'Reform and Opening-up', Chinese companies with comparative advantages were encouraged to invest abroad to promote the export of goods and services, inspire Chinese worker outflows, and enhance the competitiveness of Chinese companies globally. During the whole 10th five-year plan period, the average annual increase rate of OFDI flows was 53.36 per cent.

In 2004, the State Council issued a Catalogue of Countries and Industries for Guiding Investment Overseas to encourage Chinese firms to invest abroad according to the regulated industries in different countries. Those companies which followed the catalogue enjoyed preferential policies on; capital, foreign exchange, taxation, and customs. In 2006, the Chinese government established Overseas Economic and Trade Cooperation Zones (OETCZ), a new mode of overseas investment under the

government's guidance, to increase employment, taxes income, and exports of the host country.

Table 4.4: China's Outward FDI (since 1999)

Year	Amount (Flows, US$, billion)	Number of Enterprises (Flows)	Amount (Stock, US$, billion)	Number of Enterprises (Stock)
1999	0.591	220	3.174	2,616
2000	0.551	243	3.725	2,859
2001	0.780	232	4.333	3,091
2002	0.983	350	9.340	6,960
2003	2.855	-	33.222	-
2004	5.498	-	44.777	-
2005	12.261	-	57.206	-
2006	21.160	-	75.026	-
2007	26.506	-	117.911	-
2008	55.907	-	183.971	-
2009	56.529	-	245.755	-
2010	68.811	-	317.211	-
2011	74.650	-	424.781	-
2012	87.804	-	531.941	-
2013	107.844	-	660.478	-
2014	123.120	-	882.642	-
2015	145.667	-	1,097.865	-
2016	196.149		1,357.390	
2017	158.288		1,809.037	

***Source**: Almanac of China's Foreign Economic Relations and Trade (2000-2003), Statistical Bulletin of China's Outward Foreign Direct Investment (2004-2017)*

***Notes**: Since 2003, the data came from the Statistical Bulletin of China's Outward Foreign Direct Investment*

These measures effectively promoted OFDI activities at this stage, and China's international investment began to enter a rapid growth period. By the end of 2017, the flow of OFDI from China had increased from US$0.591 billion in 2009 to US$158.288 billion, the stock of OFDI from China increased from US$3.174 billion in 2009 to

US$1,809.037 billion (Table 4.4). China became the third-largest country providing OFDI since 2012.

The periodical characteristics of China's OFDI are closely related to the evolution of China's national policies. The dynamic changes of China's OFDI in each stage are consistent with China's economic policy changes. Chinese OFDI development has been the outcome of government policy promotion, which means that government policies have significantly influenced China's international investment. The related policy measures of the home country are an important institutional factor that can significantly affect the decisions of multinational operations.

4.2.2 Geographical Distribution and Characteristics of China's OFDI

China's fast economic growth, increasing domestic demand for resources, high technology and accumulating enormous foreign exchange reserves have all played significant roles in China's recent surge in overseas investments. China's recent surge in OFDI particularly illustrates that China has outperformed many other countries in the post-crisis period after the 1997 Asian financial crisis. China ranked as the third-largest source country/region in the world in 2017. Since 2003, the gap between inward and outward FDI flows has been filled by launching the 'going abroad' policy (Figure 4.1). Despite the rapid growth in China's outbound investment flows, the stock volume remains lower than that of the United States. (Table 4.5).

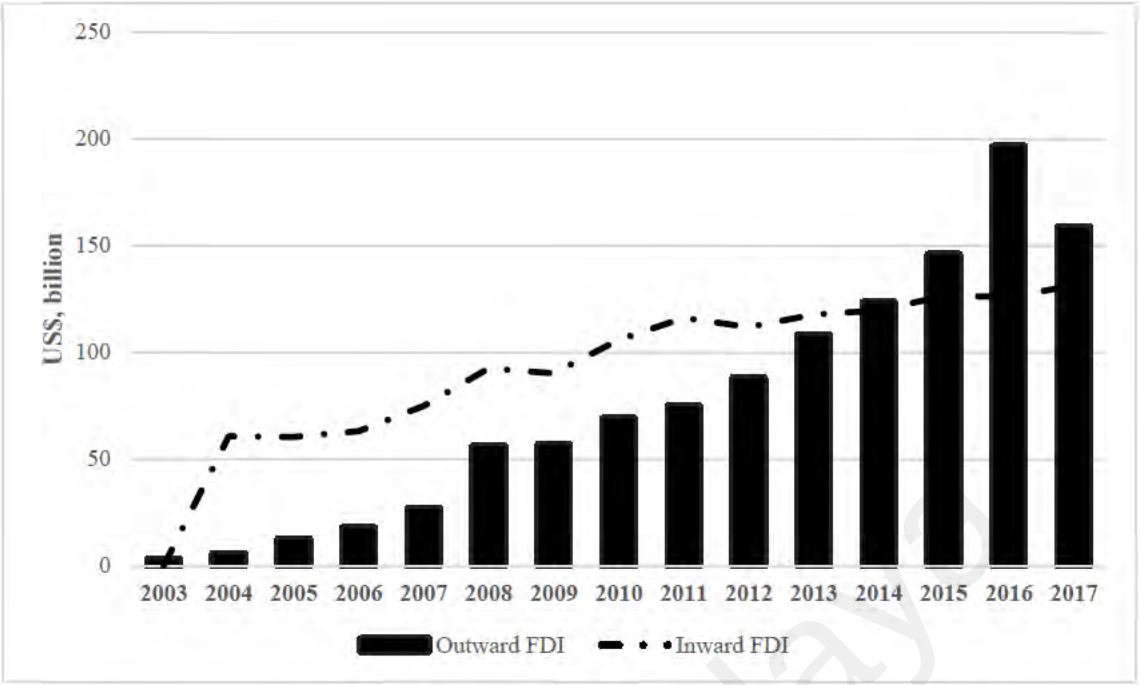

Figure 4.1: China's Inward and Onward Foreign Direct Investment (US$, billion)

Source: *UNCTAD, World Investment Report (2004-2018), NBSC, China Statistical Yearbook (2004-2018)*

Table 4.5: China's Outward FDI Ranking in the World

Year	Global Ranking (Flows)	Global Ranking (Stock)
2002	26	25
2003	21	25
2004	20	27
2005	17	24
2006	13	23
2007	17	22
2008	12	18
2009	5	16
2010	5	17
2011	6	13
2012	3	13
2013	3	11
2014	3	8
2015	2	8
2016	2	6
2017	3	2

Source: *World Investment Report (2003-2018)*

In 2017, Chinese companies conducted 431 outward M&As in 56 countries, with an actual transaction value of US$119.62 billion. Of the actual transaction value, US$33.47 billion were from companies and banking loans in China, which accounted for 21.1 per cent of China's total OFDI. Chinese companies' M&As were carried out in 18 industrial categories, including; mining, manufacturing, real estate, leasing and business services, information transmission, software and IT services, and the wholesale and retail trade (Table 4.6).

Table 4.6: Industrial Distribution of China's OFDI (M&As in 2017)

Industry	Number of M&As	Amount (US$, billions)	Share (%)
Manufacturing	163	607.2	50.8
Information Transmission, Software and IT Services	42	61.2	5.1
Transportation, Storage and Postal Services	13	55.8	4.7
Production and Supply of Electricity, Heat, Gas and Water	30	101.9	8.5
Financial Services	4	34.2	2.9
Leasing and business services	38	63.1	5.3
Real Estate	9	25.2	2.1
Mining	22	114.1	9.5
Hotels and Catering services	1	65.0	5.4
Culture, Sports and Entertainment	5	5.8	0.5
Wholesale and Retail Trade	45	31.2	2.6
Scientific Research and Technical Services	28	11.2	0.9
Public Health and Social Work	5	11.7	1.0
Agriculture, Forestry, Animal Husbandry and Fishery	13	8.1	0.7
Education	3	0.1	--
Water Conservancy, Environment and Public Facility Management	3	0.3	--
Resident Services, Repair and Other Services	4	0.1	--
Construction	3	0.2	--
Total	431	1196.2	100

***Source**: Statistical Bulletin of China's Outward Foreign Direct Investment (2017)*

Regarding the destinations of capital flows, most of China's outward FDI has flowed into developing countries. Until 2017, the stock volume of China's OFDI into developing countries was 85.8 per cent of China's total OFDI. Meanwhile, 12.7 per cent flowed into developed countries, and only 1.5 per cent flowed into transition countries. China's OFDI has mainly flowed into Asian countries and regions, such as; Hong Kong, Singapore, Indonesia, Laos, Macau, Kazakhstan, Viet Nam, United Arab Emirates, Pakistan, Myanmar, Thailand, South Korea, Israel, Mongolia, and Malaysia. Asian countries accounted for 60 per cent of China's total stock volume of OFDI (Figure 4.2). Around 20 per cent of China's total OFDI went to Latin American countries, such as; the Cayman Islands, the Virgin Islands, British, Brazil, Venezuela, Argentina, Ecuador, and Jamaica.

European countries have become a hot destination for Chinese OFDI, and its share of OFDI flows has increased from 1.5 per cent in 2003 to 6.1 per cent in 2017. The main destinations have been; the Netherlands, United Kingdom, Russia, Luxembourg, Argentina, France, Sweden, Norway, Italy, and Spain. It seems that African countries have become less important for China's OFDI since 2008. China still needs a huge volume of natural resources for its development, and it invests mainly in; South Africa, Congo, Zambia, Algeria, Nigeria, Ethiopia, Ghana, Zimbabwe, Angola, Tanzania. America's share of OFDI has increased faster than Canada for North American countries. In 2003, Canada's share was only half that of America's, but in 2017, Canada's share only accounted for one-sixth of America's. For countries in Oceania, Australia accounts for 86.62 per cent of the total share, followed by New Zealand and Papua New Guinea.

From an industry perspective, the leasing and business services industry accounted for 34.04 per cent, nearly one-third of the total share. Asian countries and regions, such

as; Singapore and Hong Kong, were the leading destinations for OFDI in the leasing and business services industry. The OFDI in this sector mainly aims to assist companies' production and marketing in other industries. The activities in this sector were expected to be mainly influenced by market-seeking motivation (Wang & Shao, 2016). Then the wholesale and retail trade industry comprised 12.52 per cent, and the information transmission, computer services, and software industry comprised 12.10 per cent. Those industries mainly concentrate on services that account for nearly 60 per cent of total Chinese OFDI stock.

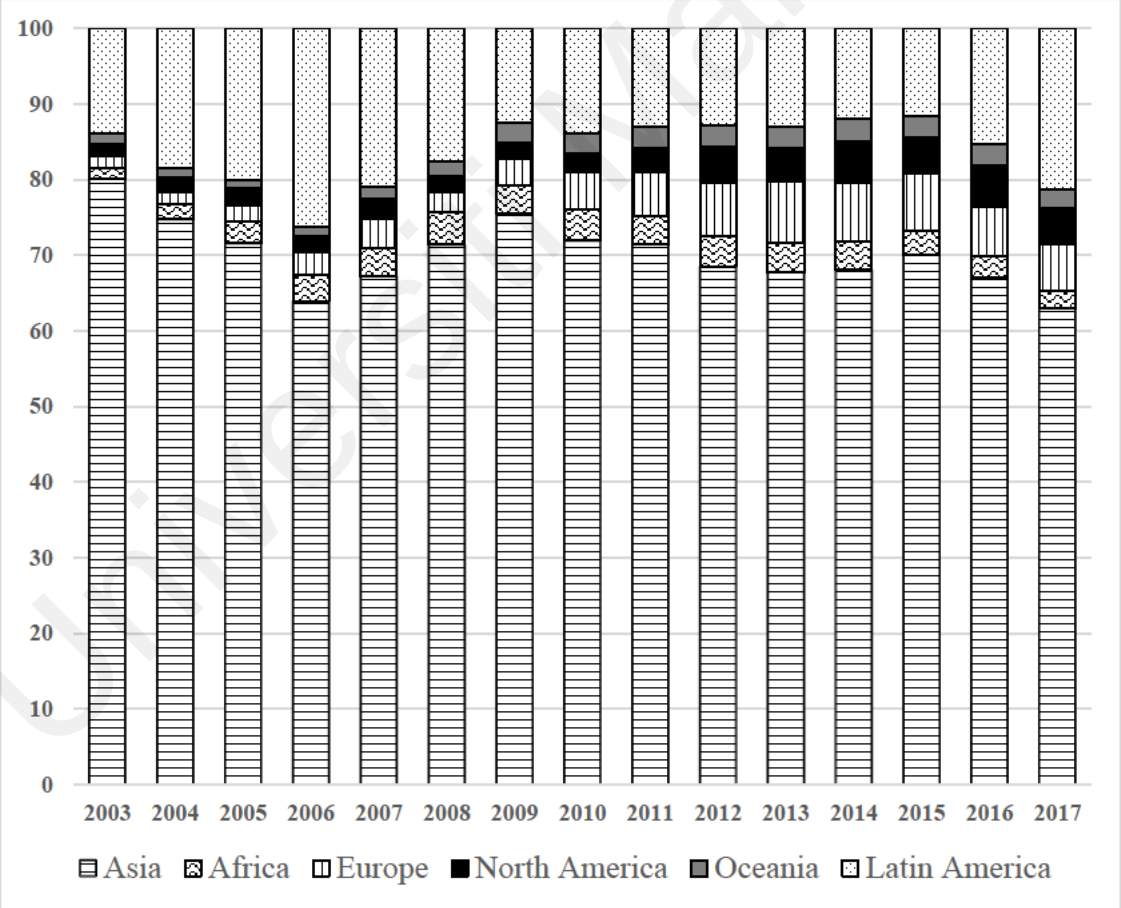

Figure 4.2: China's OFDI Distribution in Different Areas (Per cent), 2003-2017

***Source**: Statistical Bulletin of China's Outward Foreign Direct Investment (2003-2017)*

***Notes:** Calculated by the Author*

Table 4.7: Top 50 Countries/Areas for China's Outward FDI, 2017

Ranking	Country/Area	Ranking	Country/Area
1	Hong Kong China	26	France
2	Cayman Islands	27	Myanmar
3	Virgin Islands, British	28	Cambodia
4	United States	29	United Arab Emirates
5	Singapore	30	Thailand
6	Australia	31	Viet Nam
7	United Kingdom	32	Malaysia
8	Netherlands	33	India
9	Luxembourg	34	Israel
10	Russian Federation	35	Congo, DR
11	Germany	36	Iran
12	Canada	37	Mongolia
13	Indonesia	38	Venezuela
14	Macau China	39	Brazil
15	Bermuda	40	Japan
16	Switzerland	41	Zambia
17	Kazakhstan	42	Nigeria
18	South Africa	43	New Zealand
19	Sweden	44	Angola
20	Lao PDR	45	Papua New Guinea
21	Korea, Rep.	46	Norway
22	Pakistan	47	Saudi Arabia
23	Ethiopia	48	Zimbabwe
24	Italy	49	Tajikistan
25	Algeria	50	Ghana

***Source**: Statistical Bulletin of China's Outward Foreign Direct Investment (2017)*

***Notes:** Calculated by the Author*

Table 4.8: Industrial Distribution of China's Outward FDI Stock, 2017

Industry	Share
Agriculture, Forestry, Animal Husbandry and Fishery	0.91%
Mining	8.72%
Manufacturing	7.76%
Production and Supply of Electricity, Gas and Water	1.38%
Construction	2. 08%
Wholesale and Retail Trade	12.52%
Transport, Storage and Post	3.03%
Lodging and Catering Services	0.19%
Information Transmission, Computer Services and Software	12.10%
Banking	11.21%
Real Estate	2.97%
Leasing and Business Service	34.04%
Scientific Research and Technical Service	1.20%
Management of Water Conservancy, Environment and Public Facilities	0.13%
Residents Service, Repair and Other Service	1.05%
Education	0.18%
Health, Social Works	0.08%
Culture, Sports and Entertainment	0.45%

***Source**: Statistical Bulletin of China's Outward Foreign Direct Investment (2017)*

***Notes**: Calculated by the Author*

The mining industry remains an important sector for China's overseas investment, although the share declined from 19.75 per cent in 2006 to 8.72 per cent in 2017. The outward FDI stock in the mining industry has always remained in the top three sectors with the largest amount of China's OFDI. Since 2016, China's economic growth rate has seen downward pressure, and OFDI activities were restricted to guarantee abundant foreign exchange reserves. The OFDI flows to the mining industry were negative for the first time in 2017. Although the leasing and business services industry attracted most of

China's OFDI, the firm-level data advocated that part of the services business went to the mining industry (Wang & Huang, 2012).

Those industries are related to trade and manufacturing, contributing to China's economic growth in important roles. Chinese investments have gone to; education, health, culture, sports and entertainment (Table 4.8).

For different regions, the distribution of China's OFDI seems to have different characteristics. China's resource-seeking OFDI has been allocated worldwide: Asia, Europe, Oceania, North America, Africa, and Latin America. For African countries, China has helped those countries build infrastructure; at the same time, China has gained access to natural resources. The advantages of Chinese companies relative to other less-developed countries help to explain the expansion of multinational corporations from developing countries based on traditional FDI theory.

China has allocated investment to the manufacturing industry in European and North American countries to upgrade the industry by mergers and acquisitions. Chinese companies need high technology to boost and maintain their economic growth. As they lack experience in R&D, an efficient way to acquire it is by M&A. The leasing and business services investment has been mainly allocated in Asia and Latin American countries. Investment in the financial services industry has mainly focused on developed areas, such as; Europe, North America, and Oceania. Recently, investments in real estate have appeared in Oceania and Europe (Table 4.9).

Table 4.9: Top 5 Industries in Each Continent, 2017

Area	Industry	Volume (US$, billions)	Share (%)
Asia	Leasing and Business Services	510.3	44.8
	Wholesale and Retail Trade	153.4	13.5
	Financial Services	140.4	12.3
	Mining	79.5	7.0
	Manufacturing	73.3	6.4
Africa	Construction	12.9	29.8
	Mining	9.8	22.5
	Financial Services	6.1	14.0
	Manufacturing	5.7	13.2
	Leasing and Business Services	2.3	5.3
Europe	Manufacturing	34.1	30.8
	Mining	22.5	20.3
	Financial Services	17.7	16.0
	Leasing and Business Services	10.6	9.6
	Wholesale and Retail Trade	5.2	4.7
Latin America	Information Transmission, Computer Services and Software	186.6	48.2
	Leasing and Business Services	76.6	19.8
	Wholesale and Retail Trade	59.5	15.4
	Financial Services	25.1	6.5
	Mining	8.8	2.3
North American	Manufacturing	19.5	22.4
	Mining	14.7	16.9
	Leasing and Business Services	12.8	14.7
	Financial Services	10.6	12.2
	Information Transmission, Computer Services and Software	6.6	7.6
Oceania	Mining	22.4	53.6
	Real Estate	4.4	10.6
	Leasing and Business Services	3.1	7.5
	Financial Services	2.9	6.8
	Manufacturing	2.0	4.7

***Source**: Statistical Bulletin of China's Outward Foreign Direct Investment (2017)*

4.3 China's Outward Foreign Direct Investment among the BRI Countries

The Belt and Road Initiative is a regional development strategy for the Silk Road Economic Belt and the 21st Century Maritime Silk Road. It involves 65 countries from six different regions: Eastern Asia (China, Mongolia), Southeast Asia (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Vietnam), South Asia (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri-Lanka), Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan), Europe (Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech, Estonia, Georgia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey, Ukraine), Middle East & Northern Africa (Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Yemen). The BRI is partly based on the Silk Road Economic Belt, proposed in September 2013 when President Xi Jinping made a speech at Nazarbayev University in Khazakstan. The Silk Road Economic Belt aims to build a land channel from the Pacific Ocean to the Baltic Sea by improving cross-border infrastructure and the flow of international trade and capital. Another foundation of the BRI is the 21st Century Maritime Silk Road which was proposed in October of 2013 when President Xi Jinping made a state visit to Indonesia and delivered a speech at the Indonesian Parliament. The 21st Century Maritime Silk Road connects the Association of Southeast Asian Nations (ASEAN) and links countries from the South China Sea to the Mediterranean Sea and the South Pacific Ocean.

From China's perspective, the Belt and Road Initiative, a comprehensive trans-regional development policy that combines investment and trade, is considered a win-win strategy that brings prosperity for China and related countries. The Chinese government and the Asian Infrastructure Investment Bank (AIIB) have financed the BRI. Some scholars believe that the BRI is motivated by maintaining a high economic

growth rate for the Chinese economy and strengthening the political influence of China. The Belt and Road Initiative involves 65 countries which account for around 60 per cent of the world's population and about 30 per cent of the world's GDP (Huang, 2016). Countries along the BRI are endowed with abundant energy and natural resources; however, their manufacturing industries are relatively undeveloped.

This section explains the trends and characteristics of China's investment among the BRI countries. Then, the sector distribution of China's OFDI along these countries is clarified in detail.

4.3.1 The Trends and Characteristics of China's OFDI in the BRI Countries

The distribution of Chinese OFDI among the BRI countries is an important signal to measure Chinese companies' performance and investment motivations. The BRI countries saw a sharp increase in Chinese investment from US$1.311 billion to US$154.38 billion between 2003 and 2017 (Figure 4.3). The annual growth rate of China's OFDI into the BRI countries was 40.58 per cent which was much higher than the 33.05 per cent growth rate of Chinese OFDI stock globally. The massive investment in BRI countries has improved their infrastructure and lowered transport costs. Furthermore, with the high-level government to government cooperation, the relatively stable political environment has encouraged Chinese firms to invest more in the BRI countries (Du & Zhang, 2018).

The method of China's OFDI into the BRI countries has varied more than most scholars have believed. The Belt and Road initiative has been designed to promote Chinese OFDI into the BRI countries while not increasing China's OFDI into the BRI countries. As shown in Figure 4.3, the official data indicated the declining trend of China's OFDI stock into the BRI countries to China's total OFDI stock after 2013 when China unveiled the BRI initiative. This trend was also captured by the data from the

American Enterprise Institute and Heritage Foundation, which recorded China's overseas investment value as above US$ 100 million since 2005 (Figure 4.4).

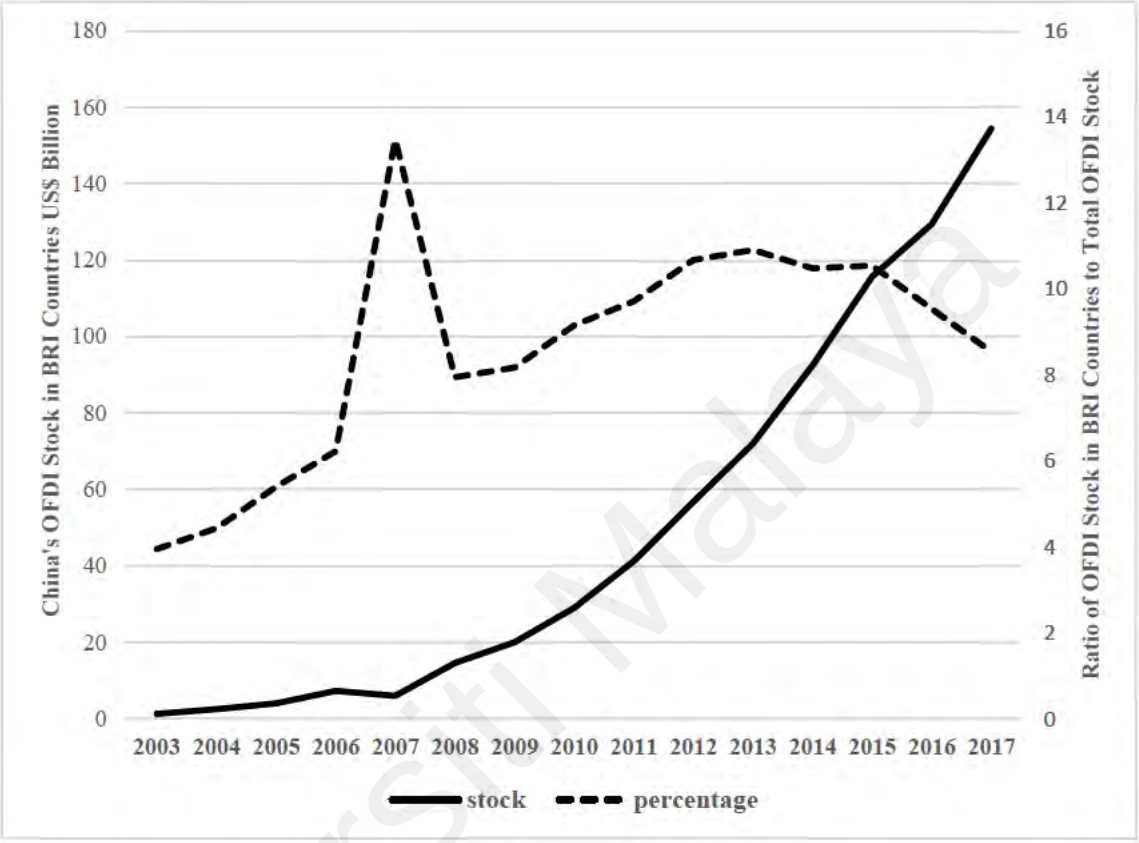

Figure 4.3: China's OFDI in the BRI Countries (Stock and Percentage), 2003-2017

Source: *Statistical Bulletin of China's Outward Foreign Direct Investment (2003-2017)*

Notes: *Calculated by the Author*

After unveiling the BRI, the Chinese government sharply increased investments in the BRI countries, reaching a peak in 2015 and then falling until 2018. The Ministry of Commerce of the People's Republic of China (MOFCOM) has shown an ongoing increasing trend different from the China Global Investment Tracker (CGIT). The difference between the MOFCOM and CGIT is that the latter has tracked capital flows' final destinations. Another is that because Xi Jinping announced the BRI, there exists a

phenomenon of modifying data by grassroots officials for political motivation to showcase the achievements of the BRI (Goh & Ruwitch, 2017, October 24).

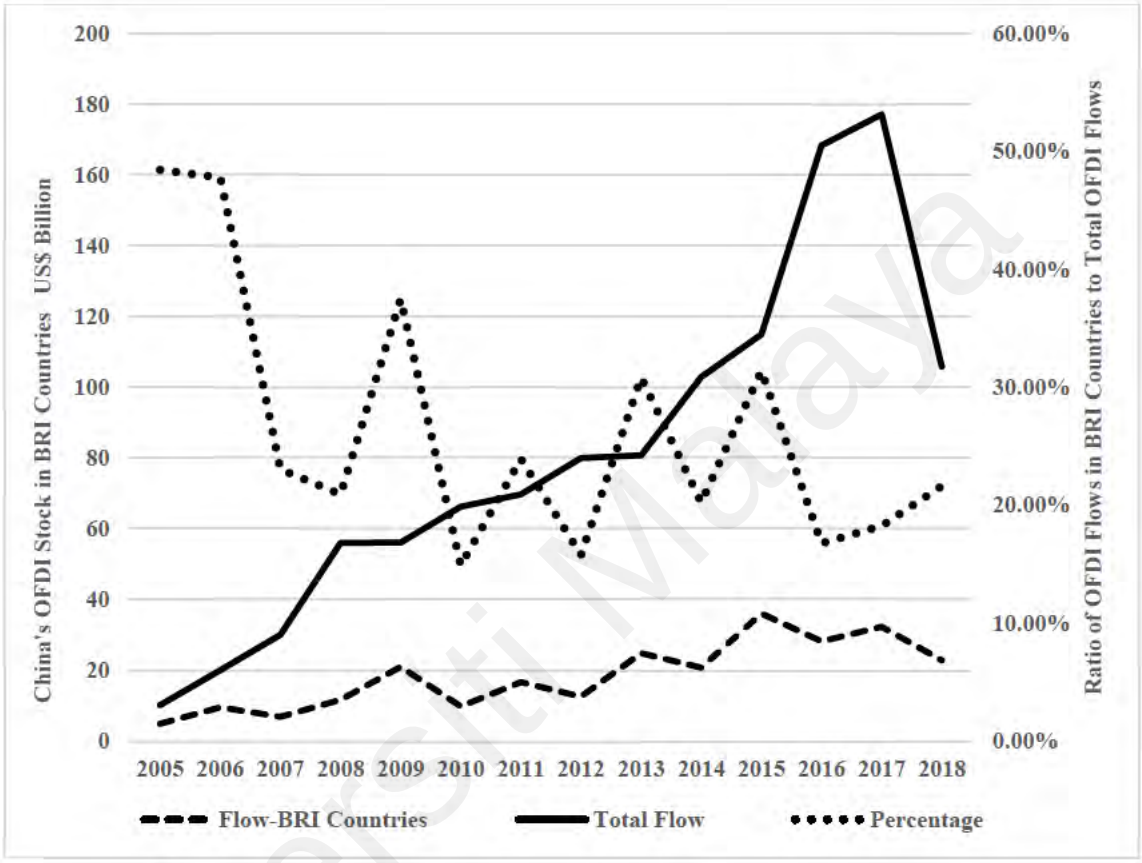

Figure 4.4: China's OFDI (Flow and Percentage), 2005-2018

***Source**: American Enterprise Institute and Heritage Foundation*

***Notes:** Calculated by the Author*

Intensive concentration is one of the characteristics of China's investment in the BRI countries. The top 10 recipient countries have accounted for 73 per cent of total investment in the BRI countries, and the top 20 recipients have accounted for 92 per cent. Capital from China has mainly flowed to Asia countries, especially Southeast Asian countries. Among the top 10 host countries, only the Russian Federation and the

United Arab Emirates are located outside Asia; six out of the ten countries are in Southeast Asia (Figure 4.5). Singapore has received nearly 30 per cent of total Chinese OFDI stock in the BRI countries, mainly distributed to; logistics, energy, finance and real estate industries. Taking advantage of cultural proximity to China, stable government, and professional service providers, Singapore has acted as China's launchpad into the Association of Southeast Asian Nations (ASEAN) countries, attracting the most Chinese investment among the BRI countries (Jing, 2019, April 30).

The intensive concentration of China's OFDI in the BRI countries also can be seen from a geographic perspective. By the end of 2017, Southeast Asian countries accounted for about 58 per cent of total Chinese OFDI in the BRI countries. The Middle East and North African countries accounted for nearly 12 per cent of that Chinese investment, which was approximately equal to the share of European countries. South Asian countries attracted a little more investment than Central Asian countries, which were nearly 8 per cent. As Mongolia is the only Central Asian country among the BRI, it accounted for 2 per cent of total Chinese investment in the BRI countries (Figure 4.6).

It can be seen when comparing the data with 2012 that after unveiling the BRI, China's investment has been more concerned with Southeast Asian countries, from 50 per cent in 2012 to 58 per cent in 2017. The share of the Middle East and North African countries only increased by 1 per cent. European and South Asian countries maintained the same proportion as before. East Asian and South Asian countries decreased their share of China's total OFDI in the BRI countries by 3 and 6 per cent, respectively.

The geographic distribution of Chinese investment in the BRI countries suggests that market size is one of the elements affecting the investment decisions of Chinese firms. Of the top 20 recipient countries of Chinese investment, 13 were in the top 20 ranking of BRI countries by GDP. In other words, Chinese firms prefer to choose large market

countries as their destination of outward investment. MNEs enlarge their production in host countries to penetrate growing local markets approximated by their GDP (Agarwal, 1980; Benito, 1997; Faeth, 2009; Vukanović, 2016). The positive relationship between foreign direct investment and GDP has been supported by other empirical works (Arregle et al., 2013; Ethier, 1986; Harvey, 1989; Iamsiraroj & Doucouliagos, 2015; Lall et al., 2003; Tsai, 1991; Wang & Swain, 1995; Yang et al., 2000).

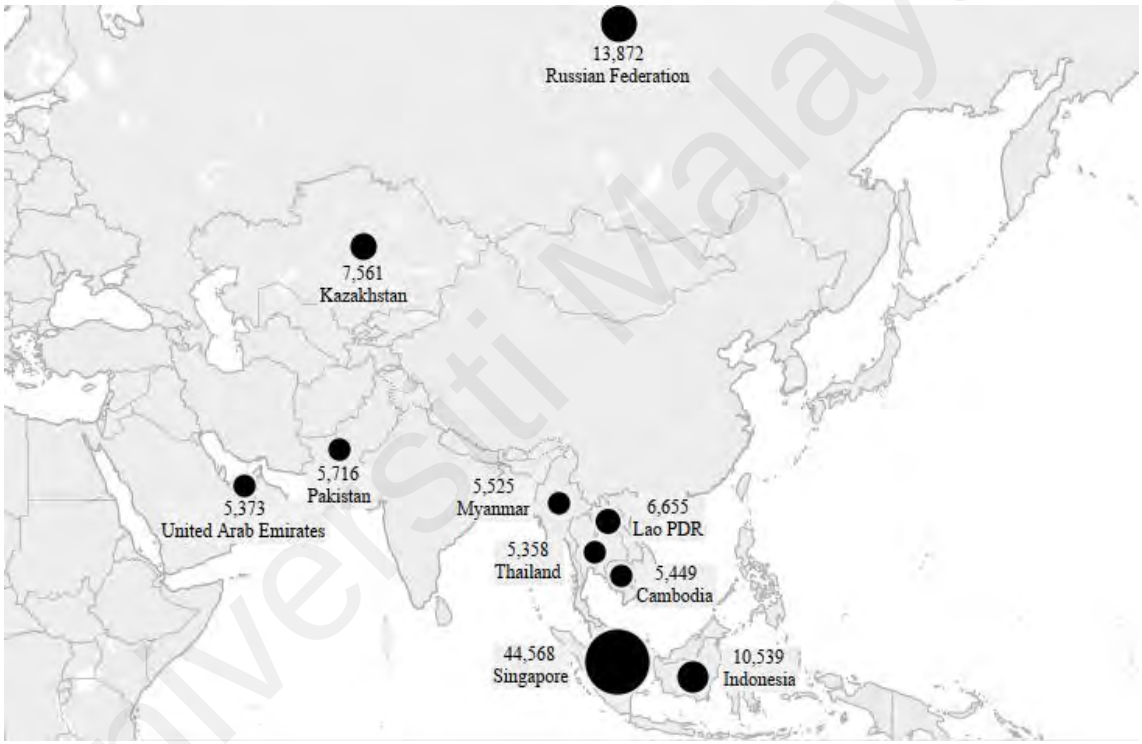

Figure 4.5: Top 10 Recipients of China's OFDI in the BRI Countries, 2003-2017 (US$, million)

***Source**: Statistical Bulletin of China's Outward Foreign Direct Investment (2018)*

***Notes**: Calculated and Mapped by the Author*

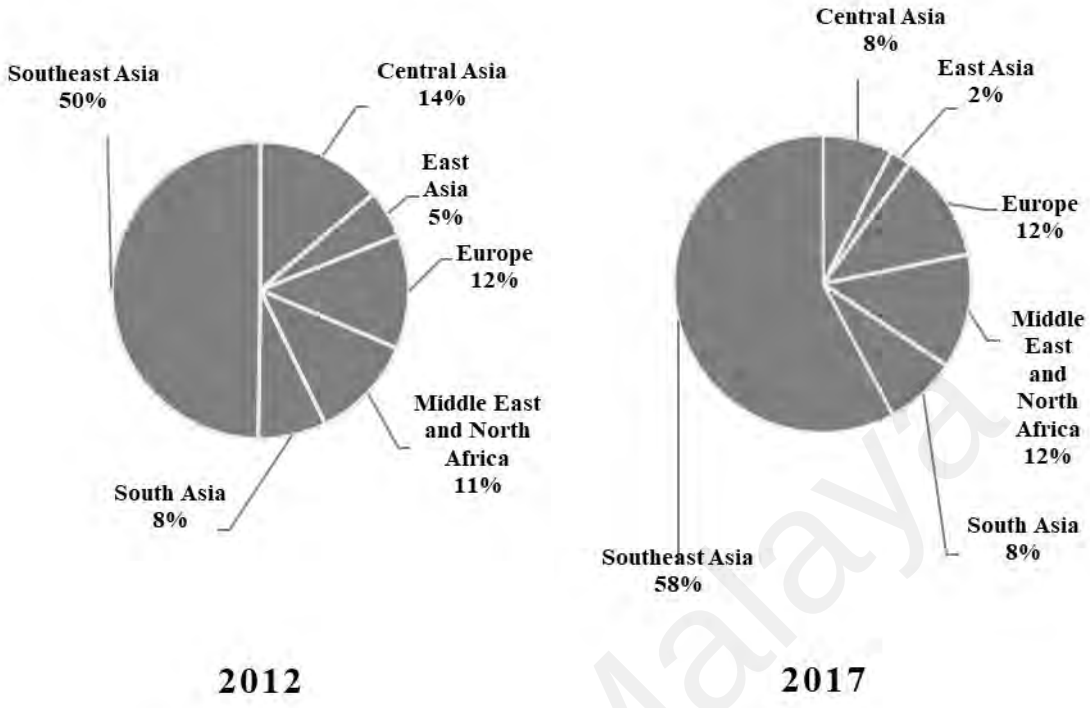

Figure 4.6: Regional Distribution of China's OFDI Stock in the BRI Countries (2012, 2017)

Source*: Statistical Bulletin of China's Outward Foreign Direct Investment (2018)*

Notes*: Calculated and Mapped by the Author*

4.3.2 Sector Distribution of OFDI in the BRI Countries

As industry sector data was unavailable from MOFCOM, CGIT data helped map the distribution characteristics by industry of China's OFDI in the BRI countries using firm-level data.

Foreign direct investment from China has mainly targeted the; energy, metals, and transport industries which account for 68.56 per cent of the total industry distribution in the BRI countries (Table 4.10). The top three industries were the same as the distribution of China's OFDI worldwide. Investment in the energy sector was mostly through mergers and acquisitions (M&As) FDI, while the others were greenfield FDI.

Energy subindustries, such as; oil, coal, gas and hydro, have been the core drivers for the BRI, which has helped China to access reliable and efficient energy networks (Len, 2015). Except for the demand for traditional energy consumption, China is looking for environmentally-friendly energy sources, such as gas from the Russian Federation and Kazakhstan, as environmental pollution is gaining more attention in the economic development process.

Investment in the metals industry has mainly been distributed in the; steel, copper and aluminium subsectors which have promoted Chinese manufacturing firms to enlarge their cross-border activities. In detail, Indonesia, Bangladesh, Mongolia and India have been the main destinations of the steel sector. Afghanistan, Myanmar and Serbia have been the core recipients of Chinese investment in the copper sector. Malaysia, Indonesia, Saudi Arabia and Egypt have been the main destinations of Chinese investment in the aluminium sector. Reliable metal supplies have fulfiled the demands of domestic and foreign consumption and kept China's status as the world's factory (Fessehaie & Morris, 2013; Tan, 2013; Yao et al., 2010).

Chinese investment in the transport industry has been a constant feature. Autos, shipping, and rail have been the primary targets for Chinese MNEs in the transport industry. To enlarge the production and marketing networks of Chinese auto MNEs, Indonesia, Serbia, the Russian Federation, and Singapore have been targeted as core investment recipients to serve the host country or other countries in this region mainly through greenfield investments. China's shipping investments have flowed largely from state-owned companies to; Pakistan, Sri Lanka and Turkey to acquire ports as a guarantee to acquire strategic assets and corporations with China's diplomatic strategy (Lee et al., 2018). Railway investment in the BRI countries has promoted infrastructure

connectivity by taking advantage of high technology from Chinese SOEs and low-cost railway construction (De Soyres et al., 2018).

Since 2014, China's investments in; entertainment, finance, health, logistics, technology, tourism, transport, and utilities have become more attractive relative to other sectors. In other words, China decreased investments in natural resources from 77.14 per cent in 2013 to 51.78 per cent in 2018. The changes in sectoral investment distribution were affected by economic behaviour and Chinese government policy.

4.4 Chinese Government Policies to Encourage OFDI in the BRI Countries

The previous section examined the dynamic changes in the distribution of Chinese investment by industry. SOEs have been the main drivers of Chinese investments in; energy, metals, transportation, logistics, technology, and finance. Thus, the policy elements that affect the investment decisions of SOEs should be considered.

As the direct controller of SOEs and indirect controller of private companies, the Chinese government supports greenfield investment and M&As investment in the BRI countries by releasing the Outbound Foreign Investment Catalogue (OFIC) and the Guide for Outbound Investment and Cooperation (GOIC). Meanwhile, the Chinese central government has vigorously promoted Chinese Overseas Cooperation Zones (COCZs) to boost overseas investment and cooperation with host countries.

4.4.1 Outbound Foreign Investment Catalogue

The OFIC is released to guide Chinese companies to make investment decisions in different sectors and countries by; the Ministry of Commerce (MOFCOM), Ministry of Foreign Affairs (MOFA) and National Development and Reform Commission (NDRC). Since 2004, the Chinese government has issued three catalogues covering 130 countries. The OFIC aims to encourage Chinese companies with competitive advantages to engage

Table 4.10: Industrial Distribution of China's OFDI in the BRI Countries (US$, million)

Sector	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Agriculture	0	0	0	200	0	1,440	100	0	2,040	1,560	440	1,940	280	510	8,510
Chemicals	0	0	0	0	0	190	1,920	0	110	0	0	0	0	500	2,720
Energy	4,690	6,280	2,010	9,060	18,460	4,590	8,790	4,860	15,430	12,260	20,310	11,380	6,610	5,730	130,460
Entertainment	0	0	0	0	0	0	0	240	0	0	0	5,160	1,050	0	6,450
Finance	0	0	0	0	530	170	100	1,000	200	320	1,700	1,100	230	690	6,040
Health	0	0	0	0	0	0	0	0	240	0	0	0	1,080	100	1,420
Logistics	0	0	150	0	0	0	810	0	0	800	290	190	10,090	0	12,330
Metals	0	940	4,320	2,160	480	2,140	2,740	2,280	1,920	1,190	2,700	410	470	5,830	27,580
Other	0	120	0	0	0	400	0	230	410	530	1,530	1,240	4,060	4,190	12,710
Real Estate	0	1,300	0	0	600	500	1,690	1,670	3,390	1,640	1,620	1,740	3,890	140	18,180
Technology	0	0	460	0	500	300	0	1,500	110	1,600	3,280	250	410	1,120	9,530
Tourism	0	0	0	0	0	0	0	0	450	0	0	1,860	0	0	2,310
Transport	0	970	0	330	470	150	550	870	610	930	3,500	2,840	4,180	3,340	18,740
Utilities	0	0	0	0	0	0	0	0	0	0	730	140	0	0	870
Total	4,690	9,610	6,940	11,750	21,040	9,880	16,700	12,650	24,910	20,830	36,100	28,250	32,350	22,150	257,850

***Source**: American Enterprise Institute and Heritage Foundation*

***Notes**: Calculated by the Author*

Table 4.11: Industrial Distribution of China's OFDI in the BRI Countries (Account in Number of Affiliates)

Country	2005-2008	Number of Affiliates	2009-2013	Number of Affiliates	2014-2018	Number of Affiliates
Afghanistan	Metals	1	Energy	1		
Bangladesh					Energy	4
					Finance	1
					Metals	1
					Other	1
Belarus			Transport	1	Logistics	1
Bulgaria			Transport	1		
Bosnia					Energy	1
Brunei					Energy	1
Cambodia	Energy	3	Energy	4		
			Entertainment	1		
			Finance	1	Transport	2
			Metals	1	Agriculture	1
			Real estate	1	Real estate	1
Croatia					Energy	1
Czech Republic					Finance	3
					Real estate	1
Egypt	Logistics	1	Energy	1		
	Metals	1	Real estate	2		
			Other	1	Other	2
Georgia			Finance	1		
			Other	1		
			Real estate	1		
Hungary			Chemicals	3		
			Technology	1	Technology	1
India					Agriculture	3
			Energy	1	Energy	6
					Entertainment	1
					Health	1
	Metals	2			Metals	2
					Other	6
					Real estate	3
					Technology	6
					Tourism	1
			Transport	1	Transport	2
Indonesia	Energy	2	Energy	4	Energy	6
			Metals	5	Metals	6
			Real estate	3	Real estate	4
			Transport	1	Transport	4
					Other	1
Iran	Energy	1	Energy	1	Energy	2
					Metals	1
Iraq			Agriculture	1	Agriculture	2
Israel			Energy	3	Entertainment	1
			Health	1	Health	1

					Other	1
					Technology	2
Jordan					Chemicals	1
					Energy	1
					Other	1
Kazakhstan	Energy	3	Energy	4	Energy	4
			Metals	1	Finance	1
			Transport	1	Other	1
					Real estate	1
Kuwait					Energy	1
Kyrgyzstan					Energy	2
					Metals	1
Laos			Energy	2	Energy	4
					Metals	1
			Other	1	Other	3
			Real estate	1	Real estate	2
					Transport	1
Malaysia					Agriculture	1
			Energy	1	Energy	5
					Finance	1
			Metals	4	Metals	1
			Other	1	Other	1
			Real estate	3	Real estate	5
					Technology	2
					Tourism	1
			Transport	3	Transport	3
Maldives					Transport	1
Mongolia	Energy	1	Energy	3	Energy	2
	Metals	1			Metals	1
Myanmar			Energy	1	Energy	1
	Metals	1	Metals	2		
Nepal			Energy	1	Real estate	2
Oman					Other	1
Pakistan			Energy	4	Energy	7
					Finance	1
					Other	2
	Technology	2	Technology	1	Technology	2
					Transport	1
Poland			Transport	1	Energy	2
					Other	2
					Utilities	1
Philippines	Energy	1				
Qatar			Energy	1		
Russian Federation			Agriculture	1	Agriculture	1
	Energy	2	Energy	9	Energy	9
			Finance	4		
			Metals	5	Metals	1
	Other	1	Other	1		
	Real estate	1	Real estate	1	Real estate	1
			Technology	1	Technology	2
			Transport	1	Transport	2

Saudi Arabia	Metals	1	Energy	1		
Serbia					Energy	2
					Metals	3
					Other	1
					Transport	1
Singapore	Agriculture	1	Chemicals	1	Agriculture	1
	Energy	1	Energy	2	Energy	1
					Entertainment	1
					Finance	2
			Logistics	1	Logistics	6
					Other	3
			Real estate	4	Real estate	8
					Technology	1
	Transport	2			Transport	3
					Utilities	1
Slovenia					Entertainment	1
					Other	1
Sri Lanka			Logistics	1	Logistics	1
			Real estate	1	Real estate	1
			Transport	1	Transport	1
Syria	Energy	2	Energy	1		
Tajikistan			Real estate	1		
Thailand			Agriculture	1	Energy	1
			Finance	1	Other	2
			Real estate	1	Technology	1
			Transport	2	Transport	1
Turkey	Energy	1	Energy	3	Energy	1
					Finance	2
					Technology	1
			Transport	1	Transport	1
Turkmenistan					Energy	1
UAE			Tourism	1	Energy	6
					Other	1
					Transport	1
Ukraine					Energy	1
Uzbekistan			Metals	1	Energy	1
			Other	1	Real estate	2
Vietnam			Energy	1	Energy	5
			Other	1	Other	1
			Technology	1		
			Transport	2	Transport	2
Yemen	Energy	1				

***Source**: American Enterprise Institute and Heritage Foundation*

***Notes**: Calculated by the Author*

in high-level international competition and cooperation and promote the growth of goods, service trade, and technology. Those companies that follow the guide to investing abroad will be supported by preferential government policies on; capital, foreign exchange, taxation, and customs.

For the BRI countries, 51 out of the 64 countries are covered by the catalogue. The first catalogue was published in 2004 and covered 30 BRI countries. The Southeast Asian countries were the only regional countries covered in the first catalogue. Meanwhile, the top 10 countries that have received the most Chinese investment were included in the first catalogue. The OFIC can be regarded as one of the most important government policies that reflects the real strategy of the Chinese government to engage in international business. Preferential policies from the government have changed the direction of capital flows from Chinese companies.

From a sector distribution perspective, the catalogue includes; natural resources (agriculture, forestry, fishing industry, mining, quarrying, and oil and gas extraction), the manufacturing sector, the service sector and others. Chinese OFDI has sought natural resources, such as; forestry, fishing, aquaculture and mining in 40 out of 51 BRI countries, except for Singapore, Turkey, Hungary, Nepal, Jordan, Israel, Bulgaria, Estonia, Lithuania, Slovenia and Slovakia. Forestry has been the most attractive sector in agriculture. Forestry has covered nine countries: Thailand, Laos, Myanmar, Cambodia, Malaysia, Indonesia, Czech Republic, Russia and Croatia. Fishing has been the second most attractive sector, including eight countries: Myanmar, the Philippines, Indonesia, Brunei, Timor-Leste, Pakistan, Sri Lanka and Oman (Table 4.12).

The oil and gas extraction industry has included 18 countries: Myanmar, Indonesia, Brunei, Timor-Leste, Iran, United Arab Emirates, Saudi Arabia, Egypt, Russia, Kazakhstan, Uzbekistan, Azerbaijan, Yemen, Syria, Turkmenistan, Kuwait, Qatar, and

Oman. The Chinese government chose countries with abundant oil reserves. Some of them are in the top ranking of countries with proven crude oil reserves, such as; Saudi Arabia, Iran, Kuwait, United Arab Emirates, Russia, Kazakhstan, and Qatar (Table 4.13). For the mining industry, the subsector has mainly focused on coal mining (Malaysia, Kyrgyzstan, Vietnam, Russia, Mongolia, Bangladesh, India, Pakistan and Ukraine), copper mining (Russia, Mongolia, Pakistan, Afghanistan, Poland, Armenia, Kazakhstan, the Philippines, Iran, Myanmar) and iron ore mining (Vietnam, Russia, Mongolia, India, Ukraine, Afghanistan, Kazakhstan). According to the above analysis, the Chinese government's policy encouraging natural resources-seeking FDI in the BRI countries can be seen.

The manufacturing sector covers; food manufacturing (Armenia, Vietnam, Belarus, Kazakhstan, Bulgaria, Malaysia, Turkmenistan, Tajikistan, Laos, Kyrgyzstan and Vietnam), beverage and tobacco product manufacturing (Russia, Cambodia, Vietnam, Kazakhstan and Kyrgyzstan), textile mills (Thailand, Azerbaijan, Egypt and Uzbekistan), apparel manufacturing (Jordan, Bangladesh, Cambodia, Pakistan, Sri Lanka, Mongolia, United Arab Emirates, Turkey, Poland, Czech Republic, Romania, Russia, Syria, Tajikistan, Turkmenistan, Estonia and Lithuania), leather and allied product manufacturing (Turkey, Mongolia, Lithuania, Belarus and Yemen), wood product manufacturing (Romania, Belarus, Estonia, Slovenia, Croatia, Indonesia, Myanmar and Russia), paper manufacturing (Thailand, Vietnam, Myanmar, Kyrgyzstan, Ukraine, Laos, Malaysia and Russia), petroleum and coal products manufacturing (United Arab Emirates, Oman and Singapore), chemical manufacturing (Kuwait, Thailand, Myanmar, Malaysia, Syria, Indonesia, Saudi Arabia, Egypt, Uzbekistan, India, Pakistan, Tajikistan and Ukraine), plastics and rubber products manufacturing (Kyrgyzstan, India, Iran, Saudi Arabia, Egypt, Romania, Russia, Kazakhstan, Sri Lanka, Albania, Qatar, Thailand and Malaysia), non-metallic mineral product manufacturing (Vietnam, Kuwait,

Mongolia, Nepal, Yemen and Armenia), primary metal manufacturing (Malaysia, Ukraine and Qatar), machinery manufacturing (Laos, Vietnam, the Philippines, United Arab Emirates, Hungary, Saudi Arabia, Albania, Oman, Thailand, Pakistan, Bangladesh, Malaysia, Myanmar, Slovakia, Qatar, India, Syria, Sri Lanka, Estonia, Czech Republic and Turkey), computer and electronic product manufacturing (Singapore, Russia, Poland, Romania, Belarus, Armenia, Slovenia, Bulgaria, Pakistan, Indonesia, the Philippines, India, Turkey, Yemen, Jordan and Slovakia), electrical equipment, appliance, and component manufacturing (Czech Republic, Egypt, Indonesia, Iran, Kazakhstan, Uzbekistan, Poland, Myanmar, Malaysia, Bangladesh, Turkmenistan, Indonesia, Hungary, Romania, Vietnam, Jordan and Laos), transportation equipment manufacturing (Czech Republic, Russia, Ukraine, Bulgaria, Cambodia, Bangladesh, Nepal, Laos, Indonesia, Kazakhstan, Myanmar, Iran, Vietnam, the Philippines, Pakistan, Egypt and Romania) and other miscellaneous manufacturing (India). Among these 51 countries, Russia, Malaysia, Egypt, Vietnam, Thailand, Myanmar, India, Pakistan, Romania, Laos, the Philippines, Indonesia and the Czech Republic have been the most popular destinations for Chinese government policy to encourage investment in the manufacturing industry.

For the service sector, investment has been distributed mostly into the construction industry (Russia, Thailand, Iran, Turkmenistan, Indonesia, Jordan, Cambodia, United Arab Emirates, Ukraine, Syria, Myanmar, Turkey, Mongolia, Vietnam, Pakistan, Egypt, Bulgaria, Kazakhstan, Malaysia, the Philippines, Qatar, India, Albania and Singapore), wholesale trade industry (Turkmenistan, India, Belarus, Turkey, Egypt, Kazakhstan, Vietnam, Jordan, Thailand, Hungary, Romania, Singapore, United Arab Emirates, Russia, Ukraine, Malaysia and Pakistan), travel arrangement and reservation services industry (Slovenia, Slovakia, Hungary, Sri Lanka, Egypt, Malaysia, Indonesia, Thailand, Vietnam, India, Cambodia, Nepal, Russia, Estonia and Croatia), professional, scientific,

and technical services (Poland, Czech Republic, Estonia, Russia, Belarus, Kyrgyzstan, Oman, Israel and Singapore), information industry (Romania, Croatia, Russia, Iran, Kyrgyzstan, Kazakhstan, India and Israel) and transportation and warehousing industry (United Arab Emirates, Indonesia, the Philippines, India, Russia, Singapore and Kazakhstan). The finance and insurance industry and health care and social assistance industry have received less attention.

China's manufacturing and service industries investments can be explained as promoting trade substitution and avoiding tariff barriers to maintain the existing host country's market share. As Chinese companies have relative advantages in manufacturing; textiles, television sets and electrical machinery and the construction industry, it has faced increasing pressure from policymakers in host countries to reduce the trade deficit. One of the ways to avoid tariff and non-tariff barriers has been to transfer production from China to other countries. Investment in the wholesale trade industry has been seen as seeking greater market share. According to relative industry investment encouragement, the market seeking FDI motivation can be proved. Meanwhile, Chinese government support has encouraged Chinese companies to compete with MNEs from advanced economies and acquire high technology through M&As. Such industries include; biological pharmacy, computer science, finance and electronics.

The catalogue has reflected the motivation of the Chinese government to promote overseas investment. The Chinese government has chosen countries with good relationships and important trade partners with China. The selected host countries should also be key members of regional economic organisations, and their economies should be complementary to the Chinese economy. The selection of sectors has mainly encouraged companies with excess capacity or relative advantages with the host country

Table 4.12 Industrial Distribution of the Outbound Foreign Investment Catalogue

Industry	Country
Natural Resource Sector	
Fishing	Myanmar, the Philippines, Indonesia, Brunei, Timor-Leste, Pakistan, Sri Lanka, Oman
Forestry	Thailand, Laos, Myanmar, Cambodia, Malaysia, Indonesia, Czech Republic, Russia, Croatia
Oil and gas extraction industry	Myanmar, Indonesia, Brunei, Timor-Leste, Iran, United Arab Emirates, Saudi Arabia, Egypt, Russia, Kazakhstan, Uzbekistan, Azerbaijan, Yemen, Syria, Turkmenistan, Kuwait, Qatar, Oman
Coal mining	Malaysia, Kyrgyzstan, Vietnam, Russia, Mongolia, Bangladesh, India, Pakistan, Ukraine
Copper mining	Russia, Mongolia, Pakistan, Afghanistan, Poland, Armenia, Kazakhstan, the Philippines, Iran, Myanmar
Iron ore mining	Vietnam, Russia, Mongolia, India, Ukraine, Afghanistan, Kazakhstan
Manufacturing Sector	
Food manufacturing	Armenia, Vietnam, Belarus, Kazakhstan, Bulgaria, Malaysia, Turkmenistan, Tajikistan, Laos, Kyrgyzstan ,Vietnam
Beverage and tobacco product manufacturing	Russia, Cambodia, Vietnam, Kazakhstan, Kyrgyzstan
Textile mills	Thailand, Azerbaijan, Egypt, Uzbekistan
Apparel manufacturing	Jordan, Bangladesh, Cambodia, Pakistan, Sri Lanka, Mongolia, United Arab Emirates, Turkey, Poland, Czech Republic, Romania, Russia, Syria, Tajikistan, Turkmenistan, Estonia, Lithuania
Leather and allied product manufacturing	Turkey, Mongolia, Lithuania, Belarus and Yemen
Wood product manufacturing	Romania, Belarus, Estonia, Slovenia, Croatia, Indonesia, Myanmar, Russia
Paper manufacturing	Thailand, Vietnam, Myanmar, Kyrgyzstan, Ukraine, Laos, Malaysia, Russia
Petroleum and coal products manufacturing	United Arab Emirates, Oman, Singapore
Chemical manufacturing	Kuwait, Thailand, Myanmar, Malaysia, Syria, Indonesia, Saudi Arabia, Egypt, Uzbekistan, India, Pakistan, Tajikistan, Ukraine
Plastics and rubber products manufacturing	Kyrgyzstan, India, Iran, Saudi Arabia, Egypt, Romania, Russia, Kazakhstan, Sri Lanka, Albania, Qatar, Thailand, Malaysia
Non-metallic mineral product manufacturing	Vietnam, Kuwait, Mongolia, Nepal, Yemen, Armenia
Primary metal manufacturing	Malaysia, Ukraine, Qatar
Machinery manufacturing	Laos, Vietnam, the Philippines, United Arab Emirates, Hungary, Saudi Arabia, Albania, Oman, Thailand, Pakistan, Bangladesh, Malaysia, Myanmar, Slovakia, Qatar, India, Syria, Sri Lanka, Estonia, Czech Republic, Turkey
Computer and electronic product manufacturing	Singapore, Russia, Poland, Romania, Belarus, Armenia, Slovenia, Bulgaria, Pakistan, Indonesia, the Philippines, India,

	Turkey, Yemen, Jordan, Slovakia
Electrical equipment, appliance, and component manufacturing	Czech Republic, Egypt, Indonesia, Iran, Kazakhstan, Uzbekistan, Poland, Myanmar, Malaysia, Bangladesh, Turkmenistan, Indonesia, Hungary, Romania, Vietnam, Jordan, Laos
Transportation equipment manufacturing	Czech Republic, Russia, Ukraine, Bulgaria, Cambodia, Bangladesh, Nepal, Laos, Indonesia, Kazakhstan, Myanmar, Iran, Vietnam, the Philippines, Pakistan, Egypt, Romania
Other miscellaneous manufacturing	India
Service Sector	
Construction industry	Russia, Thailand, Iran, Turkmenistan, Indonesia, Jordan, Cambodia, United Arab Emirates, Ukraine, Syria, Myanmar, Turkey, Mongolia, Vietnam, Pakistan, Egypt, Bulgaria, Kazakhstan, Malaysia, the Philippines, Qatar, India, Albania, Singapore
Wholesale trade industry	Turkmenistan, India, Belarus, Turkey, Egypt, Kazakhstan, Vietnam, Jordan, Thailand, Hungary, Romania, Singapore, United Arab Emirates, Russia, Ukraine, Malaysia, Pakistan
Travel arrangement and reservation services industry	Slovenia, Slovakia, Hungary, Sri Lanka, Egypt, Malaysia, Indonesia, Thailand, Vietnam, India, Cambodia, Nepal, Russia, Estonia, Croatia
Professional, scientific, and technical services	Poland, Czech Republic, Estonia, Russia, Belarus, Kyrgyzstan, Oman, Israel, Singapore
Information industry	Romania, Croatia, Russia, Iran, Kyrgyzstan, Kazakhstan, India, Israel
Transportation and warehousing industry	United Arab Emirates, Indonesia, the Philippines, India, Russia, Singapore, Kazakhstan
Finance and insurance industry	Russia
Health care and social assistance industry	Russia

***Source**: MOFCOM*

***Notes**: Calculated by the Author*

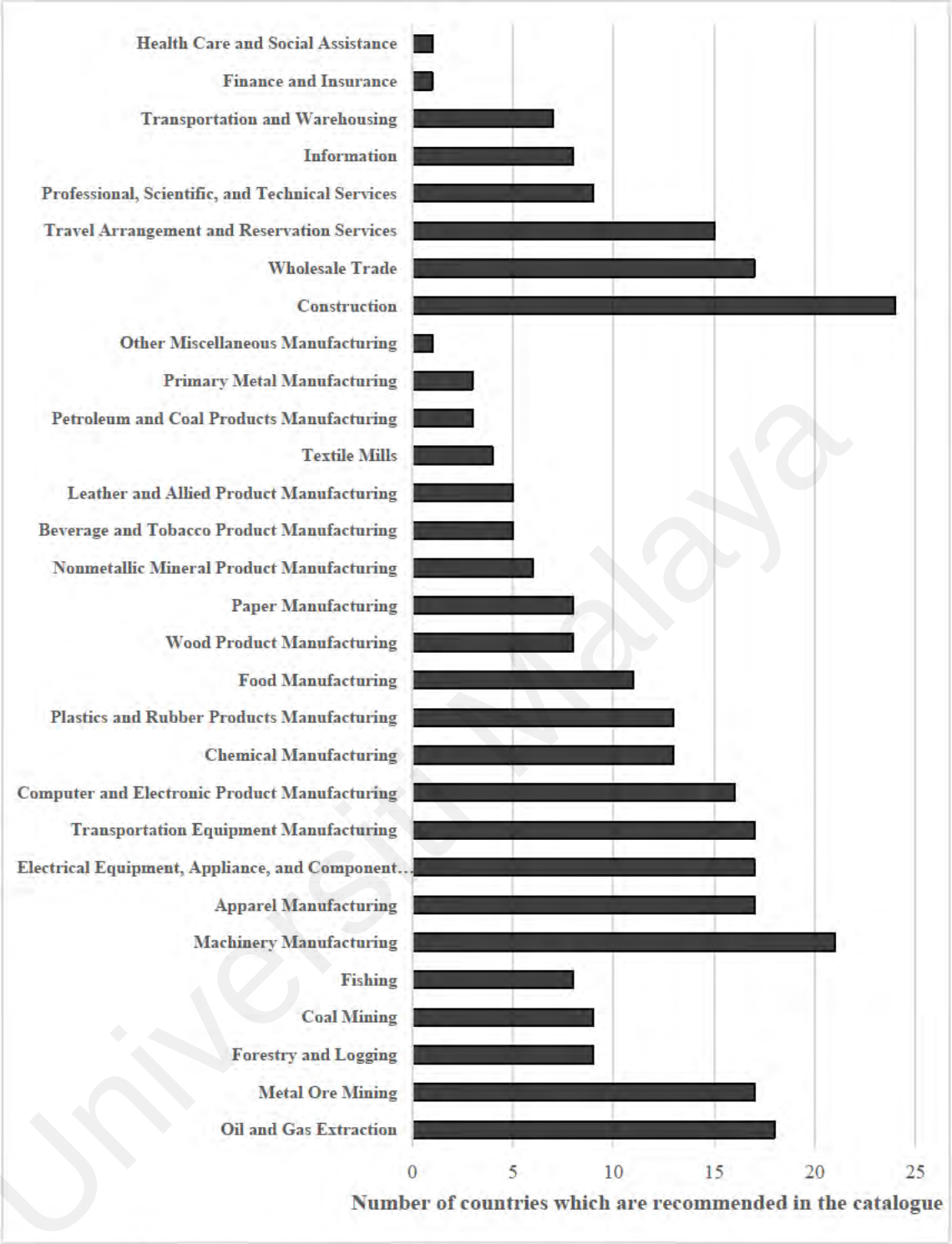

Figure 4.7: Sector Distribution of the Outbound Foreign Investment Catalogue

Source: *MOFCOM*

Notes: *Calculated by the Author*

Table 4.13: Ranking of Proven Crude Oil Reserves (2018)

Country	Ranking
Saudi Arabia	2
Iran	3
Kuwait	6
United Arab Emirates	7
Russia	8
Kazakhstan	12
Qatar	14
Azerbaijan	21
Oman	22
Turkmenistan	25
Egypt	27
Indonesia	28
Yemen	29
Syria	30
Brunei	40
Uzbekistan	45
Myanmar	63
Timor-Leste	--

***Source**: International Energy Statistics*

Table 4.14: Number of Attractive Sectors for China's OFDI in the BRI Countries

Country	Agriculture, Forestry, and Fishing	Mining	Manufacturing	Service	Others	Total
First Catalogue						
Thailand	2	1	6	3	0	12
Singapore	0	0	3	6	0	9
Laos	2	1	5	0	1	9
Myanmar	3	3	6	1	0	13
Vietnam	2	1	7	3	2	15
Cambodia	2	0	4	2	0	8
Philippines	2	1	5	2	1	11
Malaysia	1	1	8	4	0	14
Indonesia	2	1	5	3	1	12
Brunei	2	1	0	0	0	3
India	1	1	6	6	1	15
Pakistan	1	1	6	2	1	11
Bangladesh	1	1	4	0	0	6
Afghanistan	0	1	0	0	0	1
Timor-Leste	1	1	0	0	0	2
Mongolia	0	1	3	2	0	6
Iran	0	2	4	2	0	8
United Arab Emirates	0	1	4	4	0	9
Saudi Arabia	0	1	4	0	0	5
Turkey	0	0	4	2	0	6
Egypt	1	1	7	3	0	12
Poland	0	1	4	2	0	7
Czech Republic	1	0	5	1	0	7
Hungary	0	0	4	2	0	6
Romania	0	0	6	3	0	9
Russia	2	2	9	7	0	20
Kyrgyzstan	0	1	4	2	0	7

Kazakhstan	0	2	5	4	0	11
Uzbekistan	0	1	3	1	0	5
Azerbaijan	0	1	1	0	0	2
Subtotal	26	29	132	67	7	261
Second Catalogue						
Sri Lanka	1	1	3	1	0	6
Nepal	0	0	3	1	1	5
Yemen	0	1	3	0	0	4
Syria	0	1	3	1	0	5
Jordan	0	0	3	2	0	5
Israel	0	0	2	2	0	4
Belarus	2	1	4	2	0	9
Tajikistan	1	1	3	1	1	7
Turkmenistan	1	1	3	3	0	8
Ukraine	1	1	4	2	0	8
Bulgaria	0	0	3	1	0	4
Albania	1	0	3	2	1	7
Subtotal	7	7	37	18	3	42
Third Catalogue						
Kuwait	0	1	2	0	0	3
Qatar	0	1	3	1	0	5
Oman	1	1	2	1	0	5
Estonia	0	0	3	2	0	5
Armenia	0	1	3	0	0	4
Lithuania	0	0	3	0	0	3
Slovenia	0	0	2	2	0	4
Slovakia	0	0	2	2	0	4
Croatia	1	0	2	2	0	5
Subtotal	2	4	22	10	0	38
Total	37	42	193	97	12	381

***Source**: MOFCOM*

***Notes:** Calculated by the Author*

in ‘going abroad’. Meanwhile, based on the characteristics of the host country, the Chinese government has encouraged investors to focus on the high technology industry to upgrade the Chinese economy.

4.4.2 Guide for Outbound Investment and Cooperation

In 2009, the MOFCOM first published the GOIC covering 162 countries and areas. The guide is updated yearly and currently includes 172 countries and areas, covering all the BRI countries, except; Bhutan, Montenegro and Palestine. The main objective of issuing and updating the guide is to offer comprehensive and authoritative information about host countries for Chinese MNEs to operate production activities overseas. Meanwhile, the guide aims to avoid blindness and risks for Chinese overseas investment.

The characteristics of the GOIC are pertinence and authority. Pertinence refers to the guide introducing basic information concerning a host country concerning investment cooperation, indicating issues that Chinese companies may confront, and then giving suggestions and guidance to those companies. Authority indicates that all the information is from the Economic and Commercial Counselor’s Office of the Embassy of the People’s Republic of China in those countries, official data of the host country departments, and relevant international companies and institutions.

The guide includes seven sections. Section one indicates what a kind nation the host country is. The host country’s history, geographical, political and cultural conditions are explored in this section as basic knowledge. The attractiveness of the host country to foreign direct investment is explained in section two. This section considers the advantages of the host country for attracting FDI, such as; domestic market size, consumption capacity, natural resources, technology levels, industry structure, government concerned industry, labour costs, government stability, infrastructure, and

trade and investment relationships with China, and other countries. By following this section, Chinese companies can decide on investments in a host country.

Section three explains the host country's government regulations and policies concerning foreign trade and attracting FDI. As their foreign production branches will meet the demands of the host country and also fulfil the needs of the Chinese market or other countries, Chinese companies should know the host country's regulations regarding imports and exports. Chinese companies should also know the host country's local government policies and regulations regarding tax collection, labour employment, land usage, environmental protection, foreign investment protection, intellectual property rights protection, privileges for foreign companies, and anti-commercial bribery. These factors also affect the decisions for overseas investment by Chinese MNEs. Meanwhile, Chinese companies should fully understand; contracting with local projects, investing in cultural markets, finance and the stock market, and dispute handling methods.

Section four explains the handling of relevant investment procedures for investment in a host country. For new company registration, the requirement for the ratio of shares and the minimum registered capital should be known. This section gives suggestions for Chinese companies to contract for projects, apply for employment visas, file taxes, apply for patents, and register trademarks. Also, a list of institutions is provided for Chinese MNEs to consult regarding business investment.

Section five informs Chinese companies about what they should pay attention to when investing and cooperating in a host country. Chinese investment in the BRI countries considers business strategy and considers economic benefits. This section also lists what Chinese companies should pay attention to concerning international trade, contracting projects, labour service corporations, and risk prevention.

Sections six and seven advise Chinese companies to build harmonious relationships with host countries and deal with problems. A good relationship with the host country's government and people is key for Chinese MNEs to conduct business. In addition, Chinese MNEs should also; obey local cultural customs, undertake social responsibility, and spread Chinese culture. If Chinese MNEs are facing problems, it is better to use the law and search for help from the local government and the Chinese Embassy in the host country.

The GOIC can be seen as the government's suggestion for Chinese MNEs. From an investment motivation perspective, it gives market and natural resources information. Besides, potential investment opportunities, such as industries to choose from, are explained for each host country. Chinese MNEs can make their first investment decisions based on the above information by choosing which country and sector. Although the final decision may differ from the government's suggestions, it provides basic information about the host country and offers tips for further investment.

4.4.3 Chinese Overseas Cooperation Zones

Defined by the Ministry of Commerce, COCZs refer to industrial parks that receive investment from Chinese-owned companies registered in the People's Republic of China (excluding Hong Kong, Macao and Taiwan) as independent legal entities. COCZs play an industrial agglomeration role and promote relevant industrial development with complete infrastructure, industrial development strategy, and excellent public services.

With the Chinese government promoting it's 'going abroad' policy, Chinese overseas cooperation zones (COCZs) have provided a new platform for facilitating investment to experience fast development. There are 113 COCZs, with 54 of them located in BRI countries. Among the BRI countries, Indonesia, Russia and Cambodia have been the most attractive destinations, and a total of 24 COCZs have been built in these nations.

As a cooperation platform proposed by the central government, a Chinese company that successfully operates such an industrial park and passes the evaluation of the Ministry of Commerce can obtain financial support of as much as 0.2 billion RMB. Currently, 30 COCZs have been evaluated and confirmed by the Ministry of Commerce, with 21 of them located in the BRI countries. As well as support from the Ministry of Commerce, China Development Bank has also encouraged the development of COCZs. COCZs can obtain financing support through balance transfer and syndicated loans.

According to the different characteristics of the BRI countries, the leading industries have differed in each COCZ. From a host country perspective, each country and market has relative advantages in a specific industry, such as The Cambodia - China Tropical Agriculture Demonstration Area. Cambodia takes advantage of its cheap land and labour and a good natural environment to attract Chinese companies to cooperate in the agriculture industry. China needs forestry, agricultural planting, and mineral resources from a home country perspective. It seeks suitable destinations to fulfil its requirements. In 2019, China imported bananas from The Cambodia - China Tropical Agriculture Demonstration Area for the first time. Thus, COCZs are a better way for cooperation from both sides.

The Chinese central government has proposed to enhance the development of COCZS in official documents, such as 'Vision for Maritime Cooperation under the Belt and Road Initiative' and 'Guidelines of the State Council on Promoting International Cooperation in Production Capacity and Equipment Manufacturing'. COCZs should be seen as agglomerating different industries along the supply chain and increasing competitive capability, serving the final goal of promoting capacity cooperation and industrial upgrading. As its economic growth rate is slowing down, China faces the problem of excess production capacity in; steel, cement, electrolytic aluminium, and

machinery manufacturing industries. The Chinese government has proposed supply-side reforms to reduce production capacity to maintain continuous economic growth. Meanwhile, industrial transformation and updating is another aim for the 'Made in China 2025' strategy, aiming to transfer China from a low-end manufacturer to a high-end one. As industrial parks that represent part of the production capacity of Chinese companies and as tools serving the Chinese government's aims, COCZs in the BRI countries play the role of absorbing excess production capacity and industrial upgrading.

4.5 Conclusions

The BRI countries play an important role in receiving China's OFDI. Before the Chinese government propounded the Belt and Road Initiative, the Chinese central government had issued policies to encourage outward investment in some BRI countries. Chinese companies have chosen countries with good relationships with China as their priority. From the industry distribution perspective, the Chinese government has proposed policies to guide the OFDI distribution in the BRI countries. Those policies have included the Outbound Foreign Investment Catalogue to guide outbound investment and cooperation and Chinese overseas cooperation zones. One motivation behind investments has been the economic factor of the host country's comparative advantage in; land, labour, natural resources. Another motivation has been Chinese government intervention to; disburse excess capacity, transfer labour-intensive industries overseas and enlarge market share against the background of Sino-US trade conflicts. Typically, state-owned enterprises, as enforcers of China's central policies, have chosen industries that guarantee economic growth and national security. Private companies that receive financial support from the government will also choose industries designated by the central government. The descriptive analysis in Chapter 4 provides the basis for subsequent Chapters.

CHAPTER 5: THE PERFORMANCE OF CHINA'S OFDI AMONG THE BELT AND ROAD INITIATIVE COUNTRIES

5.1 Introduction

This chapter focuses on China's outward foreign direct investment performance. Based on the methodology and data descriptions explained in Chapter 3, the findings of the SFA are reported.

The remainder of this chapter is organised as follows: part two describes the statistical characteristics of the factors that determine the OFDI from China. The means, standard deviations, and maximum and minimum values are reported. An OLS test was first conducted, and the residuals were checked to examine whether the model was suitable for SFA analysis. Part three comprises the unit root testing of the data. Part four indicates the detailed outcomes of the SFA used to check the efficiency of China's OFDI among the BRI countries. The last part comprises the conclusion.

5.2 Descriptive Statistics

The descriptive statistics regarding the data used in this analysis are summarised in Table 5.1, whereas the regional distribution of OFDI among the BRI countries is presented in. All the variables are expressed in natural logarithmic form, except the data from the Index of Economic Freedom and Governance Indicators (trade cost, investment cost, government, and political stability).

For the market size variable, the mean of China's GDP was higher than that of the BRI countries as a whole. One of the characteristics of the BRI countries is that most of the states are developing economies, and their market sizes are relatively small, which means that China's companies have more advantages than those companies from the BRI countries.

Table 5.1: Descriptive Analysis of the Data for the SFA Model

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI_{ij}^{t}	896	3.89	2.92	-4.61	10.70
GDP_{i}^{t}	960	29.39	0.39	28.70	29.95
GDP_{j}^{t}	949	24.64	1.64	20.60	28.60
$SQDGDP_{ij}^{t}$	948	16.17	2.88	3.11	22.64
DIS_{ij}	960	8.57	0.38	7.07	8.95
$RESOURCE_{i}^{t}$	780	2.05	1.65	-9.54	17.50
$Enroll_{j}^{t}$	873	3.35	0.82	-1.64	4.56
$DSKILL_{ij}^{t}$	868	0.70	1.10	5.76e-07	19.04
$DGDP_{ij}^{t} \times DSKILL_{ij}^{t}$	858	-2150.52	9594.97	-99192.33	29651.07
$TRADECOST_{i}^{t}$	960	32.57	7.83	26.40	49.40
$TRADECOST_{j}^{t}$	862	25.52	12.86	10.00	100.00
$INVCOST_{j}^{t}$	863	51.58	21.35	10.00	100.00
$POLITICAL_{j}^{t}$	927	40.68	27.76	0.00	119.31
$INFRA_{j}^{t}$	960	12.05	3.10	-1.84	16.96
$GOVERNMENT_{j}^{t}$	928	0.03	0.83	-1.84	2.44

***Notes**: 1. All variables are in natural logarithm form, except $TRADECOST_i^t$, $TRADECOST_j^t$, $INVCOST_j^t$, $GOVERNMENT_j^t$, and $POLITICAL_j^t$*

2. For the definition of each variable, refer to Table 3.2.

For trade cost, the mean of the BRI countries' trade cost was lower than that of China. A relative low trade cost gives a host country strong trade efficiency that will attract more direct investment from overseas. Moreover, the benefit of producing outside a home country outweighs the loss of economies of scale compared to merely concentrating on production in the home market.

For the variables taken in natural logarithm form, the overall variation was less than the rest of the variables in the original value.

The correlation matrix of the Pearson test is shown in Table 5.3. China's outward FDI had a strong relationship with the GDP of the host country, which was 0.48. The relationship between China's outward FDI and the host country's infrastructure was the same as above. The most substantial negative relationship was -0.84, which happened between the GDP of the home country and the investment cost of the home country. Although this value meant that the two variables were highly correlated as the value was above 0.8 (Table 5.2), the variance inflation factor (VIF) test showed that all VIF values were below 5. The VIF test showed that the multicollinearity is not of significant concern.

Table 5.2: Variance Inflation Factor Test

Variable	VIF	1/VIF
GDP_i^t	3.85	0.26
GDP_j^t	2.59	0.39
$SQDGDP_{ij}^t$	1.75	0.57
DIS_{ij}	1.44	0.69
$RESOURCE_i^t$	1.20	0.84
$Enroll_j^t$	1.88	0.53
$DSKILL_{ij}^t$	1.27	0.79
$DGDP_{ij}^t \times DSKILL_{ij}^t$	1.58	0.63
$TRADECOST_i^t$	3.57	0.28
$TRADECOST_j^t$	2.14	0.47
$INVCOST_j^t$	1.65	0.61
$POLITICAL_j^t$	1.66	0.60
$INFRA_j^t$	2.50	0.40
$GOVERNMENT_j^t$	1.26	0.80

Table 5.3: Correlation Matrix for All Variables

	FDI_{ij}^{t}	GDP_{i}^{t}	GDP_{j}^{t}	$SQDGDP_{ij}^{t}$	DIS_{ij}	$RESOURCE_{i}^{t}$	$Enroll_{j}^{t}$	$DSKILL_{ij}^{t}$	$DGDP_{ij}^{t} \times DSKILL_{ij}^{t}$	$TRADECOST_{i}^{t}$	$TRADECOST_{j}^{t}$	$INVCOST_{j}^{t}$	$POLITICAL_{j}^{t}$	$INFRA_{j}^{t}$	$GOVERNMENT_{j}^{t}$
FDI_{ij}^{t}	1.00														
GDP_{i}^{t}	0.48	1.00													
GDP_{j}^{t}	0.45	0.02	1.00												
$SQDGDP_{ij}^{t}$	0.10	0.28	0.20	1.00											
DIS_{ij}	-0.45	0.00	0.06	0.17	1.00										
$RESOURCE_{i}^{t}$	0.01	-0.05	0.06	0.05	0.07	1.00									
$Enroll_{j}^{t}$	-0.13	0.18	0.11	0.08	0.35	0.07	1.00								
$DSKILL_{ij}^{t}$	-0.07	-0.23	-0.01	0.03	0.03	-0.22	0.04	1.00							
$DGDP_{ij}^{t} \times DSKILL_{ij}^{t}$	0.12	0.08	-0.16	-0.41	-0.25	-0.06	-0.20	-0.20	1.00						
$TRADECOST_{i}^{t}$	-0.40	-0.84	-0.02	-0.27	-0.03	0.03	-0.16	0.19	-0.01	1.00					
$TRADECOST_{j}^{t}$	0.05	-0.34	0.03	-0.32	-0.37	-0.05	-0.58	0.11	0.24	0.34	1.00				
$INVCOST_{j}^{t}$	0.28	-0.16	0.20	-0.25	-0.38	0.14	-0.34	-0.02	0.21	0.10	0.46	1.00			
$POLITICAL_{j}^{t}$	-0.17	0.02	-0.14	0.40	0.16	0 11	0.31	0.06	-0.37	-0.01	-0.37	-0.33	1.00		
$INFRA_{j}^{t}$	0.47	0.06	0.74	0.10	-0.12	0.05	0.02	-0.03	-0.12	-0.04	0.08	0.24	-0.22	1.00	
$GOVERNMENT_{j}^{t}$	0.09	0.04	0.14	0.19	0.19	-0.12	-0.03	-0.14	-0.26	-0.03	-0.13	-0.18	0.09	0.07	1.00

5.3 Unit Root Tests for Panel Data

For panel data, as the independent variables contain the same hidden trend as the dependent variable, the regression result appears more significant than it should be. Unit root tests are used to check the stationarity of both dependent and independent variables to avoid spurious correlation in regression.

From the characteristics of the data used in this research, the Fisher-type test was used as it was most suitable for unbalanced panel data with missing values. The advantage of the Fisher-type test is that it calculates the p-value of each panel and then combines them, which makes it more powerful than the t-bar test. Thus, if one panel has a missing value or even one data panel is missing, the overall value can still be calculated (Choi, 2001; Maddala & Wu, 1999).

The level and first difference panel unit root tests are based on the null of nonstationarity. Table 5.4 shows the results of different Fisher-type unit root tests in level. As the distance between two countries is fixed over the years, the distance variable was not used to conduct unit root tests. Fisher-type unit root tests have four different statistics, Inverse chi-squared (P), Inverse normal (Z), Inverse logit t (L*), and Modified inv. Chi-squared (Pm). The Inverse chi-squared (P) results were conclusive because the panel data had finite N.

In Table 5.4, the results showed that almost all variables were stationary, except for infrastructure and the interaction between the differences of GDP and skills. Then, the first difference panel unit root tests were investigated in Table 5.5. Based on the P statistic, all variables were stationary.

Table 5.4: Unit Root Test Results (Level)

Variable	Fisher-Type (ADF)				Conclusion
	P	Z	L*	Pm	
FDI_{ij}^{t}	442.70***	-5.90***	-10.89***	19.95***	I(0)
GDP_{i}^{t}	1468.97***	-34.05***	-50.70***	83.81***	I(0)
GDP_{j}^{t}	370.93***	-4.46***	-8.08***	15.18***	I(0)
$SQDGDP_{ij}^{t}$	288.06***	-4.44***	-6.13***	10.00***	I(0)
$RESOURCE_{i}^{t}$	262.55***	-3.74***	-5.58***	9.41***	I(0)
$Enroll_{j}^{t}$	292.10***	-1.67**	-4.56***	10.67***	I(0)
$DSKILL_{ij}^{t}$	184.11***	5.65	3.90	3.82***	I(0)
$DGDP_{ij}^{t} \times DSKILL_{ij}^{t}$	136.36	6.89	5.80	0.79	NS
$TRADECOST_{i}^{t}$	237.93***	-8.09***	-7.46***	6.87***	I(0)
$TRADECOST_{j}^{t}$	212.59***	-3.83***	-4.63***	5.80***	I(0)
$INVCOST_{j}^{t}$	186.19***	-0.69	-2.42***	4.11***	I(0)
$POLITICAL_{j}^{t}$	298.39***	-5.63***	-7.30***	11.07***	I(0)
$INFRA_{j}^{t}$	139.1071	-0.5709	-0.6336	0.6942	NS
$GOVERNMENT_{j}^{t}$	165.85***	-1.81***	-2.10***	2.66***	I(0)

***Notes**: 1. ***, **, and * denote the significance at the 1%, 5%, and 10% levels.*

2. For the definition of each variable, refer to Table 3.2.

3. NS means Nonstationary.

4. P=Inverse chi-squared statistic, Z=Inverse normal statistic, L=Inverse logit t statistic, and Pm =Modified inv. Chi-squared statistic.*

Table 5.5: Unit Root Test Results (First Difference)

Variable	Fisher-Type (ADF)				Conclusion
	P	Z	L*	Pm	
FDI_{ij}^{t}	311.42***	-3.62***	-5.92***	11.68***	I(0)
GDP_{i}^{t}	628.88***	-19.52***	-21.67***	31.31***	I(0)
GDP_{j}^{t}	160.83***	0.46	-0.22	2.05***	I(0)
$SQDGDP_{ij}^{t}$	177.56***	-2.18**	-2.54***	3.10***	I(0)
$RESOURCE_{i}^{t}$	163.87**	-1.93**	-1.74**	2.24**	I(0)
$Enroll_{j}^{t}$	216.97***	-1.76**	-2.79***	5.90***	I(0)
$DSKILL_{ij}^{t}$	216.97***	-1.76**	-2.79**	5.90***	I(0)
$DGDP_{ij}^{t} \times DSKILL_{ij}^{t}$	223.83***	1.23	-1.26	6.34***	I(0)
$TRADECOST_{i}^{t}$	593.17 ***	-18.70***	-20.43***	29.07***	I(0)
$TRADECOST_{j}^{t}$	487.74***	-8.13***	-14.96***	23.41***	I(0)
$INVCOST_{j}^{t}$	164.78***	-0.74	-1.87**	2.74***	I(0)
$POLITICAL_{j}^{t}$	199.89***	-2.82***	-3.33***	4.82***	I(0)
$INFRA_{j}^{t}$	158.06**	-1.57*	-1.55*	1.88**	I(0)
$GOVERNMENT_{j}^{t}$	213.63***	-0.59	-2.40***	5.69***	I(0)

***Notes**: 1. ***, **, and * denote the significance at the 1%, 5%, and 10% levels.*

2. For the definition of each variable, refer to Table 3.2.

3. P=Inverse chi-squared statistic, Z=Inverse normal statistic, L=Inverse logit t statistic, and Pm =Modified inv. Chi-squared statistic.*

5.4 Empirical Findings for the BRI Countries

The empirical findings of the stochastic frontier analysis of China's OFDI among the BRI countries are shown in Table 5.7. According to the characteristics of the SFA model, before conducting SFA analysis, the skewness and kurtosis test (D'Agostino & Belanger, 1990) was used. This test examined the negative skewness of the OLS residuals to reject the null hypothesis of zero skewness in the errors and to check whether the stochastic frontier analysis was suitable for the analysis or not.

As seen in Table 5.6, all residuals had negative skewness, which was significant at the 5% or 1% levels. The results proved that the SFA model was suitable for the

proposed data analysis. Meanwhile, the chi-square statistics (Breusch & Pagan, 1979) rejected the null hypothesis of constant variance of errors and then provided technical inefficiency evidence in the independent variables. The non-constant variance of errors also meant that heteroscedasticity existed, which would lead to serious problems in estimating the Maximum Likelihood (ML) parameter (Caudill et al., 1995).

Table 5.6: OLS Test of China's OFDI among the BRI Countries (Overall)

	1	**2**	**3**	**4**
GDP_i^t	3.47***	3.85***	4.06***	4.03***
	(0.18)	(0.19)	(0.19)	(0.20)
GDP_j^t	0.97***	0.96***	0.96***	0.97***
	(0.04)	(0.04)	(0.04)	(0.04)
$SQDGDP_{ij}^t$	-0.05**	-0.10***	-0.11***	-0.10***
	(0.02)	(0.03)	(0.03)	(0.03)
DIS_{ij}	-3.79***	-3.25***	-3.27***	-3.25***
	(0.18)	(0.19)	(0.19)	(0.19)
$RESOURCE_i^t$	0.08*	0.08**	0.13*	0.13***
	(0.04)	(0.04)	(0.04)	(0.04)
$Enroll_j^t$		-0.55***	-0.55***	-0.54***
		(0.10)	(0.10)	(0.10)
$DSKILL_{ij}^t$			0.44***	0.45***
			(0.11)	(0.11)
$DGDP_{ij}^t \times DSKILL_{ij}^t$				5.39e-06
				(7.99e-06)
Intercept	-88.95***	-102.01***	-108.31***	-107.85***
	(5.44)	(5.84)	(5.99)	(6.03)
No.of obs	726	666	662	662
R square	0.65	0.66	0.67	0.67
Skewness	-0.20**	-0.37***	-0.29***	-0.30***
Chi square	8.51***	7.23***	10.81***	10.79***

***Notes**: 1. ***, **, and * denote the significance at the 1%, 5%, and 10% levels.*

2. For the definition of each variable, refer to Table 3.2.

3. Standard Errors are reported in parentheses.

Next, Table 5.7 presents the single-step ML estimates for the two-equation stochastic frontier specification (Equation 3-25 and 3-26). In Columns 1 to 3, the cost variables represent the OFDI inefficiency, while Columns 4 to 6 increasingly augment a set of technical efficiency effects with extra OFDI-related variables.

Table 5.7: A Stochastic Frontier Specification of China's OFDI among the BRI Countries (Overall)

	1	2	3	4	5	6
Frontier Determinants						
GDP_i^t	3.50*** (0.25)	3.56*** (0.26)	3.64*** (0.26)	3.77*** (0.29)	3.82*** (0.25)	4.01 *** (0.24)
GDP_j^t	0.95*** (0.05)	0.97*** (0.04)	0.94*** (0.05)	0.95*** (0.05)	0.87*** (0.06)	0.75*** (0.07)
$SQDGDP_{ij}^t$	-0.09*** (0.03)	-0.09** (0.03)	-0.07** (0.03)	-0.09*** (0.03)	-0.09*** (0.03)	-0.09*** (0.03)
DIS_{ij}	-3.27*** (0.19)	-3.33*** (0.19)	-3.24*** (0.19)	-3.30*** (0.19)	-3.16*** (0.20)	-3.14*** (0.21)
$RESOURCE_i^t$	0.12*** (0.04)	0.12** (0.04)	0.10** (0.04)	0.10** (0.04)	0.12*** (0.04)	0.15** (0.04)
$Enroll_j^t$	-0.59*** (0.10)	-0.74*** (0.12)	-0.69*** (0.12)	-0.76*** (0.12)	-0.74*** (0.12)	-0.58 *** (0.12)
$DSKILL_{ij}^t$	0.39*** (0.11)	0.44*** (0.12)	0.42*** (0.12)	0.40*** (0.12)	0.41*** (0.12)	0.57*** (0.13)
$DGDP_{ij}^t \times DSKILL_{ij}^t$	0.00001 (7.46e-06)	0.00001* (7.56e-06)	0.00001* (7.52e-06)	0.00001* (7.42e-06)	0.00001* (7.41e-06)	0.00002*** (6.79e-06)
Intercept	-89.99*** (7.31)	-91.67*** (7.58)	-94.20*** (7.68)	-97.72*** (7.82)	-97.84*** (7.53)	-101.19*** (7.11)
Inefficiency Determinants						
$TRADECOST_i^t$	0.04*** (0.01)	0.04* (0.02)	0.03 (0.02)	0.03 (0.02)	0.02 (0.01)	0.01 (0.01)
$TRADECOST_j^t$		0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.02*** (0.01)
$INVCOST_j^t$			-0.01*** (0.01)	-0.01** (0.01)	-0.01** (0.01)	-0.02*** (0.01)
$POLITICAL_j^t$				-0.01* (0.01)	-0.01** (0.004)	-0.01** (0.004)
$INFRA_j^t$					-0.12** (0.05)	-0.16*** (0.05)
$GOVERNMENT_j^t$						-0.61*** (0.12)
No.of obs	662	621	621	607	607	593

***Notes**: 1. ***, **, and * denote the significance at the 1%, 5%, and 10% levels.*

2. For the definition of each variable, refer to Table 3.2.

3. Standard Errors are reported in parentheses.

According to the SFA model for the determinants of China's OFDI among the BRI countries results, the characteristics of the market size of both the home country and host country were significant at the 1% level and with a correct relationship. These findings supported hypotheses 1, 2 and 3. The GDP of the home country had a positive influence on China's OFDI, with a 1% increase in GDP increasing China's OFDI by 4.01%. Although the host country's GDP positively influenced China's OFDI, the effect was limited, and a 1% rise in the GDP increased China's OFDI by 0.75%.

With the development of China's economy, competition in the home market is stiff, and companies that have advantages try to seek new markets to expand their business (Liu et al., 2005). That explains why the home market's GDP influenced China's OFDI more than the host market's GDP. The difference between the home country's market size and the host country's market size had a strong negative effect on the flow of OFDI from China at the 1% level, which meant that China's investment mainly flowed to host countries with similar GDPs per capita. In other words, China's OFDI was attracted more to less developed countries than China.

The distance between the home country and the host country had a significant negative effect on the outflows of China's investment. With a 1% increase in distance, China's OFDI decreased by 3.14%, and this result proved hypothesis 7. China's OFDI has focused on countries near the home country with good relationships with the Chinese government.

China's foreign investment has been motivated by access to natural resources as its rapid economic growth has needed substantial natural resources to fulfil domestic consumption and re-exporting (Deng, 2004; Wang & Yu, 2014). The analysis showed a strong positive relationship between natural resources and China's OFDI at the 5% level,

which meant that a 1% rise in the variable increased China's outward investment by 0.15%, and the result proved hypothesis 5.

For the asset-seeking motivation, the correlation between the skill and China's OFDI was strongly negative at the 1% level, meaning China's OFDI sought countries with low technology levels. The result was opposite to hypothesis 4, which has been proved by other studies (Deng, 2009; Wang & Wang, 2011). As this study focused on the countries among the BRI, the Chinese government has been the major player promoting outward foreign direct investment. China's investment among the BRI countries has mainly been contributed by SOEs or private companies with close relationships with the Chinese government (Lin, 2015). They undertake the economic risk to cater to the Chinese government's initiatives; their investments mainly concentrate on the manufacturing, energy, and infrastructure sectors that don't need skilled workers to support production. Meanwhile, as labour costs have increased in China over recent years, some labour-intensive industries have transferred their production to countries with lower labour costs than China. (Wang et al., 2008).

The technology difference between China and the host country had a significant positive relationship with China's ODFI at the 1% level. This outcome meant that most OFDI from China flowed into countries with lower technology than China. Infrastructure development has been one of the crucial aims of the BRI (Huang, 2016). These scenarios have caused investments from China to the BRI countries unable to be technology-seeking behaviour.

The interaction term between the difference in GDP and skill had a significant positive relationship with the dependent variable. Although its influence on China's OFDI was small, with a 1% rise increasing China's OFDI by 0.00002%, its influence was significant at the 1% level. The result proved that the difference between the home

country's GDP and the host country's GDP positively affected the technology difference between the home country and the host country. Finally, it caused China's OFDI to be located more in low-technology countries.

According to the SFA model characteristics, inefficient elements should be signed oppositely to the conventional determinants of OFDI. Specifically, the home country's trade cost, host country's trade cost, and investment should be associated with positive, negative, and positive signs in the SFA model. The correlations should be negative for other inefficient elements, such as; politics, infrastructure, and government.

Concerning trade cost for both the home country and host country, the results showed no evidence to prove the home country's trade cost had any significant relationship with the home country's OFDI. Except in the SFA interpretation in Columns 1 and 2. The trade cost of the host country had a significant positive, strong relationship with China's OFDI at the 1% level; the correlation sign was opposite to this thesis' hypothesis. One reason is that for vertical foreign direct investment (VFDI), the home country usually sets the plant in the host country and the headquarters in the home market. The finished products are re-imported to the home country after production in the host country (Markusen & Maskus, 2001; Navaretti et al., 2006). In this case, VFDI is decided by the trade costs of both home and host countries. In this study, the home country's trade cost did not affect the flow of China's investment; the only determinant was the host country's trade cost. As the trade cost of the host country increased, VFDI decreased. Thus, in the SFA model, the host country's trade cost correlation should have a positive sign.

For the investment cost of the host country, the result showed the opposite sign to the hypothesis. Typically, the investment cost of the host country had a negative influence on the OFDI from the home country. The results were significant at a 1% level in the

SFA model but with the opposite signs. This outcome meant that China's investment among the BRI countries was principally toward markets with high investment costs.

There was a significant negative relationship between the political stability of a host country and China's outward investment at the 5% level for the political variable. This outcome was the opposite of hypothesis 6, which meant that China's investment was trying to find countries with relatively stable politics.

Table 5.8: Summary of the SFA Results

	Real Sign	**Expected Sign**
GDP_i^t	+	+
GDP_j^t	+	+
$SQDGDP_{ij}^t$	-	-
DIS_{ij}	-	-
$RESOURCE_i^t$	+	+
$Enroll_j^t$	-	+
$DSKILL_{ij}^t$	+	+
$DGDP_{ij}^t \times DSKILL_{ij}^t$	+	-
$TRADECOST_i^t$	NS	+
$TRADECOST_j^t$	+	_
$INVCOST_j^t$	-	+
$POLITICAL_j^t$	-	+
$INFRA_j^t$	-	-
$GOVERNMENT_j^t$	-	-

***Notes**: 1. NS= Not significant at the 10% level.*

2. For the definition of each variable, refer to Table 3.2.

Concerning infrastructure, there was still a significant negative relationship between the infrastructure of the host country and China's OFDI at the 1% level. Thus, hypothesis 11 was proved. The same conclusion could be used for government

efficiency. The results showed that China's investment was mainly focused on host countries with relatively better infrastructure and higher government efficiency. Taken together, the political stability, infrastructure, and government efficiency of the BRI countries were significantly lower than China's OFDI performance (Table 5.8).

5.5 Empirical Findings for Different Regions

Countries among the BRI have differences in economics, politics, and governance. Thus, the SFA model cannot fully analyse the data to explain China's OFDI specifically. Southeast Asia has been attracting China's OFDI for decades; China's first outward investment began in 1965 into Malaysia. Until 2017, 57.77 per cent of China's OFDI, among the BRI countries, was located in Southeast Asia. According to Table 3.1 in Chapter 3, five regions for China's OFDI were defined, as Mongolia was combined with the Central Asian countries because of its geographical location. The SFA model analysed each of these regions, and the results are shown in Table 5.9.

5.5.1 South Asia

Concerning South Asian countries, the host country's GDP had a significant positive relationship with China's GDP at the 1% level. However, the distance variable had a significant positive relationship with outflows of Chinese foreign direct investment at the 1% level. This outcome was opposite to the hypothesis and meant that the distance variable increased the volume of China's investment. There was no significant relationship between natural resources and the dependent variable for natural resources. China's investment in this region was not asset-seeking motivated as technology did not affect the outflow of Chinese investment. However, the technology difference had a significant positive relationship with China's OFDI at the 5% level. Combined with the result of the host country's market size, China's investment in South Asia was mainly market-seeking with the advantage of the high-technology of Chinese companies.

Table 5.9: Stochastic Frontier Specification of China's OFDI among the BRI Countries (By Region)

	South Asia	Middle East and North Africa	Europe	Central Asia	Southeast Asia
Frontier Determinants					
GDP_i^t	2.38	3.97***	3.54***	2.69***	2.67***
	(2.44)	(0.32)	(0.48)	(0.61)	(0.00002)
GDP_j^t	0.79***	1.70***	0.93***	0.50***	0.06***
	(0.07)	(0.13)	(0.08)	(0.10)	(2.87e-06)
$SQDGDP_{ij}^t$	0.41	-0.24***	-0.13***	0.15***	0.06***
	(0.47)	(0.05)	(0.05)	(0.05)	(2.82e-06)
DIS_{ij}	2.87***	-0.29	-7.41***	-0.88***	0.87***
	(1.12)	(1.55)	(1.13)	(0.31)	(0.00001)
$RESOURCE_i^t$	0.01	0.08	0.09	0.34**	0.02***
	(0.04)	(0.12)	(0.12)	(0.18)	(1.54e-06)
$Enroll_j^t$	-0.76	-1.84***	1.51***	-0.91	0.11***
	(0.84)	(0.27)	(0.52)	(0.76)	(0.00002)
$DSKILL_{ij}^t$	1.27**	0.96**	-1.20***	0.06	-0.14***
	(0.59)	(0.40)	(0.38)	(0.61)	(0.00002)
$DGDP_{ij}^t \times DSKILL_{ij}^t$	0.00009	0.00003***	-0.00011***	0.00013*	0.00015***
	(0.00006)	(7.81e-06)	(0.000063)	(0.00008)	(6.72e-09)
Intercept	-114.09**	-142.19***	-62.22***	-77.04***	-81.08***
	(55.83)	(16.21)	(18.15)	(16.49)	(0.0006)
Inefficiency Determinants					
$TRADECOST_i^t$	-0.04	0.07***	-0.328	0.20	0.07***
	(0.10)	(0.02)	(0.19)	(0.13)	(0.03)
$TRADECOST_j^t$	0.12**	-0.001	-0.02	0.41***	-0.04*
	(0.05)	(0.02)	(0.07)	(0.32)	(0.03)
$INVCOST_j^t$	-0.21*	0.001	-0.07***	-0.02	-0.06***
	(0.12)	(0.01)	(0.02)	(0.09)	(0.01)
$POLITICAL_j^t$	0.13**	-0.01	0.01	0.08	-0.04***
	(0.06)	(0.01)	(0.03)	(0.09)	(0.01)
$INFRA_j^t$	-0.03	0.11	-0.26**	-0.31	-0.57***
	(0.16)	(0.13)	(0.16)	(3.67)	(0.14)
$GOVERNMENT_j^t$	-0.64	-0.56**	-3.53***	0.30	0.05***
	(1.15)	(0.23)	(0.99)	(2.76)	(0.01)
No.of obs	67	160	246	36	94

***Notes**: 1. ***, **, and * denote the significance at the 1%, 5%, and 10% levels.*

2. For the definition of each variable, refer to Table 3.2.

3. Standard Errors are reported in parentheses.

Concerning the trade cost of the host country, the result showed that there was a significant and negative effect on Chinese OFDI. This result suggested that VFDI was the main type of investment, which decreased as the trade cost of the host country increased. The investment cost of the host country variable had a significant and

positive effect on China's investment, which meant that China's OFDI was located more in countries with higher investment costs. The political variable had a highly significant and negative effect on the dependent variable. This outcome meant that China's investment undertook substantial political risk and was government policy motivated.

5.5.2 Middle East and North Africa

For the Middle East and North African countries, both the home country and host country market size strongly affected China's OFDI at the 1% level. The GDP per capita difference between China and the host country had a strongly significant and negative effect on attracting China's OFDI. The results meant that the countries in the region were relatively less developed than China, and Chinese companies sought countries with similar development levels in which to invest.

The natural resources result differed from the hypothesis; there was no relationship between natural resources and Chinese OFDI. China's investment had a significant negative relationship with skills for technology seeking investment. This situation meant that Chinese investment focused on countries with lower skills. As skill difference was significant with a positive sign, the results proved that Chinese investment sought countries with lower technology levels than China. The interaction term between the difference of GDP and the skill difference showed a positive relationship with China's OFDI. The result meant that China's investment in this region was mainly in countries with lower economic development levels and lower-skilled labourers.

For inefficiency elements, the home country's trade cost showed the expected sign and relationship with the dependent variable, which implied that the high trade cost of the home country reduced the efficiency of China's OFDI. Concerning government efficiency, the result also proved the hypothesis. The result meant that with the

improvement of government efficiency in the host country, China's overall flow of investment increased.

5.5.3 Europe

For the 25 host countries in Europe, the market size of both China and the 25 European countries had a significant and positive effect on China's outward investment. This outcome meant that China's investment was more likely to be located in countries with higher GDPs. The GDP per capita difference between the home and host countries had a significant and negative effect on the dependent variable at the 1% level. The results of the market size of the host country and the GDP difference showed that China's outward investment was at the maximum value when the host country had a large market size but with a relatively lower GDP per capita.

For the asset-seeking motivation, the skill variable had the same effect as the hypothesis, which meant that the strategic asset increased the inflows of Chinese foreign investment. Furthermore, the skill difference of the home country and the host country negatively influenced the dependent variable. This outcome meant that Chinese investment sought host countries with similar asset levels. The interaction item showed a significant negative sign. This outcome meant that horizontal foreign direct investment (HFDI) would be the dominant type of OFDI. This situation is because the HFDI theory predicts that affiliate production is promoted by similar skill endowments between the home country and the host country (Navaretti et al., 2006).

Concerning the inefficient elements, the investment cost of the host country was significant but with signs contrary to the hypothesis. The host country's infrastructure and government efficiency indicated significant and positive effects on China's OFDI.

5.5.4 Central Asia

For the market size of both the home country and Central Asian countries, the effect on China's OFDI was positive and significant, as stated in the hypothesis. The difference in GDP per capita positively affected Chinese investment, opposing the hypothesis. This outcome meant that investment was more located in host countries with different development levels than China.

Based on the coefficient of the natural resource, there was a positive relationship between the host country's natural resources and China's OFDI, which was a major finding. With a 1% increase in the host country's natural resources, China's OFDI increased by 0.34%. Chinese companies focused on natural gas and crude oil as major energy sources. The analysis showed that Turkmenistan was China's largest natural gas supplier (Petersen & Barysch, 2011). For the asset-seeking motivation, the result showed no relationship between the skill endowment of Central Asian countries and Chinese investment.

The interaction term of GDP difference and skill difference showed that VFDI rose with the increase of the interaction term. For the inefficiency elements, only the trade cost of the host country was significant at the 1% level. With the negative relationship with Chinese OFDI, VFDI again proved to be the main type of China's investment in this region.

5.5.5 Southeast Asia

As the major destination of China's OFDI, the market size of Southeast Asian countries had a significant and positive effect on attracting Chinese investment. Meanwhile, the GDP per capita difference between China and the countries in this region also had a strongly positive effect on the outflow of Chinese FDI. This outcome meant that Chinese investment was more likely to choose larger markets that were more

developed. One of the interesting findings was that if the geographic distance was significantly positive, it increased the volume of Chinese OFDI.

Natural resources and strategic assets were significant and positive at the 1% level. China's investment in Southeast Asia was not only motivated by natural resources but also by asset-seeking. The skill difference result showed that China's investment was seeking assets similar to China. Concerning the interaction term, the result showed that it was positive and affected the outward flows VFDI from China.

The major finding was that all inefficiency elements were significant. For the trade cost of the home country, the sign of the coefficient showed that VFDI increased with the decreasing of the trade cost of the home country. While, for the trade cost of the host country, the sign of coefficient showed that HFDI was affected. Regarding the host country investment cost, the result was significant, but the sign was opposite to the hypothesis.

Political and infrastructure both proved the hypothesis, which meant that with improved political stability and infrastructure, the performance of China's OFDI was better. Concerning government efficiency, the result was significant but with signs contrary to the hypothesis.

China's investment in this region had market size-seeking, natural resources-seeking, and asset-seeking motivations. The OFDI type was HFDI and VFDI.

5.6 Efficiency Scores of China's OFDI

Efficiency scores were used to measure the performance of China's OFDI among the BRI countries. The individual economy results are shown in Table 5.10 and Table 5.11. The average score of China's OFDI efficiency was 0.34, which was relatively low compared to the world average of 0.40 obtained by Armstrong (2011). This outcome

meant that there is huge potential to improve the performance of China's OFDI as the efficiency score was the ratio of real OFDI to the frontier estimation of OFDI.

The highest efficiency score came from the United Arab Emirates, which had a difference of 0.6150, and the lowest score came from Bangladesh. For the ten worst countries for efficiency scores, four of them came from South Asia (Maldives, Nepal, Afghanistan and Bangladesh), four of them came from Europe (Azerbaijan, Latvia, Armenia, and Macedonia), and two of them came from the Middle East and North Africa (Bahrain and Lebanon). This outcome meant that the overall FDI performance of South Asian countries was the worst, which was the same as shown in Chapter 4.

5.7 Conclusion

In this chapter, the stochastic frontier analysis results were shown overall and by region. Overall, market size, natural resources, and skill endowment played significant roles in China's OFDI. As the correlation sign of skill endowment was negative, the technology-seeking motivation hypothesis was rejected. For the inefficiency elements, although the host country's trade cost significantly affected China's OFDI, the sign was opposite to the hypothesis. Also, for the investment cost of the host country, the results showed that the flow of investment was more to countries with higher investment costs.

For different regions, the market-seeking motivation was significant in all regions. China's investment in Central Asia and Southeast Asia sought natural resources. Asset-seeking investment was mainly in Europe and Southeast Asia. The inefficiency elements performance was best in Southeast Asia. In the other four regions, those elements had no effect or the opposite effect on the performance of China's OFDI.

The gap between the analysis and the hypothesis was that government policy affected China's investment among the BRI countries, which was not easily measured in the

econometric analysis. Chapter 6 discusses the results more deeply from the government policy perspective to explain the motivation of Chinese investment.

Table 5.10: Efficiency Scores for China's OFDI

Country	Score	Country	Score
AFG	0.075670	LBN	0.060087
ALB	0.200512	LKA	0.433621
ARE	0.666315	LTU	0.204210
ARM	0.112076	LVA	0.128116
AZE	0.149272	MDA	0.215151
BGD	0.051317	MDV	0.097952
BGR	0.387703	MKD	0.085758
BHR	0.113572	MNG	0.245285
BLR	0.258268	MYS	0.535465
BRN	0.350495	NPL	0.097906
CZE	0.503049	OMN	0.274860
EGY	0.574402	PAK	0.319630
EST	0.172546	PHL	0.152272
GEO	0.625173	POL	0.482795
HRV	0.241657	QAT	0.605756
HUN	0.600870	RUS	0.572354
IDN	0.538788	SAU	0.542251
IND	0.160729	SVK	0.316621
IRN	0.509524	SYR	0.268783
ISR	0.363871	THA	0.415747
JOR	0.378956	TLS	0.266157
KAZ	0.513098	TUR	0.423157
KGZ	0.658895	UKR	0.181149
KHM	0.555922	VNM	0.313198
KWT	0.274711	YEM	0.565620
LAO	0.567681		

Table 5.11: Efficiency Scores for China's OFDI (By Year)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
AFG	-	-	-	-	-	-	-	-	-	-	-	-	0.0813	0.0701	-
ALB	-	-	0.2275	0.1604	0.1285	0.0827	0.2923	0.2545	0.2230	0.1934	0.2303	0.2617	0.1809	0.1710	-
ARE	-	-	0.6433	-	0.6042	0.6089	-	-	-	0.6915	0.6879	0.7115	0.7170	-	-
ARM	0.2591	-	0.2591	0.1599	0.1393	0.1032	0.1009	0.0683	0.0535	0.0481	0.1474	0.1112	0.0842	0.0699	-
AZE	0.0858	0.3304	0.1691	0.3042	0.2248	0.1688	0.1418	0.0860	0.1362	0.1052	0.0980	0.0792	0.1091	0.0513	-
BGD	0.0751	0.0364	0.0877	0.0823	0.0460	0.0446	0.0563	0.0458	0.0422	0.0398	0.0369	-	0.0226	-	-
BGR	0.2298	0.3264	0.3975	0.3630	0.2935	0.2618	0.1467	0.3753	0.5091	0.5337	0.5143	0.4877	0.5369	0.4521	-
BHR	0.1467	0.1161	0.3346	0.0548	0.0893	0.0702	0.0927	0.0644	0.0532	0.1670	0.0414	0.0664	0.0607	0.2323	-
BLR	-	-	0.0390	0.0271	0.0194	0.0773	0.0990	0.2625	0.2173	0.3267	0.3794	0.4924	0.5814	0.5777	-
BRN	-	-	-	-	-	-	-	-	-	-	-	0.3406	0.2975	0.4134	-
CZE	0.1817	0.2884	0.2888	0.5699	0.5644	0.5930	0.5872	0.5664	0.5633	0.6205	0.6056	0.5802	0.5280	0.5053	-
EGY	0.5226	0.5000	0.5810	0.6325	0.6087	0.5846	0.6257	0.6165	0.5821	0.5664	0.5670	0.5681	0.5455	0.5408	-
EST	-	-	0.2963	0.2217	0.1740	0.1408	0.3439	0.2828	0.2278	0.1033	0.0891	0.0796	0.0603	0.0511	-
GEO	-	0.5224	0.6474	0.6379	0.6050	0.6136	0.6181	0.6416	0.5945	0.6142	0.6575	0.6805	0.6556	0.6390	-
HRV	-	-	0.1931	0.1661	0.4485	0.4043	0.3609	0.2863	0.2324	0.2001	0.1567	0.1834	0.1410	0.1273	-
HUN	0.5215	0.4782	0.3120	0.6526	0.6524	0.6338	0.6109	0.7137	0.6949	0.6812	0.6661	0.6513	-	0.5426	-

IDN	0.4318	0.5288	0.5017	0.5036	0.5719	0.5230	0.5429	0.5357	0.5352	0.5741	0.5964	0.5939	0.5407	0.5632	-
IND	0.0050	0.0137	0.0284	0.0298	0.1091	0.1504	0.1353	0.2080	0.2105	0.2545	0.3003	0.3017	0.2724	0.2311	-
IRN	0.4512	0.5073	0.4821	0.5103	-	-	-	0.5406	0.5657	-	-	-	-	-	-
ISR	0.1314	0.1038	0.4689	0.4512	0.4218	0.3405	0.3148	0.3451	0.3110	0.3199	0.2618	0.3663	0.5271	0.7306	-
JOR	0.3530	0.5664	0.6083	0.5322	0.4331	0.3427	0.3401	0.3294	0.2847	0.3410	0.3162	0.3166	0.2823	0.2592	-
KAZ	0.2215	0.2409	0.5430	0.5057	0.5572	0.6234	0.5925	0.5615	0.5820	0.6335	0.6181	0.5942	0.4924	0.4173	-
KGZ	0.6126	0.6061	0.6590	0.6973	0.6759	0.6548	0.6899	0.6778	0.6616	0.6617	0.6722	-	0.6581	0.6386	-
KHM	0.5046	0.4604	0.0310	0.5181	0.5385	0.5808	0.6485	0.6979	0.7161	0.6625	0.6634	0.6387	0.5763	0.5462	-
KWT	0.0617	0.2809	-	0.2762	0.0317	0.0979	0.1236	0.3497	0.3788	-	0.3002	0.4726	0.4770	0.4461	-
LAO	-	-	-	-	-	-	-	0.5840	0.5910	0.5890	0.5947	0.5815	0.5407	0.4927	-
LBN	-	0.0120	0.0657	0.1024	0.0645	0.0463	0.1150	0.0846	0.0571	0.0628	0.0519	0.0430	-	0.0158	-
LKA	0.4608	0.4039	0.4780	0.3669	0.2894	0.3401	0.3136	0.4606	0.5063	0.4968	0.5087	0.4553	0.5262	0.4643	-
LTU	-	-	0.3874	0.3406	0.2826	0.2263	0.1929	0.1310	0.0976	0.1397	0.1925	0.1743	0.1460	0.1395	-
LVA	0.3894	0.3442	0.2780	0.2974	0.0898	0.0699	0.0488	0.0384	0.0280	0.0224	0.0198	0.0187	-	0.0207	-
MDA	-	-	0.4116	0.3389	0.2542	0.2017	0.1969	0.1546	0.1188	0.2061	0.2438	0.2046	0.1142	0.1365	-
MDV	-	-	-	-	-	-	-	-	-	-	0.0365	0.0614	0.0437	0.2502	-
MKD	0.1765	-	0.1765	0.1378	0.1172	-	0.0653	0.0157	0.0193	0.0245	0.1179	0.1136	0.0880	0.0675	-
MNG	0.0852	0.2261	0.2461	0.2923	0.3158	-	-	-	-	-	0.2889	0.2882	0.2456	0.2193	-
MYS	0.6341	0.6165	0.6292	0.5951	0.5588	0.5328	0.5206	0.5509	0.4975	0.4895	0.4985	0.4557	0.4461	0.4712	-

NPL	0.0459	-	-	-	-	-	0.0823	0.0878	0.0204	0.0905	0.1475	0.1485	0.1768	0.0815	-
OMN	-	0.0027	0.3270	0.5189	0.4574	0.2354	0.1369	0.2074	0.2175	0.1875	0.3916	0.3666	0.3349	0.1896	-
PAK	-	-	0.2941	0.1586	0.4040	0.3934	0.4101	0.3771	0.3987	0.3954	0.3382	0.2879	0.2100	0.1682	-
PHL	0.1015	0.0853	0.1327	0.1034	0.1126	0.1481	0.1593	0.2452	0.2314	0.2153	0.1866	0.1646	0.1310	0.1148	-
POL	0.2964	0.2569	0.4406	0.6297	0.6148	0.5833	0.5467	0.5344	0.5217	0.4883	0.4910	0.5005	0.4583	0.3967	-
QAT	0.5005	0.5173	0.5075	0.5597	0.6425	0.6345	0.5964	0.6153	0.6401	-	0.6591	0.6765	0.6522	0.6733	-
RUS	0.3451	0.4387	0.5839	0.6232	0.6168	0.6011	0.5834	0.5876	0.5931	0.5984	0.6259	0.6182	0.6184	0.5790	-
SAU	0.0330	0.1372	0.5489	0.6634	0.6554	0.6650	0.6425	0.6203	0.6061	0.6133	0.6190	0.6113	0.5967	0.5795	-
SVK	0.0767	0.0626	0.0475	0.0464	0.4015	0.3646	0.4242	0.3140	0.3805	0.5190	0.4905	0.5055	0.4529	0.3467	-
SYR	0.0524	0.0524	0.2833	0.4951	0.2443	-	-	-	-	-	-	-	-	-	-
THA	0.5108	0.4887	0.4669	0.4233	0.4213	0.3777	0.3207	0.3945	0.3261	0.4023	0.4074	0.4359	0.4209	0.4238	-
TLS	-	-	-	-	-	-	-	-	-	-	0.2662	-	-	-	-
TUR	0.2068	0.2373	0.2431	0.3330	0.2773	0.3537	0.6281	0.5769	0.5202	0.5089	0.5119	0.5242	0.5257	0.4770	-
UKR	0.0075	0.0744	0.0946	0.1669	0.1995	0.1946	0.2311	0.2246	0.2328	0.1960	0.2118	0.2446	0.2497	0.2080	-
VNM	0.1251	0.2990	0.3453	0.3002	0.2988	0.2997	0.3076	0.3388	0.3403	0.3534	0.3474	0.3676	-	0.3483	-
YEM	0.6062	0.6420	0.6768	0.6058	0.6256	0.6188	0.5882	0.5449	0.5002	0.4765	0.5503	0.4432	0.4744	-	-

CHAPTER 6: THE ROLE OF GOVERNMENT POLICY ON CHINA'S OFDI IN THE BELT AND ROAD INITIATIVE COUNTRIES: CASE STUDIES

6.1 Introduction

The previous chapter examined the determinants and the efficiency of China's OFDI in the BRI countries. Some of the variables were inconsistent with the existing hypotheses when examining the results. One of the reasons was that the factors that determine the flow of Chinese investment into the BRI countries could not be measured by quantitative methods. China's multinational enterprises are either SOEs or private companies influenced by Chinese government policies. As the promoter of Chinese OFDI, the Chinese government is another major element that this research needs to consider. Two cases have been selected to understand better why Chinese companies choose the BRI countries as their foreign investment destination.

6.2 Tsingshan Holding Group

6.2.1 The Development of the Iron and Steel Industry in China and Government Policies

Since the People's Republic of China's (PRC) founding, the iron and steel industry has been a key sector for developing China's economy. Especially after 1978, with the rapid growth of China's economy, the production of iron and steel increased sharply. This situation was due to the interaction of the iron and steel industry with other industries, such as; energy, building, transportation, auto manufacturing, infrastructure, packaging, and machinery.

The key role of the iron and steel industry in China's economic development has been highlighted by Chinese leaders. In 1958, Mao Zedong claimed to 'take steel as the key link and drive everything else forward'. The main idea was to motivate China's peasants to produce iron and steel by using backyard blast-furnace methods to catch up

with the production volume of developed countries during the Great Leap Forward period. Mao Zedong believed that the iron and steel industry was the cornerstone of industrialisation. China, a country destroyed during the war, needed to change to become an industrialised country to make it rich and powerful. In October 1978, Deng Xiaoping visited Japan. The main purpose of his trip was to ask Japan to assist the Chinese steel industry, as, at that time, Japan had advanced steel production lines. Deng Xiaoping inherited Mao Zedong's thought of taking steel as the key link but highlighted that quality was more important than quantity. Deng believed that the centre of industrial production was to improve quality and put forward the idea of quality first. Quality first refers to the quality of the product and product varieties. Deng Xiaoping paid great attention to the quality of iron and steel products. His idea of quality first had an important and far-reaching influence on China's iron and steel industry development (Leng & Wang, 2004). Although the leaders who followed Deng Xiaoping have not put forward specific thoughts about the iron and steel industry, the overall trend has increased product quantity and quality. Since 1996, China has maintained its position as the world's largest steel producer.

Meanwhile, Chinese iron and steel companies still need to solve the problem of increasing the importation of iron ore (Figure 6.1). Even though China is the fourth largest country globally for iron ore reserves (USGS, 2019), the quality of its iron ore is low (13.44 per cent lower than the average level). To fulfil its increasing need for domestic production and decrease production costs, China has increasingly imported iron ore from; Australia, Brazil, India, and South Africa, which have high reserves of high-grade iron ore. In 2019, China imported 1.07 billion metric tons of iron ore with an average price of US$95.70 per metric ton, which was an increase of 34.8 per cent compared to the average price in 2018, and the iron ore import dependency ratio was

around 80 per cent (MOFCOM, 2020, April 4). It seems that the increasing importation of iron ore will continue in the future.

Figure 6.1: The Production of Crude Steel and Import of Iron Ore (Ten Millions of Metric Tons), 1949-2018

***Source**: China Iron and Steel Industry Yearbook (1950-2019)*

Even though China is the largest iron ore consuming country, it has no pricing power. The reserves and production of iron ore are highly centralised. According to data released by the United States Geological Survey (USGS) in 2020, the world's crude ore reserves comprised 170 billion metric tons, and the iron content reserves comprised 81 billion metric tons. The world's iron ore reserves are mainly concentrated in; Australia, Brazil, Russia, and China. These country's reserves comprised 48 billion tons, 29 billion tons, 25 billion tons, and 20 billion tons, respectively, accounting for 71.77 per cent of

the world's total reserves. In addition, as shown in Table 6.1, Canada, Kazakhstan, India, Iran, Ukraine, and Sweden also have relatively rich iron ore resources (USGS, 2019).

Table 6.1: Iron Ore Reserves by Country, 2018 (Million Metric Tons)

Country	Usable ore	Iron content	Reserves	
			Crude ore	Iron content
Australia	900,000	557,000	48,000	23,000
Brazil	460,000	250,000	29,000	15,000
Canada	52,400	31,500	6,000	2,300
Chile	14,000	8,940	NA	NA
China	335,000	209,000	20,000	6,900
India	205,000	126,000	5,500	3,400
Iran	36,400	23,900	2,700	1,500
Kazakhstan	41,900	11,700	2,500	900
Mexico	22,300	14,000	NA	NA
Peru	14,200	9,530	NA	NA
Russia	96,100	56,700	25,000	14,000
South Africa	74,300	47,200	1,100	690
Sweden	35,800	22,200	1,300	600
Ukraine	60,300	37,700	6,500	2,300
United States	49,500	31,300	3,000	1,000
Other Countries	62,500	35,800	18,000	9,500
World Total (rounded)	2,460,000	1,470,000	170,000	81,000

***Source**: United States Geological Survey*

Another reason Chinese companies do not have iron ore pricing power is due to the high degree of consolidation in the iron ore industry. Over the last few decades, the characteristic of corporate concentration in the iron ore industry has continued. In 2018, the top 10 largest iron ore production companies accounted for 62.8 per cent of total world production (Table 6.2). In 2005, China fully participated in iron ore negotiations

and replaced Japan as the main negotiator in Asia. Since then, China has fought hard in fierce long-term negotiations with the three major iron ore giants. However, in the end, due to tight supply and soaring spot prices, Chinese companies have had to accept substantial price increases one after another. As Chinese companies have low pricing power on iron ore, there was even a call for the Chinese government to intervene concerning prices (Housego, 2020, December 13).

Table 6.2: Production of Top 10 Iron Ore Company, 2018 (Million Metric Tons)

Company	Production	% of World	Country	Rank
Vale	385.0	16.36%	Brazil	1
Rio Tinto	291.0	12.37%	UK	2
BHP	274.0	11.65%	Australia	3
Fortescue	166.0	7.06%	Australia	4
Hancock*	76.0	3.23%	Australia	5
Anglo American	47.0	2.00%	UK	6
Arcelor	59.0	2.51%	UK	7
NMDC+Odisha	43.0	1.83%	India	8
Metalloinvest	40.0	1.70%	Russia	9
CSN	28.0	1.19%	Brazil	10
Total Top 10 Companies	1409.0	59.89%		
Total World	2352.7	100.00%		

Source: Löf et al. (2019)

To maintain the development of China's steel industry and solve the problems related to dependence on iron ore imports. The first policy concerning the iron and steel industry was issued in China during 2005 called 'the iron and steel industry development policy'. It specified the aim of improving the competitiveness of the iron and steel industry to an advanced level by M&As. Specifically, it aimed to increase industrial concentration to 50 per cent in 2010 and 70 per cent in 2020. It also

encouraged large-scale domestic companies to establish; iron ore, chromium ore, manganese ore, nickel ore, scrap steel, coal production and supply bases abroad through greenfield and brownfield investments. The government encouraged using overseas resources to solve the important need for raw and auxiliary materials, such as; ore and coke, for coastal area companies.

In 2011, the twelfth five-year plan for developing the iron and steel industry was issued by the Ministry of Industry and Information Technology (MIIT). The plan continued the strategy of enlarging overseas investments to fulfil the iron ore needs of the domestic market by aiming to increase overseas iron ore production capacity by more than 100 million metric tons. It was the first time that the government officially mentioned encouraging overseas investment in iron ore. Considering the characteristics of China's iron ore resources of low-grade, poor endowment, high mining costs, and the requirement for energy conservation and emissions reduction, the importation of iron ore should be encouraged. As China's steel companies have no power of discourse in iron ore pricing, the key to solving this problem was encouraging steel companies to go overseas. By going overseas, they could; exploit iron ore, build factories and reimport steel billets or steel instead of domestic production.

Encouraging Chinese companies to implement foreign direct investment and build steel plants was a major strategy for developing the steel industry during the twelfth five-year plan. To complete the plan's goals, it suggested developing and utilising international natural resources and establishing stable and reliable; iron ore, chrome ore, manganese ore, coking coal, and other fossil fuels bases in countries with resource advantages and neighbouring countries.

In 2016, the MIIT issued the transformation and upgrade plan for the iron and steel industry, which aimed to solve the serious problem of overcapacity. During the twelfth

five-year plan" period, China's crude steel capacity utilisation rate dropped from 79 per cent in 2010 to around 70 per cent in 2015. Meanwhile, the debt ratio of key large and medium-sized companies exceeded 70 per cent. Overcapacity evolved from a regional issue to a nationwide problem. The plan suggested that the main way to solve the problem was to strengthen international production capacity cooperation, encouraging Chinese companies to transfer their factories to the BRI countries with abundant natural resources and potential markets.

6.2.2 Tsingshan Holding Group's Foreign Direct Investment in Indonesia

Tsingshan was founded in Wenzhou, Zhejiang Province, in the 1980s. It is a large-scale private enterprise focusing on stainless steel production and smelting. Tsingshan has focused on the stainless-steel industry, constantly innovating production technology and expanding industrial fields. It has formed a stainless-steel industry production chain that runs through the upper, middle, and lower parts, with production bases in; Fujian, Guangdong, Zhejiang, Shanghai, Southeast Asia, and Africa. Tsingshan has high-quality nickel-chromium ore resources in Southeast Asia and Africa and stainless-steel upstream production bases.

The mining industry has traditionally been a hot industry for foreign investment in Indonesia. Indonesia is extremely rich in mineral resources and has become an important supply source for international coal and metal mineral products, such as; nickel, iron, tin, and gold. It has attracted a large amount of foreign capital to invest in the upstream mining industry to stabilise the supply of raw materials. Indonesian government policies, such as imposing a 20 per cent export tax on the export of raw materials and requiring foreign investors to invest in the establishment of smelting and processing plants in Indonesia, have stimulated foreign investment in the downstream mineral industry. At present, mining has become the largest foreign investment industry

in Indonesia, accounting for approximately one-sixth of the nation's total foreign investment (Chinese Academy of International Trade and Economic Cooperation et al., 2021).

In 2009, Bintang Delapan Mineral (BDM) invited the Tsingshan Group to establish a full-staged industrial park that developed from a power plant to a smelter factory and unrefined materials to end product. The notion of building the industrial park was a concrete commitment of the company in supporting a downstream industry based on Indonesian Government Regulation No. 4/2009.

In July 2013, Tsingshan built a nickel pig iron (NPI) smelter with a capacity of 300 thousand tons of NPI per year and a 2x65 megawatt (MW) power plant through PT Sulawesi Mining Investment (a joint venture controlled by Shanghai Decent Investment (Group) Co., Ltd., PT Bintang Delapan Investama, Reed International Limited, and Fujian Decent Industrial Co., Ltd.).

Then in October 2013, the PT. Indonesia Morowali Industrial Park (IMIP) was established by Shanghai Decent Investment (Group) Co., Ltd. (a subsidiary of Tsingshan) and PT Bintang Delapan Investama. It is located in Baha Dobi Town, Morowali County, Central Sulawesi Province, Indonesia. It was one of the projects witnessed by the two heads of the countries when President Xi Jinping visited Indonesia in 2013. It has received great attention and strong support from both country's governments. In August 2016, the IMIP passed the assessment of China's Ministry of Commerce and Ministry of Finance as an overseas economic and trade cooperation zone. In October 2018, the Indonesian government approved the IMIP as a bonded trade zone (equivalent to China's export processing zone).

Sulawesi Island, where the IMIP is located, contains 50 per cent of Indonesia's nickel reserves, and there are many nickel reserves situated directly around the park. These will provide a stable raw material supply for companies entering the zone in the future. The plan is for the IMIP to transform the advantages of the available nickel resources into economic advantages on the spot and gradually build an industrial chain of; production, processing, and the sale of ferronickel and stainless steel.

In May 2014, PT Indonesia Guang Ching Nickel and Stainless Steel Industry (GCNS) was founded by Tsingshan to enlarge NPI production. This company was targeted to build a production line with 600 thousand tons of NPI capacity per year and a 2x150 MW power plant.

In July 2015, a new company named PT Indonesia Tsingshan Stainless Steel (ITSS) was founded by Tsingshan Holding Group, Ruipu Technology Group Co., Ltd., Hanwa Co., Ltd., and PT Indonesia Morowali Industrial Park. This factory was designed as a stainless steel plant with a 1 million tons capacity of stainless steel in slab form per year and a 2x350 MW power plant. This project adopted Rotary Kiln-Electric Furnace (RKEF) technology to produce hot melted NPI, which is then sent directly to an argon oxygen decarburisation (AOD) furnace for stainless steel smelting. This RKEF+AOD method reduced energy consumption and production costs compared to the traditional method.

In December 2015, A jetty with a capacity of 92.5 thousand deadweight tonnage (DWT) was designed to be built. Shanghai Decent Investment (Group) Co., Ltd. and PT Bintang Delapan Investama corporate set up PT Bintang Delapan Terminal (BDT) to oversee this project. As an important part of the IMIP's infrastructure, this project combined an international route from the IMIP to Tsingshan's own 50 thousand DWT jetty in China and had the approval of the Indonesian government.

In May 2016, Tsingshan set up a new company named PT Indonesia Ruipu Nickel and Chrome Alloy (IRNC) with Ruipu Technology Group Co., Ltd. and the IMIP. IRNC was designed as a high-carbon ferrochrome plant with a capacity of 600 thousand tons per year and supporting facilities of coke plant and cold-rolled stainless steel plant having a capacity of 700 thousand tons per year. The chrome ore was imported from South Africa and made into ferrochrome, and then directly used in stainless steel smelting. The whole process reduced production costs and enhanced competitiveness.

In December 2016, PT Tsingshan Steel Indonesia (TSI) was set up in Indonesia in cooperation with the Shanghai Decent Investment (Group) Co., Ltd., and PT Bintang Delapan Mineral. The project planned to build a plant with a capacity of 500 thousand tons of NPI per year to fulfil the needs of other companies located in the IMIP.

To fully use Indonesia's mineral resources, PT Dexin Steel Indonesia (DXSI) was set up by Delong Steel Singapore Projects Pte. Ltd., Shanghai Decent Investment (Group) Co., Ltd., and PT Indonesia Morowali Industrial Park in August 2017. It aimed to produce 3.5 million tons of steel per year.

Due to the huge need for nickel ore in the IMIP, Tsingshan increased investment in NPI with the cooperation of Nickel Mines Limited and Shanghai Wanlu Investment Co., Ltd. PT Hengjaya Nickel Industry (HNI) and PT Ranger Nickel Industry (RNI) were set up in September 2017 and November 2018, respectively. The two projects aimed to produce 300 thousand tons of NPI per year.

In October 2018, PT Huayue Nickel Cobalt (HNC) was set up by Huaqing Nickel & Cobalt Co., Ltd., Qingchuang International Holdings (a subsidiary of Tsingshan), Woyuan Holdings (a subsidiary of Tsingshan), Indonesia Morowali Industrial Park, and

Long Sincere. The factory was designed to produce 60 thousand tons per year of nickel-cobalt hydroxides to be used in the batteries of new energy vehicles.

PT QMB New Energy Materials (QMB) is a joint venture that was founded by New Horizon International Holding (a subsidiary of Tsingshan), PT Indonesia Morowali Industrial Park, GEM New Material Co., Ltd. Guangdong Brunp Recycling Technology Co., Ltd., and Hanwa Co., Ltd in January 2019. This project was designed to be a hydrometallurgical base of 50 thousand tons of nickel and 4 thousand tons of cobalt. It will produce 50 thousand tons of nickel hydroxide intermediate products, 150 thousand tons of battery-grade nickel sulphate crystals, 20 thousand tons of battery-grade cobalt sulphate crystals, and 30 thousand tons of battery-grade Manganese sulphate crystals.

6.2.3 Discussion

Although Tsingshan is a private company in China and should follow traditional western FDI theory to decide on investment, it has shown different motivations from companies from advanced countries.

6.2.3.1 Natural Resource Seeking with Government Intervention

Natural resource seeking is the basic motivation for energy companies to enlarge their production overseas (Kamal et al., 2019; Wadhwa & Reddy, 2011; Yao et al., 2010). As nickel accounts for 60 per cent of stainless steel (Baddoo, 2008), Tsingshan needs to control the nickel ore supply to reduce production costs and increase competition. For example, Tsingshan signed an agreement with PT Bintang Delapan Mineral to exploit laterite nickel ore in an area of about 47,000 hectares in 2009. The laterite nickel ore will be imported to China and be used to produce stainless steel by Tsingshan's stainless steel production factories in; Fujian, Guangdong, and Zhejiang. This import process will be long lasting if there is no government policy change.

Table 6.3: Tsingshan's Foreign Direct Investment in Indonesia (US$, million)

Date	Company	Shareholding Structure	Specific Project	Value
16 July 2013	PT Sulawesi Mining Investment (SMI)	1. Shanghai Decent Investment (Group) Co., Ltd. (46.55%) 2. PT Bintang Delapan Investama (25.65%) 3. Reed International Limited (24%) 4. Fujian Decent Industrial Co., Ltd. (3.8%)	1. An NPI smelter (300 thousand tons NPI per year) 2. Power plant (2x65 MW)	628
3 October 2013	PT Indonesia Morowali Industrial Park (IMIP)	1. Shanghai Decent Investment (Group) Co., Ltd. (49.69%) 2. PT Bintang Delapan Investama (25.31%) 3. PT Sulawesi Mining Investment (25%)	With a total area of 1200 hectares to utilise nickel-based resources and to produce nickel pig iron (NPI) and stainless steel	N.A
2 May 2014	PT Indonesia Guang Ching Nickel and Stainless Steel Industry (GCNS)	1. Guangdong J-Eray Technology Group (35%) 2. Guangdong Guangxin Holdings Group (25%) 3. PT. Indonesia Morowali Industrial Park (20%) 4. Guangdong Guangxin Suntec Metal (10%) 5. Luck Scenery International Limited (5%) 6. Hanwa Company Limited (5%)	1. An NPI smelter (600 thousand tons NPI per year) 2. Power plant (2x150 MW)	1035
28 July 2015	PT Indonesia Tsingshan Stainless Steel (ITSS)	1. Tsingshan Holding Group (51%) 2. Ruipu Technology Group Co., Ltd. (19%) 3. Tsingtuo Group Co., Ltd. (10%) 4. PT Indonesia Morowali Industrial Park (10%) 5. Hanwa Co., Ltd. (10%)	1. An NPI smelter (1 million tons NPI per year) 2. Power plant (2x350 MW)	840
December 2015	PT Bintang Delapan Terminal (BDT)	1. PT Bintang Delapan Investama (51%) 2. Shanghai Decent Investment (Group) Co., Ltd. (49%)	A jetty with the capacity of 92.5 thousand (DWT)	81.55
May 2016	PT Indonesia Ruipu Nickel and Chrome Alloy (IRNC)	1. Tsingshan Holding Group (70%) 2. Ruipu Technology Group Co., Ltd. (20%)	1. A high-carbon ferrochrome plant (600 thousand tons per year)	460

		3. PT Indonesia Morowali Industrial Park (10%)	2. A stainless steel plant (700 thousand tons per year)	
December 2016	PT Tsingshan Steel Indonesia (TSI)	1. Shanghai Decent Investment (Group) Co., Ltd. (80%) 2. PT Bintang Delapan Investama (20%)	An NPI smelter (500 thousand tons NPI per year)	119
September 2017	PT Hengjaya Nickel Industry (HNI)	1. Nickel Mines Co., Ltd. (60%) 2. Shanghai Decent Investment (Group) Co., Ltd. (20%) 3. Shanghai Wanlu Investment Co., Ltd. (20%)	An NPI smelter (150 thousand tons of NPI per year)	200
29 October 2018	PT Huayue Nickel Cobalt (HNC)	1. Huaqing Nickel & Cobalt Co., Ltd. (58%) 2. Qingchuang International Holdings (20%) 3. Woyuan Holdings (11%) 4. Indonesia Morowali Industrial Park (10%) 5. Long Sincere (1%)	60 thousand tons per year of nickel-cobalt hydroxides	1280
November 2018	PT Ranger Nickel Industry (RNI)	1. Nickel Mines Co., Ltd. (80%) 2. Shanghai Decent Investment (Group) Co., Ltd. (20%)	An NPI smelter (150 thousand tons of NPI per year)	300
11 January 2019	PT QMB New Energy Materials (QMB)	1. GEM New Material Co., Ltd. (36%) 2. Guangdong Brunp Recycling Technology Co., Ltd. (25%) 3. New Horizon International Holding (21%) 4. PT Indonesia Morowali Industrial Park (10%) 5. Hanwa Co., Ltd (8%)	A hydrometallurgical base of 50 thousand tons of nickel and 4 thousand tons of cobalt.	210

Source: *Author*

From the host country's perspective, in 2009, the Indonesian government issued the Mineral and Coal Mining Law (Law No. 4/2009) which stated that it would ban the export of unprocessed nickel and bauxite ores from 2014. Tsingshan could no longer follow its traditional way of importing nickel ore from Indonesia to fulfil its production demand in the Chinese market. Thus, Tsingshan invested more to build the NPI smelter in 2013.

From the home country perspective, since 2005, the Chinese government has encouraged local companies to 'go abroad' to make investments to fulfil the need for nickel ore. China's access to natural resources is necessary for domestic economic development, energy security, and the survival of the Chinese Communist Party (CCP) (Zweig & Bi, 2005).

As a steel company in China, Tsingshan is motivated to seek natural resources to fulfil production needs. But government policies have changed Tsingshan's investment method. The change of Indonesian government policy forced Tsingshan to build a company to engage in mining activities in the local market. At the same time, the Chinese government encouraged Tsingshan to seek natural resources overseas from an energy security perspective. Tsingshan's intention to invest overseas to seek natural resources has been consistent with both governments' policies (Table 6.4).

6.2.3.2 Government Intervention

Most of the BRI countries are developing countries with poor infrastructure. Usually, good infrastructure will attract more foreign direct investment as it will reduce transportation costs and increase accessibility to local and international markets (Asiedu, 2002; Fitriandi et al., 2014; Yamin & Sinkovics, 2009). To improve the opportunity of Chinese private companies to invest in such countries, the Chinese government has

proposed a new way of helping companies invest overseas: Chinese Overseas Economic and Trade Cooperation Zones (COCZs). The IMIP is one such COCZ.

The BRI strategy is a national development strategy. Thus, the Chinese government usually signs such agreements with host countries through its foreign policy to set up COCZs.

COCZs can be seen as a new method for Chinese OFDI, resulting from government policy-driving investment. In the case of the IMIP, it has improved the quality of infrastructure of the special economic zone. It has attracted relevant companies to invest in the zone, especially for small and medium companies. As infrastructure is a public good in the zones, all companies will have lower production costs. Besides, to make investment more interesting, the Chinese government has encouraged industrial chains to transfer to the IMIP to improve the success rate of OFDI and fulfil the target of the steel and iron industry policy.

Financial support is important for Tsingshan. PMI was the first company in the IMIP, and Reed International Limited holds 24 per cent of PMI. The China-ASEAN Investment Cooperation Fund controls Reed International Limited, a state-owned investment company. GCNS was the second company in the IMIP. Guangdong Guangxin Holdings Group holds a 25 per cent share, and Guangdong Guangxin Suntec Metal (a subsidiary of Guangxin Holdings Group) holds a 10 per cent share; both are state-owned enterprises. Tsingshan cooperates with Chinese SOEs to obtain financial support from the government. In June 2017, China and Indonesia held a cooperation forum on ‘One Belt One Road and Global Shipping’ in Beijing. During this period, Tsingshan and the China Development Bank (CDB) (SOE) reached an agreement where CDB promised to provide another US$1.22 billion for financial support of the IMIP.

One of the reasons for Tsingshan obtaining financial support from the China Development Bank is that Chinese President Xi Jinping witnessed the IMIP signing. Officially, Xiang Guangda (president of Tsingshan) and Xi Jinping's relationship is unclear. However, the vice president of Tsingshan Huang Weifeng was the deputy mayor of Wenzhou City, Zhejiang Province, from 1993 to 1998. Tsingshan has a good relationship with the local government. Another reason is that Tsingshan followed government policy and actively responded to the BRI.

Then in 2013, with the issue of the Opinion of the State Council Regarding Resolving the Contradiction of Serious Overcapacity, the new policy stated that new projects would be blocked to solve the problem of excess capacity and environmental pollution (Price et al., 2016, April). The Belt and Road Initiative was proposed under this condition. China needed to transfer its excess production capacity overseas, and Indonesia moved up the mining value chain.

Tsingshan's case can be seen as policy driving investment and policy utilising investment, although it looks like natural resource seeking. The Chinese government has been the push factor in encouraging companies to make investment decisions by issuing industrial policies from the economic development and environmental protection perspectives. Tsingshan's foreign direct investment was fully under the consideration of the government policies of both the home country and the host country. The interaction between Tsingshan and the Chinese government has indicated the different characteristics of FDI from China.

Table 6.4: The Relationship between Tsingshan's OFDI in Indonesia and Government Policy

No	Government Policy	Company's Response
1	In 2009, the Indonesian government issued the Mineral and Coal Mining Law (Law No. 4/2009) which stated that it would ban the export of unprocessed nickel and bauxite ores from 2014.	In July 2013, Tsingshan built a nickel pig iron (NPI) smelter with a capacity of 300 thousand tons of NPI per year and a 2x65 megawatt (MW) power plant through PT Sulawesi Mining Investment (a joint venture controlled by Shanghai Decent Investment (Group) Co., Ltd., PT Bintang Delapan Investama, Reed International Limited, and Fujian Decent Industrial Co., Ltd.), which in total was worth US$628 million.
2	On October 3, 2013, Chinese President Xi Jinping visited Indonesia and attended an Indonesia-China Business Luncheon with the Indonesian President Susilo Bambang Yudhoyono. The two presidents also witnessed the signing of several business cooperation agreements between the two countries.	a). On October 3, 2013, The PT. Indonesia Morowali Industrial Park (IMIP) was established by Shanghai Decent Investment (Group) Co., Ltd. (a subsidiary of Tsingshan) and PT Bintang Delapan Investama witnessed by the presidents of the two countries. b). In May 2014, PT Indonesia Guang Ching Nickel and Stainless Steel Industry (GCNS) was founded to enlarge the production of NPI, which in total was worth US$1,035 million. c). In July 2015, PT Indonesia Tsingshan Stainless Steel (ITSS) was founded by Tsingshan Holding Group, Ruipu Technology Group Co., Ltd., Hanwa Co., Ltd., and PT Indonesia Morowali Industrial Park. The factory was designed as a stainless steel plant with a capacity of 1 million tons of stainless steel in slab form per year and a 2x350 MW power plant, which in total was worth US$840 million. d). In December 2015, A jetty with a capacity of 92.5 thousand deadweight tonnage (DWT) was designed to be built, which in total was worth US$81.55 million. f). In May 2016, Tsingshan set up PT Indonesia Ruipu Nickel and Chrome Alloy (IRNC) with Ruipu Technology Group Co., Ltd and the IMIP. IRNC was designed to a high-carbon ferrochrome plant with a capacity of 600 thousand tons per year and supporting facilities of a coke plant and a cold-rolled stainless steel plant with a capacity of 700 thousand tons per year, which in total was worth US$460 million. g). In December 2016, PT Tsingshan Steel Indonesia (TSI) was set up in Indonesia with the cooperation of Shanghai Decent Investment (Group) Co., Ltd., and PT Bintang Delapan Mineral. The project planned to build a plant with a capacity of 500 thousand tons of NPI per year to fulfil the needs of other companies located in the

		IMIP, which in total was worth US$119 million. h). In August 2017, PT Dexin Steel Indonesia (DXSI) was set up by Delong Steel Singapore Projects Pte. Ltd., Shanghai Decent Investment (Group) Co., Ltd., and PT Indonesia Morowali Industrial Park to make full use of Indonesia's mineral resources, which in total was worth US$1012 million. i). Tsingshan increased investment in NPI with the cooperation of Nickel Mines Limited and Shanghai Wanlu Investment Co., Ltd. PT, and Hengjaya Nickel Industry (HNI) and PT Ranger Nickel Industry (RNI) were set up in September 2017 and November 2018, respectively, which in total were worth US$500 million. g). In October 2018, PT Huayue Nickel Cobalt (HNC) was set up by Huaqing Nickel & Cobalt Co., Ltd., Qingchuang International Holdings (a subsidiary of Tsingshan), Woyuan Holdings (a subsidiary of Tsingshan), Indonesia Morowali Industrial Park, and Long Sincere. The factory was designed to produce 60 thousand tons per year of nickel-cobalt hydroxides, which in total was worth US$1280 million. k). In January 2019, PT QMB New Energy Materials (QMB) was founded by New Horizon International Holding (a subsidiary of Tsingshan), PT Indonesia Morowali Industrial Park, GEM New Material Co., Ltd. Guangdong Brunp Recycling Technology Co., Ltd., and Hanwa Co., Ltd. This project was designed to be a hydrometallurgical base of 50 thousand tons of nickel and 4 thousand tons of cobalt, which in total was worth US$210 million. Also, this project was listed in the 'List of Deliverables of the Belt and Road Forum for International Cooperation', which was published during the Second Belt and Road Forum for International Cooperation (BRF) in 2019.
3	In 2017, China and Indonesia held a cooperation forum on 'One Belt One Road and Global Shipping' in Beijing	Tsingshan Group Holding and the China Development Bank (CDB) (SOEs) reached an agreement where CDB promised to provide another US$1.22 billion for the financial support of the IMIP.

***Source**: Author*

6.3 Huawei Technologies Co., Ltd.

6.3.1 The Development of the Telecommunications Industry in China and Government Policies

From the early days of the founding of the PRC to the late 1970s, China's telecommunications industry was never been taken seriously. Accompanied by the issue of the 'Open Door Policy', the telecommunications industry has ushered in development opportunities. Although, it was far behind western countries.

In January 1979, Deng Xiaoping proposed that investments focus on infrastructure, such as; electricity, coal, transportation, and telecommunications. In March 1980, Deng Xiaoping said that transportation and telecommunications should be prioritised to develop the entire economy. The Chinese leader put forward a strategy for accelerating the development of telecommunications, which laid the ideological foundation for the take-off of the telecommunications industry (Chen & Shih, 2005).

As China's telecommunications industry was extremely backward at that time, it could only use foreign equipment to build its telecommunications network. As the main telecommunication equipment, telephone switches were mainly imported from; Japan, the United States, Canada, Sweden, Germany, Belgium, and France.

Government leaders recognised this lack of independent R&D situation, and they decided to improve the telecommunications industry by issuing government policies. China's Sixth Five-Year Plan was the first time that the Chinese government officially highlighted the important role of the telecommunications industry and decided to focus on optical fibre communication technology. After that, the Chinese government increased investment in the telecommunications industry in the Seventh Five-Year Plan and aimed to reach the world's advanced level by 1990 (NDRC, 1986).

Although both the Eighth Five-Year Plan and the Ninth Five-Year Plan gave prominence to the telecommunications industry, there was no policy to specify how to develop it. The Tenth Five-Year Plan Outline for Information Industry was the first detailed and comprehensive policy related to the telecommunications industry. It aimed to enlarge the contribution of the telecommunications industry to the growth of the Chinese GDP by improving the competitiveness of Chinese companies by way of international cooperation. At the same time, it called for continuing to adopt various forums to strengthen international technology cooperation and technology imports. In 1995, the China Academy of Telecommunication Technology and Cwill Telecommunications (American Company) built a joint venture called Beijing Xinwei to develop China's first homegrown wireless technology named Synchronous Code Division Multiple Access (SCDMA). The Chinese government financed the company with around 25 Million RMB to support the company's 'go abroad' strategy (Whalley et al., 2011).

At the same time, the Chinese government put forward its 'go abroad' strategy in the early 21st century to encourage Chinese companies to expand overseas production (Parmentola, 2017). The main reason for encouraging Chinese telecommunications companies to 'go abroad' was to seek high technology by building research centres in target countries (Di Minin et al., 2012). The Eleventh Five-Year Plan Outline for the Information Industry and The Twelfth Five-Year Development Plan of the Communication Industry gave more detailed policies concerning the 'go abroad' strategy. These policies included; actively participating in international cooperation in technology, resources, policies and standardisation, and participating in the International Telecommunication Union and bilateral, regional and multilateral activities. Those policies aimed to incorporate the information industry's 'go abroad' policy into the overall strategy of national diplomacy and the economy to provide multi-faceted

support for companies to ‘go abroad’. It can be seen that China was aiming to be one of the world’s leaders in the telecommunication industry, especially regarding the fourth generation of mobile communication technology standards (4G). The Chinese government hoped that Time Division-Long Term Evolution (TD-LTE) would become an international standard.

With the Belt and Road Initiative launch, information industry policies for the BRI countries first appeared in relevant government documents. The Information Industry Development Guide highlighted that China should promote the interconnection of information and communication facilities with the BRI countries, aiming to realise overseas operations of information businesses. Meanwhile, it also encouraged advanced technical standards and telecommunications equipment when ‘going abroad’, mainly targeting BRI countries.

Over recent decades, the Chinese telecommunications industry has changed from a latecomer to a world leader. Meanwhile, the telecommunications industry has been seen as a new driving force for maintaining Chinese economic development. Currently, the Chinese government is issuing policies to maintain the industry’s leading role in the fifth generation of mobile communication technology standards (5G) and trying to utilise such advanced technology to serve the BRI countries.

6.3.2 Huawei’s Foreign Direct Investment in the BRI Countries

Established in 1987, Huawei started as a small grocery store, doing business to make money. By chance, Huawei's founder Ren Zhengfei was introduced to a Liaoning Provincial Agricultural Telephone Office director and began to represent Hong Kong Hong Nian Company's HAX subscriber switch. Since then, Huawei has established many relationships with the telecommunications industry.

Huawei became a world-renowned company by attaching great importance to R&D. Huawei has built R&D centres in China and foreign countries. India was the first BRI country where Huawei built an overseas research centre. The centre was established in 1999 and has mainly engaged in software research and development for Huawei telecom products, including next-generation network (NGN), intelligent network, data communication, etc. It provides pre-sales and after-sales technical support for Asia-Pacific and other overseas markets.

After continuous investment in this research institute, Huawei then set up the largest overseas research centre in India because of the available IT talents. Indian employees were found to abide by norms and worked very carefully. They strictly followed processes and maintained technical quality standards when constructing and developing specific software modules and platforms. IT education in India is more detailed and targeted than in China, and it teaches students how to achieve corporate goals better. Indian employees do not lack creativity. Their thinking is very active, and they are always thinking about improving quality and efficiency (Lan, 2006, June 21).

Besides, India has a good intellectual property protection system. Any employee must sign an agreement before entering Huawei to ensure that there will be no intellectual property issues even if they go to work for other companies in the future. Huawei takes advantage of this, and by combining India's IT skills with Chinese employees' design and understanding of entire system architectures, its goals can be achieved easily. Huawei didn't stop its international strategy in India after its first entrance into this market. In 2006, Huawei announced an enlargement of its investment in the R&D centre. This growth aimed to employ more local engineers, up from 1200 to 2000 in the following year, by investing US$40 million. In 2010, Huawei declared that it would build a factory costing US$500 million in Chennai to produce

telecommunications equipment (Table 6.5). In 2015, Huawei's largest overseas R&D centre was built in Bangalore; this centre was designed to develop software for network and enterprise solutions for businesses.

Besides its R&D centre, India also hosts Huawei's largest global service sharing centre (GSC) in Bangalore. Huawei's GSC provides comprehensive services, including; Global Network Operation Centre (GNOC), Network Integration Service (NIS), Network Planning and Optimization (NPO) and Information technology (IT) integration, and comprehensively promotes a customer-centric operation model. Huawei's GSC in India provides end-to-end solutions in a multi-network, multi-technology, and multi-vendor environment.

Table 6.5: Huawei's Investment in Selected BRI Countries (US$, million)

Year	Destination	Activity	Amount	Estimated
2006	India	Research & Development	100	No
2008	India	Research & Development	41	Yes
2010	India	Research & Development	500	No
2015	India	Research & Development	170	No
2018	India	Sales	100	No
2005	Russia	ICT & Internet Infrastructure	3	No
2012	Russia	Research & Development	21.8	Yes
2015	Russia	ICT & Internet Infrastructure	55	No
2017	Russia	ICT & Internet Infrastructure	3	No
2019	Russia	Mergers and Acquisitions	50	No
2019	Russia	Research & Development	106.6	Yes
2019	Russia	Sales, Marketing & Support	5.3	Yes
2021	Russia	ICT & Internet Infrastructure	8.5	No
2008	Indonesia	Research & Development	8.7	Yes
2015	Indonesia	Manufacturing	72.6	Yes
2015	Indonesia	Education & Training	8.2	Yes
2010	Turkey	Research & Development	50	No
2011	Turkey	Research & Development	15	No
2013	Turkey	Mergers and Acquisitions	100	No

***Source**: fDi Markets, Huawei Annual Report, and Other Media Reports*

Huawei built its second overseas research centre in Russia in 1999 to attract top Russian mathematicians to participate in Huawei's basic research. If companies do not make sufficient investment in basic research, they will not have core competitiveness in the market in the future. Huawei has always attached great importance to basic research; even it began as a small company. Unlike the international strategies of other Chinese companies, which have sought high technology from developed countries by M&As (Alvstam & Ivarsson, 2020; Yao & Wang, 2014), Huawei has tried to acquire high technology from developing countries through building research centres.

Huawei chose Russia as the destination for its globalisation strategy because of Russia's potential market and its outstanding talents, especially in mathematics. In 1997, the Russian ruble depreciated sharply, and communications companies from developed economies, such as; Siemens, Alcatel, Nippon Electric Company (NEC), left the Russian local market. That year, Huawei inaugurated a joint venture named "Beto-Huawei" with Beto-Konzern and Russia Telecom to sell products in the Russian market. However, while the newly established joint venture company did not increase sales for Huawei instantly, it did not leave the Russian market due to business setbacks. Meanwhile, Huawei realised that Russia had a good relationship with China, and it had many mathematics scientists. Russia was, therefore, a good destination for an overseas research centre. In 1999, a research centre was built to specialise in algorithms to help Huawei accumulate advanced technology in telecoms. Huawei SingleRAN was a radio access network (RAN) technology created by one of Huawei's Russian mathematicians. It allowed Huawei to use one base station to process 2G and 3G signals simultaneously, and the volume and weight of this base station were 50% smaller than competitors' offerings. Because of its small size, low weight, and low cost, Huawei's technology suddenly surpassed Ericsson's. Because of this algorithm, Huawei rose from No. 4 in the communications equipment market to No. 1 (Yan, 2019).

In 2019, Huawei completed the acquisition of a Moscow security technology company called Vocord. An insider who understood the transaction revealed that Huawei spent about 50 million US dollars to purchase this established technology company's technology patents and R&D talents in the face recognition system market. Huawei mainly bought the patents, and Vocord's engineers specialised in developing video surveillance, and the face recognition technology was directly poached. Russia's current security market is huge, especially for government departments. Combined with the technical advantages of Vocord and Huawei and Vocord's market foundation, Huawei will occupy a strong position in the Russian security market going forwards. Huawei has obtained a complete technology portfolio and market at a relatively low price. In the same year, Huawei announced a plan to build three new research centres in Russia.

Huawei regards Russia as a talent pool, and it has attracted many R&D personnel. Russia has system programming talents that meet Huawei's current needs, such as operating system research and development.

Different from Huawei's R&D centres in India and Russia, its R&D centre in Indonesia is mainly targeted to expand the local market and increase the market share of Huawei products. On December 10, 2008, Huawei held a grand opening ceremony at the Shangri-La Hotel in Jakarta for its Indonesia R&D Centre and Training Centre. The centre mainly provides software customisation services for Indonesian local operator partners, especially in capacity and value-added services. Through the effective operation of the centre, Huawei can achieve better interaction with Indonesian telecom operators, provide better technical support, and promote the rapid development of Indonesian telecom services, especially value-added services. Indonesia is the largest country in ASEAN and is also the headquarters of ASEAN. It plays a decisive role as it

has the largest population in ASEAN country and 70 per cent of its population are below 34 years old. As a market, it has substantial potential for Huawei.

As a leader in the ICT industry, Huawei expands international markets by transferring technology to host countries. In 2015, PT Huawei Tech Investment Co. Ltd signed a Memorandum of Understanding (MOU) with the Indonesian Ministry of Communication and Information Technology to build a joint innovation centre to provide local industry with creative platforms and resources for Indonesia (Xinhua, 2015, May 20). Huawei will also provide information and communications technology talent training to promote local talent development (KOMINFO, 2016, January 19). The training projects have mainly been signed with universities, such as; University of Indonesia, Bandung Institute of Technology, Gachamada University, Dibonegoro University, Surabaya Institute of Technology, Telkom University, University of Sumatera Utara, Brawijaya University, Mataram University, Hanudin University, Politeknik Elektronika Negeri Surabaya, and Politeknik Negeri Ujung Pandang. After continuous investment in Indonesia, Huawei changed its position from the third-largest supplier in 2007 to the largest supplier in 2013 (MOFCOM, 2008, Feburary 2; Zhao et al., 2013, October 8).

Due to Huawei's leadership in 5G technologies, Western countries have suppressed the company over the past two years. The key for Huawei's 5G race has been a Turkish Professor named Erdal Arikan, who invented polar codes. In 2008, Professor Erdal Arikan published a paper at the IEEE "Transactions on Information Theory". This paper became the first encoding method that had been proven to reach the Shannon limit for transmission over a binary input discrete memoryless channel. In 2010, Huawei built an R&D centre in Turkey, and in the same year, Huawei contracted Professor Erdal Arikan to seek technology cooperation. It is not clear whether Huawei built the R&D centre

because of Professor Arikan. Nevertheless, one thing that can be affirmed is this R&D centre was targeted at Turkey's talents.

Huawei has sought high technology by hiring host country scientists and cooperating with local universities. The Turkish R&D Centre was once the second-largest Huawei overseas R&D centre. By 2020, Huawei had 1,500 employees in Turkey, 85 per cent of whom were locals. Huawei has also cooperated with universities in Turkey, such as; Yildiz Technical University, Gazi University, Middle East University of Technology, Istanbul Technical University, Aegean University, Boğaziçi University, and Istanbul University. Besides, Huawei has also tried to merge with high technology companies to acquire advanced technology. In 2012, Huawei announced that it planned to invest US$100 million in acquisitions in Turkey over the following year.

6.3.3 Discussion

From Huawei's investment history, it could be concluded that Huawei's investment behaviour has been similar to Western MNEs. As a world-famous telecoms company, Huawei has been discussed broadly from the perspectives of its international strategy (Cooke, 2012; Micheli & Carrillo, 2016; Sun, 2009), entry model (Wu & Zhao, 2007), and international theory (Child & Rodrigues, 2005). None of this research has deeply investigated the role of government policies.

6.3.3.1 Technology Seeking

As a late-coming firm, technology seeking was one of the aims from the start of Huawei. To catch up with international giants and maintain a leading position in technology and products, Huawei insists that more than 10 per cent of sales revenue is invested in R&D, and it is expected that such a high investment will bring long-term high returns. In the "Huawei Basic Law" promulgated in 1998, R & D investment was stipulated: "We guarantee to allocate 10 per cent of sales for R & D funding and will

increase the proportion of the allocation when necessary and possible." Ren Zhengfei believed that Huawei could narrow the gap with the world and establish a leading position in the communications field by continuously increasing investment.

Technology seeking OFDI is a realistic choice for companies without technological advantages for using external resources to obtain core technological capabilities under technological globalisation. It is also a way for companies to achieve innovation. Huawei has adopted two methods to achieve this target. One is to set up R&D institutions, embed in local clusters, cooperate with local companies to "learn by doing" on advanced technology and management experience, and develop new products with independent intellectual property rights, technology, and patents. The second has been to acquire technology through mergers and acquisitions of local companies with advanced technology, which is an effective form of utilising foreign scientific and technological resources (Cantwell et al., 2004; Dunning & Lundan, 2008; Lundan, 2002).

The BRI countries are key for Huawei's research and technology seeking. Huawei has acquired talent by offering high salaries in the host countries and utilises such talent to obtain high technology. When looking back on the history of Huawei, the scientists from Russia and Turkey have played critical roles for Huawei to accumulate R&D capability in 3G and obtain s leading position in the competition for 5G. Although Huawei has carried out M&As activities in the BRI countries, they have been relatively fewer than green investments.

6.3.3.2 Market Seeking

Market seeking motivation can be further divided into defensive market seeking and offensive market seeking. Defensive market seeking refers to the fact that to maintain an established overseas market, a company usually invests in a location to avoid trade

barriers or gets closer to customers and provides them with better products and services to follow existing overseas customers. Offensive market seeking means that a company has an equal market position with local companies and provides products and services to local customers. In this case, a company can gain advantages in transportation costs and market information acquisition and strengthen its control over independent brands and other intangible assets (Kamal et al., 2019; Wadhwa & Reddy, 2011).

For companies at the startup stage, market share is vital for their development or survival. In 1995, Ren Zhengfei had keenly foreseen that the Chinese domestic telecommunications market was about to be saturated, and large-scale telecommunications infrastructure construction was about to end. Huawei, which already had a certain scale in the Chinese market, needed to find new fast-growing market space as soon as possible to maintain a high growth rate and occupy a large market share. Otherwise, Huawei may not be able to develop continually. Therefore, it is inevitable for Huawei to go overseas to seize the market and explore emerging markets.

In 2018, along with tense Sino-US relations, the Sino-US trade war began. Huawei's development in developed countries has also been hindered. In addition to cutting off Huawei's parts supply chain, the United States prohibits Huawei from participating in many international companies, prevents Huawei from cooperating with some universities. Huawei cannot use products with American technology, which makes Huawei prohibited from connecting to networks containing American technology. Huawei has been excluded from the supply of 5G equipment by the United States, Britain, Australia, and New Zealand. Huawei has, therefore, turned to broader and deeper cooperation with the Belt and Road countries. However, behind the cooperation, the role of the Chinese government can be seen.

6.3.3.3 Government Intervention

Many of Huawei's disputes centre around its relationship with the Chinese government. Even though Huawei is a private company, Huawei is still considered supported by the Chinese government.

Ren Zhengfei, CEO of Huawei, has a background as a Chinese communist and member of the Chinese military. After Ren Zhengfei graduated from Chongqing Institute of Architecture and Civil Engineering (Now is part of Chongqing University) in 1968, he joined the Chinese People's Liberation Army and became a construction engineer until 1982. Due to his outstanding knowledge concerning technology, Ren Zhengfei became a communications officer and was subsequently transferred to an aircraft factory in Anshun to develop a military communications system code-named 011. In March 1978, 33-year-old Ren Zhengfei went to Beijing to attend the National Science Conference attended by more than 6,000 delegates. In the same year, Ren Zhengfei joined the Communist Party of China. Ren Zhengfei's first wife was Meng Jun, the daughter of Meng Dongbo, former deputy governor of Sichuan Province. These facts provide sufficient reasons to believe that Ren Zhengfei maintains a good relationship with the Chinese government.

Regarding Huawei's overseas investments, the Chinese government has extended a hand of friendship. Since its early entry into overseas markets, Huawei has received strong support from Chinese financial institutions, such as the Export-Import Bank of China (state-owned enterprise). On February 13, 2004, in Shenzhen, the headquarters of Huawei, the Export-Import Bank of China and Huawei Technologies Co., Ltd. formally signed a US$600 million export credit framework agreement, which was used to support Huawei's overseas market development and expansion. As a national export credit agency supporting the development of China's open economy, the Export-Import

Bank of China has always focused on supporting the expansion of exports of high-tech, high-value-added mechanical and electrical products and high-tech products as its financing focus and supporting companies with comparative advantages to ‘go abroad’.

Huawei has not only obtained government support for its overseas investment but also for its R&D activities. The various forms of subsidies that Huawei has received from the Chinese government total as much as US$75 billion, including; government support funds, concessional loans, tax relief, land concessions, etc. These huge subsidies have made Huawei's product prices 30% lower than its competitors (Yap, 2019, December 25). The largest subsidy that Huawei has received has been credit support totalling US$46 billion, including US$16 billion in loans from state-owned banks. The China Development Bank and the Export-Import Bank have provided Huawei with more than US$30 billion over the past 20 years in lines of credit. In addition, from 2008 to 2018, China's preferential support policies for high-tech industries have enabled Huawei to save US$25 billion in taxes. Huawei has received government grants divided into two parts (Table 6.6). One comprises unconditional government grants mainly used for innovation and research projects carried out by Huawei. Other government grants have been conditional, meaning that Huawei should complete R&D projects specified by the government (Huawei, 2020). Huawei’s annual report doesn’t disclose what kind of research it has completed for the government. The Chinese government buying services and products from private companies can be seen as market behaviour; this interaction can help Huawei’s relationship with the government. The unconditional grants comprise the real government support for Huawei’s R&D activities.

Table 6.6: Government Grants Received By Huawei (RMB, million)

Year	Unconditional	Conditional		Total
		R&D	Others	
2008	130	487	-376	241
2009	251	329	-307	273
2010	434	545	-386	593
2011	1,098	576	-504	1,170
2012	587	523	-360	750
2013	307	686	-528	465
2014	422	521	90	1,033
2015	539	846	691	2,076
2016	476	388	431	1,295
2017	671	326	181	1,178
2018	969	444	132	1,545
2019	1,189	281	197	1,667
Total	7,073	5,952	-739	12,286

***Source**: Huawei Annual Report (2009-2019)*

Huawei started its globalisation journey partly due to the Chinese government's ‘go abroad’ policy. Followed by the Tenth Five-Year Plan Outline and Eleventh Five-Year Plan for Information Industry, Huawei started to ‘go abroad’ and built R&D centres in; India, Russia, Indonesia, and Turkey. For companies with a crisis sense, participating in international competition is the best way to survive. Huawei realised that following government policy to conduct overseas investments would enlarge its market share, and countries with good relationships with the Chinese government was one of the factors that determined Huawei’s overseas investment behaviour. As stated by (Ren, 2003)

> Chinese President Jiang Zemin and Russian President Boris Yeltsin reached a strategic partnership for the 21st century in 1996, in line with China and Russia's fundamental interests and security needs. This partnership gave a massive boost to China and Russia’s economies and development. However, China and Russia couldn’t just focus on strategy: the high-level cooperation friendship needed to be vigorously communicated with the grassroots economy to consolidate this mutual

friendship. All successful Chinese companies were encouraged to show their skills to the Russian market. Huawei's cross-border marketing and investment has followed China's diplomatic route and is anticipated to succeed.

Huawei completed the first phase of globalisation under the national strategy of "going global" and completed its role change from an industry laggard to a leader. Huawei's internationalisation path has been centred on developing countries and spreading to developed countries. Huawei chose developing countries rather than developed countries as the primary destination for its internationalisation. One of the important considerations has been China's diplomatic route.

Since the Chinese government put forward the BRI, Huawei has ushered in its second stage of internationalisation, which started in 2013. Based on the transfer of excess production capacity and the need for industrial upgrading, the BRI has allowed Huawei to start its second stage of internationalisation. Some scholars have only paid attention to the BRI's aim to transfer China's excess production capacity but have ignored the process of industrial upgrading (Johnston, 2019). To this end, the Chinese government proposed the "Made in China 2025" strategy, and its purpose has been to develop China's high-end manufacturing industry and enhance China's national competitiveness (Ma et al., 2018; Wang et al., 2020). The economic development of a latecomer country can be divided into four stages: factor-driven, investment-driven, innovation-driven, and wealth-driven (Porter, 2011). Over recent decades, China's rapid development has been based on cheap labour and the destruction of the natural environment. At the same time, China's reform and opening-up policy has attracted significant foreign capital to participate in China's development. Relying on foreign advanced technology, equipment, and key components, China has produced standardised products to fulfil the needs of local and foreign markets. The salient feature

of the investment-driven stage has been the consumption of many natural resources, increased environmental pollution, and rising labour costs. Due to excessive demands for raw materials and products, the prices of production factors have continued to rise, and the prices of products have continued to fall due to overcapacity. To increase the competitiveness of its national economy and solve the problems mentioned above, China must move up to the next stage: the innovation-driven stage. In the initial stage of the BRI, the Chinese government focused too much on acquiring natural resources, infrastructure, and production capacity cooperation. While the BRI has been questioned by some scholars (Brautigam, 2020; Jones & Hameiri, 2020; Were, 2018, August 31), the Chinese government has begun to pay attention to the role of high-tech industries in the BRI. Most of the countries in the BRI are developing countries, and they need advanced technology and management experience. From the perspective of the Chinese government, scientific and technological cooperation can not only reduce the voice of doubts from the international community about the motivation of the BRI but also promote China's economy to enter the innovation-driven stage.

On May 30, 2016, Chinese President Xi Jinping delivered his “Struggle to Build a World's Scientific and Technological Power” speech at the National Science and Technology Innovation Conference. The speech mentioned that against the background of the BRI, it was necessary to accelerate the construction of a technological innovation centre with global influence. Ren Zhengfei also participated in the conference. At the end of his speech, Ren Zhengfei mentioned:

> I will carefully study the speeches of President Xi Jinping and Premier Li Keqiang and the spirit of this meeting. Huawei will further strengthen innovation, enhance core competitiveness, and make unremitting efforts to revitalise China's century-old dream of technological revitalisation (Ren, 2016, June 3).

The Chinese government hopes to accelerate the development and application of 5G technology under the background of its Made in China 2025 policy. Huawei's 5G technology has achieved a leading global position. At the same time, the US government has suppressed Huawei and united other Western countries to boycott Huawei's 5G technology. With the help of the Chinese government, Huawei has obtained 5G contracts from the BRI countries (Table 6.7).

6.4 Conclusion

The Chinese government has played a vital role in helping Chinese companies make overseas investments. When the Chinese economy encounters difficulties, the Chinese government has hoped to solve problems such as; economic slowdowns, excess production capacity, and environmental pollution through cooperation with the Belt and Road countries.

The Chinese government has assisted companies in response to natural resources shortages as the BRI countries are mostly developing economies with weak infrastructure and high risk. Government-supported industrial parks can allow private companies in the industrial chain to relocate overseas collectively. When these companies invest overseas in a group, they increase their output value and reduce production costs. From the perspective of the Chinese government, the government still maintains control of this industry by financially supporting the companies.

Due to tensions in Sino-US relations, Chinese high-tech companies have been restricted from conducting connected transactions with American companies. For these high-tech companies, market seeking has been an important factor in determining companies' investments. Through technology transfers, the Chinese government has urged these companies to cooperate with the Belt and Road countries. These transfers

meet the needs of these countries for high-tech technology and give Chinese companies vast potential markets.

Table 6.7: The Relationship between Huawei's OFDI and Government Policy

No	Government Policy	Company's Response
1	In 1996, Chinese President Jiang Zemin and Russian President Boris Yeltsin reached a strategic partnership for the 21st century.	Huawei began to develop the Russian market, and Huawei built its second overseas research centre in Russia in 1999 to attract top Russian mathematicians to participate in Huawei's basic research.
2	In 2013, Chinese President Xi Jinping visited Indonesia and met with the Indonesian President Susilo Bambang Yudhoyono.	Huawei signed a talent training plan with the Indonesian Ministry of Communications. According to this plan, PT Huawei Indonesia would invest funds and human resources to train 1,000 outstanding students in two years in batches. After training was completed, students would receive certificates issued by the Ministry of Communications and the Ministry of Labour.
3	In 2015, Turkish President Recep Tayyip Erdogan visited China and met with Chinese President Xi Jinping.	The Turkish President met with Huawei's rotating CEO Guo Ping in Beijing and visited the exhibition hall of the Huawei Beijing Research Institute. Subsequently, the two parties also witnessed the signing of a 5G cooperation MOU between Huawei and Turkish operator Turkcell.
4	In April 2018, The Indonesian government officially launched the "Making Indonesia 4.0" roadmap. On 20 August 2020, Chinese State Councilor and Foreign Minister Wang Yi held talks with Indonesian Foreign Minister Retno Marsudi in Baoting, Hainan.	On 2 December 2020, Huawei signed an agreement with Indonesia to develop 5G technology and cultivate talents jointly. Huawei will train 100,000 employees to be proficient in digital technologies, such as cloud and 5G. According to this memorandum of understanding, Huawei will use its internal technology in employee training.
5	In June 2019, Chinese President Xi Jinping visited Russia and met with Russian President Vladimir Putin.	Russian telecommunications company MTS and China's Huawei signed a memorandum for 5G cooperation during the meeting.
6	In October 2019, Chinese President Xi Jinping visited India and met with Indian PM Narendra Modi.	The Indian government agreed to allocate India's 5G temporary spectrum to Huawei, and an Indian company also expressed support for Huawei.

***Source**: Author*

CHAPTER 7: CONCLUSION, POLICY IMPLICATION AND FURTHER RESEARCH DIRECTIONS

The objectives of this research were to examine the pattern and policy of China's OFDI in the BRI countries, estimate the performance of Chinese investment in those countries, and detect the determinants of China's overseas investment in the BRI countries from the institutional perspective. The role of the Chinese government in supporting overseas investment in the BRI countries has been highlighted. These objectives have been addressed in Chapters 4, 5, and 6. This outcome was achieved using stochastic frontier analysis and case studies advanced in Chapter 3. This concluding chapter explains the main findings. These are followed by the theory implications, policy implications, and recommendations for further research.

7.1 Summary of Findings

This section summarises the main findings for the three research questions outlined in Chapter 1 (Table 7.1). The detailed findings of each research question are explained in the following sections.

7.1.1 The Pattern and Policy of China's OFDI in the BRI Countries

Chapter 4 presented a descriptive analysis of China's OFDI in the BRI countries from geographical distribution, industrial distribution, and policy support perspectives by using country-level and firm-level data. This analysis was motivated by three factors. Examining the geographical distribution of Chinese investment in the BRI countries helped to understand the characteristics of FDI, especially which factors were suitable to be used in the following empirical analysis. While, the industrial distribution analysis supported the researchers to consider the motivations behind Chinese investment in the BRI countries, such as; market, natural resources, assets, and low labour cost seeking.

Finally, after the Chinese government has issued policies to support overseas investment, government policy could be introduced as a factor to determine China's OFDI.

From the basic geographical analysis of China's investment in the BRI countries, large investments have been located in countries with vast markets and not far from China. Market-seeking investment has been one reason the Chinese government has transferred its production overcapacity by increasing overseas investment (Freeman, 2020; Xu, 2020). Chinese investment has been more likely to choose the BRI countries surrounding China as its destination, which means that geographical distance affects the flow of investment. This was consistent with the traditional analysis (Blanc-Brude et al., 2014; Egger & Pfaffermayr, 2004).

From the industrial perspective, as industrial sector data was not available from MOFCOM, CGIT data was the only source that helped map the industrial distribution of Chinese investment in the BRI countries. FDI from China has mainly targeted the energy and metal industries, which account for 56.58 per cent of the total industrial distribution in the BRI countries (Table 4.10). Chinese investments in the BRI countries have been mainly natural resources-seeking motivated; this was inconsistent with the existing literature, which stated that China had not sought natural resources in the BRI countries (He & Cao, 2019; Liu et al., 2017).

Energy subindustries, such as; oil, coal, gas and hydro, have been the core drivers for the BRI, which has helped China to access reliable and efficient energy networks (Bashir et al., 2021; Len, 2015). Except for the demand for traditional energy consumption, China has been looking for environmentally-friendly energy, such as gas from the Russian Federation and Kazakhstan, as environmental pollution is receiving more attention as part of economic development (Liu et al., 2020).

Table 7.1: Summary of the Main Findings

Research Questions	Research Objectives	Main Findings
Given the government's BRI objectives, what has been China's OFDI in the BRI countries?	To examine the pattern and policy of China's OFDI in the BRI countries	China's overseas investment in the BRI countries has been concentrated in countries geographically close to China and with large market sizes. Meanwhile, the Chinese government has issued policies to support overseas investment from the perspectives of destination, industry, and risk reduction.
How well has China's OFDI performed in the BRI countries?	To estimate the performance of China's OFDI in the BRI countries	China's OFDI in the BRI countries has mainly been driven by resource-seeking investment, market-seeking investment, and low labour costs. Chinese investment in the BRI countries can still improve its performance.
Are there non-economic motives in Chinese OFDI in the BRI countries?	To detect the role of government policy in China's OFDI to the BRI countries	The Chinese government has issued policies to support overseas investment in the BRI countries. The policies have mainly been motived by transferring excess manufacturing capacity, upgrading industries, and ensuring the competitiveness of high-tech companies.

***Source**: Author*

Investment in the metals industry has mainly been in the; steel, copper, and aluminium subsectors which has promoted Chinese manufacturing firms to enlarge their cross-border activities. Where Indonesia, Bangladesh, Mongolia, and India have been

the main destinations of the steel sector. Afghanistan, Myanmar and Serbia have been the core recipients of Chinese investment in the copper sector. Lastly, Malaysia, Indonesia, Saudi Arabia, and Egypt have been the main destinations of Chinese investment in the aluminium sector. Reliable metals supply has fulfiled the demand for domestic and foreign consumption, which has helped China maintain its status as the world's factory (Qian & Fulton, 2017; Tan et al., 2019; Tan, 2013; Yao et al., 2010).

Besides the economic factors that have affected Chinese investments in the BRI countries, Chinese government policy has played an important role in investing in the; energy, metals, transportation, logistics, technology, and finance industries. As the direct controller of SOEs and indirect controller of private companies, the Chinese government has supported both greenfield and M&As investments in the BRI countries by releasing the OFIC and GOIC. Meanwhile, the Chinese central government has vigorously promoted COCZs to boost overseas investment and cooperation with host countries.

The OFIC has been released to guide Chinese companies to make investment decisions in different sectors and countries by MOFCOM, MOFA, and NDRC. The OFIC aims to encourage Chinese companies with competitive advantages to engage in high-level international competition and cooperation and promote the growth of; goods, service trade, and technology. Companies that follow the guide to investing overseas can enjoy preferential government policies on; capital, foreign exchange, taxation, and customs.

The GOIC can be seen as the platform by which the Chinese government generates suggestions or proposals for Chinese MNEs. From an investment motivation perspective, it provides information about markets and natural resources. Besides, potential investment opportunities, such as industry choices, are explained for each host

country. Chinese MNEs can make their first investment decisions based on the above information by choosing which country and which sector. Although the final decision may differ from the government's suggestions, it provides basic information concerning host countries and offers tips for further investment.

COCZs refer to industrial parks that receive investment from Chinese-owned companies registered in the People's Republic of China (excluding Hong Kong, Macao, and Taiwan) as independent legal entities. COCZs play an industrial agglomeration role and promote relevant industrial development with a complete infrastructure, industrial development strategy, and excellent public services. Among the BRI countries, Indonesia, Russia and Cambodia have been the most attractive destinations, and a total of 24 COCZs have been built. As a cooperation platform proposed by the central government, Chinese companies who successfully operate an industrial park and pass the evaluation of the Ministry of Commerce are eligible to secure financial support amounting to 0.2 billion RMB. Except for the support from the Ministry of Commerce, China Development Bank also encourages the development of COCZs. COCZs can obtain financing support in balance transfers and syndicated loans.

The Chinese central government has proposed to enhance the development of COCZS in official documents, such as 'Vision for Maritime Cooperation under the Belt and Road Initiative' and 'Guidelines of the State Council on Promoting International Cooperation in Production Capacity and Equipment Manufacturing. COCZs should be seen as different agglomerating industries along the supply chain and increasing competitive capability, serving the final goal of promoting capacity cooperation and industrial upgrading. As its economic growth rate slows, China faces excess production in the; steel, cement, electrolytic aluminium, and machinery manufacturing industries. The Chinese government has proposed supply-side reform to reduce production

capacity to maintain continuous economic growth. Meanwhile, industrial transformation and updating have been another aim of the 'Made in China 2025' strategy to transform China from a low-end manufacturer to a high-end one. COCZs in the BRI countries are industrial parks that represent part of the production capacity of Chinese companies. They are tools serving the aim of the Chinese government, playing the role of both absorbing excess production capacity and industrial upgrading.

The descriptive analysis supported the following empirical analysis. The traditional analysis only uses macro data to analyse the characteristics of China's OFDI, which only supports the market-seeking motivation. Micro-level data should be used to check the natural resource-seeking and strategic asset-seeking motivations. Besides, Chinese government policy is a special factor affecting the flow of Chinese overseas investment in the BRI countries, which existing research has not considered.

7.1.2 The Performance of China's OFDI in the BRI Countries

The econometric analysis of China's OFDI in the BRI countries in Chapter 5 revealed that the performance of Chinese overseas investment was similar to the existing research. According to the results of the SFA model for the determinants of China's OFDI among the BRI countries, the characteristics of the market size of the home country and host country were significant at a 1% significance level and with a correct relationship (Table 5.7). These findings supported the hypotheses of market-seeking motivation. With the development of China's economy, competition in the home market has been stiff, and companies that own advantages have tried seeking new markets to expand their businesses (Kamal et al., 2019; Liu et al., 2005). That explains why the home market's GDP influenced China's OFDI more than the host market's GDP. The difference between the home country's market size and the host country's market size had a strong negative effect on the OFDI from China at the 1% significance level,

which meant that China's investment mainly flowed to host countries with similar GDPs. In other words, China's OFDI was more attracted to less developed countries than China.

The distance between the home country and the host country had a significant negative effect on the outflows of China's investments. This situation was consistent with the descriptive analysis of the geographical distribution of China's OFDI in Chapter 4 (Figure 4.5). With a 1% increase in distance, China's OFDI decreased by 3.14%. China's OFDI has focused on countries near the home country, and normally those countries have experienced good relationships with the Chinese government.

China's foreign investment has been motivated by natural resources as the nation's rapid economic growth has required huge natural resources to fulfil domestic consumption and re-exports (Deng, 2004; Drogendijk & Blomkvist, 2013; Mourao, 2018; Wang & Yu, 2014). The analysis showed a strong positive relationship between natural resources and China's OFDI at the 1% level, which meant that a 1% rise in the natural resources variable increased China's outward investment by 0.15%. The result proved the hypothesis of natural resources-seeking motivation.

For strategic asset-seeking motivation, the correlation between skill and China's OFDI was strongly negative at the 1% significance level, which meant that China's OFDI sought countries with low technology levels. The result was opposite to the hypothesis that Chinese companies were motivated by strategic asset-seeking with the outflow of FDI (Deng, 2009; Wang & Wang, 2011). As this study focused on the countries among the BRI, the Chinese government has been the major player in prompting outward foreign direct investment. The investments in the BRI countries have been mainly contributed by state-owned enterprises or private companies that have a close relationship with the Chinese government (Lin, 2015). The investments have

mainly concentrated on the energy and infrastructure sectors which need cheap and unskilled workers to support production. Chinese companies have undertaken economic risk to cater for the Chinese government's initiatives.

Meanwhile, as labour costs have increased in China over recent years, some labour-intensive industries have transferred their production from China to countries with lower labour costs (Wang et al., 2008). The technology difference between China and a host country had a significant positive relationship with China's ODFI at the 1% significance level. This outcome meant that most of the OFDI from China has flowed into countries with lower technology than China. Infrastructure development has been one of the crucial aims of the BRI (Huang, 2016), hence, signifying that investment from China to the BRI countries cannot be a technology-seeking behaviour.

The characteristics of the SFA model indicated that the inefficient elements should be signed opposite to the conventional determinates of OFDI. Specifically, the home and host country's trade costs and investment should be associated with positive, negative, and positive signs in the SFA model. The correlations should be positive, negative, and negative for the other inefficient elements, such as; political risks, infrastructure, and government (Table 5.8).

For the trade cost of the home country and host country, the results showed no evidence to prove that the home country's trade cost had any significant relationship with the home country's OFDI. The trade cost of the host country had a significant positive relationship with China's OFDI at the 1% significance level, and the correlation sign was opposite to the hypothesis. One of the reasons may have been that for vertical foreign direct investment (VFDI), the home country usually sets up plants in the host country and the headquarters in the home market. After finishing production in the host country, products are re-imported to the home country (Markusen & Maskus, 2001). In

this case, VFDI is decided by the trade cost of both the home country and the host country. In this study, the home country's trade cost did not affect the flow of China's investment, and the only determinant was the host country's trade cost. As the trade cost of the host country increased, the VFDI decreased. Thus, the host country's trade cost correlation should be positive in the SFA model.

For the investment cost of the host country, the result showed the opposite sign to the hypothesis. Normally, the investment cost of the host country had a negative influence on the OFDI from the home country. However, in the SFA model, the results were significant at the 1% significance level but with opposite signs. This situation indicated that China's investment among the BRI countries was toward markets with high investment costs.

For the political variable, there was a significant negative relationship between the political stability of the host country and China's outward investment at the 5% significance level. This outcome was opposite to hypothesis 6 (highlighted in Chapter 3) that China's investment was trying to find countries with less stable politics.

Concerning infrastructure, there remained a significant negative relationship between the infrastructure of the host country and China's OFDI at the 1% significance level. The same conclusion could be used for government efficiency. The results showed that relatively better infrastructure and higher government efficiency of the host country increased FDI flows from China.

Trade cost, investment cost, political risk, infrastructure, and government efficiency of the host countries played important roles in the efficiency of Chinese investments in the BRI countries, especially for infrastructure. Infrastructure was the second largest factor affecting Chinese overseas investment inefficiency when comparing the

coefficient values of each factor (Table 5.7). For the Chinese government, the easiest way to increase the FDI in the BRI countries has been to improve the infrastructure of those countries, as the Chinese government cannot easily control other factors.

For different regions, the motivations behind Chinese investment have shown some differences. Market seeking motivation was a common phenomenon among different regions. In contrast, China mainly has sought natural resources in Central Asia and Southeast Asia, and there has been no evidence that China has been seeking resources in other regions. Except for South Asia and Central Asia, the result showed that China had asset-seeking motivations in; the Middle East and North Africa, Europe, and Southeast Asia. In the Middle East and North Africa, China has mainly sought cheap labour; as a result, the coefficient was significant at the 1 per cent level with a negative sign. In Europe and Southeast Asia, the result showed that China sought talent with high educational backgrounds. This result was interesting. The regression results indicated that China sought cheap labour in the BRI countries, but this was not the full story. When looking at the regression result of each region, China has been seeking hi-tech talents from those developing countries. Hence, contradicting the existing research (Chen & Yang, 2011; Deng, 2009).

7.1.3 The Strategic Motivations for China's OFDI in the BRI countries

Based on the descriptive analysis in Chapter 4, it is clear that Chinese government policy has played an important role in promoting China's overseas investment. In Chapter 4, the Chinese government issued policies guiding companies to invest in the BRI countries were discussed. In Chapter 5, the regression results showed that existing theory explained a large part of Chinese OFDI in the BRI countries. However, there were some limitations to the research in Chapter 5. As the Chinese government has issued many policies to promote OFDI in the BRI countries, it remains impossible to

use quantitative methods to test the role of government policies. Thus, the specific case studies in Chapter 6 have helped understand how those policies worked.

Tsingshan Holding Group was chosen for the first case study, a large-scale private enterprise focusing on stainless steel production and smelting. One of the reasons that the steel industry was selected for the case study is that China is the largest iron ore consuming country; it has no pricing power on iron ore and heavily depends on imports. To maintain the development of the steel industry and solve the problem of dependence on the importation of iron ore, the Chinese government has issued the iron and steel industry development policy. The policy has encouraged large-scale domestic companies to establish production and supply bases of; iron ore, chromium ore, manganese ore, nickel ore, scrap steel, and coal abroad through greenfield investment and brownfield investment.

Encouraging Chinese companies to implement foreign direct investment and build steel plants has been a major strategy for developing the steel industry during the twelfth five-year plan period. In 2016, the MIIT issued the transformation and upgrade plan for the iron and steel industry, which aimed to solve the serious problem of overcapacity. The plan showed that the most significant way to solve the problem was to strengthen international production capacity cooperation, encouraging Chinese companies to transfer their factories to the BRI countries with abundant natural resources and potential markets.

Tsingshan's overseas investment followed the traditional western FDI theory to seek natural resources in Indonesia, and it showed different motivations from companies from advanced countries. As a steel company in China, Tsingshan has been motivated to seek natural resources to fulfil production needs. However, the government policies changed Tshingshan's investment method. The change of Indonesian government policy

forced Tshingshan to build a company to engage in mining activities in the local market. In comparison, the Chinese government encouraged Tshingshan to seek natural resources overseas from the energy security perspective. Tsingshan's intention to invest abroad to pursue natural resources was consistent with both governments' policies (Table 6.4).

With the BRI strategy being a national development strategy, the Chinese government usually signs agreements with host countries through its foreign policy to set up COCZs. COCZs can be seen as a new method for Chinese OFDI, resulting from government policy-driving investment. In the case of the IMIP, it has improved the quality of infrastructure of this special economic zone, and it has also attracted relevant companies to invest in zones, especially for small and medium sized companies. As the infrastructure is a public good in the zones, all companies will have lower production costs. Besides, to make investment more interesting, the Chinese government has enabled industrial chains to transfer to the IMIP to improve the success rate of OFDI and fulfil the target of the steel and iron industry policy.

Although the investment decision of Tsingshan in Indonesia may be portrayed as natural resources seeking, its decision to invest was very much influenced by the investment policy laid down by the Chinese government. As highlighted in section 6.2.3.1, Tsingshan's investment decision was influenced by Chinese government policies. Its investment decision seemed to answer the government's outward foreign direct investment strategy's call. For example, on October 3, 2013, Chinese President Xi Jinping visited Indonesia and attended an Indonesia-China Business Luncheon with the Indonesian President Susilo Bambang Yudhoyono. The two presidents also witnessed the signing of several business cooperation agreements between the two countries. PT Indonesia Tsingshan Stainless Steel (ITSS) was founded by Tsingshan Holding Group,

Ruipu Technology Group Co., Ltd., Hanwa Co., Ltd., and PT Indonesia Morowali Industrial Park in 2015 to answer the call of China's outward investment policy to Indonesia. The factory was designed as a stainless steel plant with a capacity of 1 million tons of stainless steel in slab form per year and a 2x350 MW power plant worth US$840 million.

The second case was Huawei which was established in 1987. Huawei has become a world-renowned company from its beginnings as a small company because Huawei attaches great importance to R&D. Huawei has built R&D centres in China and overseas countries. Huawei has mainly targeted India, Russia, Indonesia, and Turkey to build overseas R&D centres in the BRI countries. Technology seeking investment is a realistic choice for companies without technological advantages seeking to use external resources to obtain core technological capabilities (Kedia et al., 2012; Wright et al., 2004).

The BRI countries are key for Huawei's research and technology search. Huawei acquires talent by offering high salaries in the host countries and utilising that talent to acquire high technology. When looking back on the history of Huawei, scientists from Russia and Turkey have played critical roles in Huawei, accumulating R&D capability in 3G and obtaining a leading position in the competition for 5G. Although Huawei has undertaken M&As activities in the BRI countries, they have been relatively less than greenfield investments.

From the market seeking investment perspective, Huawei has reached a certain scale in the Chinese market and needs to find new fast-growing market spaces as soon as possible to maintain its high growth rate and occupy a large international market share. Failing this, Huawei may not be able to develop continually. Therefore, it was inevitable for Huawei to go overseas to seize the market and explore emerging markets.

In 2018, along with the tense Sino-US relations, the Sino-US trade war began. Due to this situation, Huawei's development in developed countries has been hindered. In addition to cutting off Huawei's parts supply chain, the United States has prohibited Huawei from participating with many international companies and prevented Huawei from cooperating with some universities. Huawei cannot use products incorporating American technology, making Huawei unable to connect to networks containing American technology. When Huawei was successively excluded from the country's 5G equipment suppliers by the United States, Britain, Australia, and New Zealand, Huawei turned to broader and deeper cooperation with the Belt and Road countries. Moreover, behind the cooperation, it seems to see the role of the Chinese government.

For Huawei’s overseas investments, the Chinese government has extended a hand of friendship. Since its early entry into overseas markets, Huawei has received strong support from Chinese financial institutions, such as the Export-Import Bank of China (state-owned enterprise). Huawei not only obtains government support for its overseas investments but also for its R&D activities. Huawei's various forms of subsidies from the Chinese government are as high as US$75 billion, including; government support funds, concessional loans, tax relief, land concessions, etc.

Since the Chinese government proposed the BRI, Huawei has ushered in the second stage of internationalisation, which started in 2013. Based on the transfer of excess production capacity and the need for industrial upgrading, the BRI has allowed Huawei to start the second stage of internationalisation. Some scholars have only paid attention to the aim of the BRI to transfer China's excess production capacity but have ignored the purpose of industrial upgrading (Johnston, 2019). To this end, the Chinese government proposed the “Made in China 2025” plan, the purpose being to develop

China's high-end manufacturing industry and enhance China's national competitiveness (Ma et al., 2019; Wang et al., 2020).

In the initial stage of the BRI, the Chinese government focused too much on acquiring; natural resources, infrastructure, and production capacity cooperation. While the motivations of the BRI have been questioned by some scholars (Brautigam, 2020; Jones & Hameiri, 2020; Were, 2018, August 31), the Chinese government has begun to pay attention to the role of high-tech industries. Most countries along the BRI are developing countries, and they need advanced technology and management experience. From the perspective of the Chinese government, scientific and technological cooperation can reduce the voice of doubt from the international community about the motivations of the BRI and promote China's economy to enter an innovation-driven stage.

While the Chinese government hopes to accelerate the development and application of 5G under the background of Made in China 2025, Huawei's 5G technology has already achieved a leading global position. At the same time, the US government has suppressed Huawei and united other Western countries to boycott Huawei's 5G technology. With the help of the Chinese government, Huawei has obtained 5G contracts from the BRI countries (Table 6.7).

The Chinese government has played a very important role in helping Chinese companies make overseas investments. If the Chinese economy encounters difficulties, the Chinese government hopes to alleviate China's economic slowdown, excess production capacity, and environmental pollution through cooperation with the Belt and Road countries.

The Chinese government has assisted companies in response to natural resource shortages. As the BRI countries are mainly developing economies with weak infrastructure and high risk, Chinese Government-supported industrial parks have allowed private companies in the industrial chain to relocate overseas collectively. When these companies invest overseas in a group, they increase their output value and reduce production costs. From the perspective of the Chinese government, the government still maintains control of these industries by finically supporting such companies.

Due to tensions in Sino-US relations, Chinese high-tech companies have been restricted from conducting related transactions with American companies. For these high-tech companies, market seeking has been an important factor in determining the companies' investments. Through technology transfers, the Chinese government has urged these companies to cooperate with the Belt and Road countries. This situation has met the needs of these countries for high-tech technology and has given Chinese companies a huge potential market.

7.2 Theory Implications

In terms of theoretical implications, this research has contributed to the existing theory of FDI, especially regarding Dunning's theory which relates to the motivations and drivers of overseas investment, such as; market, resource, efficiency, and strategic asset seeking.

Based on the empirical results presented in Chapter 5, the findings of this research suggested that Dunning's theory explained the motivations of Chinese OFDI in the BRI countries, such as; market-seeking, cheap labour-seeking, and natural resource-seeking. One of the important roles of the BRI has been for Chinese companies to seek large markets to absorb their excess production capacity. Chinese companies have transferred

their excess production capacity to countries with cheap labour costs, imitating the investment paths of traditional multinationals from developed countries and avoiding the trade conflict between China and the United States that has restricted Made in China products. Seeking natural resources has fulfiled the needs of economic development and state security. All the above results have followed the analysis of the characteristics in Chapter 4 and the extant research (Buckley et al., 2007; Deng, 2004; Kamal et al., 2019; Mourao, 2018; Wang & Yu, 2014).

Meanwhile, the empirical results in Chapter 5 suggested that additional variables should be included to explain outward FDI from China to the BRI countries. Chinese government policy for OFDI has impacted Chinese companies to decide on their overseas investments' destination and industrial distribution. Although the determinants of OFDI discussed in Chapter 5 appear to be Chinese companies' decisions from their business perspectives, government policy for overseas investment can be a guide and a key factor that has affected the investment decisions of these companies. To be precise, the market seeking motivation should be referred to as market seeking with government policy intervention in China's OFDI. This statement means that the Chinese government pushes the companies to occupy overseas markets to transfer the excess production capacity to maintain the economy's development and upgrade industries. Chinese government policy has targeted low-end manufacturing companies and high-tech companies. As the trade conflicts between China and the US have worsened, market seeing has been urgent for Chinese companies, such as Huawei. A larger market will pay off for Huawei's investment in research and development (R&D) for 5G.

Motivation to seek natural resources is intervened with by Chinese government policy. As most of these companies are state-owned, the most urgent task for those SOEs has been to seek natural resources and observe energy and food safety. Chinese

SOEs used to try to control energy and mine production by M&As in Australia but were restrained by the Australian government on the grounds of threatening Australian security. This situation made the Chinese government turn to the BRI countries to invest in the natural resources sector. Hence, investments by Chinese companies in the natural resources sector have been on behalf of the Chinese government.

Finally, asset-seeking motivation has also been directly affected by government policy. The Chinese government issued the Made in China 2025 policy to show its ambition in upgrading industries. Chinese companies with the potential to be world leaders in high technology receive government financial support for R&D activities. This situation makes those companies seek talent worldwide. Huawei's case has shown that scientists from developing countries can also make great contributions to 5G.

Traditionally, Dunning's theory has been from the perspective of private companies without government intervention. In this situation, companies seek a market, resources, efficiency, and strategic assets under the background of maximising profits. In China's BRI, government policy has played an important role in promoting investment cooperation between China and the BRI countries. Although the existing research has focused on institutional factors that have determined China's OFDI, no research has yet proposed how the role of government policy has affected investment motivations. In other words, the existing works of literature have only tested the motivations of Chinese investment from the side of companies and ignored how the Chinese government controls the motivations from the empirical result. Chinese companies are only the tools for government to achieve its national goals. This outcome supplements Dunning's theory.

7.3 Policy Implications

The empirical results of this thesis have offered several policy implications. The regression results in Chapter 5 showed that Chinese companies had sought natural resources and cheap labour in the BRI countries. There have been disputes concerning Chinese companies investing in the natural resources field. Environmental pollution has been a common issue when Chinese companies have focused overseas, especially in the; mining, gas, and oil industries. If not properly dealt with, environmental protection issues will cause tension and conflict between Chinese overseas companies and residents of the host countries and even force host governments to adopt environmental regulation measures. The Chinese government should issue laws and regulations for Chinese MNEs to ensure environmentally friendly production to deal with any conflicts.

Another way to solve this problem may be to encourage companies, which heavily rely on natural resources as their input for production and export overseas as the main income, to transfer the whole production value chain to the BRI countries. This policy suggestion came from the case of Tsingshan in Chapter 6. If Chinese companies only engage in activities related to raw materials, the host country will benefit little. When the whole value chain is transferred to the BRI countries, it will increase the production value, and the host country will benefit from employment, management, and technology transfers. Then, the BRI countries will welcome investments from China as they will bring capital and technology. The value chain transfer to the BRI countries may avoid trade conflicts with the United States. When the product is labelled as ‘Made in the BRI Countries’ instead of ‘Made in China’, these other countries will reduce China's trade deficit.

The Chinese government should also encourage high-technology companies to invest in the BRI countries after observing the motivations of China’s investment in the BRI

countries. China has sought cheap labour in the BRI countries. However, Huawei's case in Chapter 6 showed that Huawei sought technology and talent from BRI countries. While most BRI countries are developing countries and lack high technology, they have huge populations with specialised talent. By employing highly educated people and offering them high salaries, they may one day create innovations equalling the world's leading companies. From a host country's perspective, investment in high technology is the most needed type. The BRI will only benefit China and the host country if China encourages high technology investment.

Investment in infrastructure is critical for the BRI. Chapter 5 shows that the BRI countries have significant potential for China to increase overseas investment. When the determinants of investment inefficiency were examined, infrastructure was positively related to efficiency scores. The coefficient value was the largest among them, which meant that if the host country's infrastructure improved, China's investment would increase. For the inefficiency determinants, such as; trade cost, investment cost, infrastructure, government efficiency, and political stability, the only variable that the Chinese government can help improve is the host country's infrastructure. This outcome explains why the Chinese government claims to invest in infrastructure in the initiative. There has been negative news about some infrastructure investments, such as the East Coast Rail Link in Malaysia and the Hambantota port in Sri Lanka. Thus, the Chinese government should concentrate less on providing financial support for projects and more on evaluating the reliability of projects to avoid any negative effect of the investment for the BRI countries.

7.4 Limitations and Suggestions for Further Research

This thesis has contributed to the existing literature on China's OFDI in the BRI countries, but there remains scope for improvement. From the data perspective, the

official data from the Chinese statistics office was not entirely reliable as the data only covered companies that invested in an initial destination. Huge capital flows to Hong Kong and the British Virgin Islands, which were then transferred to other countries or returned to China, were not properly recorded. Thus, the data does not truly reflect the real destination of investment flows. The firm-level data from fDi intelligence and China Global Investment Tracker were also limited as the fDi intelligence data only recorded greenfield investments. fDi intelligence and China Global Investment Tracker only record investments that have claimed to have happened, not the ones that have truly happened. However, this is the only data that is currently available for research. From the method perspective, even though the qualitative method explained how the Chinese government issues policies to affect the destination and motivation of Chinese investment in the BRI countries, the specific relationship between companies and the government is still unclear, especially for private companies. This situation is important for understanding the role of government policies, as not all private companies react to government policies.

In Chapter 6, case studies were used to check the role of government policies on the Chinese OFDI. They explained how government policies affected the investment decisions but did not specify the extent of the effects. There is the possibility of finding a proper proxy to use quantitative methods to examine the role of government policies on Chinese overseas investment and the effects of government policies in the future. This research is meaningful, as the policymakers need to obtain feedback from Chinese companies overseas to revise policies to improve policymaking efficiency.

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