FACULTY OF BUSINESS

THE IMPACT OF OIL RENT DEPENDENCE ON MALAYSIAN MANUFACTURING SECTOR: THE ROLE OF FINANCIAL DEVELOPMENT AND GOVERNMENT INTERVENTION

VANESSA CHAN MING MIIN
0000-0003-3816-0352

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DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

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ABSTRACT

In the Twelfth Malaysia Plan, 2021-2025, strategies were introduced to help the manufacturing sector produce high-value, diverse and complex products. Underpinning this transition would be the intensification of government policies to alleviate the competitiveness obstacles of this sector. One of these potential obstacles is oil rent dependence as it has destabilised Malaysia's economic growth and exchange rate, casting doubts on the existence of the so-called "oil curse" in the Malaysian economy. Oil curse refers to an inverse association between oil rent dependence and growth of real economic sectors (i.e., manufacturing sector). To date, few studies have argued that financial development and government intervention potentially moderate the impacts of oil rent dependence on the manufacturing sector.

The literature on oil curse lacked sufficient discussion on the impacts of oil rent dependence on the manufacturing sector. While the literature had highlighted the moderating role of financial development and government intervention on the oil curse phenomenon from a theoretical perspective, it ignored the empirical and sectoral basis discussion. Accordingly, there are three main contributions from this study. Firstly, this is the first empirical study to investigate the impacts of oil rent dependence on the production and export of the manufacturing sector, along with identifying the potential moderators of this relationship. Secondly, this research is the first to examine the moderation effect of financial development on the relationship between oil rent dependence and the manufacturing sector. Lastly, this is also the first study to empirically investigate the moderating role of government intervention on the impacts of oil rent dependence on the manufacturing sector.

In order to understand the nexus between oil rent dependence and the manufacturing sector, the Dutch disease theory was adopted as it describes how the oil resource boom dampens the manufacturing sector through the reallocation of production factors and appreciation of the exchange rate.

Malaysian annual time series data for the period of 1970-2019 was employed and eight respective econometric models were constructed. The data were analyzed by applying Autoregressive Distributed Lag (ARDL) bounds test.

The findings of this research indicate that although oil rent dependence positively contributes to the production of the Malaysian manufacturing sector, the underdeveloped financial sector has weakened this positive correlation. Specifically, Malaysia's inefficient banking sector and stock market might hamper the efficient allocation of oil rent. However, our result also found that government intervention can play a favourable role in reducing the negative consequences of oil rent on the production of the manufacturing sector. Precisely, tax reforms incentives were able to diversify the sources of government revenue and reduce the country's reliance on oil rent. In contrast, this study also found that oil rent dependence does not have any impact on manufactured exports, while financial development and government intervention also do not moderate the relationship between oil rent dependence and manufactured exports.

This study offers a few policy implications. Firstly, the government should pay more attention to the adverse impacts of oil rent dependence on the production of the manufacturing sector. Specifically, through government intervention, the source of government revenue should continue to be diversified to reduce the dependency on oil rent. Secondly, financial sector reform should be carried out so that the financial sector can improve the production and export of the manufacturing sector. Quality and compliance institutions and governance frameworks can be established to strengthen financial development. Lastly, a fund managed by an independent entity responsible for managing the oil rent should be established. This fund would act as a "reservoir dam" to protect Malaysia from economic instability induced by oil price shocks, essentially reversing the Dutch disease phenomenon.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

It is widely recognized that achieving sustainable economic growth is always the main goal of economic policy. Since most developing countries are working on living standards improvement and poverty alleviation, many studies have been conducted to identify the major components of economic growth, knowing the fact that technological spillovers and learning-by-doing are critical in promoting the sustainability of economic growth. As a result, several major components of economic growth have been identified, especially the manufacturing sector, whereby its positive contributions towards economic growth have been acknowledged by economists.

Since the Industrial Revolution in Britain in the 18th century, the manufacturing sector started becoming the key engine of economic growth (Attiah 2019). It has been widely recognized in the existing literature that the manufacturing sector is able to stimulate economic growth by encouraging learning-by-doing and triggering technological spillovers. In addition to stronger linkage and spillover effects as compared with other economic sectors, the positive relationship between the manufacturing sector and economic growth can be attributed to the opportunities for capital accumulation and economies of scale that exist in this sector (Szirmai 2012; Szirmai and Verspagen 2015). Indeed, the importance of the manufacturing sector is also reflected in many countries, like Korea, Japan and Taiwan, where the manufacturing sector is the main driver of economic growth.

Since the manufacturing sector is influential over the whole economy due to its role as the key engine of economic growth, the shrinkage of the manufacturing sector will have a devastating impact on the country's economic growth (Haraguchi, Cheng, and Smeets 2017). Therefore, it is unsurprising to say that the development of the manufacturing sector is always the priority of economic policy agendas. This is evidenced by the "reindustrialization" strategy employed by most of the governments of developed countries after the Global Financial Crisis in 2008 to achieve long-run economic growth (Jia et al. 2020). Due to this reason, many researches had been conducted based on the factors that might influence the manufacturing sector, such as the study by Rahman and Hossain (2003) that focused on the impacts of the exchange rate on the private investment of the manufacturing sector. However, since the last century, increasing research started to pay attention to another factor that might impede the manufacturing sector, which is natural resource dependence (Corden and Neary 1982; Dobrynskaya and Turkisch 2010; Oomes and Kalcheva 2011; Chang, Lin, and Lin 2021). Recently, this factor is widely discussed in the literature as one of the possible reasons that impede the economic sectors and consequently, economic growth. Based on the literature, overdependence on natural resources will exert negative effects on the manufacturing sector by weakening the innovation process and thus, reducing the technological spillover effects (Herman 2016; Henry 2019). Besides, it was also claimed that natural resource dependence also adversely affects the learning-by-doing process, which mainly takes place in the manufacturing sector (Arezki and Van Der Ploeg 2007; Van Der Ploeg 2011). This claim is actually based on the idea of the "natural resource curse", which is also known as the "paradox of plenty" (Amundsen 2014; Adams et al. 2019; Ampofo

et al. 2020; Erdoğan, Yıldırım, and Gedikli 2020). Natural resource curse refers to the situation in which resource-rich countries are experiencing lower economic growth rates as compared to resource-poor countries due to an overdependence on natural resources (Rehner, Baeza, and Barton 2014; Shao and Yang 2014; Wang et al. 2019). The main reason this topic receives increasing attention is that economists are ambivalent about the role of natural resources in economic growth.

In fact, starting from Adam Smith (1776) and David Ricardo (1821), classical economists have always believed that the possession of natural resources confers economic success as it provides production inputs and contributes to economic growth by exporting primary goods (Asif et al. 2020). Sachs (2007) also mentioned that oil revenue can be used in funding public and private consumptions as well as investments. Due to these benefits, the endowment of natural resources is always considered a "blessing" for the country's economy (Aljarallah 2021). Moreover, the Industrial Revolution in the 18th century clearly proves the importance of natural resources in economic growth as many Europe countries, especially the British, had achieved economic prosperity through the exploitation of the colonies' natural resources (Clark, O'Rourke, and Taylor 2008). Besides, oil and diamond, which are possessed by Norway and Botswana, respectively, are also one of the main reasons that allow the countries to achieve economic development. Nonetheless, this is not the case for every resource-abundant country. Since the 1980s, many resource-abundant countries, especially oil-abundant countries, such as Venezuela and Nigeria, are having opposite results (Chekouri, Chibi, and Benbouziane 2017). Instead of having a high economic growth rate, the economy of these resource-rich countries is found to grow at a slower pace as compared to resource-scarce countries like Korea, Taiwan and Singapore. Due to this puzzling phenomenon, many researchers claimed that these countries are cursed by natural resources (Hodler 2006; R. Wang, Tan, and Yao 2021).

During the last few decades, there are many studies conducted based on the impacts of natural resource dependence, especially oil rent dependence, on economic growth. Nonetheless, the results are inconclusive. While most of the research, such as the one by Olayungbo and Adediran（2017), found that oil rent dependence negatively impacts economic growth, there are also some studies, like the one by Hassan and Abdullah (2015), that claimed that oil rent positively contributes to economic growth. Among the existing studies, some of them also studied how oil rent dependence impacts certain types of economic sectors, such as the financial sector. However, the impact of oil rent dependence on the manufacturing sector in Malaysia has rarely been studied empirically. Since it is also widely-recognised in existing research that financial development and government intervention are having moderation effects on the impacts of oil rent dependence, this research not only focused on the relationship between oil rent dependence and the manufacturing sector, but also concentrated on how both of them moderate this relationship (Moradbeigi and Law 2016; 2017; Kim and Lin 2017). Furthermore, this research was conducted in Malaysia, which is widely-known as an oil and natural gas producer. Malaysia is actually the second-largest oil and gas producer in Southeast Asia. In fact, Malaysia's economy is highly dependent on oil and natural gas resources, which can be proved by the average share of oil revenue in Malaysia's total revenue, namely around 28.42% (MOF 2019). Besides, oil and natural gas resources also account for around 15% of Malaysia's Gross Domestic Product (GDP), reflecting the significance of this sector in the

country's economy. It is worth-mentioning that unlike the other oil-abundant countries, such as Nigeria, it is still inconclusive on whether Malaysia escapes from the oil curse, which is the same as the natural resource curse but used to describe the country that is overdependent on oil and natural gas resources (Doraisami 2015; Badeeb, Lean, and Smyth 2016). Although different policies have been implemented to reduce the dependency on oil and gas resources, the country's economy is still vulnerable to oil price shocks (Central Intelligence Agency 2018). In addition to the oil and gas industry, the manufacturing sector is also important for Malaysia's economy, which can be reflected by its share of employment and contribution towards Malaysia's GDP (Chandran and Munusamy 2009). More specifically, around 40% of jobs in Malaysia are created by the manufacturing sector, making it the largest contributor to the total employment in Malaysia. On the other hand, the manufacturing sector is also the second-largest contributor of GDP after the services sector, contributing more than 20% of Malaysia's GDP (Salleh et al. 2016). However, it is found that the GDP contributed by the manufacturing sector had decreased from 31.3% in the year 2006 to 21.443% in the year 2019. Besides, the growth rate of Malaysia's manufacturing sector also declined from 10.6% in 2008 to 3.8% in 2019 (Chandran and Munusamy 2009; Department of Statistics Malaysia 2010b; 2021). In addition, the share of manufactures exports in merchandise export had decreased from the peak of 80.355% in 2000 to 70.115% in 2019. These findings clearly indicate the contraction of Malaysia's manufacturing sector. Meanwhile, it is also found that the share of Malaysia's services sector in GDP increased from 43.93% in 2006 to 54.21% in 2019, while the growth rate of the services sector raised from 5.7% to 6.2% in the same period (Malaysian Communication and Multimedia Commission 2006; Department of Statistics Malaysia 2021). According to Chang, Lin, and Lin (2021), the growth of the services sector and the shrinkage of the manufacturing sector are considered as the symptoms of the Dutch disease, which is the main mechanism of the oil curse. Accordingly, the contraction of Malaysia's manufacturing sector might be caused by the high level of oil rent dependence.

Prior to the research problem, questions and objectives, it is necessary to have a good understanding of oil rent dependence. The previous literature that discussed the relationship between oil rent dependence and the manufacturing sector will be explained in the following section. The explanations of financial development and overview of Malaysia will also be provided.

1.2 Oil Rent Dependence and Oil Curse

The conventional view of oil and natural gas resources is that the possession of these resources will stimulate economic growth as the country will receive windfall of oil rent, which can be channeled into productive investments (Yilanci, Aslan, and Ozgur 2021). Some economists even call oil resources "black gold" because they believe that these resources can act as the main driver of any productive economic activity, causing these resources to play a special role in stimulating economic development (Norouzi and Fani 2020). However, during the last few decades, it is found that instead of achieving sustainable economic growth, many oil-abundant countries like Nigeria and Venezuela are experiencing economic stagnation rather than sustained economic development (Sachs and Warner 2001). This situation is known as an "oil curse", which refers to the phenomenon in which oil-abundant countries are having slower

economic growth rates due to an overdependence on oil rent (Badeeb, Lean, and Smyth 2016). As for the term "oil rent", it refers to the difference between the production value of crude oil and natural gas at world price and their total production cost.

Before understanding the concept of the oil curse, it is necessary to have a clear understanding of natural resources and the types of natural resources. In Cambridge Dictionary, natural resources are defined as things that occur in nature and can be used by humans. Natural resources can be categorized into point-source natural resources and diffuse natural resources. If the ownership of natural resources is concentrated and the resource rent can be exploited easily, these natural resources will be classified as "point-source natural resources". Oil and mineral resources are some examples of point-source natural resources. On the other hand, diffuse natural resources refer to those where the resources rent are diffused across the society and their investment barriers are more modest. Based on the existing research, a country only suffers from natural resource curse when it is overdependent on point-source natural resources, including oil and natural gas (Stevens and Dietsche 2008; Mavrotas, Murshed, and Torres 2011; Ahmed, Mahalik, and Shahbaz 2016; Cockx and Francken 2016). This is because point-source natural resources will intensify the social divisions and weaken the government institutions, which consequently hamper the country's efficiency in managing economic shocks. In contrast, rather than dampening the economic growth, countries that base their economy on diffuse natural resources are more capable of managing economic shocks effectively. In this research, point-source natural resources, which is crude oil resources was focused.

Theoretically, the endowment of oil and natural gas will lead the country to achieve sustainable economic growth by exhibiting several economic benefits. Firstly, by exporting the oil and gas resources, it will provide the country with the windfall of oil rent which can be used to finance productive investments enhancing the country's economic growth. Indeed, oil rent can be used in improving public infrastructures and living standards (Haass and Ottmann 2017; Agüero et al. 2021; Bergougui and Murshed 2021). Besides, the abundance of oil and gas resources will facilitate the technology transfer, which improves labour efficiency (Lynn Karl 2004; Dogan, Altinoz, and Tzeremes 2020).

However, while oil-abundant countries can receive enormous amounts of oil rent by exporting the oil resources, instead of achieving sustainable economic growth, many oil-abundant countries, especially countries in Africa, are experiencing economic stagnation, which is reflected by their lower economic growth rates or lower GDP per capita (Majumder, Raghavan, and Vespignani 2020). According to Auty (1993), when a resource-abundant country is having a slower economic growth rate due to an overdependence on natural resources, this phenomenon is known as "natural resource curse", which refers to the negative relationship between natural resources and economic growth (Wilson 2013; Perez-Sebastian and Raveh 2016). Nonetheless, if it is an oil-rich country that is suffering from slower economic growth, the situation will be known as "oil curse" which is the same as the natural resource curse, but used to describe the country that is overdependence on oil resources. The presence of abundance of oil and natural gas resources in a country can be considered a double-edged sword (Frankel 2012; Moradbeigi and Law 2014). On one hand, some oil-abundance countries, like Norway and Canada, achieve economic growth through oil rent utilization. On the other hand, Nigeria and Venezuela, which possess more oil resources than Norway, do not have better

economic performance. Instead, they are having lower economic growth rates and high poverty rates. It is worth mentioning that only oil-dependent countries will suffer from oil curse. In other words, oil-abundant countries can succeed in achieving sustainable economic growth provided that their economies are not overdependent on oil resources.

It is important to bear in mind that the oil curse is caused by oil rent dependence instead of oil resource abundance (Badeeb, Lean, and Clark 2017). Although many studies used oil resource abundance and oil rent dependence interchangeably, they are two different concepts. For oil resource abundance, it refers to the amount of oil resource that the country is endowed with and can be used in social and economic development. On the other hand, oil rent dependence refers to the degree to which a country's economy relies on its oil resources (Pendergast, Clarke, and Van Kooten 2011; Wang et al. 2019; Zhang and Brouwer 2020). When a country is overdependent on oil resources, it represents that the production structure of the whole economy is less diversified. According to Farzanegan (2014) and Lashitew and Werker (2020), oil rent dependence can be reflected by the share of oil rent in GDP. In addition to these studies, there are many proxies identified for the measurement of natural resource dependence which also can be used to measure oil rent dependence. For example, Kaznacheev (2014) used the share of natural resources export in total exports and share of natural resources export in GDP to measure natural resource dependence. Based on the author, a country is overdependent on oil and gas resources when more than 25% of total exports is contributed by them or the share of oil and gas resources' export in GDP is more than 10%. On the other hand, Karl (2004) classified a country as an oil-dependent country when 60%-95% of the country's total exports is contributed by the exports of oil resources. According to International Monetary Fund (IMF), if the average share of oil revenue in total revenue is more than 25%, the country will be considered an oil-dependent country.

Oil-rent dependence does not lead to the oil curse itself. It is actually connected by several mechanisms. Among these mechanisms, Dutch disease is the most common mechanism. Dutch disease theory is constructed from the Salter-Swan-Corden-Dornbusch model, which is also known as the Australian model or economy dependent model (Metaxas and Weber 2016). Dutch disease refers to the contraction of non-resource tradable sectors due to the appreciation of the exchange rate that arises from resource boom (Kojo 2015). Based on the Dutch disease theory, when the country is overdependent on oil resources, pulling effect and spending effect will occur. On the one hand, pulling effect occurs when production factors shift to the oil resources sector and result in the shrinkage of other economic sectors (Gasmi and Laourari 2018). On the other hand, spending effect occurs when the oil resource boom increases the income and consequently raises the demand for goods and services. As a result, inflation and appreciation of exchange rate will occur and the competitiveness of domestic products, including manufactured products will decrease in terms of export as they become more expensive in the global market (Almozaini 2017). Another mechanism for the oil curse is the volatility of oil prices. Based on van der Ploeg and Poelhekke (2009), the resources sector is one of the most volatile sectors due to low elasticity of supply. In fact, an oil-dependent country is very vulnerable to the volatility of oil prices, which exhibits adverse impacts on its economic growth. This is because oil price volatility will generate uncertainty that hinders the planning process for economic growth.

Indeed, the presence of the oil curse had been proved empirically by many researches. For instance, Hammond (2011) claimed that although Angola is the largest oil producer in Africa, the country suffers from oil curse instead of achieving economic growth through the utilization of oil resources. In addition, the presence of the oil curse had also been proven in several other countries, such as Uganda, Nigeria and Venezuela (Mosbacher 2013; Ojakorotu, Kamidza, and Eesuola 2018; Su et al. 2020) . In these countries, instead of being successful like Norway and Canada, the discovery of oil resources resulted in economic stagnation. Although previously many researchers claimed that Malaysia had succeeded in escaping from the oil curse as it was able to achieve economic growth through economic diversification and industrialization, it was recently found that the manufacturing sector, which acts as the main driver of Malaysia's economic growth, is suffering from contraction, reflected by the decline in its contribution towards Malaysia's GDP and growth rate (Gylfason 2001; Sachs and Warner 2001; Auty 2007; Van Der Ploeg 2011). Since Badeeb, Lean, and Smyth (2016) and Badeeb, Szulczyk, and Lean (2021) had proven the existence of the oil curse in Malaysia, therefore, oil rent dependence might be the reason behind the shrinkage of the manufacturing sector through Dutch disease.

1.2.1 Oil Rent Dependence and Manufacturing Sector

In most of the existing research, it is always mentioned that overdependence on oil rent is going to hamper the non-resource sectors, including the manufacturing sector (Wu, Li, and Li 2018; Kassouri, Altıntaş, and Bilgili 2020). Due to the importance of the manufacturing sector in the economy, oil rent dependence can impede economic growth by dampening the manufacturing sector (Gylfason and Zoega 2006). Accordingly, a more systematic and empirical analysis is required to investigate the relationship between oil rent dependence and the manufacturing sector.

Among the existing research which theoretically explained the relationship between oil rent dependence and the manufacturing sector, the most popular articles are Sachs and Warner (1995), Sachs and Warner (2001), Gylfason (2002) and Gylfason and Zoega (2006). It was noticeable that in these studies, Dutch disease was always explained as one of the reasons that impede the manufacturing sector. This is because pulling effect, which is one of the effects of Dutch disease, will cause the factors of production, like labour to shift away from the manufacturing sector to the oil resources sector and consequently, increase the production cost of the manufacturing sector. Besides, another type of effect, spending effect, dampens non-resource sectors compromising the manufacturing sector through the inflation and appreciation of the exchange rate, thereby making the manufactured exports more expensive relative to the world market prices.

Indeed, there are many studies that discussed how the manufacturing sector will be affected by oil rent dependence through Dutch disease. According to the literature, Dutch disease will result in deindustrialization, which refers to the contraction of the manufacturing sector in the whole economy (Kitchen and Thrift 2009; Gasmi and Laourari 2018). This is because the pulling effect leads to direct deindustrialization by shifting the factors of production away from the manufacturing sector while the spending effect will result in indirect deindustrialization through inflation and appreciation of the exchange rate. These explanations are supported by many studies, such as the studies of Oomes and Kalcheva (2011), Taguchi and Khinsamone

(2018) and Shao et al. (2020). It is worth mentioning that according to Van Der Ploeg (2011), as a tradable sector, the manufacturing sector enjoys the benefits of learning-by-doing, which plays an important role in economic growth. Thus, when the labour shifts away from the manufacturing sector due to higher wages offered by the oil resources sector, it is going to dampen economic growth by impeding learning-by-doing. Besides, oil rent dependence will dampen the spillover effects, which tend to be stronger in the manufacturing sector and the function to stimulate the growth of other economic sectors. Consequently, it will hamper the country's economic growth.

Overall, it can be concluded that although oil rent dependence was claimed to have negative impacts on the manufacturing sector, it is notable that the adverse impact is mainly focused on the production and export of the manufacturing sector. The reason behind this is because the pulling effect of Dutch disease reduces the production of the manufacturing sector by inducing the movement of production factors away from the manufacturing sector whereas the spending effect of Dutch disease dampens the manufactured exports by reducing their competitiveness in the international market through exchange rate appreciation. Accordingly, this research is going to examine the impacts of oil rent dependence on the production and export of the manufacturing sector in the context of Malaysia.

Since the existing theoretical explanations claimed that oil rent dependence negatively affects the manufacturing sector, it is also necessary to examine both the financial development and government intervention, which were claimed to have moderation effects on the relationship between oil rent dependence and the manufacturing sector (Neo 2009; Benkhodja 2014; Kim and Lin 2017; Moradbeigi and Law 2017). This is because the effectiveness of oil rent utilization mainly depends on the level of financial development. The higher the level of financial development, the more effective the financial sector is in channeling the oil rent into productive economic activities and vice versa (Moradbeigi and Law 2016). Regarding government intervention, the main reason that it is able to moderate the impacts of oil rent dependence is that for most of the oil-rich countries like Malaysia, the oil rent is under the management of the government. Likewise, the Malaysian government holds exclusive ownership over oil and natural gas resources (U.S. Energy Information Administration 2021). Therefore, government intervention moderates the impacts of oil rent dependence on the manufacturing sector through then spending decisions of the oil rent.

The explanations concerning financial development will be discussed in the next section, followed by explanations on government intervention and the section that provides an overview of Malaysia, which is the case study of this research. The problem statement, research questions and research objectives will be discussed in Section 1.6, 1.7 and 1.8, respectively. Next, the significance of this research will be discussed in Section 1.9.

1.3 Financial Development

Over the years, the importance of financial development in promoting economic growth have been widely-recognized in the literature (Khalifa Al-Yousif 2002; Hassan, Sanchez, and Yu 2011; Ben Jedidia, Boujelbène, and Helali 2014; Durusu-Ciftci, Ispir, and Yetkiner 2017). The

financial sector comprises the financial market and financial institutions. Although both function as financial intermediaries and are responsible for reallocating financial resources from savers and investors to companies, they have different goals. Profitability is the main target of the financial market, whereas financial institutions aim at allocating financial resources effectively to develop the country's economy (Shahbaz, Nasir, and Lahiani 2020). When the financial system of the country is considered well-developed, the financial sector is able to build a good connection between the agents and principals. This is because one of the important roles of the financial system is to effectively channel scarce resources into productive investments (Blanco 2009). Thus, when the financial system reduces the issue of asymmetric information, the financial system will be able to reduce market frictions by connecting the agents with principals and consequently, allocating the scarce resources to productive investments (Levine 2005).

Financial development refers to the improvement in terms of the quality, quantity and efficiency of financial services (Calderón and Liu 2003; Badeeb and Lean 2017). Financial development was firstly examined by Schumpeter (1911), who argued that a well-developed financial sector is one of the requisites for achieving sustainable economic growth because a highly developed financial sector can promote optimal capital allocation. Indeed, achieving a high level of financial development is one of the main goals for every country that wishes to achieve economic prosperity. This is because a high level of financial development positively contributes to economic growth. When the country have a well-developed financial system, it will be able to reduce financial fragility, which refers to the financial system's vulnerability to financial crises (Lagunoff and Schreft 2001). In addition to the ability to protect the country's economy from financial crises, the positive relationship between financial development and economic growth also can be attributed to the other functions of financial development which are producing the ex-ante information regarding the investments to effectively allocate the scarce resources, carrying out investment monitoring and corporate governance, diversifying and managing risks, mobilizing and pooling savings, and lastly, easing the exchange of both goods and services (Levine 2005).

According to Čihák et al. (2013), there are four categories determining how well the financial system performs its functions. The first category is the financial depth, which refers to the size of financial markets and institutions and is widely used to measure financial development. Second, the accessibility of the financial sector, which refers to the degree to which individuals and companies can access financial services. The third measurement is the financial sector's efficiency, which focuses on whether the financial sector can conduct financial transactions at the lowest cost and lastly, the financial stability. Accordingly, the financial sector will be deepened when more types of financial services and products are provided, the accessibility of the financial services is improved, the financial intermediaries are able to conduct the transactions at lower cost and faster speed, as well as the financial stability is enhanced. Indeed, competition arises when the financial sector is deepened. However, competition within the sector is one of the main drivers for financial development. This is because, in addition to improve the efficiency, the competition actually forces the financial intermediaries to perform

financial services at a lower cost and diversify risks to outperform other competitors (Krueger 2004; Beck and Maimbo 2011).

On the other hand, different explanations have been established to explain the relationship between financial development and economic growth. If the causality relationship flows from financial development to economic growth, it is known as the supply-leading hypothesis or finance-led growth hypothesis. This hypothesis postulates that financial development promotes economic growth. The second hypothesis is the demand-following hypothesis which was firstly mentioned by Robinson (1952), who argued that the causality flows from economic growth to financial development. This is because when the country achieves economic growth, the demand for financial services will increase, subsequently driving the growth of the financial system (Akinci, Akinci, and Yilmaz 2014; Adeyeye et al. 2015; Chow, Vieito, and Wong 2019). Furthermore, there is also the feedback hypothesis, otherwise known as the "bidirectional causality view", another hypothesis that is the combination of those two hypotheses (Majid and Mahrizal 2007). This hypothesis was firstly mentioned by Lewis (1955), who argued that financial development and economic growth cause each other. The fourth hypothesis is the neutral hypothesis or independent hypothesis, which was first mentioned by Lucas (1988), who claimed that there is no relationship between financial development and economic growth (Karimo and Ogbonna 2017; Opoku, Ibrahim, and Sare 2019). Although the positive relationship between financial development and economic growth have been widely-recognized by existing research, there is another hypothesis that states that financial development negatively affects economic growth, namely the finance-hurt-growth hypothesis (De Gregorio and Guidotti 1995; Bist 2018; Guru and Yadav 2019; Mollaahmetoğlu and Akcąli 2019).

Since financial development has an important role in economic growth, many studies were conducted based on financial development in oil-rich countries. Just like any other country in the world, financial development is also the main engine for economic growth in oil-abundant countries. When oil is extracted and sold to other countries, the oil rent will be considered extra income for the country. As mentioned above, one of the functions of the financial sector is optimal resource allocation. Thus, if an oil-rich country is having a high level of financial development, the well-developed financial sector will be able to channel the windfall of oil rent into more productive investments and thus, strengthens the country's economic growth. Nonetheless, if the country is having an underdeveloped financial sector, the oil rent might be used to substitute private savings. As a result, it might causes economic distortions by weakening the investment projects' efficiency and stopping the price mechanism from working effectively (Nili and Rastad 2007). Overall, the theoretical discussions clearly demonstrated that financial development can moderate the impacts of oil rent dependence on the manufacturing sector. This idea was also examined by other researchers such as Moradbeigi and Law (2016; 2017) that empirically proved the moderation effects of financial development on the negative impacts of oil rent dependence which arose from oil price volatility.

1.4 Government Intervention

Based on the Cambridge Dictionary, government intervention refers to the actions of the government in intervening in the operations of the financial market or certain industries. According to Luedde-Neurath (1988), government intervention can be categorized into directive intervention and facilitative intervention. Directive intervention refers to the actions taken by the government aiming at achieving certain objective by intervening in the investment and production of particular industries (Wang 2018). For example, tax incentives, public research facilities, financial subsidies and funding for research and development (R&D) are considered directive interventions. In contrast, facilitative intervention refers to the public goods provided by the government, such as education and infrastructure, which is aimed at fostering a positive and stable environment for private companies (Song et al. 2019).

For the impacts of government intervention, there are two strands of literature. The first strand was based on the free market neoclassical theory that postulates that the market should be free from government interference as a high level of government intervention in the market will dampen the country's economic growth by resulting in an ineffective resource allocation and a slowdown trend in the economic marketization (Wang 2018; Wu, Li, and Li 2018). In addition, oil curse literature also asserted that government intervention causes negative impacts, which can be reflected by the vulnerability of oil-abundance countries towards policy failures. The reason behind this is that the windfall of the oil rent will raise society's expectations and force the government to spend the oil rent quickly. Normally, quick and poorly coordinated decisions will turn out to be bad decisions. Spending the oil rent hurriedly and without proper planning will result in economic distortions (Paul Stevens 2004).

In contrast, in the state-centred theory, it was argued that government plays a strategic role in economic development and it can be proven by the Asian Newly Industrialized Countries (NICs), in which their economic success is always attributed to direct state intervention. (Wang 2018). Additionally, it was also claimed that government intervention positively contributes to innovations (Wei and Liu 2015). The market alone is unable to provide sufficient incentives for knowledge production. Due to this reason, the presence of inappropriate knowledge and high uncertainties on receiving returns for the commitment always cause private enterprises to underinvest in R&D and consequently leads to the failure of technological catch-up (Wang 2018; Song et al. 2019). Moreover, resource curse literature also argued that the main reason that some resource-abundant countries can be the exceptions of the resource curse is good government decisions (Paul Stevens 2004). If the government is able to plan the utilization of oil rent properly like Norway, then it will not only protect the country from the oil curse but also achieve sustainable economic growth (Ramírez-Cendrero and Wirth 2016).

1.5 Malaysia

In this research, Malaysia, the second-largest oil and gas producer in Southeast Asia, was selected as the case study. For Malaysia, it had succeeded in transforming itself from an agriculture-based economy to a manufacturing-based economy. The importance of the manufacturing sector in Malaysia can be proven by the increase in total employees of the sector.

Previously, the percentage of the manufacturing sector in Malaysia's GDP was in an increasing trend and reached a peak of 30.864% of GDP in 2000. However, since then, it was found that the manufacturing sector of Malaysia started to decline. The GDP contributed by the manufacturing sector decreased from 23.8% in 2009 to 21.443% in 2019. Besides, the growth rate of Malaysia's manufacturing sector also declined from 7.1% in 2006 to 3.8% in 2019. Significantly, it indicated the shrinkage of the manufacturing sector (Chandran and Munusamy 2009; Department of Statistics Malaysia 2021).

Meanwhile, it is also argued that Malaysia's economy is highly dependent on oil and natural gas resources (Stevens 2005; Stevens and Dietsche 2008; Badeeb, Lean, and Shahbaz 2020). As mentioned earlier, IMF considers a country overdependent on natural resources if more than 25% of the total revenue is contributed by natural resources. Accordingly, Malaysia is considered an oil-dependent country as the average share of oil revenue in Malaysia's total revenue is around 27% (Ministry of Finance Malaysia 2021). Prior to the 1970s, Malaysia's economy was dominated by the production of primary commodities, such as rubber, food processing and handicrafts (Hirschman 1982; Mohit 2009). However, since 1970, Malaysia's economy started to rely heavily on oil resources, and it had accounted for at least 20% of Malaysia's GDP over the years (Doraisami 2015). The Malaysian government had implemented several policies, such as tax reform initiatives, aiming at achieving government revenue diversification in order to reduce the country's dependency on oil and gas resources. As shown in **Figure 1.1** Oil Revenue (% Total Revenue), although the share of oil revenue in Malaysia's total revenue decreased between the period of 2009-2016, it increased again after that, clearly showing that Malaysia's economy was still highly dependent on oil and gas resources.

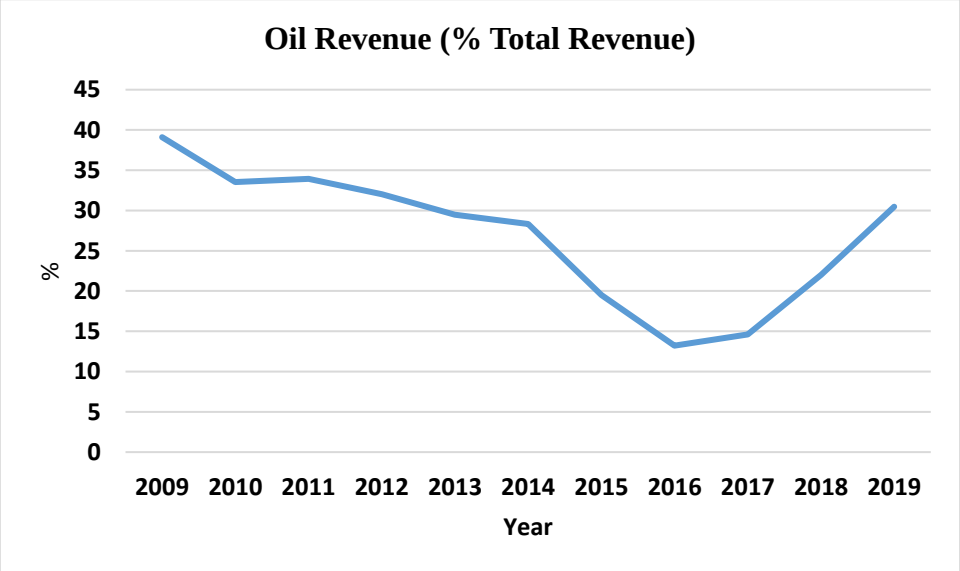


Figure 1.1 Oil Revenue (% Total Revenue)
Source: Ministry of Finance Malaysia (2021)

It is important to note that to date, there is no consensus on whether Malaysia had succeeded in escaping the oil curse. Previously, there was various research that claimed that Malaysia had succeeded in evading the oil curse. as it was able to achieve economic growth (Sachs and

Warner 2001; Gylfason 2002; Rosser 2006; Weinthal and Luong 2006; Ross 2019). Nonetheless, Doraisami (2015) argued that the windfall of resource rent had caused the Malaysian government to provide funds for unproductive investments, which cast the doubt on whether Malaysia had escaped from natural resource curse. Besides, Badeeb, Lean, and Smyth (2016) also argued that the overdependence on oil rent had caused Malaysia to invest in unproductive investment, meaning that Malaysia did not succeed in escaping oil curse. Therefore, along with the shrinkage of the manufacturing sector, it will be interesting to study whether oil rent dependence is one of the reasons behind the contraction of Malaysia's manufacturing sector.

1.6 Problem Statement

Prior to the 1970s, Malaysia's manufacturing sector only contributed around 11% of GDP. Over the years, Malaysia had succeeded in transforming itself from an agriculture-based economy to a manufacturing-based economy, which can be attributed to the significant inflow of foreign direct investment due to the implementation of the Investment Act 1986 (Mahadevan 2001; Bekhet and Othman 2018). Nowadays, the manufacturing sector has become the main driver of Malaysia's economic growth due to its contribution towards GDP, market exportation and jobs creation (Ngu, Lee, and Bin Osman 2020). Nonetheless, it was recently found that Malaysia's manufacturing sector is suffering from contraction, which can be reflected by the decline in its growth rate, contribution towards GDP, and total exports. More precisely, the growth rate of the manufacturing sector had declined from strong growth of 7.1% in 2006 to 3.8% in 2019. The share of the manufacturing sector in Malaysia's GDP also declined from 31.3% in 2006 to 21.443% in 2019, while the share of the manufactures exports in merchandise export also decreased from the peak of 80.355% in 2000 to 70.115% in 2019 (Chandran and Munusamy 2009; World Bank 2020). Significantly, Malaysia's manufacturing sector is suffering from stagnation. While overreliance on low-skilled labour (Basri, Karim, and Sulaiman 2020), increased in global competition and slowdown trend in upgrading the value chain (Asyraf et al. 2019) are part of the reasons behind the contraction of Malaysia's manufacturing sector, based on Badeeb, Szulczyk, and Lean (2021), oil rent dependence, which is widely-discussed in the literature as one of the possible reasons that impede the economic growth of oil-rich countries, might also be one of the reasons behind the stagnations of Malaysia's manufacturing sector.

Based on the literature, overdependence on oil rent will transform oil resources from a blessing into a curse and impede the manufacturing sector through Dutch disease, which refers to the crowding-out effect of increase in oil rent on the manufacturing sector and thus, economic growth (Eisgruber 2013). In fact, Doraisami (2015) showed that the windfall of resource rent had created distortions in Malaysia's economic growth by allowing the government to invest in unproductive activities. Besides, Badeeb, Lean, and Smyth (2016) also proved the existence of oil curse empirically by showing that the overdependence on oil rent had caused Malaysia to engage in unfruitful investments. In another recent research, Badeeb, Szulczyk, and Lean (2021) also concluded that the oil curse dampens the manufacturing sector through Dutch disease in Malaysia.

Following the investigation on the relationship between oil rent dependence and the manufacturing sector, the moderation effects of financial development and government intervention on this relationship also need to be studied as it has been proven that the impacts of oil rent dependence are different in the extent of financial development and government intervention (Nili and Rastad 2007; Moradbeigi and Law 2017; Kim and Lin 2017). Accordingly, it is necessary to study whether the financial development and government intervention will strengthen or weaken the impacts of oil rent dependence on Malaysia's manufacturing sector.

1.7 Research Questions

The research questions in this study focused on the impacts of oil rent dependence on the manufacturing sector and how financial development and government intervention moderate the relationship between oil rent dependence and the manufacturing sector. To be more specific, the research questions in this research were:

1. What is the impact of oil rent dependence on production and export of manufacturing sector?
2. How financial development moderates the impact of oil rent dependence on production and export of manufacturing sector?
3. How government intervention moderates the impact of oil rent dependence on production and export of manufacturing sector?

1.8 Research Objectives

Since this research aimed at exploring the relationship between the oil rent dependence and the manufacturing sector as well as the moderation effects of financial development and government intervention on this relationship, the research objectives for this study were:

1. To investigate the impact of oil rent dependence on production and export of manufacturing sector.
2. To investigate the moderation role of financial development on the impact of oil rent dependence on production and export of manufacturing sector.
3. To investigate the moderation role of government intervention on the impact of oil rent dependence on production and export of manufacturing sector.

1.9 Significance of the Research

1.9.1 Practical Implications

This research contributes to the policymakers by providing a deeper insight into the relationship between oil rent dependence and the manufacturing sector and the potential moderators of this relationship. Since it is evidenced that oil rent dependence dampens the production of Malaysia's manufacturing sector, it will be the responsibility of the policymakers to implement measures in order to reduce the dependency on oil rent. Furthermore, the analysis on the moderating role of financial development and government intervention allows policymakers to have a better understanding of how to protect Malaysia from the oil curse. As the findings of this research indicated the adverse impacts of oil rent dependence on the production of the

manufacturing sector channels via financial development, policymakers should implement policy to develop the financial sector in order to achieve oil rent utilization. In contrast, since government intervention is able to weaken the adverse impacts of oil rent dependence on the production of the manufacturing sector, this research recommends that Malaysian policymakers implement policies that aim at reducing the country's reliance on oil rent and utilizing the oil rent in promoting the expansion of the manufacturing sector. In a nutshell, this research not only provides policymakers with a better understanding of the relationship between oil rent dependence and the manufacturing sector, but also provides recommendations on how to utilize the oil rent more effectively and thus, protect the manufacturing sector from Dutch disease phenomenon based on the analysis on the moderation effect of financial development and government intervention.

1.9.2 Contributions

This research contributes to the existing literature in several ways by underlining the insights into the oil curse literature along with the moderating role of financial development and government intervention. More specifically, this research is the first study that explored the relationship between oil rent dependence and the manufacturing sector in Malaysia by employing time-series data from the period of 1970-2019. This research concentrated on the manufacturing sector since there is growing consensus that the manufacturing sector is the main driver of Malaysia's economic growth due to its spillover effect and learning-by-doing process, which benefits the whole economy by stimulating the growth of other economic sectors.

Moreover, this research also contributes to the existing literature by being the first study to empirically examined the moderating role of financial development on the nexus between oil rent dependence and the manufacturing sector. More precisely, after a close examination of the existing literature, it was noticeable that the financial development-economic growth nexus in resource-abundant countries had received considerable attention. To the best of our knowledge, there were very few studies that employed different indicators for financial development when examining the moderation effect of financial development from different aspects. In other words, unlike most of the existing research that mostly employed one indicator of financial development, this research contributes by providing a deeper understanding of the moderation effect of financial development on the oil rent dependence-manufacturing sector nexus from different aspects by adopting two indicators for financial development.

As mentioned earlier, in addition to financial development, the relationship between oil rent dependence and the manufacturing sector is also different in the extent of government intervention. Therefore, in contrast to previous studies, this research contributes to the existing literature by specifically studying the moderation effect of government intervention on the relationship between oil rent dependence and the manufacturing sector. Among the existing studies, most only focused on how government intervention moderates the impacts of resource rent on economic growth. To the best of our knowledge, the methodology of this research was also different from other studies such that instead of only employing annual time series data, quarterly data were also used to further confirm the results accuracy. The findings of this research provide meaningful relationships among the variables. Therefore, as mentioned above,

some practical policy recommendations were provided for policymakers to use the oil rent as a blessing rather than a curse.

1.9.3 Theoretical Contributions

This research also contributes to Dutch disease theory by examining how pulling effect and spending effect are moderated by financial development and government intervention. More specifically, although the pulling effect of Dutch disease postulates that the oil resource boom will shift the production factors out of the manufacturing sector into the oil resources sector, the studies in the related literature believed that financial development mitigates the adverse impacts of oil rent dependence through effective resources allocations. However, this study contributes by showing that financial development does not necessarily weakens the adverse impacts of oil rent dependence as it was found that financial development tends to exacerbate the pulling effect through inefficient oil rent allocations. In contrast to financial development, while the literature claimed that government intervention will dampen economic growth in oil-dependent countries through institution weakening effect, this study provides a different perspective by showing that government intervention is able to reduce the adverse impacts of oil rent dependence on the production of the manufacturing sector through implementations of diversification strategies which aim at reducing the country's dependency on oil rent.

1.10 Structure of Thesis

Since this research is presented rigorously, the structure of this thesis is as follows:
Chapter 2: An Overview of Malaysia discusses the case study of this research, Malaysia. This chapter provides an overview of Malaysian history and economic background. Since this research focused on the manufacturing sector, an overview of Malaysia's manufacturing sector is also provided followed by discussions on financial development and oil and natural gas resources.

Chapter 3: Literature Review discusses the existing research regarding oil curse, financial development and government intervention. This chapter also discusses the hypotheses development for this research. Two hypotheses explaining the relationship between oil rent dependence, and the production and export of the manufacturing sector are presented. This research also presents another four hypotheses regarding the moderation effects of financial development and government intervention on the oil rent dependence-manufacturing sector nexus. The research gap is also presented in this chapter.

Chapter 4: Research Methodology explains the research methodology applied in this research in order to achieve the research objectives in Section 1.8. This chapter begins with discussions on the data and the variables. Eight econometric models were formed in order to address the research questions stated in Section 1.7. Unit root test was applied to investigate the stationarity of the variables, while Autoregressive Distributed Lag (ARDL) bounds test was applied for cointegration test. This research also conducted diagnostic tests, stability tests, robustness test and Toda and Yamamoto (1995) and Dolado and Lütkepohl (1996) (TYDL) causality test.

Chapter 5: Result Analysis and Discussion discusses the empirical findings of this research based on the research objectives and research questions.

Chapter 6: Conclusion summarizes the findings of this study and presents the conclusion for this research. Besides, the policy recommendations, limitations of the study and recommendations for future study are also presented in this chapter.

CHAPTER 2:
AN OVERVIEW OF MALAYSIA

2.1 Introduction

It is very beneficial to overview Malaysia's economy comprehensively before studying the relationship between oil rent dependence and the manufacturing sector. This is because the political and economic environments of Malaysia are influential in shaping the attitudes of the government and economic sectors.

This chapter is arranged as follows: Section 2.2 introduces Malaysia, which is the case study of this research, while Section 2.3 provides an overview of Malaysia's economy. Malaysia's economic structure is explained in Section 2.4. Section 2.5 and Section 2.6 concentrate on Malaysia's manufacturing sector and financial development, respectively. Natural resources in Malaysia is explained in Section 2.7.

2.2 Introduction to Malaysia

Malaysia is a multiracial country in Southeast Asia, occupying more than half of the Malay Peninsula and part of the Borneo island. Malaysia is divided into West Malaysia and East Malaysia. West Malaysia, which is also known as Peninsular Malaysia, comprises 11 states and 2 federal territories, whereas East Malaysia is made up of 2 states and 1 federal territory. The total area of Malaysia is around 329,847 km^2 and the total population is 32.73 million, of which 29.62 million are Malaysian citizens and 3.12 million are non-citizens (Department of Statistics Malaysia 2020b). Malaysia comprises different ethnicities and the three main races are Malays, Chinese, and Indians. The main language of Malaysia is Malay.

In the first quarter of 2020, Malaysia was estimated to have a population of 32.73 million and more than 50% of the total population were male. Over the years, Malaysia has been experiencing a decreasing trend in terms of population growth rate. The average annual population growth rate decreased from 2.6% for the period of 1991-2000 to 2.0% for the next ten years. In 2020, the growth rate hit a new low of 0.4%. Regardless, Malaysia succeeded in reducing the infant and maternal mortality rate to 64 per 10,000 live births and 21.1 per 100,000 live births, respectively, in 2019. The decrease in infant and mortality rate can be attributed to increasing births attended by skilled staff and increasing health expenditure. The improvement in healthcare also extended the life expectancy at birth to 76 years and reduced the death rate to 5.17 per 1,000 people in 2019. However, the population growth rate was in a decreasing trend due to a decline in non-citizens and a decreasing fertility rate. More specifically, Malaysia's fertility rate declined from 4.9 per woman in 1970 to 1.8 in 2019 because most of the women prioritized education and careers, leading them to marry later.

The report released by Department of Statistics Malaysia (2020b) showed that it was estimated that the percentage of the Chinese population will decline from 22.8% in 2019 to 22.6% in 2020 due to the decreasing Chinese women's fertility rate. On the other hand, 23.3% of the

total population was under the age of 15 and around 69.7% of the population was between the age of 15 and 64 in 2020. It was noticeable that the employment rate for youths, whose age was between 15 and 24, was in a decreasing trend. It decreased from 42.07% in 1991 to 36.32% in 2020 due to the preference of employers for older employees who have more work experience.

2.3 Overview of Malaysia's Economy

It is widely-recognized in the literature that although Malaysia succeeded in transforming itself from an agriculture-based economy to a manufacturing-based economy, the country's economy is still heavily dependent on crude oil resources (Bekhet and Othman 2018; Badeeb, Lean, and Shahbaz 2020; Shangle and Solaymani 2020). This is because crude oil resources have contributed to around 15% of the country's GDP and 27% of the total government revenue. In order to reduce the dependency on oil rent, the government decided to enhance the role of the services sector as the engine of economic growth and improve the sustainability of the revenue stream through the implementation of tax revenue initiatives. Indeed, the government had made some progress on it, which can be proven by an increase in the share of the non-oil revenue, a decline in the share of the oil revenue in Malaysia's total revenue and an increase in the contribution of the manufacturing and services sectors. The share of the non-oil revenue had increased to 12% of GDP in 2019 while the share of oil revenue in total revenue also declined from 41.3% in 2009 to 31.7% in 2019 (MOF 2020). Although the share of oil revenue was lower than in 2009, it is now showing an increasing trend since 2016, which might indicate an increase in country's dependency on oil resources. However, it is also worth-mentioning that around 80% of Malaysia's GDP was contributed by the manufacturing and services sectors, making them the largest contributors to Malaysia's economy.

Among the states, Selangor has the best economic performance in Malaysia, which can be reflected by its contribution to Malaysia's economy. Over the years, Selangor is the largest contributor to Malaysia's economy as it had accounted for 24.2% of Malaysia's GDP in 2019, which can be attributed to the largest share of Selangor in the construction, service and manufacturing sectors, which are the major contributors to Malaysia's economy. Due to the same reason, with a population of 6.55 million, Selangor had reached RM54,995 per capita GDP in 2019. An interesting fact is although Sarawak, which is the largest natural gas producer in Malaysia, had attained a high state revenue and had attained RM53,358 per capita GDP, Sarawak's GDP growth rate is quite low as compared with other states. Similarly, as the largest oil producer in Malaysia, Sabah has the lowest economic growth rate in both 2018 and 2019. In the report released by Department of Statistics Malaysia (2019), commodity-based states were experiencing slower growth. In other words, the reason that Sarawak and Sabah were experiencing slower GDP growth rates might be because of oil and natural gas resources.

In the 1960s, because of the presence of a sizeable amount of foreign banks, well-trained labour, advanced infrastructures and a large plantation sector, Malaysia was able to experience rapid industrial and economic growth. Malaysia's real GDP growth rate increased rapidly from -0.1% in 1957 to 7.8% in 1966. However, the oil crisis in 1973 severely impaired Malaysia's economy

and resulted in an economic recession. The growth rate of real GDP plunged from 8.3% in 1974 to 0.8% in 1975. In order to boost the economy, the Malaysian government spent massively on public investment projects. The spending on public investment projects increased around three-folds and the growth rate of real GDP successfully rebounded back and achieved 9.3% in 1979 (Ang 2007).

In the 1980s, Malaysia started concentrating on the role played by the private sector in stimulating sustainable economic growth. Different privatization policies, such as Privatization Policy was introduced in 1983 and another unit which known as Public Private Partnership (PPP) was also established in 2009 with the aim of economic enhancement. The successes of these privatization plans had been reflected by an increase in investment rate and the development of infrastructures that stimulate industrial growth. The societies also benefited from PPP projects as different types of social infrastructures such as KL Sentral, highways and bus stations were built (Ismail and Harris 2014).

In 1985, world commodity prices plunged due to the high inflation rate policy in the United States. It caused Malaysia to experience a negative GDP growth rate, which was -1.025%. The negative effects were exacerbated when the oil prices decreased again by more than 50% in 1986 and caused the unemployment rate to reach a peak, of 7.4% (Gately, Adelman, and Griffin 1986; Department of Statistics 2020c). In response to the commodity prices shock, Malaysia decided to promote foreign direct investment. Hence, Promotion of Investments Act 1986 was established with the purpose of boosting investments in the manufacturing, agriculture and tourism sectors. As a result, Malaysia's GDP growth rate rebounded to 9.938% in 1988 and the current account also accelerated from -1.923% in 1985 to 5.294% in 1988. From 1990 to 1996, Malaysia experienced a stable economic growth rate because of the promotion of the private sector. Meanwhile, the contribution made by foreign direct investment to Malaysia's GDP also increased from 1.313% in 1987 to 5.035% in 1996. The share of foreign direct investment in GDP even reached a record high of 8.76% in 1992.

Nonetheless, Asian Financial Crisis in 1997 raised concerns among the policymakers as it significantly slowed down Malaysia's economic growth. During Asian Financial Crisis, Malaysia's currency depreciated by 34% at the end of October 1997 (Choudhry 2005). The negative impacts became more severe in 1998 when the stock market crashed. Kuala Lumpur Stock Exchange, or Bursa Malaysia index decreased from a peak of 1270.67 in February 1997 to 302.91 in August 1998. Due to these issues, foreigners and investors lost their confidence and divested from Malaysia. The investment rate declined dramatically from 43.114% in 1997 to 21.891% in 1999. Malaysia's GDP growth rate in 1998 also decreased to -7.359%. In order to recover the economy, the Malaysian government implemented a series of measures in terms of exchange rate control, financial sector and corporate sector reform. Based on Meesook et al. (2001), the increase in global demand for electronics, together with the implementation of macroeconomic policies had successfully recovered Malaysia's economy, which can be proven by the increase in GDP growth rate and current account. Malaysia's GDP growth rate accelerated from -7.359% in 1998 to 8.859% in 2000, while the current account increased from -5.935% in 1997 to 9.05% in 2000.

Since 2001, Malaysia's economic policies were guided by Third Outline Perspective Plan (OPP 3), which covered the economic development strategies from 2001 to 2010. OPP 3 aimed at helping Malaysia overcome issues that arise from globalization and advanced technology. The policy planned to achieve its objectives by transforming Malaysia's economy into a knowledge-based economy through human resources development, as well as promotion of domestic investment and foreign direct investment. Also, the Eighth Malaysia Plan and Ninth Malaysia Plan were launched with the purpose of implementing OPP 3. Overall, these plans were successful because Malaysia had register credible economic growth during the period of the Eighth Malaysia Plan and every economic sector, along with society, benefited from the Ninth Malaysia Plan.

Nonetheless, the global financial crisis in 2008 severely impaired Malaysia's economy. Based on Bank Negara Malaysia (2010), the crisis not only hampered private investment activities, but also reduced the production of Malaysia's manufacturing sector by 11.1%, while exports were reduced by 7.4% in 2008. Malaysia's economic condition became progressively worse when exports further decreased by 20% due to the decline in world trade in the first quarter of 2009. Due to this reason, Malaysia's manufacturing sector production also decreased by almost 20% and the GDP growth rate contracted by 1% at that time. For the purpose of economic recovery, several policies have been implemented and direct financial support was provided for domestic economic activities. These policies succeeded in slowing down the decline in domestic demand and registered a positive growth rate of 1.7% in the second half of 2009.

In 2010, Economic Transformation Program was introduced in order to transform Malaysia from a middle-income economy to a high-income economy by 2020, as well as improve the production chain. Between the period of 2011-2015, Malaysia had achieved a stable economic growth rate of 5.3%. The reason behind the steady growth was strong domestic demand which arose from an increase in private investment activity and economic diversification. With the purpose of further promoting economic development, Malaysia decided to sign the Trans-Pacific Partnership (TPP), a free-trade agreement. It is believed that this agreement will enhance Malaysia's competitive advantage as well as improve its accessibility to the global market.

It is noteworthy that although Malaysia's GDP growth rate fluctuated over the years, Malaysia's GDP per capita still experienced an increasing trend due to the expansion of the services sector. The GDP per capita had increased from US$ 2441.742 per capita in 1990 to US$ 11,414.207 in 2019. **Figure 2.1** shows Malaysia's annual GPD growth rate from 1970 to 2019.

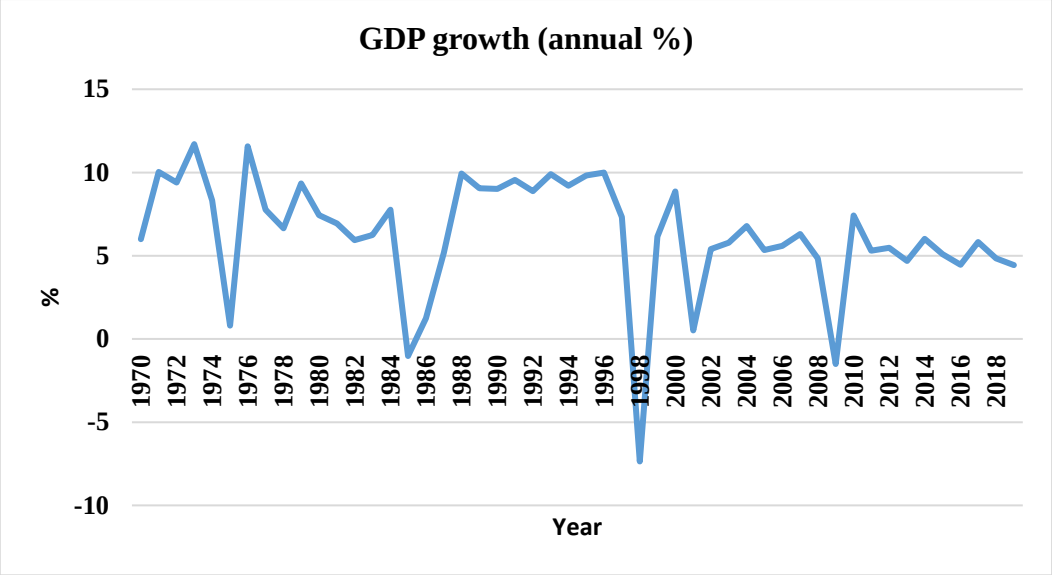


Figure 2.1 Malaysia's GDP Growth Rate
Source: World Bank (2020)

2.3.1 Malaysian's Purchasing Power

Malaysia's inflation rate is measured by Consumer Price Index (CPI). The inflation rate had fluctuated from year to year. Between the year 1972 to 1974, Malaysia's inflation rate increased dramatically. It accelerated from 3.232% in 1972 to 17.329% in 1974 as a consequence of the oil crisis which also resulted in a current account deficit of -5.67% in 1974. In addition to the oil crisis, bad weather and an increase in demand for food and raw materials also led to a food shortage that ultimately increased domestic prices. After the implementation of the investment policy, the Malaysian government succeeded in declining the inflation rate to 2.634% and converted the current account deficit into a surplus in 1976. However, the inflation rate was only stable for a few years. When the oil prices increased by around 66% in 1981, the prices of both investment goods and raw materials also increased. As a consequence, Malaysia's inflation rate increased to 9.7% with a current account deficit of -9.874% in 1981. Although Malaysia's inflation rate was actually quite stable during the early 1990s, Malaysia experienced a high inflation rate again in 1998 when Malaysia's currency depreciated by more than 40% due to the Asian Financial Crisis. The government responded quickly by implementing capital controls which not only fixed the currency at U$1=RM3.80, but also controlled the country's inflation rate (Cheng and Tan 2002). From the year 2000 to 2007, Malaysia's inflation rate only fluctuated slightly before it increased again to 5.441% in 2008. The main reason the inflation rate increased in 2008 was the global financial crisis that happened together with increasing commodity and food prices. Since then, due to the awareness of seriousness of a global financial crisis, Malaysia's government implemented fiscal and monetary policies to mitigate negative impacts that may arise from the crisis (Nambiar 2013). It was noticeable that the inflation rate only fluctuated slightly over the years and has been maintained at a low level since 2009. **Figure 2.2** Inflation Rateshows the inflation rate of Malaysia.

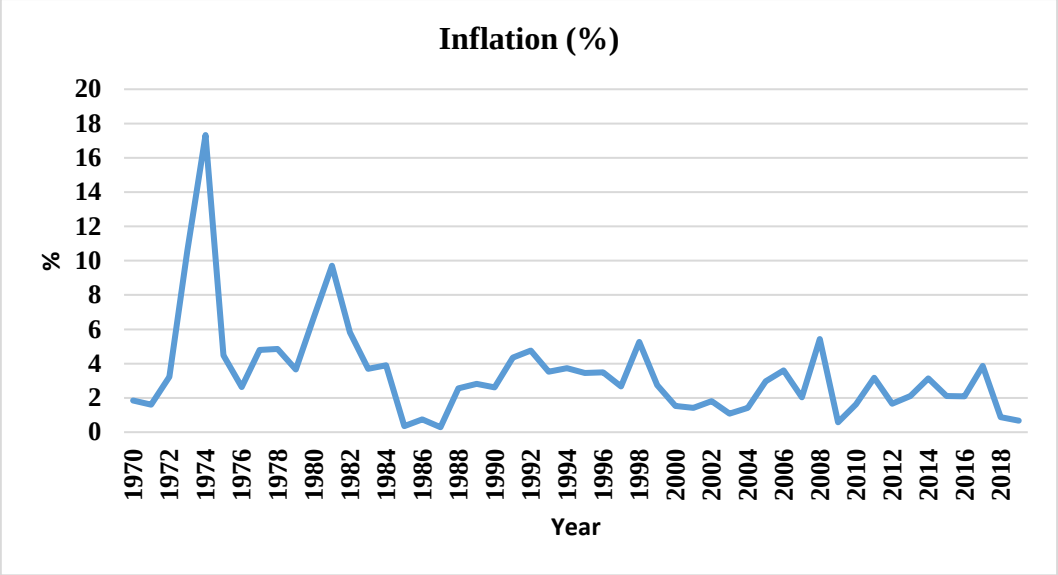


Figure 2.2 Inflation Rate (%)
Source: World Bank (2020)

2.3.2 Trade Openness

It is noteworthy that Malaysia has been classified as one of the most open economies by World Bank (2020). As shown in **Figure 2.3**, even though Malaysia's trade openness increased significantly since 1986, it experienced a decreasing trend since 2006, which might be due to the decrease in the production and export of crude oil. For Malaysia, 84.5% of the total exports in 2019 was contributed by the manufacturing sector. This can be attributed to one of the subsectors of the manufacturing sector, namely the electrical and electronics industry (E&E), which was the largest contributor to Malaysia's total exports, accounting for 35.9% of the total exports in 2019. On the other hand, intermediate goods accounted for 56.7% of the total imports, followed by capital goods and consumption goods (Department of Statistics Malaysia 2020d).

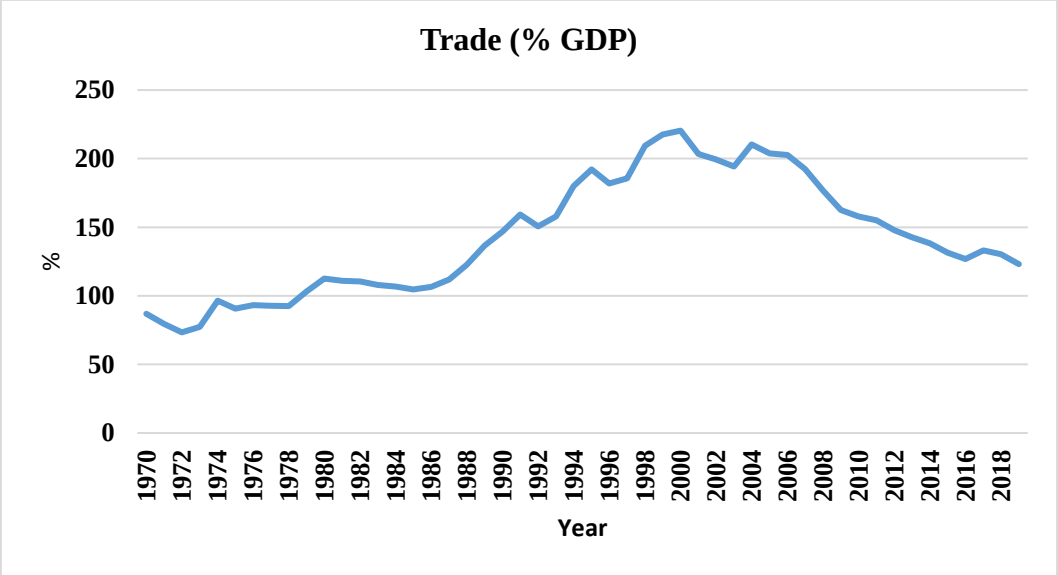


Figure 2.3 Trade (% GDP)
Source: World Bank (2020)

Among the trading partners of Malaysia, China accounts for the major portion of total trade, with an average share of 15.65%, followed by Singapore and European Union. In fact, China became the largest trading partner because of its largest portion of total imports. Based on the research by Lew and Sulaiman (2014), China's products price is 30% lower than Malaysia's products price. Therefore, Malaysian businessmen prefer to import products from China to reduce their costs. In contrast, Singapore is the largest exporter to Malaysia due to its nearness to Singapore and production technologies (Gursel and Ostertag 2016).

2.3.3 Saving and Investment

During the period 1990 to 1997, Malaysia experienced a stable economic growth rate with an increased investment rate. The gross fixed capital formation, which represents the investment rate, increased significantly from 33.043% of GDP in 1990 to 43.114% in 1997. However, the Asian Financial Crisis in the second half of 1997 caused the investment rate dropped to 21.89% in 1999. Although the measures that implemented by government had succeeded in recovering the economy, but until now, Malaysia's investment rate is still lower than 30% of GDP, which is quite low compared with the investment rate from 1990 to 1997. This might be due to the decreasing trend in private and public investments. Based on Bank Negara Malaysia (2015), private investments accounted for around 64% of Malaysia's total investment, which significantly proved the importance of private investments for Malaysia's economy. This is why the private investment rate fluctuated due to the global demand shock and the average private investment rate declined from 22.9% of GDP during the 1990s to 15.5% in 2012, it led to a lower investment rate in Malaysia (Bank Negara Malaysia 2013). However, in the next few years, even though the growth rate of private investments was in a decreasing trend, it had a better performance than public investments, showing a positive growth rate as shown in Figure 2.4 Investment Growth Rate (%). Overall, private investments in Malaysia were mainly supported by investments in the manufacturing and services sectors, which accounted for 24% and 51% of private investments respectively.

In contrast, the growth of public investments in 2012 was mainly driven by the investments made in the oil and gas sector, which aimed at increasing production. Investments were also made in public transportations such as the construction of KLIA2. However, it started to experience a negative growth rate from 2014 to 2018. Although it had a positive growth rate of 0.1% in 2017, public investments declined by 10.8% and was at 5.2% of GDP in 2019. This can be attributed to the reduction in public companies' spending as the projects for the oil and gas industry were almost complete. In fact, public investments are mainly driven by investments made by public companies as they accounted for around 72% of public investments in 2014. This might be due to the policy implemented by the government that was aimed at establishing public companies in order to execute other policies. This was also the reason that the number of public companies increased from 55 in the 1960s to 354 in the 1980s (Ibrahim 2000).

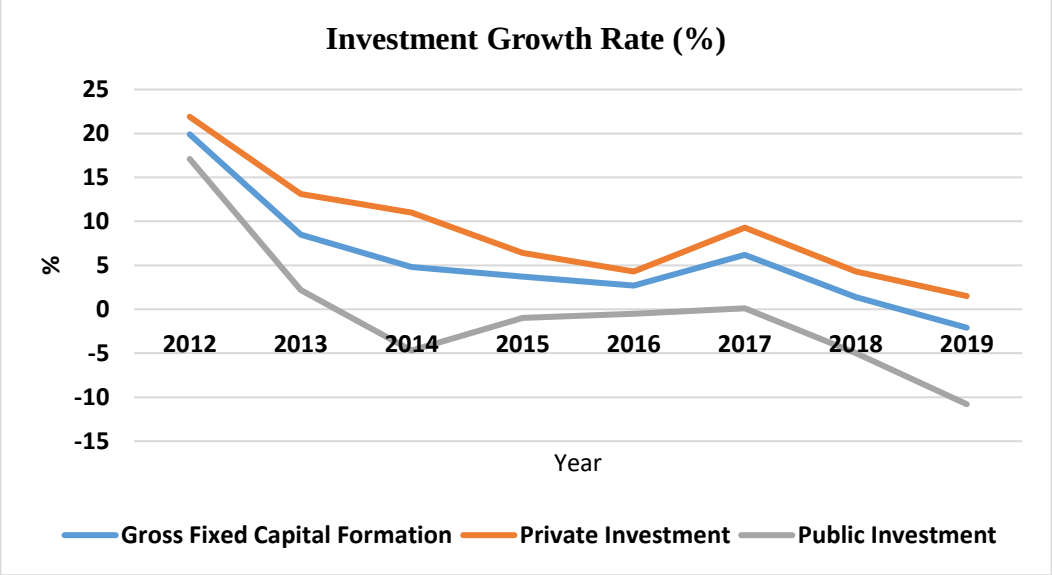


Figure 2.4 Investment Growth Rate (%)
Source: Bank Negara Malaysia (2014a; 2015; 2016; 2017; 2018; 2019; 2020)

According to *The World Factbook*, Malaysia's gross national savings is 28.4% of GDP and ranks 35th in the world. However, since 1998, Malaysia's gross domestic savings started to experience a decreasing trend, which can be attributed to decreasing deposits interest rate that discourages households from savings. Meanwhile, it was also found that the household debts increase in Malaysia might be due to the decrease in lending interest rate. When household debt increases, more income will be used to repay debts and less income will be available for savings. Besides, central government debt is having an increasing trend over the years. It increased from RM360.437 billion in 2008 to RM648.475 billion in 2016, also representing an increase from 39.8% in 2009 to 51.891% of GDP in 2016. Just like household savings, when the central government debt is higher, more money will be needed to repay the debt every year which in turn, reduces government savings. Based on World Bank, it is predicted that Malaysia's government debt will continue to increase and as a result, the gross national saving will experience a decreasing trend.

2.3.4 Income Level

Although Malaysia succeeded in transforming itself into an upper middle-income economy, it was claimed that Malaysia is caught in a middle-income trap as it is overdependent on multinational companies and foreign direct investments for technological innovation and export upgrading. According to Cherif and Hasanov (2015), although they were having lower development levels than Malaysia in the 1970s, Korea and Taiwan nowadays have outperform Malaysia and achieved a high-income economy because instead of relying on foreign companies for technology transfer, their domestic companies conduct innovation themselves. On the other hand, the report released by United Nations Educational Scientific and Cultural and Organization (2016) claimed that Malaysia is overdependent on oil and natural gas resources, which has been one of the factors that prevents Malaysia from reaching a high-income status. As a matter of fact, whether Malaysia can succeed in escaping from the middle-

income trap and achieving high-income status will depend on what extent the country can stimulate technological innovation domestically.

With the purpose of accomplishing the goal of attaining a high-income status, the Economic Transformation Programme (ETP) focusing on competitiveness enhancement and governance improvement was introduced in 2010. In this program, the Malaysian government aimrf at creating 3.3 million new jobs so that the country can reach RM48,000 per capita income and transform into a high-income economy by 2020. Additionally, this program was also target at reducing the level of dependency on oil and natural gas resources and strengthening the role of the private sector in economic growth (PEMANDU 2010). Besides, Trans-disciplinary Research Grant Scheme focusing on alleviating poverty and achieving sustainable economic development through technological innovation was launched in 2014 (United Nations Educational Scientific and Cultural and Organization 2016). Although these policies failed to transform Malaysia into a high-income economy, they did narrow the gap between the gross national income (GNI) threshold and GNI per capita of Malaysia, as shown in **Figure 2.5**.

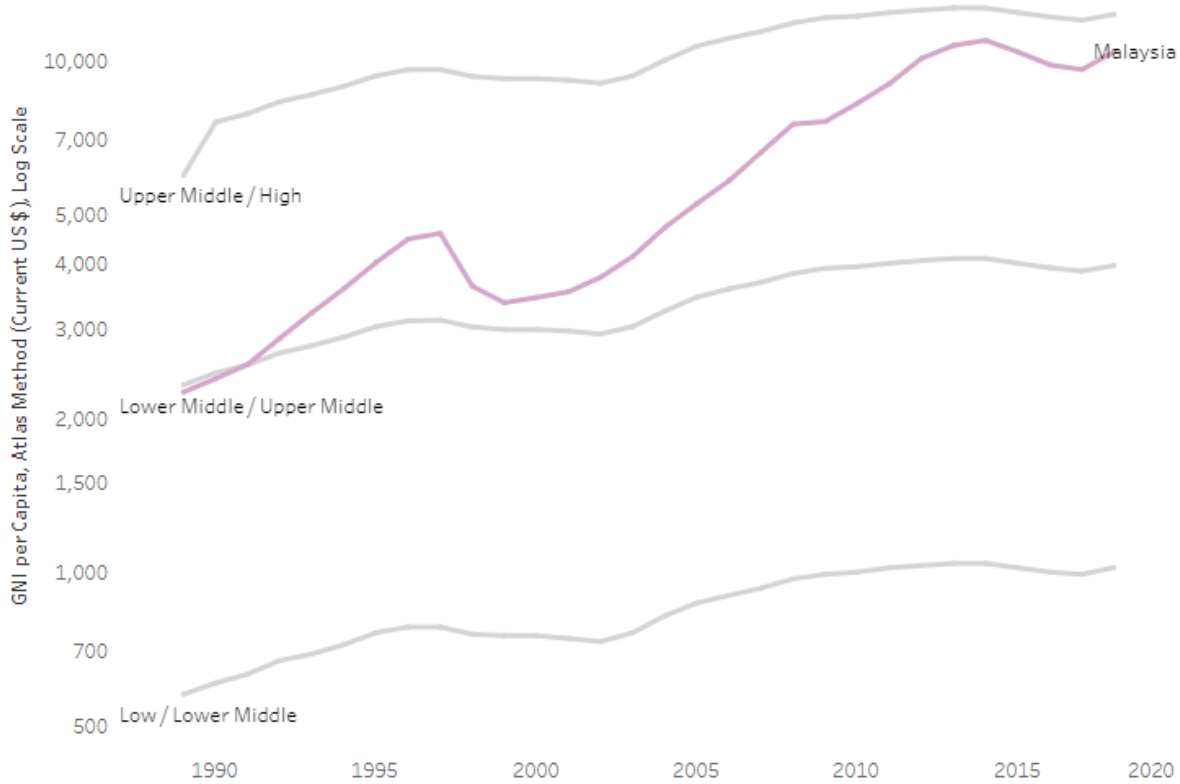


Figure 2.5 GNI per capita
Source: World Bank (2020)

2.4 Malaysia Economic Structure

Prior to independence, tin and rubber industries played dominant roles in the export sector because of the geographical advantages of Malaysia, such as its tropical climate and nearness to the trade route linking East Asia and Europe, making them more profitable compared with other economic sectors. In order to protect the private interest of the British, policies were implemented, which consequently boosted Malaysia's GDP. Ironically, although Malaysia's

GDP was having a rapid growth during that time, national income and consumption were experiencing slower growth as only a small amount of revenue was allocated to the local populations. Besides, in order to maximize the return on investment, British worked together with Malay sultans in facilitating the immigration of low-paid workers from China and India, who mainly worked in the tin and rubber industries respectively. Due to the immigration of Chinese and Indians, the percentage of Malays in the total population decreased from 62.8% in 1901 to 49.5% in 1947 (Sachs n.d.).

After independence, Malaysia underwent dramatic changes in terms of its economic structure. It succeeded in transforming itself from an agro-based economy to a manufacturing-based economy (Bekhet and Othman 2018; World Bank 2020). During the independence era, the agriculture sector accounted for the majority part of Malaysia's GDP, followed by the industry and manufacturing sectors. However, the establishment of First Malaysia Plan 1966-1970 that emphasized the need for industrialization caused the share of the agriculture sector in Malaysia's GDP to decrease. Meanwhile, the share of the manufacturing sector in Malaysia's GDP started to increase due to the implementation of strategies that promoted export (Mohit 2009).

In 1970, due to the racial riots happened in 13 May 1969, New Economic Policy (NEP) aiming at reducing the poverty rate and diversifying the economy was launched (Lewison et al. 2016). NEP succeeded in strengthening the manufacturing sector, especially the E&E industry, through interconnections between local companies and multinational companies from the United States. However, it was noticeable that although Malaysia succeeded in achieving poverty reduction, education extension, and health improvement, the country's economy was still heavily relying on oil and natural gas resources, which consequently caused Malaysia to fail in achieving sustainable economic growth. Along with mixed education quality, these issues caused the goal of transforming into an innovation-based industry to become unaccomplished. The situation got worst due to the rise of China's manufacturing sector after 2000, becoming the major competitor for Malaysia in the global market and consequently resulting in the reduction of contribution of the manufacturing sector to Malaysia's GDP (Sachs n.d.).

Malaysia's economic structural change is reflected in the share of the economic sectors in Malaysia's GDP. Based on **Figure 2.6**, it is shown that the share of both the manufacturing and industry sectors in GDP was in an increasing trend since 1987, followed by a decreasing trend after 2004. In addition to the rise of China's manufacturing sector in the international market, the decreasing trend might be due to the increase in the role of the services sector in Malaysia's economy. As shown in **Figure 2.6**, the contribution of the services sector to Malaysia's GDP started to increase in 2004 due to the government's policy to transform Malaysia into a developed country through the development of the services sector. In terms of the share of agriculture in GDP, it declined continuously until now, which significantly reflects the effort of Malaysia in upgrading itself into an industrialized nation.

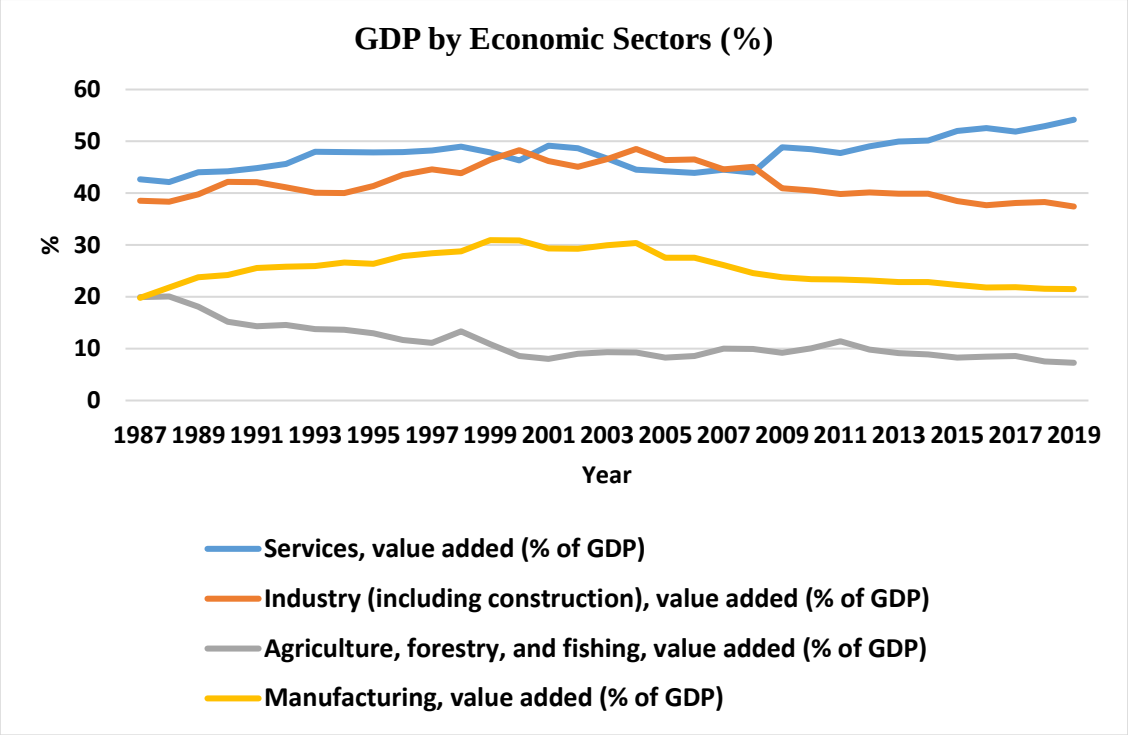


Figure 2.6 GDP by Economic Sectors
Source: World Bank (2020)

In addition to the share of the economic sectors in GDP, the changes in Malaysia's economic structure are also reflected by the share of the economic sectors in total employment. Based on **Figure 2.7**, it is obvious that there was an increasing trend in the share of the services sector in total employment, reflecting the success of Malaysia in developing the services sector through Services Sector Blueprint, a blueprint that introduced the purpose of services sector development. Based on the blueprint, it was anticipated that around 9.3 million jobs will be created and 56.5% of GDP will be contributed by the services sector in 2020 (MIDA 2020). Meanwhile, the employment share of the agriculture sector decreased significantly from 52.8% in 1970 to 10.361% in 2019.

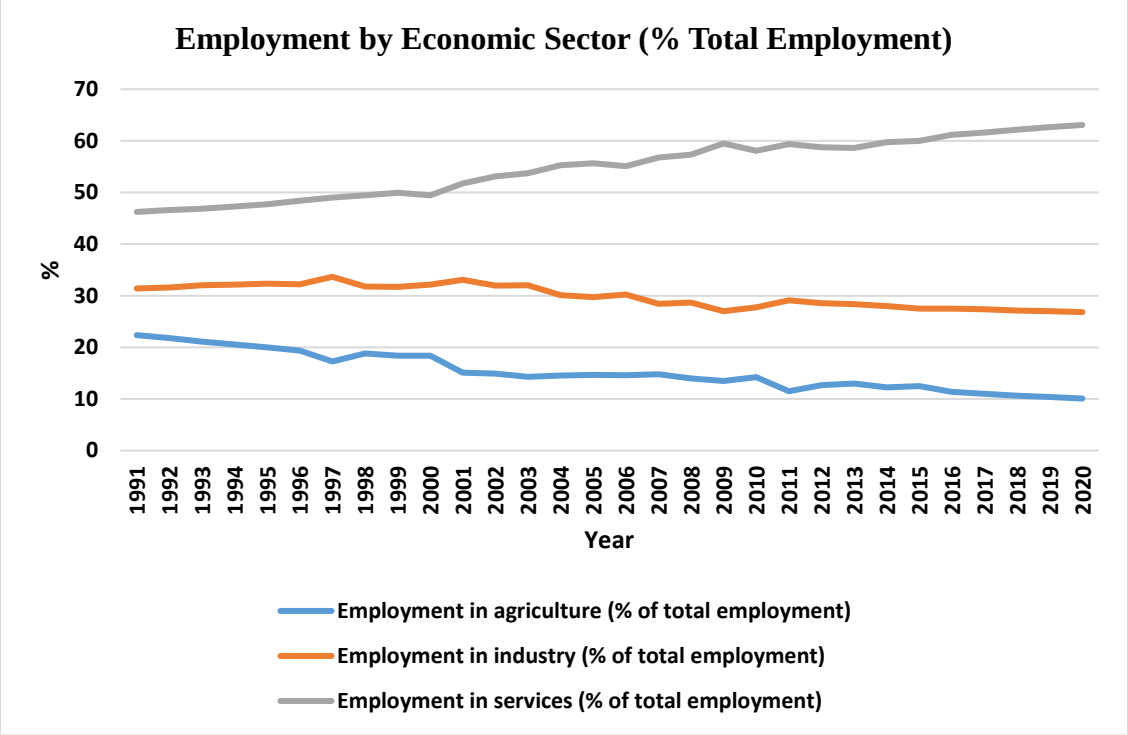


Figure 2.7 Employment by Economic Sectors (% Total Employment)
Source: World Bank (2020)

2.5 Manufacturing Sector

The manufacturing sector of Malaysia started to expand in the 1970s when the government implemented several policies in order to provide more chances for Malays to become capitalist and participate at the management level. Meanwhile, oil and natural gas resources also started to become more significant for Malaysia's economy. During the period 1960 to 1980, the contribution made by the manufacturing sector was an increasing trend. It increased from 10.261% in 1960 to 21.948% in 1980. However, it started to slowdown when crude oil prices decreased in 1985 and1986. With the purpose of reviving the manufacturing sector and the whole economy, Promotion of Investments Act 1986 was introduced to attract more foreign investments. Along with the government's effort, the establishment of Plaza Accord used for realignment of the exchange rate between dollar and yen, and the abolition of Generalised System of Preferences (GSP) privileges created a favorable environment for manufactured exports. The combination of these factors resulted in an average growth rate of 8% and budget surpluses from 1993 to 1997 (Doraisami 2015).

After 1988, Malaysia's manufacturing sector became one of the major contributors to Malaysia's GDP. Although it was experiencing a decreasing trend after 2004, the contribution made by the manufacturing sector still accounted for more than 20% of Malaysia's GDP. This significantly evidenced the importance of the manufacturing sector in Malaysia's economy. Previously, food production was the main subsector of the manufacturing sector, followed by the wood and printing industry (Lim 1987). In 2000, it was taken over by the E&E industry. The E&E industry had accounted for around 21.7% of the total manufacturing projects from

2000 to 2019 and 35.9% of Malaysia's total exports in 2019, which significantly reflects the significance of this industry in the whole economy (Department of Statistics Malaysia 2020d; Ministry of International Trade and Industry 2020).

Since 2004, the export of goods and services in Malaysia had started to experience a decreasing trend. However, the exports still positively contributed to the growth of GDP due to the shrinkage of imports (World Bank Group 2018). Meanwhile, the export of manufactured goods also reduced due to the decline in export of E&E products. It is important to note that although Malaysia's market share in both China and United States increased, the gains had been offset by the decrease in aggregate demand for exports (World Bank 2019). Nonetheless, the decreasing demand did not prevent investors from making investments in the manufacturing sector. Based on Malaysia of International Trade and Industry (MITI), in 2019, around 39.8% of total private investments were made in the manufacturing sector. Furthermore, **Figure 2.8** also shows that the investments in the manufacturing sector were mainly contributed by foreign investors. This is because Malaysia had introduced several policies, such as providing tax incentives and establishing liberal equity policies, that effectively promoted the foreign investments. Due to this reason, the decline in demand did not reduce investors' interest to invest in the manufacturing sector, especially the E&E industry, which accounted for 31.02% of total investments in the manufacturing sector. It is worth mentioning that in addition to the ability to attract investments, the E&E industry was also the main driver of the growth of the export-oriented manufacturing sector because of its steady export demand.

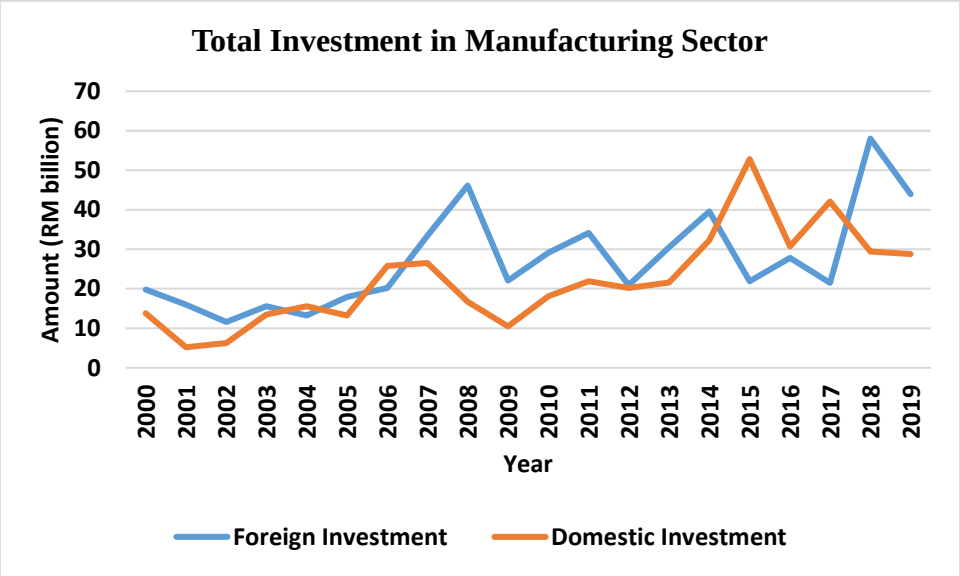


Figure 2.8 Total Investment in Manufacturing Sector
Source: MITI (2020)

In terms of the employment of the manufacturing sector, **Figure 2.9** shows that Malaysia's manufacturing sector was having a negative growth rate of total employment from 2011 to 2015, which was actually caused by the oil price shock and global trade slowdown. However, when the external trade started to improve, the manufacturing sector also started to experience a positive growth rate in total employment. Based on Ministry of International Trade and Industry (2020), the manufacturing sector is the second-largest employment sector in Malaysia.

However, it was noticeable that around 25% of total employees in the manufacturing sector were non-Malaysians. This might be due to the reason that Malaysians have a low willingness to work in the furniture and wood industry, leaving businessman no choice but to employ non-citizens (International Monetary Fund. Asia and Pacific Dept 2018).

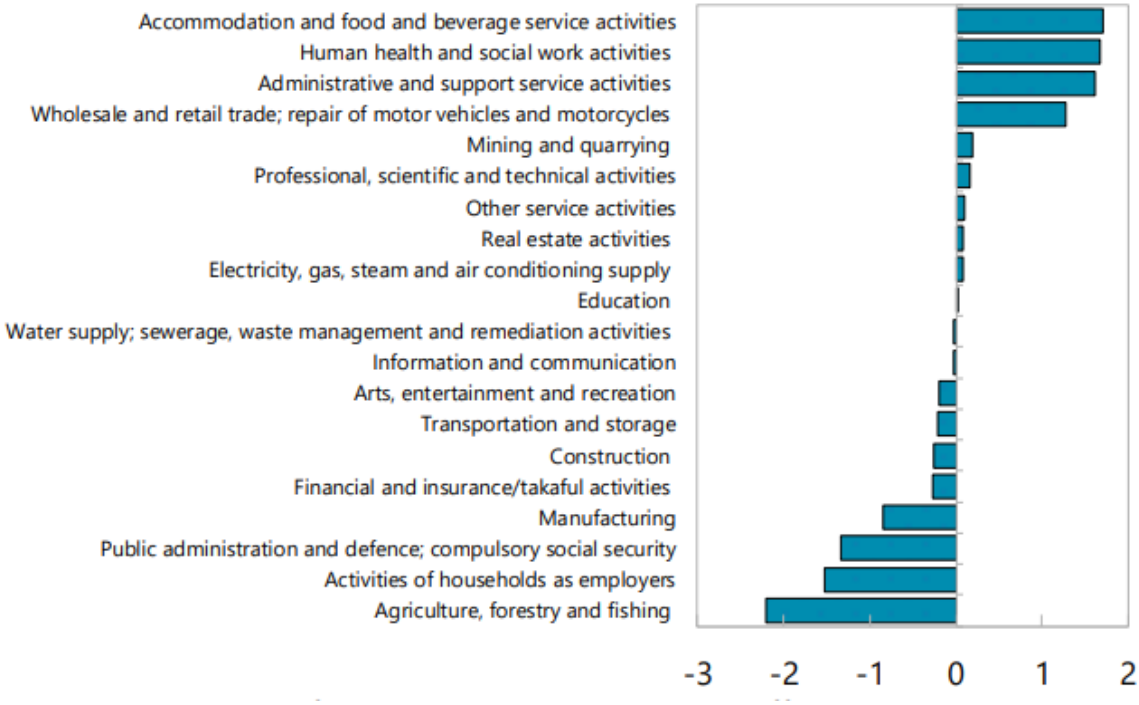


Figure 2.9 Changes in Total Employment by Industry
Source: International Monetary Fund. Asia and Pacific Dept (2018)

Regarding the labour productivity of the manufacturing sector, it reduced by 14.6% per year from 2012 to 2014. Besides, the average annual growth rate of labour productivity also declined from 4.6% from 2005 to 2010, to 2.1% from 2010 to 2015. On the other hand, the percentage of companies that exceeded the labour productivity median also declined to 45.7%, while the average labour productivity growth rate of companies below the median further decreased from -1.9% to -6.1%. This could be due to the reason that the companies refused to reduce their workforce when the products demand decreased. From the company's perspective, if they expect to hire the employees again in the future, reducing the labour productivity in the short-term will prevent them from firing the employees as a response to the cyclical fluctuations (World Bank 2016).

2.5.1 Subsectors of Manufacturing Sector

The manufacturing sector in Malaysia comprises many subsectors including E&E, food, beverages and tobacco, textiles, wearing apparel and leather, wood, furniture, paper and printing, petroleum, chemical, rubber and plastic, non-metallic, mineral, basic metal and fabricated metal, and transport equipment and other manufactures products.

Among these subsectors, the E&E industry is one of the largest contributors to Malaysia's manufacturing sector as it accounts for 25.1% of total employees and 26.7% of the value added

of the manufacturing sector. Besides, in 2019, the E&E industry contributed around 35.9% of Malaysia's total exports, which significantly evidenced its role as the main contributor to both the manufacturing sector and Malaysia's economy. Furthermore, the E&E industry can be classified into another three subsectors, namely industrial electronics, consumer electronics and electronic components. The electronic components subsector is playing a leading role in this industry because of semiconductor devices. In fact, Malaysia became the largest semiconductors producer in the world in 1978. Even though the share of semiconductor exports had declined from 24.9% of total exports in 1990 to 21.3% in 2011, Malaysia still accounted for 7.1% of global semiconductor exports in 2011 (Rasiah and Shan 2016). In addition to the E&E industry, because of the abundance of oil resources in Malaysia, the manufacturing sector is also supported by the petroleum, chemical, rubber and plastic products subsector, which accounts for 17.1% of total employees and 30.5% of value added in the manufacturing sector. In contrast, the textiles, wearing apparel and leather products subsector is the smallest contributor to the manufacturing sector as it only accounts for 2.0% of total fixed assets in the manufacturing sector which is very small compared with the E&E products subsector and the petroleum, chemical, rubber and plastic products subsector, which accounts for 20.08% and 31.21% of total fixed assets, respectively.

2.5.2 Production of Manufacturing Sector

Unlike the mining and quarrying sector which sometimes experience a negative growth rate, Malaysia's manufacturing sector has always experienced a positive production growth rate. This can be attributed to the E&E products subsector and the petroleum, chemical, rubber and plastics products subsector. In fact, together with the machinery and equipment, these three subsectors are considered the main drivers of transforming the production of the manufacturing sector into a high-value and technologically advanced sector.

Regarding competitors, Malaysia's manufacturing sector has to compete with manufacturing companies from Vietnam, Philippines, India, Thailand and China. The first four countries are having a competitive advantage in terms of lower labour wages. On the other hand, China is one of the most competitive countries in this world as it is technologically advanced. Thus, in order to transform the manufacturing sector into a high-tech sector and ensure that it is able to compete globally, Industry 4.0, otherwise known as the Fourth Industrial Revolution and Smart Manufacturing has been implemented. In this policy, several Information and Communication Technologies (ICTs), such as Cyber-Physical Systems (CPSs), Internet of Things (IoT) and Internet of Services (IoS) will be adopted in the manufacturing sector for production improvement (Hubert Backhaus and Nadarajah 2019). It is expected that the adoption of these technologies will improve the efficiency and quality of the manufacturing sector.

In terms of small-medium enterprises (SMEs) in the manufacturing sector, the growth of its value added is usually led by the petroleum, chemical, rubber and plastics products subsector. It is worth mentioning that although the manufacturing sector only accounted for 7% of SMEs in Malaysia, they had contributed to around 19.8% of total SMEs' GDP in 2019. Significantly, it indicates the importance of SMEs to Malaysia's economy and the manufacturing sector.

Therefore, in order to boost SMEs in the manufacturing sector, several policies emphasizing product diversification have been implemented. Both technical support and financial support are also provided by Malaysia's government with the purpose of improving SMEs from the aspects of creativity and competitiveness (Whah and Lim 2018). Overall, it is unquestionably that the implementation of these policies will improve the production of SMEs in the manufacturing sector.

2.5.3 Export of Manufacturing Sector

Concerning the total exports of Malaysia, the manufacturing sector is the largest contributor as it accounts for more than half of the total exports. The percentage of the manufacturing sector in total exports increased significantly from 27.171% in 1985 and reached the peak of 80.355% in 2000. The increase in the share of the manufacturing sector in total exports can be attributed to the expansion of the manufacturing sector, which was caused by the introduction of Investments Promotion Act in 1986 to promote foreign direct investments (Doraisami 2015). Although it slightly declined after that, the manufacturing sector still contributed to around 70.115% of total exports in 2019, proving the dominant role of the manufacturing sector in Malaysia.

The export of the manufacturing sector is led by the export of E&E products which accounts for the major portion of total exports. Besides, it was also claimed that the manufactured exports were estimated to grow around 7.8% from 2014 to 2015 because of the sustained demand for E&E products. The importance of the E&E product subsector is also evidenced when the manufactured exports experienced a rise in trade surplus, from RM 24.6 billion in 2016 to RM 36.8 billion in 2017 when the E&E product subsector, one of the export-oriented industries, was experiencing an upcycle. Indeed, one subsector is insufficient to support the growth of manufactured exports. Therefore, different policies were implemented with the purpose of improving manufactured exports. For instance, Export Acceleration Mission was introduced in 2019 in order to provide more export opportunities for the chemical and chemical products subsector. Moreover, the government also planned to improve the accessibility of product testing and certification in order to ensure that the manufactured products comply with international standards (Ministry of International Trade and Industry 2006).

It is worth mentioning that SMEs in the manufacturing sector is the second-largest contributor to the total exports of SMEs. In 2019, it had contributed around 48.0% of total SMEs' exports and 8.6% of Malaysia's total exports, clearly indicating the importance of SMEs in the manufacturing sector. Thus, in order to develop the SMEs in the manufacturing sector, the Third Outline Perspective Plan (OPP3) was implemented in order to widen the export markets by enhancing the quality, improving the dissemination of information, and strengthening the marketing and promotion strategies. Besides, financial support was provided by the government to allow the SMEs to adopt more advance technology, such as e-commerce applications to improve the accessibility of the global market. Also, the government promoted exports of small-medium industries in the manufacturing sector by establishing General

Trading Companies aiming at export promotion and enhancement (Bank Negara Malaysia 2006).

2.6 Financial Development in Malaysia

Malaysia's financial system can be categorized into financial institutions and the financial market. Financial institutions include both the banking system and non-bank financial intermediaries whereas money and foreign exchange market, derivatives market, capital market and offshore market are classified as the financial market. Just like other countries, Malaysia's financial system is dominated by the banking sector. Based on Bank Negara Malaysia (BNM), Malaysia has 42 commercial and Islamic banks, 11 investment banks, 62 insurance companies and takaful operators and 15 financial holding companies.

In Malaysia, BNM is responsible for the establishment and implementation of monetary policies aiming at providing more financial support for productive economic activities, improving the money market's efficiency and achieving market and financial stability. The largest bank in Malaysia is Malayan Banking Berhad (Maybank), which occupied more than 29% of Malaysia's banking system's total assets in 2019, and its largest shareholder is Permodalan Nasional Berhad, a government-owned company. Although Malaysia has 26 commercial banks, only 8 of them are local companies. The reason behind the establishment of foreign banks in Malaysia is the policies implemented by BNM, which encouraged foreign bank participation in the mid-1990s after the Asian Financial Crisis. In Malaysia, although foreign banks are requested to obtain at least 50% of domestic credit needs from local banks, these foreign banks are actually receiving the same treatment as local banks in terms of money market instruments, accessibility to the central bank's discount window and availability of foreign capital through swaps. The banking sector plays an important role in Malaysia's economic growth because financial flows are mostly under the control of the banking sector, accounting for around 70% of the financial system's total assets. Malaysia's banking sector is dominated by commercial banks as they are the largest fund provider, and they also provide every type of banking service. In addition to being the only financial institution that provides the facilities of current accounts, Malaysia's commercial banks are also allowed to perform foreign exchange services (Sufian, Kamarudin, and Nassir 2016).

Before Asian Financial Crisis, Malaysia was having a fragile financial sector. Unlike the companies nowadays that mostly depend on bond markets to obtain financial resources, the presence of underdeveloped bond markets forced the companies in the 1960s to rely on banks to finance their activities. Besides, although the activities of financial institutions were regulated and supervised by BNM, it was claimed that the regulations and price mechanisms before 1997 were inflexible. During the early 1990s, Malaysia was experiencing a stable macroeconomic environment, which can be proven by the low inflation and unemployment rates. Nonetheless, the investment quality decreased due to the investment made in speculative real estate. Malaysia also suffered from decreasing exports and increasing current account deficits. As a result, the banking sector had large amounts of unhedged short-term currency loans that were used to finance domestic lending. Due to this reason, when Asian Financial

Crisis happened, it translated from currency crisis into a banking crisis, followed by a contraction of liquidity and credit crunch. Consequently, it resulted in an economic recession (Randhawa 2011). Since then, Malaysia has implemented several financial development policies. The Financial Sector Masterplan (FSMP) was introduced in 2001 to build the foundation of financial development from 2001to 2010. In this policy, the government aimed at ensuring the financial sector is well-prepared to face challenges that arise from liberalization and globalization (Bank Negara Malaysia 2001). Following FSMP, the Financial Sector Blueprint was introduced in 2011 with the purpose of strengthening the role of the financial system and evolving the financial sector from 2011 to 2020.

Following the implementation of FSMP, the contribution of the financial sector to Malaysia's GDP increased from 9.7% in 2001 to 11.7% of GDP in 2010, with an average growth rate of 7.3%. The total assets of the financial system also increased from RM1,295.2 billion in 2001 to RM3,040.89 billion in 2010. Besides, FSMP also improved the profitability of domestic commercial banks, which can be proven by the increase in return on assets (ROA) and return on equity (ROE). Based on Bank Negara Malaysia (2011), ROA and ROE of domestic commercial banks increased to 1.6% and 16.7% in 2010 respectively. On the other hand, the Financial Sector Blueprint also further improved the financial sector. Before 2011, the domestic credit provided to the private sector was experiencing a decreasing trend. However, after the introduction of the Financial Sector Blueprint, it slightly increased and since had a stable trend until now. Since electronic payments (e-payment) plays a prominent role in transforming Malaysia into high value-added economy, the Financial Sector Blueprint also succeeded in promoting the use of e-payments, which is reflected by the number of e-payments transactions per capita that increased from 49.4 in 2011 to 149.5 in 2019.

Moreover, Malaysia is having a high level of financial inclusion, which can be reflected by the number of people who are having bank accounts, which is around 846 per 1,000 people as well as number of depositors with commercial banks, which is 708 per 1,000 people. According to Trotsenburg (2013), the level of financial inclusion in Malaysia is higher than 92% of the countries in this world as it is taking advantage of mobile phones and online banking to improve accessibility. Due to the high accessibility of financial support, SMEs in Malaysia are able to expand their businesses and thus, lowering the unemployment rate by hiring around 48.4% of Malaysia's total workforce (Department of Statistics Malaysia 2020e).

2.7 Malaysia's Natural Resources

As one of the Southeast Asia countries, Malaysia is endowed with oil and natural gas resources. Malaysia is also widely known as the second-largest oil and gas producing country in Southeast Asia. Based on Central Intelligence Agency (2019), the proved oil reserves for Malaysia in 2018 was 3.6 billion barrels, which was the fourth-highest oil reserves in Asia after China, India and Vietnam whereas the proved natural gas reserves in 2018 was 1.183 trillion cubic meters (cu m). In terms of production, oil production is more than 1.7 million barrels per day whereas the production of natural gas is around 6,800.77 MMscf/d. As shown in **Figure 2.10**, Sabah and Sarawak have the largest amount of oil and natural gas resources in Malaysia.

However, the state's economic growth rate in 2019 was only 2.5% and 0.5%, respectively, which was the lowest among the states and federal territories. Based on Department of Statistics Malaysia (2019), this might be due to the dependence on oil and natural gas resources as it was claimed that commodity-based states have lower economic growth rates.

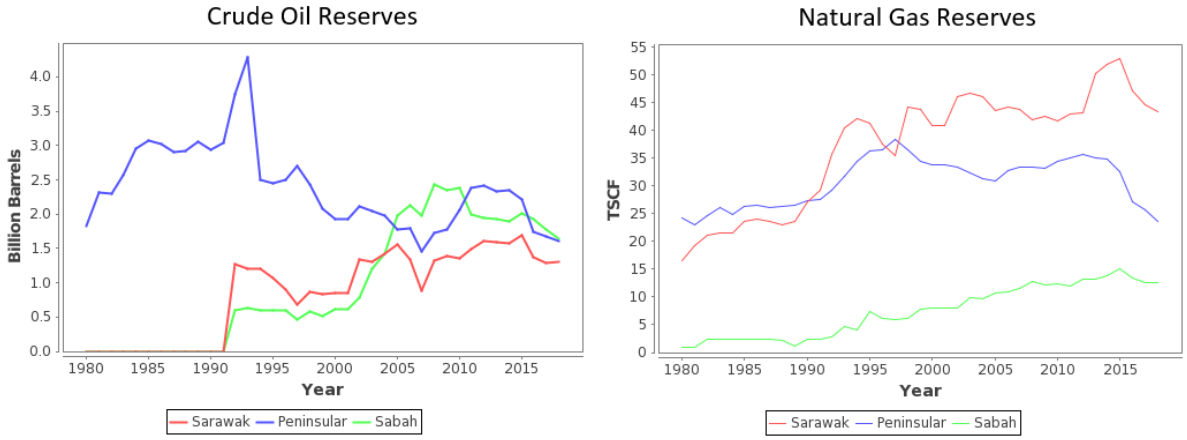


Figure 2.10 Proved Reserves of Oil and Natural Gas
Source: Energy Commission (2020)

In Malaysia, the first discovery of oil resources was in Miri, Sarawak in 1911, whereas the first discovery of natural gas was in 1983. However, oil resources only started to become significant in the 1970s, and it was replaced by natural gas as the main resource for Malaysia after the 2000s (Oh, Pang, and Chua 2010). Until now, both of these resources still play a crucial role in Malaysia's economy. In order to manage the oil revenue, Petroleum Nasional Berhad (Petronas) was established together with the introduction of Petroleum Development Act 1974. Although there are many foreign oil and natural gas companies in Malaysia, Petronas holds the ownership of all oil and natural gas exploration and production projects that are conducted in Malaysia. However, the exclusive ownership does not stop Petronas from cooperating with other companies in conducting oil and natural gas projects.

Although the consumption of oil and natural gas resources is an increasing trend, around 50% of crude oil production are exported to other countries as it can receive higher premium in the global market. Meanwhile, domestic oil consumption is met by importing low-cost crude oil. Regarding natural gas, although Malaysia is the second-largest liquefied natural gas exporter in the world, it still imports from other countries as the demand for natural gas in West Malaysia keep on increasing. Therefore, in order to ensure that the need for natural gas will be met continuously, regasification terminals that secure the supply of natural gas are developed by Petronas.

Regarding the production of oil resources, it is under the management of National Depletion Policy 1980. At the time, oil production was around 400,000 barrels per day and it was expected that the proved reserves of oil resources would last until the mid-1990s (Abdullah 1986). However, with the further discovery of oil resources, the maximum oil production per day was revised and for now, the limitations of oil production is 650,000 barrels per day (Yatim et al. 2016). On the other hand, as shown in **Figure 2.11**, the production of natural gas increased

over the years to meet the increasing consumption of natural gas. Therefore, in order to prolong the lifespan of natural gas reserves, the consumption of natural gas is limited to around 2,000 million standard cubic feet per day. Moreover, with the purpose of balancing the utilization of natural resources including oil and natural gas, Four Fuel Diversification Strategy 1981 was introduced. This policy covered four types of energies, namely oil, natural gas, hydro and coal. The policy is reviewed occasionally to assure that Malaysia is not overdependence on certain type of natural resource. After the revision made in 1999, Five Fuel Diversification Strategy was launched, with renewable energy added as the fifth fuel.

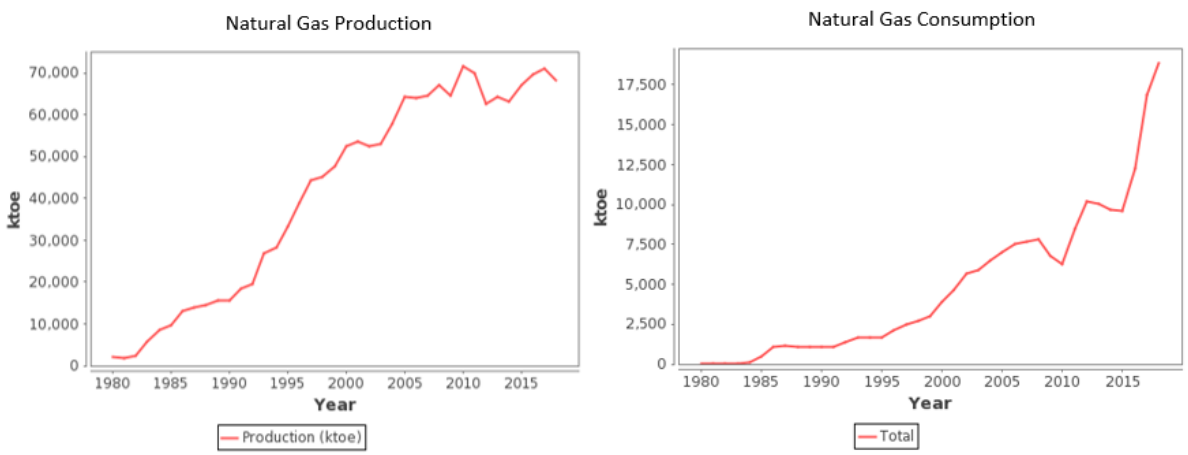


Figure 2.11 Natural Gas Production and Consumption
Source: Energy Commission (2020)

As discussed earlier, Malaysia's economy started to rely on oil resources in 1970, which indicated by the increasing share of oil rent in Malaysia's GDP as shown in **Figure 2.12**. Nonetheless, it fluctuated significantly over the years due to the fluctuations in world oil prices. Although the share of oil rent in GDP decreased during the 1990s due to the collapse in oil prices caused by the Gulf War and Asian Financial Crisis, it increased continuously after that until 2008. The oil prices severely decreased in 2008 due to the global financial crisis, which consequently reduced the share of oil rent in GDP. Since then, Malaysia's government tries to reduce the country's dependency on oil rent. The success of the government can be proven by a decrease in the share of oil rent in GDP from 9.2% in 2009 to 5.5% in 2019. Besides, the percentage of oil revenue in total revenue also decreased from 41.3% in 2009 to 31.7% in 2019 while the percentage of export of oil and liquefied natural gas (LNG) has been on a decreasing trend since 2014 as shown in **Figure 2.13**. Thus, although Malaysia's economy is still heavily dependent on oil and natural gas resources, evidence has clearly proven the government's effort in reducing the country's dependency on oil and gas resources.

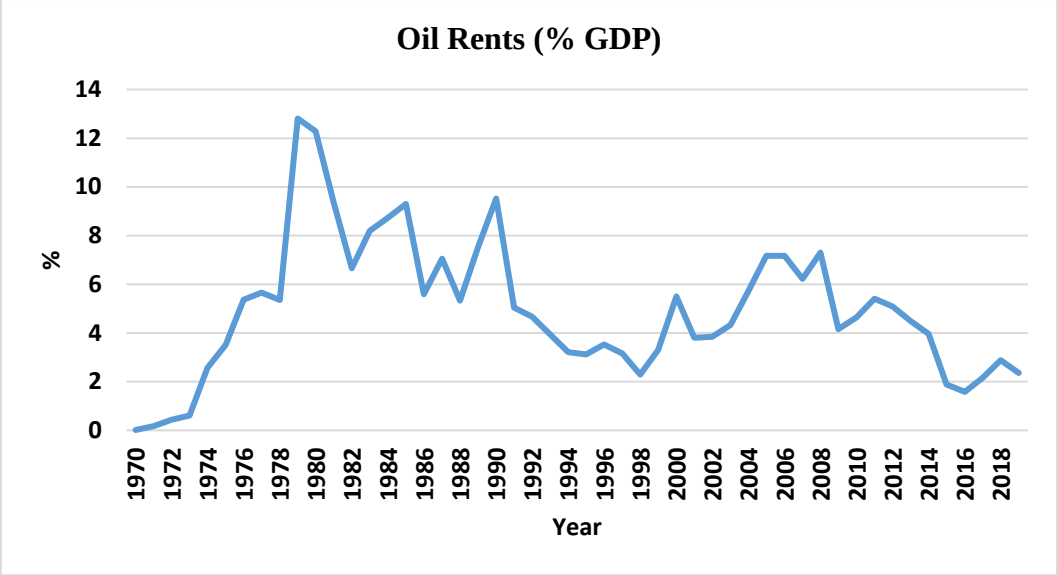


Figure 2.12 Oil Rent (% GDP)
Source: World Bank (2020)

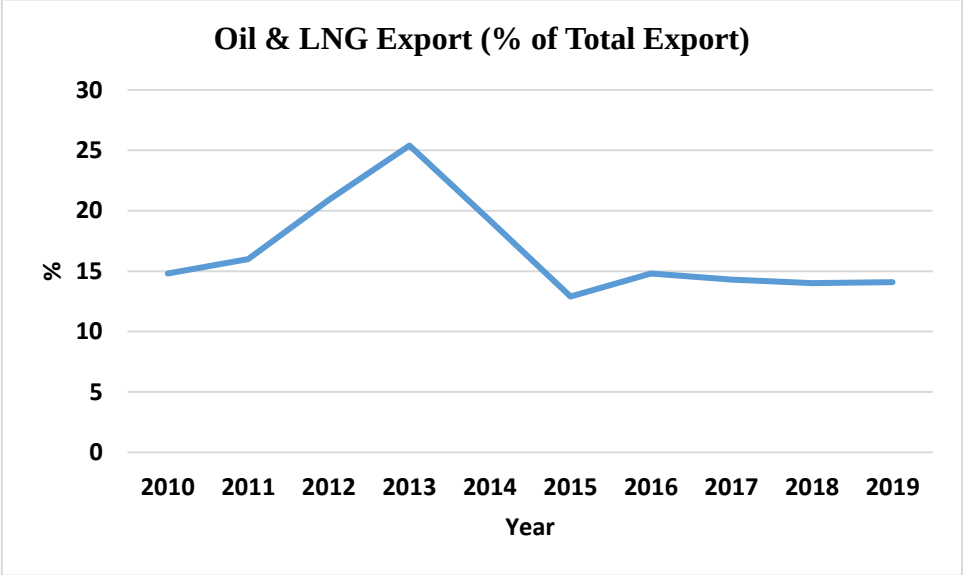


Figure 2.13 Oil and LNG Export (% Total Export)
Source: Department of Statistics Malaysia (2010a; 2012; 2013; 2014; 2015; 2016a; 2017a; 2018; 2019a; 2020a)

CHAPTER 3
LITERATURE REVIEW

3.1 Introduction

This chapter begins with an overview of the literature regarding the natural resource curse in Section 3.2. In Section 3.3, the mechanisms that link oil rent dependence with poor economic performance are discussed. The underpinning theory of this research, which is Dutch disease theory, will be explained in Section 3.4. Furthermore, financial development is discussed in Section 3.5. The existing literature regarding the financial development in oil-abundant countries is discussed in Section 3.6. Section 3.7 and Section 3.8 discuss government intervention as a whole and government interventions in oil-abundant countries. Since the current research subject is in Malaysia, past research conducted in this country is also discussed in Section 3.9, followed by the research gap in Section 3.10. The hypothesis development and chapter summary are discussed in Section 3.11 and Section 3.12, respectively.

3.2 Natural Resource Curse

Research in the field of natural resources-economic growth nexus had emerged in the last century and the major finding was natural resource dependence negatively impacts economic growth. More specifically, there are several studies which found impressive evidence that proved the existence of a slower economic growth rate in resource-abundant countries during the last few decades (Nankani 1979; Auty and Gelb 1986; Sachs and Warner 1995; Mikesell 1997). This idea has since been rapidly adopted in a range of fields, whether under the name of natural resource curse or paradox of plenty. The term "natural resource curse", was firstly mentioned by Auty (1993) and was used to describe slower economic growth in resource-abundant countries due to overdependence on natural resources (Sandbu 2006; Brückner 2010; Carmignani and Avom 2010; Rehner, Baeza, and Barton 2014; Shao and Yang 2014; Wang et al. 2019). The first empirical research which proved the existence of natural resource curse was conducted by Sachs and Warner (1995). In that research, the authors proved the negative relationship between natural resources and economic growth. Following their studies, many researches had been conducted and had proven the inverse relationship between natural resources and economic growth. For instance, Atkinson and Hamilton (2003) further confirmed the existence of the natural resource curse after analyzing data from 1980 to 1995 for 91 countries. Based on the authors, the negative relationship between natural resources and economic growth actually reflects the failure of governments in managing the windfall of resources rent sustainably. It was also found that only countries with a low or negative level of genuine savings suffered from natural resource curse. Gylfason and Zoega (2006) conducted research to study the impact of natural resource dependence. Their results showed that in addition to economic growth, natural resource dependence also adversely impacts education level and investment. This is because, on one hand, overdependence on natural resources will weaken the incentives for human capital accumulation which consequently impacts the education level within the country negatively; on the other hand, the mechanisms of natural resource curse such as Dutch disease, rent-seeking and neglect of the education, reduce the

investment in the resource-dependent countries because the resources rent tend to be allocated into the unproductive investments instead of productive activities.

In addition to proving the negative correlation between natural resource dependence and economic growth, Brückner (2010) also claimed that political mechanisms like corruption are the main causes of natural resource curse in a country. Besides, it was also suggested that natural resource export in US$ over PPP GDP is a better indicator for natural resource dependence as compared to the ratio of natural resource export to GNP, as the latter might understate the relationship between natural resource dependence and economic growth due to the failure in adjusting for the difference in the prices of non-tradable goods across the countries. Cockx and Francken (2016) studied the impacts of natural resources and government prioritization of education empirically through a panel data analysis. The authors concluded that natural resource dependence negatively impacts the spending on public education, indicating the existence of natural resource curse in those sample countries. Based on Gylfason (2001), the natural resources sector is a low-skilled intensive industry. Therefore, when a resource-abundant country is overdependent on natural resources, it might neglect the importance of education in stimulating sustainable economic growth due to the enormous amount of non-wage income contributed by the resources sector. As a result, the government might allocate an inadequate amount of resource rent to the investment in education. Moreover, Guan et al. (2020) also studied China and employed data covering 1971 to 2017. In doing so, the authors concluded that instead of promoting financial development, natural resource rent negatively impacts financial development, which in turn, proved the existence of natural resource curse. In fact, overdependence on natural resources was claimed to be able to shift the factors of production away from the manufacturing sector, and consequently dampens the financial development within a country because the adverse impacts of natural resource dependence on financial development are linked with the contraction of tradable sectors. Besides, the dampening effect of natural resources on financial development also arises in countries with a low level of institutional quality, a high level of corruption and bad governance (Wei et al. 2020).

Indeed, the impacts of natural resources on a country's economy is still inconclusive. While some researchers believed that natural resource adversely impacts economic growth, some found that natural resources actually stimulate economic growth rather than result in an economic slowdown, which cast doubt on the existence of natural resource curse (Brunnschweiler 2008; Atil et al. 2020; Dogan, Altinoz, and Tzeremes 2020; Wei et al. 2020). For instance, Yıldırım et al. (2020) selected 16 countries as their case studies and conducted a panel data analysis. In that research, the authors found that although natural resources do not have any impact on financial development in the short-term, it positively contributes to financial development in the long-term. Similarly, after investigating the impacts of natural resources on Indonesia's district-level income, Hilmawan and Clark (2019) claimed that natural resources in Indonesia positively contribute to the district-level income regardless of the indicator employed for natural resource dependence. Besides, Haseeb et al. (2021) also employed the time-series data from 1970 to 2018 and applied quantile-on-quantile regression. The research focused on five resource-abundant countries in Asia, namely China, Malaysia,

Indonesia, Thailand and India. In doing so, the authors found that natural resources have a positive relationship with economic growth in the first four countries while a negative impact was seen in India because the policymakers tended to establish policies that focused on capitalization of the natural resources sector. Although the empirical findings of existing research shed light on the positive impacts of natural resources, it does not necessarily mean that natural resources do not cause negative impacts. Simply put, natural resources have positive effects on economic growth, however, if a country is highly dependent on it, natural resource dependence will cause negative impacts, outweighing the positive impacts brought by the natural resource abundance (Papyrakis and Gerlagh 2004). In other words, natural resources only transform from a "blessing" into a "curse" when the country is highly dependent on them.

Among the existing studies, natural resource abundance and natural resource dependence were always used interchangeably (Erdoğan, Yıldırım, and Gedikli 2020; Majumder, Raghavan, and Vespignani 2020). However, both are different concepts. If natural resource abundance was used instead of natural resource dependence, the findings of the research might overturn the hypothesis of the natural resource curse because there is a positive relationship between natural resource abundance and economic growth (Lashitew and Werker 2020). More specifically, natural resource abundance refers to the amount of natural resources that a country is endowed with and can be used to develop society and economy. In contrast, natural resource dependence was explained as the degree in which a country's economy relies on its natural resources (Badeeb, Lean, and Clark 2017; Cheng, Li, and Liu 2020). Furthermore, unlike natural resource abundance, which positively contributes to economic growth, natural resource dependence causes negative effects on economic growth (Wu, Li, and Li 2018). The difference between natural resource abundance and dependence can be reflected by the indicator. Based on Ding and Field (2005), the proxy for natural resource abundance is natural resource capital per capita, whereas the percentage of natural resources capital in total capital can be used as the proxy for natural resource dependence. On the other hand, Shahbaz et al. (2019) argued that natural resource rent is the proxy for natural resource abundance, whereas, for natural resource dependence, the proxy will be the share of natural resource rent in GDP.

Indeed, many studies had proven the existence of natural resource curse in certain countries. For example, the time series data from 1970 to 2018 was applied by Anser et al. (2020) to study the Kingdom of Saudi Arabia. In doing so, the existence of natural resource curse was proven empirically as natural gas rent is negatively associated with the country's economic growth. However, it is worth mentioning that both oil and forest are considered a "resource blessing" for the country due to their positive impacts on the country's economic growth. Even though the results of the research supported the idea of resource blessing, it is important to note that forest is categorized as diffuse natural resources. Based on existing literature, natural resource curse only occurs when the country is overdependent on point-source natural resources like oil and natural gas whereas diffuse natural resources will not result in natural resource curse (Bulte, Damania, and Deacon 2005). Guan et al. (2020) selected China as their case study and employed data from 1971 to 2017. By applying several econometric techniques, the authors concluded that China is suffering from natural resource curse because instead of exhibiting positive impacts, natural resources adversely affect the financial development of the country.

The reasons behind this might be due to the failure to achieve resource rent utilization and the increase in natural resource dependence, which can be reflected by the increase in the export of natural resources and the expansion of the natural resources sector that resulted in a low level of investments in the manufacturing sector. In addition, other studies also empirically proved that China is suffering from natural resource curse (Wang et al. 2019; Cheng, Li, and Liu 2020; Xue et al. 2020; Rongwei and Xiaoying 2020). In contrast, Gallego, Maldonado, and Trujillo (2020) situated their studies in Colombia and argued that although the government had employed several policies in order to fully utilize the resources rent, the policies were not completely perfect. This is because part of the resources rent was used inappropriately by some mayors and governors, which consequently caused the negative impacts of natural resources on the employment of the services sector. Although this study explored whether institutional reform can mitigate the natural resource curse, attention was paid to political mechanisms while other economic mechanisms, especially Dutch disease, is ignored.

In some studies, instead of focusing on a single country, several countries were selected as case studies. For example, Marques and Pires (2019) selected 25 resource-abundant countries as their case studies. The authors employed annual data from 1993 to 2015 and applied Unrestricted Error Correction Model (UECM). In doing so, the authors concluded that the production of natural gas adversely impacts economic growth. The findings of the research also proved development failures, which were always claimed to have arisen from natural resource dependence due to an undiversified economy, failure of resource rents utilization or rent-seeking behaviour. In the research of Canh, Schinckus, and Thanh (2020), 90 countries were selected and classified into low, lower-middle, upper-middle and high-income countries. In doing so, the authors concluded that an increased economic complexity will help the country in mitigating the negative impacts of natural resource dependence because a higher economic complexity represents a higher quality production system which tends to result in more efficient activities that are less dependent on natural resources rent. Besides, it was also claimed that in lower middle-income economies, the economic complexity will promote the development of the manufacturing sector, which is conducive to economic growth by reducing the countries' dependency on natural resources. On the other hand, increased economic complexity will provide more opportunities to carry out highly innovative entrepreneurial activities in high-income countries. Li et al. (2020) also focused on N-11 countries and argued that although technological innovation and human capital development promote financial development, natural resources have a negative relationship with financial development, indicating the existence of natural resource curse. In another recent study, Dogan, Madaleno, and Altinoz (2020) studied several resource-rich countries and confirmed the existence of a negative relationship between natural resource dependence and financial development. While the existing literature mostly stated that the inflow of remittances into the resource-abundant countries will improve financial development by financing productive investments and solving the issues of credit constraints, Yechi Ma et al. (2021) obtained contradicting findings. More specifically, it was found that the inflow of remittances adversely impacted financial development as it was channeled into virtual economic sectors instead of real sectors. While many empirical studies proved the negative impacts of natural resource dependence on financial development, it is also necessary to study the moderation effects of financial

development due to its important role in stimulating economic growth (Khan et al. 2020; Sun et al. 2020; Jiang et al. 2021). In other words, a more theoretical and empirical analysis is needed to investigate the moderation role of financial development on the impacts of natural resource dependence.

For oil-abundant countries suffering from slower economic growth, the puzzling situation is known as an "oil curse", which is the same as natural resource curse, but used to describe the countries that are overdependent on oil resources (Badeeb, Lean, and Smyth 2016). Many researchers had situated their studies in oil-abundant countries, just like Satti et al. (2014) who studied Venezuela. In the research, the authors used data from 1971 to 2011 and applied ARDL bounds test. In doing so, the authors empirically proved that oil rent dependence adversely affects Venezuela's economic growth. Similarly, Damette and Seghir (2018) conducted research to study the relationship between oil rent dependence and the quality and quantity of government spending. The research selected 26 oil-abundant countries as the case studies and employed data from 1996 to 2011. In doing so, the authors found that oil rent dependence dampens country's economic growth by impeding government performance. More precisely, the inflow of oil rent into the countries will reduce the tax burden and, in this case, the citizens will not request transparency and accountability. In addition to examining the relationship between oil rent dependence and economic growth, the research of Majumder, Raghavan, and Vespignani (2020) studied the moderation effect of trade openness on this relationship. The authors used panel data from 1980 to 2017 and selected 95 countries as the case studies. In doing so, they concluded that trade openness is able to reduce the adverse effects of oil rent dependence on economic growth. Although these existing studies functioned well during the investigation of oil rent dependence-economic growth nexus, the impacts of natural resource dependence on the manufacturing sector has been ignored. The understanding of the natural resource dependence-economic growth nexus is no longer enough for countries to achieve sustainable economic growth. Additional empirical research should be conducted to understand the impacts of natural resource dependence, especially oil rent dependence, on the manufacturing sector.

Indeed, there are exceptions to the natural resource curse or oil curse which had been proven by existing studies. For instance, Norway is well known as a successful oil-abundant country that achieves economic growth through the utilization of oil rent (Siegle 2005; Havro and Santiso 2011; Rahim et al. 2021). In the existing research, the achievement of Norway in its economic performance is always attributed to its well-stablished policies. Norway had established its Petroleum Tax Act that specifies the tax rate imposed on the companies in the petroleum industry. Besides, Norwegian Pension Fund Global was established in 1990 in order to guide the savings and spending of oil rent. With the purpose of stabilizing the economy, the Fund save the oil rent when the oil price are high and spend them when the prices decrease. In doing so, the government is able to protect the country from economic recession if oil prices plunge (Erling Røed Larsen 2005; Holden 2013; Ramírez-Cendrero and Wirth 2016). Another resource-abundant country, Botswana is also explained as one of the countries that escaped from natural resource curse. As a diamond-rich country, it is argued that Botswana has

succeeded in achieving economic diversification and protecting itself from the natural resource curse (Barczikay, Biedermann, and Szalai 2020).

3.3 Mechanisms of Oil Curse

Oil rent dependence does not dampen the economic growth itself. It is connected by different mechanisms. Based on Gylfason (2001), there are four channels that transform the oil resources from a blessing to a curse, which are Dutch disease, rent-seeking, human capital and neglect of saving, investment and physical capital. On the other hand, van der Ploeg and Poelhekke (2009b) argued that the volatility of commodity prices is the main reason that transforms natural resources from a blessing to a curse. In other words, the reason that oil-abundant countries suffered from the oil curse is mainly due to the volatility of oil prices that generates economic uncertainty. Siakwah (2017) also situated a study in Ghana and claimed that Dutch disease, failure of the manufacturing and agriculture sectors, conflicts, government debt and environmental degradation are the mechanisms of the oil curse. After a close examination of existing research, Wu, Li, and Li (2018) classified the mechanisms of the oil curse into three types. The first one is Dutch disease, which will be discussed in detail in the next section. Another type of transmission mechanism is the crowding-out effect, which refers to the situation in which the sudden inflow of an enormous amount of resource rent will dampen economic growth by hampering the factors that are conducive to economic growth such as human capital development and investments. The third mechanism is the institution weakening effect, which can be defined as the political issues that arise from natural resource dependence, such as rent-seeking and corruption. Dwumfour and Ntow-Gyamfi (2018) mentioned that although there are several mechanisms for the oil curse such as rent-seeking, neglect of education and weak institutional framework, Dutch disease is the main mechanism that is widely-discussed in the literature. This view is also supported by the existing studies, whereby Dutch disease was always explained as the most prominent mechanism for the oil curse (Usui 1997; Badeeb, Lean, and Clark 2017; Biresselioglu et al. 2019; Marques and Pires 2019; Solarin 2020).

3.4 Dutch Disease Theory

As the most prominent mechanism for the oil curse, Dutch disease theory is constructed from the Salter-Swan-Corden-Dornbusch model, which is also known as dependent economy model or Australian model (Javaid 2011; Metaxas and Weber 2016; Taguchi and Khinsamone 2018; Bjørnland, Thorsrud, and Torvik 2019; Barczikay, Biedermann, and Szalai 2020; Alssadek and Benhin 2021). This model provides the theoretical foundation to examine the impacts of capital inflows on the exchange rate in developing countries. In this model, it was claimed that the massive inflows of capital will result in a pulling effect and a spending effect. The pulling effect occurs when the factors of production, especially labour, shift away from other economic sectors due to the capital inflows. This is because massive inflows of capital into certain economic sectors will increase the wages in those sectors and thus, induce the labour movement. Regarding the spending effect, it occurs when increase in disposable income raises the demand for goods and services. Since the prices of tradable goods are determined by the global market,

an increase in the prices of non-tradable goods will result in an exchange rate appreciation (Lartey 2007; Lartey, Mandelman, and Acosta 2012; Taguchi and Khinsamone 2018; Morales 2020).

Dutch disease theory can be defined as the situation in which the country's economy is experiencing negative impacts because of massive inflows of a foreign currency, arising from a natural resource boom (Almozaini 2017). Dutch disease theory was firstly mentioned by Corden and Neary (1982) when the manufacturing sector in Dutch, Netherlands suffered from shrinkage in the 1960s due to its overdependence on natural gas. In this research, they categorized the economy into three sectors, namely booming sector, lagging sector and non-tradable sector. The booming sector refers to the oil resources sector, whereas the lagging sector represents export-oriented economic sectors like the manufacturing sector. The non-tradable sector refers to the services sector, construction sector and retail trade. Unlike the non-tradable sector in which prices are determined by the domestic market, the prices of both the booming and lagging sectors are determined by the world market. Besides, labour is assumed to be highly mobile among these three sectors. Based on the authors, during an oil resource boom, which might be caused by improvement in technology, the discovery of oil resources or an increase in world prices, massive inflows of capital will result in both the pulling effect and spending effect.

Regarding the pulling effect, it occurs when an oil resource boom increases the production and profitability of the booming sector. This will create excess demand for factors of production, especially labour, as the booming oil resources sector is a labour-intensive industry. Since the supply of labour will remain unchanged, the excess demand from the booming sector will be met by offering higher wages and inducing the labour to shift from the non-tradable and lagging sectors to the booming sector. While increases in disposable income will raise the demand for the products of the non-tradable sector, the movement of labour out of the sector will reduce the supply of non-tradable goods. Therefore, as a result of increases in demand and reduction in supply, the prices of non-tradable goods will increase and appreciate the exchange rate. While the products prices of the lagging sector are determined by the demand in the global market, the excess demand for non-tradable products can be met by an increase in wages to hire more employees. This will further induce the movement of labour from the lagging sector to the non-tradable sector. As a consequence, the production of the lagging sectors including, the manufacturing sector, will reduce due to lower employment and result in contraction of the sector. In other words, the pulling effect will result in direct deindustrialization (Corden 1984; Oomes and Kalcheva 2011; Ge and Kinnucan 2017; Hien et al. 2020; Shao et al. 2020).

As for the spending effect, it occurs when disposable income increases due to an oil resource boom, and the income is spent domestically by companies or those who received the higher income. A higher income for companies and workers also indicates that more taxes will be available for the government and thus, government spending will also increase. As a result of the increase in spending, the aggregate demand for goods and services will unquestionably increase. The increase in prices of non-tradable goods will result in inflation and appreciation of the exchange rate. If the country uses a floating exchange rate, an enormous inflow of foreign

capital into the booming sector will increase the supply of foreign currency and in consequence, appreciate both the nominal and real exchange rates. In contrast, if a fixed exchange rate regime is employed in the country, when the foreign currency is converted into domestic currency, it will increase both money supply and demand for goods and services in the domestic economy. Consequently, it will result in an appreciation of the real exchange rate which refers to the amount of foreign currency that is needed to purchase goods in the domestic country. Due to the appreciation of the exchange rate, the competitiveness of lagging sectors, such as the manufacturing sector, will reduce as they become more expensive in the international market. Thus, the spending effect was also claimed to result in indirect deindustrialization (Corden 2012; Frankel 2012; Gasmi and Laourari 2018; Ge and Kinnucan 2017; Smith 2019; Ebrahimzadeh 2020).

In most literature, it was noticeable that Dutch disease is always viewed as the main mechanism for oil rent dependence that dampens economic growth by impeding the manufacturing sector. This is because while the spending effect will reduce the competitiveness of the manufacturing sector in the global market through inflation and exchange rate appreciation, the pulling effect also shifts the factors of production away from the manufacturing sector and results in deindustrialization. Since the spillover effects are stronger in the manufacturing sector, the shrinkage of the sector will reduce the technology spillovers effects on the whole economy. Besides, learning-by-doing which mostly takes place in the manufacturing sector will also reduce as labour will shift away from the manufacturing sector. Consequently, other economic sectors and the whole economy are unable to enjoy the benefits of productivity improvement as the spillover effects and learning-by-doing in the manufacturing sector are impeded. Indeed, Dutch disease also exhibits crowding-out effects on other non-resource sectors. However, the shrinkage of the manufacturing sector has greater adverse effects on economic growth because it has stronger positive externalities that are conducive to economic growth (Mikesell 1997; Asekunowo and Olaiya 2012; Gerelmaa and Kotani 2016).

3.5 Financial Development

Financial development refers to the improvement in terms of the quality, quantity and efficiency of financial services (Calderón and Liu 2003; Badeeb and Lean 2017). The importance of financial development was firstly examined by Schumpeter (1911) who emphasized that financial development is crucial in stimulating sustainable economic growth. This is because a well-established financial sector will effectively allocate scarce resources to the most productive economic activities. Theoretically, when financial sector is highly developed, both the efficiency and size of the financial sector are improved, and the economic structure will change. Financial development aims at transforming imperfect financial markets into well-developed markets. During the process of financial development, the outlines of transitional economies will be conducted to alter the economic management style. In doing so, bank institutions will become more effective in accomplishing their profit objectives by allocating financial resources to the private sector (Ying Ma and Jalil 2008).

Over the years, many studies had been conducted and recognized the nexus between financial development and economic growth. For instance, Ghali (1999) situated the study in Tunisia and concluded that there is a long-run positive relationship between financial development and the real GDP per capita, which clearly indicates the role of financial development as the key engine for economic growth because it is able to ameliorate savings rate, promote technological innovation and thus, the economic growth. Mollaahmetoğlu and Akcąli (2019) also confirmed the positive relationship between financial development and economic growth after they used 15 countries as the sample and employed data from 2003 to 2016. The reason behind this is that a highly developed financial sector will not only trigger savings mobilization, but also improve investment efficiency, consequently promoting sustainable economic growth by improving the productivity of real economic sectors. In contrast to this research, Aluko and Ibrahim (2020) incorporated institutions into the relationship between financial development and economic growth. Based on the authors, if the International Country Risk Guide is used to measure the institutions, financial development will only promote economic growth when the institutions exceed certain thresholds. However, if institutions are measured by the proxy from World Governance Indicators, the positive effects of financial development appear to be weaker in countries with higher institutions level because the high-quality institutions will cause financial development to produce lower impacts on economic growth.

It is also worth noting that there are several channels through which financial development stimulated economic growth. Based on Ehigiamusoe and Samsurijan (2020), financial development promotes economic growth through total factor productivity (TFP) and capital accumulation. The TFP was claimed to have a crucial role in economic growth stimulation and prediction. The values of TFP represents the country's efficiency in utilizing the inputs. In other words, when a country is having a high TFP, the country is able to use the inputs efficiently during the production process (Şeker and Saliola 2018). On the other hand, capital accumulation concentrates on the ability of the financial sector in savings mobilization. When the savings are mobilized, the collected financial resources will be allocated to productive investments. In this case, TFP which emphasizes the importance of financial innovation will reduce the issues of information asymmetry, and thus, improves the allocation of scarce resources and allow financial institutions to monitor the investment projects more effectively. As a result, both the private savings rate and marginal productivity of capital will increase. Indeed, financial development not only focuses on investing in productive projects, but also collects and processes information for investors to evaluate the projects. For the purpose of risk-sharing, a well-developed financial sector also induces investors to invest in high-risk and productive technologies. In doing so, the country's capital accumulation will improve and result in a higher economic growth rate.

Furthermore, it was also claimed that financial development can affect economic growth through two other channels, the quantitative and qualitative channels. These two channels are actually similar to the total factor productivity and capital accumulation channels mentioned above. In terms of the quantitative channel, it claims that financial development allows the financial sector to provide more financial services, such as liquidity services, and to perform its functions like savings mobilization more efficiently. As a result, more investments will be

made. However, the quantitative channel itself is insufficient to stimulate sustainable economic growth. Sustainable economic growth will only be achieved when the country invests in productive investment projects. Therefore, in order to ensure that scarce financial resources are allocated efficiently, it is necessary to achieve a high level of financial development. This is because one of the main roles of financial development is achieving optimal resource allocation. When the financial system is highly developed, the ability of the financial sector to collect and analyze projects information will improve and it will allow the financial sector to channel the financial resources into productive investments. This is known as the qualitative channel. Overall, the combination of these two channels will help promote economic growth. Financial development will pool funds and make investments through the quantitative channel while the quality of resources allocation is assured by the qualitative channel (Badeeb, Lean, and Smyth 2016).

Obviously, research proved the importance of financial development in economic growth. Based on the existing research, the nexus between financial development and economic growth can be categorized into four categories, which are the supply-leading hypothesis, demand-leading hypothesis, feedback hypothesis and neutral hypothesis. The supply-leading hypothesis is also known as the "finance-led growth hypothesis". It was firstly mentioned by McKinnon (1973) and Shaw (1973) and it postulates that financial development is able to promote economic growth by improving the capital accumulation efficiency that consequently increases the marginal productivity of capital and savings rate, which in turn, stimulate the investment in the country's economy (Manu et al. 2020). In addition to this hypothesis, a contradicting view was proposed by Robinson (1952), who claimed that the causality relationship between financial development and economic growth is flowing from economic growth to financial development. More specifically, this hypothesis claimed that economic growth stimulates financial development by increasing the demand for financial services, which consequently triggers the expansion of the financial sector. Other than these, another hypothesis regarding the nexus between financial development and economic growth was pioneered by Patrick (1966), who argued that the supply-leading hypothesis occurs in the early stage of economic development, whereas the demand-following hypothesis occurs at a later stage. This hypothesis is known as the feedback hypothesis, which can be considered the combination of the supply-leading hypothesis and the demand-following hypothesis.

Unlike the above hypotheses, the neutrality hypothesis claimed that there is no relationship between financial development and economic growth. This hypothesis postulates that the role of financial development in economic growth is overstressed (Lucas 1988; Pradhan et al. 2016; Al Fathan and Arundina 2019). Similar to other hypotheses, the presence of the neutrality hypothesis had been proven empirically by several existing research, such as Menyah, Nazlioglu, and Wolde-Rufael (2014) and Ginevičius et al. (2019). In comparison to the first three hypotheses which indicate the positive relationship between financial development and economic growth, another hypothesis, the finance-hurt growth hypothesis postulates that there is a negative relationship between financial development and economic growth. Although the finance-hurt growth hypothesis is not widely-discussed in the literature, some studies had found support for this hypothesis (Ayadi et al. 2015; Ahmed 2016; Wen et al. 2021).

3.6 Financial Development and Oil Curse

Among the existing research, it was found that resource-abundant countries, especially oil-rich countries, that are suffering from the natural resource curse tend to have a low level of financial development, while other resource-rich countries that succeed in escaping natural resource curse have a high level of financial development (Rongwei and Xiaoying 2020; Guan et al. 2020; Dogan, Altinoz, and Tzeremes 2020). This is definitely not a coincidence. In fact, when an oil-abundant country achieves a high level of financial development, the well-developed financial sector will not only offset the negative impacts of oil rent dependence and help the country achieve economic diversification, but also mitigate the volatility of the exchange rate arising from the fluctuations in oil prices (Beck 2012). Besides, van der Ploeg and Poelhekke (2009) also claimed that a low level of financial development will increase the country's vulnerability to oil prices shock. Nonetheless, if the country is able to achieve a high level of financial development, the well-developed financial sector will help the country in mitigating the negative effects arising from the fluctuations in oil prices. In other words, a high level of financial development is one of the reasons that some oil-abundant countries can succeed in escaping the oil curse and achieving sustainable economic growth. Following the research of van der Ploeg and Poelhekke (2009), there are also some researchers who found that financial development has moderation effects on the negative impacts of oil rent dependence (Moradbeigi and Law 2016; 2017).

In the literature on financial development, it had been claimed that financial development is able to transform the "oil curse" into an "oil blessing" through the stimulation of skills and knowledge-based development which consequently promote the effective utilization of scarce oil resources (Asif et al. 2020). Besides, a high level of financial development always accompanied by strong financial institutions that ensure that there are strong institutions for the management of oil resources to avoid overexploitation of scarce resources, thereby assuring that there are sufficient resources left for future generations (Asif et al. 2020). Furthermore, a well-developed financial system also allocates oil rent into more productive economic sectors especially the manufacturing sector. This is because one of the main functions of the financial sector is achieving optimal resources allocation. In this instance, oil resources tend to be a "blessing" instead of a "curse" for the country's economy. Moreover, market frictions will be eliminated as the financial sector develops, which in turn, reduces the costs of transactions and acquiring information. As a result, the issue of asymmetric information will be mitigated and the windfall of oil rent can be used an the additional source of funds to invest in more productive economic activities (Jalili et al. 2019; Erdoğan, Yıldırım, and Gedikli 2020).

In the studies of Moradbeigi and Law (2016), 63 oil-producing countries are used as the sample and data from 2000 to 2010 was employed. In doing so, the authors proved that although the volatility of oil prices adversely affects economic growth, financial development is able to mitigate the negative impacts arising from the fluctuations of oil prices. Another research by Moradbeigi and Law (2017) also studied the moderation effects of financial development on the impacts of oil rent dependence as it was claimed to be able to adversely affect economic growth through different channels, such as Dutch disease and crowding-out effect. The findings

of this study empirically proved that financial development is able to mitigate the negative effects of oil rent dependence by channeling the windfall of oil rent into productive investments. Along with that research, Rongwei and Xiaoying (2020) also conducted research to study the panel data for China from 2005 to 2018. In doing so, the authors not only prove the existence of the oil curse in China, but also proved the ability of financial development in mitigating the adverse effects of the volatility of oil prices and the "crowding-effect" of oil rent dependence. The authors also concluded that financial development offsets the negative effects of the oil curse by pooling fund and investing in productive investments. Although these studies had explored the moderation effects of financial development, attention was only paid to the oil rent dependence-economic growth nexus. The moderation role of financial development on the impacts of oil rent dependence on the manufacturing sector was ignored.

3.7 Government Intervention

Based on the Cambridge dictionary, government interventions can be defined as the actions taken by the government in order to influence the operations of financial markets or certain industries. Although it was claimed that a capable government plays a crucial role in promoting economic growth, the ideal role played by the government in a country's economy has been receiving considerable debate over the years. On one hand, the free market neo-classical theory postulates that government interventions will result in inefficient resources allocation and corruption which consequently lead to market distortions and deadweight loss; on the other hand, the state-centered theory emphasizes the strategic role played by the government in harnessing the market forces for the country's economic interest (Wang 2018). It is important to note that although the proponents of the free-market neo-classical theory emphasized the adverse impacts of government interventions, some studies proved that government interventions will only result in slower economic growth when they exceed certain thresholds. In other words, the country's economic growth will only be slowing down in the presence of excessive government interventions, while government interventions below or have reached their optimum level will actually promote economic growth (Chen and Lee 2005; Altunc and Aydın 2013; Hajamini and Falahi 2018; Wu, Li, and Li 2018). According to the literature, excessive government interventions will lead to adverse impacts on economic growth mainly because of the presence of inefficient government operations, excessive burdens imposed by regulatory processes on country's economy and the fiscal policies that tend to result in economic distortions and reduce the productivity in economic system (Ram 1986).

Based on the literature, the government is able to intervene in the country's economy through different types of mechanisms, such as regulation, taxation and public finance expenditure. These mechanisms can be classified into directive intervention and facilitative interventions (Luedde-Neurath 1988). A directive intervention refers to the action taken by the government that is aimed at achieving its objective by intervening in the investment and production of certain industries. More specifically, in directive interventions, the government will tend to allocate more capital to certain industries or products that are considered important for economic growth in order to pursue the national economic interest. Funding for R&D tax incentives, subsidies and research facilities are considered examples of directive interventions

(Wang 2018). On the other hand, a facilitative intervention refers to the action taken by the government that is aimed at creating a favourable environment for private companies by offering public goods. More precisely, rather than allocating more financial resources to certain industries, a facilitative government will tend to build a positive culture and implement the policies to overcome the obstacles of private investments, which are more efficient than public investments. Setting up education infrastructure, offering professional services, implementing well-developed regulations and providing guidelines are classified as facilitative interventions (Wang 2018; Song et al. 2019; Hou and Li 2020). It is important to note that although there are different mechanisms of government interventions, public finance expenditure, which is categorized as a directive intervention, is considered the most common mechanism. This is because the main function of public finance expenditure is to overcome the issues of inefficient resources allocation (Wu, Li, and Li 2018).

While government spending is able to stimulate economic growth through effective resources allocation, it was also argued that the efficiency of government expenditure depends on institutional quality and macroeconomic factors (Olaoye et al. 2020). More specifically, while the government can attain sustainable economic growth by allocating scarce financial resources to productive investments, it is impossible to achieve this objective if the budget institutions are not well-developed. In other words, government spending will only be effective in the presence of high institutional quality (World Bank 2003). In fact, in developing countries where weak institutions are present, it will not only result in a lack of transparency, corruption and bureaucracy, but also lead to asymmetric information as adequate information regarding government fiscal operations will not be provided to citizens (Olaoye et al. 2020). In this instance, instead of utilizing the government fund in investing in productive investments, the government funds might be abused by political elites for pursuing their own interest. As mentioned above, whether government expenditure will lead to sustainable economic growth also depends on macroeconomic factors. This is mainly because the success of government fiscal operations requires the presence of macroeconomic stability (Karimi et al. 2016). More precisely, although it was claimed that macroeconomic stability is an essential factor in achieving sustainable economic growth, it is also important to bear in mind that macroeconomic stability does not lead to a high economic growth rate itself. Instead, the relationship between macroeconomic stability and economic growth is linked by several mechanisms and one of them is fiscal expenditure (Ames 2001). This is because when a country enjoys macroeconomic stability and high quality of institutions, sustainable economic growth will be achieved as the government will tend to utilize the government funds in investing productive investments. Similarly, when a country is suffering from an unfavourable economic shock which in turn result in economic instability, it will consequently impede the positive relationship between government expenditure and economic growth (Olaoye et al. 2020).

Indeed, many studies had been conducted based on the relationship between government intervention and economic growth. For instance, in the research of Chen et al. (2011), the authors examined the nexus between government interventions and investment efficiency in the context of China. In this study, the samples were categorized into state-owned companies (SOEs) and non-SOEs, while the government intervention was measured by determining

whether the company was politically connected with the government. In doing so, the authors proved that political connections only dampen the investment efficiency of SOEs as the firms are mainly under the control of the government. The authors also further concluded that the adverse impacts of government interventions on investment efficiency are mainly transmitted through the distortions in the company's investment behaviour. In another recent research, Chang et al. (2021) also conducted research based on the impacts of government interventions on the establishment of zombie firms, which was claimed to be able to dampen economic growth through inefficient resources allocation. The empirical results revealed that the higher the level of government interventions, the higher the chance that the companies become zombie firms.

As discussed earlier, while the research indicated the adverse impacts of government interventions on economic growth, there are also a few studies that showed that government interventions below certain levels will promote economic growth. According to Asimakopoulos and Karavias (2016), the optimum level for government spending is around 18.04%. In contrast, the research conducted by Hajamini and Falahi (2018) focused on 14 European countries for the period of 1995-2014 and found that the optimum level of final consumption expenditure is 16.6%. This result is approximately equal to the empirical findings of Chiou-Wei, Zhu, and Kuo (2010), which claimed that the optimum level of government spending in Taiwan is around 16%. In addition to these studies, Nouira and Kouni (2021) studied the Middle East and North Africa (MENA) countries and other developing countries. The annual data from 1988 to 2016 was employed in the study, and it was analysed by applying the cross-sectionally ARDL approach. In doing so, the results revealed that the optimum level for government expenditure ranges from 20% to 30% for the MENA countries, whereas for the developing countries, the optimum level is 10% to 20%.

3.8 Government Intervention and Oil Curse

Along with financial development, government intervention was also claimed to have moderation effects on the impact of oil rent dependence. This can be attributed to the authority and ownership of the government over the oil resources. For instance, although there are several companies in the petroleum industry, Malaysia's government has exclusive ownership over the country's oil resources (U.S. Energy Information Administration 2021). In other words, the windfall of oil rent is under the management of the government. Based on the literature, it was noticeable that many studies provided recommendations based on how government interventions can protect the country from the oil curse or help achieve sustainable economic growth through oil rent utilization.

In the research of Bjorvatn, Farzanegan, and Schneider (2012), the authors concluded that although most oil-abundant countries have weak institutions, economic growth will be enhanced instead of suffering from the oil curse if they have a strong government. On the other hand, Holden (2013) situated the study in Norway, an exceptional country to the oil curse that has achieved economic growth. Based on the research, the main reasons that Norway can evade the oil curse are the establishment of the fiscal policy and Government Pension Fund, which

are aimed at fully utilize the oil resources. In addition, Ramírez-Cendrero and Wirth (2016) also claimed that there are four factors that helped Norway escape from the oil curse. Among these factors, three of them are related to government interventions. The first reason is the utilization of oil and natural gas resources by the Norwegian government in promoting technological innovations and improving market accessibility. Another reason is the establishment of strong regulations and a diversified economic structure. Lastly, the well-established policies aiming at dealing with the usage of oil rent and ensuring that it complements macroeconomic policies. Indeed, the mitigation effects of government interventions on the oil curse are not fully guaranteed. In Bolivia, around 50% of total exports are contributed by natural resources, clearly indicating that the country is overdependent on natural resources and suffering from the natural resource curse. Although the government had implemented several policies, it was claimed that the policies were unable to combat the natural resource curse (Ramírez Cendrero 2014).

Along with these studies, Hamdi and Sbia (2013) examined the nexus between oil revenue, government spending and economic growth in the context of Bahrain. In the study, data from 1960 to2010 was employed, and it was analyzed by conducting a multivariate cointegration analysis. The results revealed that oil revenue is the main source of economic growth, and the impacts are transmitted through government spending. On the other hand, 40 developing countries were selected as the sample and annual data from 1990 to 2012 was employed in the research of Kim and Lin (2017) to examine the relationship between natural resources and economic growth, as well as to determine whether the impacts are more severe in countries with weaker institutional quality. It was found that natural resources have adverse impacts on economic growth, but the impacts are different in the extent of government interventions. The authors argued that natural resources are actually having positive impacts on economic growth without excessive government interventions. The findings were further supported by Wu, Li, and Li (2018), who investigated the transmission channels of the natural resource curse. In this study, 30 China provinces were selected as the sample, while data from 1997 to 2015 was employed. Based on the empirical results, a high level of government interventions will result in an institutional weakening effect, which is one of the mechanisms for the natural resource curse and thereby, dampens economic growth.

3.9 Oil Curse in Malaysia

Over the years, many studies had been conducted on the topic of the oil curse, which is similar to the natural resource curse but used to describe a country that is highly-dependent on oil and natural gas resources (Badeeb, Lean, and Smyth 2016). In the literature, Malaysia was always selected as one of the samples. However, unlike other oil-abundant countries, Malaysia had received considerable debate on whether it had succeeded in escaping from the oil curse. In Sachs and Warner (2001), one of the popular studies on the natural resource curse, the authors found that although there are many resource-rich countries suffering from the natural resource curse, Malaysia is one of the exceptions because it had experienced rapid growth during the study period. Another study, by Gylfason (2001) also concluded that Malaysia succeeded in escaping from the oil curse through economic diversification and industrialization. Based on

Rosser (2006), the inflows of foreign direct investments, opportunities for exports and investments from Japan were the main reasons that protected Malaysia from the oil curse. On the other hand, Coxhead (2007) claimed that although Malaysia is highly dependent on oil and natural gas resources, the average economic growth rate from 1975 to 2001 was higher than the mean of the samples, indicating that it did not suffer from the oil curse. Also, Auty (2007) categorized Malaysia as one of the countries that had escaped from the oil curse. In addition, there were other studies that supported the idea that Malaysia had succeeded in escaping from the oil curse (Stevens 2005; Mehlum, Moene, and Torvik 2006).

In contrast, Doraisami (2015) argued that the windfall of oil rent had caused Malaysia's government to invest in unproductive investments and to buy support in order to stay in power. Therefore, the study cast doubt on whether Malaysia had succeeded in escaping the oil curse. Following Doraisami (2015), Badeeb, Lean, and Smyth (2016) also situated their studies in Malaysia and argued that Malaysia did not succeed in escaping from the oil curse because Malaysia is unable to fund productive investments due to an overdependence on oil resources. The authors also argued that instead of qualitative channels, the oil curse in Malaysia affects economic growth through quantitative channels because of the high dependence on oil resources. Another recent research by Badeeb, Szulczyk, and Lean (2021) claimed that the oil curse exists in Malaysia because the country's manufacturing sector is dampened by oil rent dependence through Dutch disease.

3.10 Research Gap

Based on Twelfth Malaysia Plan, 2021-2025, Malaysia's government is going to concentrate on the development of the manufacturing sector to build sustainable economic growth for the country as Malaysia plans to transform itself into a knowledge-based and high-valued economy (Economic Planning Unit 2021). However, according to Rasiah (2011) and Asyraf et al. (2019), Malaysia has been experiencing premature deindustrialization, which can be defined as the reduction in the competitiveness of the manufacturing sector from 2000 onwards. In 2009, the Malaysian government also expressed their worry that the country was caught in a middle-income trap due to the failure to transform into a high value-added manufacturing sector. Based on United Nations Educational Scientific and Cultural and Organization (2015), one of the ways for Malaysia to escape the middle-income trap and achieve a high value-added manufacturing sector is to reduce the level of dependency on oil and natural gas resources. The reason behind this is that when a country is overreliant on oil and natural gas resources, the oil rent dependence impedes the manufacturing sector through Dutch disease (Zhan et al. 2021; Yang et al. 2021). In other words, it is necessary to investigate the impacts of oil rent dependence on the production and export of the manufacturing sector in Malaysia.

Nonetheless, over the years, although many attempts had been made in order to study the impacts of oil rent dependence, none of them had specifically focused on the impacts of oil rent dependence on the production and export of the manufacturing sector in Malaysia. The studies only concentrated on the relationship between oil rent dependence and economic growth (Oluseun Olayungbo and Adediran 2017; Damette and Seghir 2018). For example,

recent research by Chang, Lin, and Lin (2021) determined the existence of Dutch disease in mineral-dependent countries by studying the symptoms of Dutch disease, such as exchange rate appreciation and movement of production factors from the manufacturing sector to resources sector. However, the study was conducted based on a cross-country analysis and to the best of our knowledge, the study focused on the likelihood of Dutch disease in the sample countries rather than how mineral dependence impacts the production and export of the manufacturing sector. In other words, the lack of previous research on the relationship between oil rent dependence and the manufacturing sector indicates the necessity to study in specific country. Hence, this research aimed at filling this gap by investigating the impacts of oil rent dependence on the production and export of Malaysia's manufacturing sector.

Moreover, although there were several studies conducted based on the moderation effect of financial development on the impacts of oil rent dependence, most only focused on the nexus between oil rent dependence and economic growth instead of a certain economic sector. Obviously, there is a gap in the existing literature, thereby highlighting a need to specifically study the moderating role of financial development on the relationship between oil rent dependence and the manufacturing sector.

Besides, there are very limited studies regarding the moderation effect of government interventions on the impacts of oil rent dependence. Most studies about the moderation effect of government interventions only focused on the relationship between natural resource dependence and economic growth, ignoring the sectoral basis discussion. Thus, it is necessary to dig deeper in order to understand the moderating role of government interventions on the relationship between oil rent dependence and the manufacturing sector. Only by doing so that the policy can be provided based on a sectoral basis.

In a nutshell, the current study has filled these gaps by specifically studying the relationship between oil rent dependence and the production and export of the manufacturing sector, along with the moderation effect of financial development and government interventions on this relationship in the context of Malaysia.

3.11 Hypothesis Development

3.11.1 Impacts of Oil Rent Dependence on Production of Manufacturing Sector

As mentioned earlier, oil curse literature claimed that oil rent dependence dampens economic growth by impeding the manufacturing sector through Dutch disease. Based on Dutch disease theory, the oil resource boom will exert crowding-out effects on the manufacturing sector by reducing the learning-by-doing spillovers and productivity of the manufacturing sector, which in turn impede economic growth (Corrocher, Lenzi, and Deshaires 2020). The term "crowding-out effects" is defined as the negative impacts that arise from the overdependence on oil resources on the factors that are conducive to economic growth (Ahmed, Mahalik, and Shahbaz 2016). Since many oil-rich countries like Norway have utilized oil rent in promoting the sustainability of economic growth, the abundance of oil resources as a matter of fact benefits the country's economy. However, based on Papyrakis and Gerlagh (2004), when oil-rich

countries are overdependent on oil resources, negative impacts will arise and outweigh positive contributions. As discussed earlier, different mechanisms link oil rent dependence to poor economic performance. Among these mechanisms, Dutch disease is considered the most prominent mechanism for the oil curse. Specifically, Dutch disease dampens the manufacturing sector through two types of effects, which are the pulling effect and the spending effect.

Under Dutch disease theory, during an oil resource boom, the inflows of foreign capital into the oil resources sector will increase the profitability of oil production, thus, increasing the demands for the factors of production in this sector. As a result, the inputs prices will increase in the domestic market. Since the oil resources sector is a labour-intensive industry, the demands for labour will also increase and motivate labour to shift from the manufacturing sector to the oil resources sector. As the prices of manufactured goods are determined in the global market, an increase in wages will force the manufacturing sector to reduce its production as it is unable to increase wages to retain the employees. Additionally, oil rent dependence also inhibits the technological innovations of the manufacturing sector by offering higher wages and inducing skilled labour to shift out of the manufacturing sector. Since innovation is important for the improvement of the production method, higher wages offered by the oil resources sector will indirectly impede the production of the manufacturing sector by dampening the technological innovation process. Although Dutch disease theory assumes that the economy is in full employment, it is argued that even if the reduction in manufacturing employment can be replaced by the labour from other economic sectors, the results of the decline in the production of the manufacturing sector will remain unchanged because the skilled labour is replaced by lower-skilled labour, which tends to have lower productivity. In addition to labour, increases in the prices of the factors of production will further reduce the production of the manufacturing sector. This is because the upper-bound prices cause the manufacturers to not to be able to afford all the factors of production required to maintain or increase the production level. Consequently, the production of the manufacturers will be forced to be reduced and result in the contraction of the sector. This process is known as the pulling effect, otherwise the direct deindustrialization (Mogotsi 2002; Brahmbhatt, Canuto, and Vostroknutova 2010; Pegg 2010; Jbir 2013; Moradbeigi and Law 2017; Gasmi and Laourari 2018; Henri 2019; Hien et al. 2020; Nejati and Bahmani 2020).

On the other hand, oil rent dependence also dampens the manufacturing sector through another effect of Dutch disease, namely the spending effect. Based on Henri (2019), during an oil resource boom, disposable income will increase and thus, raising the demands for both goods and services. As a consequence, the exchange rate will appreciate, and inflation will occur. The exchange rate appreciation not only reduces the competitiveness of the manufacturing sector in the international market, but also dampen the preference of investors to invest in manufacturing sector, which consequently prevents the manufacturing companies from adopting more advanced production technology. It is important to note that the spending effect of Dutch disease also shifts the production factors out of the manufacturing sector. This is because the oil resource boom will increase the disposable income in the economy. As a result, the demand and price of non-tradable goods will also increase. Since the prices of manufactured goods are determined by the demand from the global market, the increase in demand for non-

tradable goods can be met by offering higher prices for the factors of production, thus, shifting them out of the manufacturing sector. Besides, the increase in prices of non-tradable goods will result in the appreciation of the exchange rate. As a result of the currency appreciation, manufactured goods will become more expensive and less competitive in the global market. Due to this reason, the profitability of the manufacturing sector will reduce and the production of the manufacturing sector will be slowed down because entrepreneurs will shift the factors of production from the manufacturing sector to the oil resources sector and non-tradable sector, which are more profitable (Jbir and Zouari-Ghorbel 2011; Corden 2012; Jbir 2013).

In addition to Dutch disease, oil rent dependence also impairs the production of the manufacturing sector through the volatility of oil prices, which is another mechanism of the oil curse. The oil resource sector is considered one of the most volatile sectors due to the low elasticity of supply. In fact, oil prices are more volatile than any other mineral resource. Based on the existing literature, highly volatile oil prices will create uncertainty that impedes investments and thus, economic growth. Due to this reason, the manufacturing companies will lack funds to carry out research and development to improve the production of the manufacturing sector. Besides, the volatility of oil prices will also stimulate the volatility of the exchange rate, which tends to reduce investments in the manufacturing sector, contract the sector and therefore, reduce productivity growth (van der Ploeg and Poelhekke 2009a; Aladejare 2018; Corrocher, Lenzi, and Deshaires 2020).

Among the existing research, there are many studies that supported the argument of Dutch disease theory and the volatility of oil prices. For instance, Corden (2012) used Australia as the sample and claimed that the appreciation of the real exchange rate impedes the manufacturing sector by shifting the factors of production out of the manufacturing sector to the booming sector and non-tradable sector. Mironov and Petronevich (2015) also supported Dutch disease theory by claiming that natural resource dependence in Russia impedes the manufacturing sector through the pulling effect which shifts the factors of production away from the manufacturing sector. In addition, Ojaghlou (2019) also supported Dutch disease theory by explaining it as the negative impacts that arise from natural resource dependence and impede the production of tradable sectors, especially the manufacturing sector, by reallocating the factors of production away from those sectors. Regarding the volatility of oil prices, Guo and Kliesen (2005) empirically proved that the volatility of oil prices adversely affects the output of economic sectors. Based on the authors, the fluctuations in oil prices not only generate uncertainty that delays investments, but also induce costly reallocations of resources among the economic sectors. Another research, Aye et al. (2014) also used monthly data that ranges from February 1974 to December 2012 in order to study the impacts of oil price uncertainty on the production of the manufacturing sector. In doing so, the authors empirically proved that the volatility of oil prices adversely affects the production of the manufacturing sector.

Given that these theoretical explanations indicated the negative impacts of oil rent dependence on the production of the manufacturing sector, the following hypothesis was postulated by this research:

H_1: Oil rent dependence negatively impacts the production of the manufacturing sector.

3.11.2 Impacts of Oil Rent Dependence on Export of Manufacturing Sector

Based on Dutch disease theory, during an oil resource boom, the inflow of foreign capital into the oil resources sector will increase the disposable income and subsequently, the demand for goods and services (Go, Robinson, and Thierfelder 2016; Yilanci, Aslan, and Ozgur 2021). During the early stage of an oil resource boom, the supply of goods and services is unable to meet the increasing demand quickly. In the case that a fixed exchange rate is applied, the increase in prices of non-tradable goods relative to tradable goods will result in the appreciation of the real exchange rate because the prices of tradable goods are determined by the global market. In contrast, if a flexible exchange rate regime is applied in the country, the supply of foreign currency will increase due to the inflow of foreign capital. In this case, the nominal exchange rate will appreciate. It is notable that in both cases, the exchange rate will appreciate, which in turn, reduces the competitiveness of the manufacturing sector in the global market (Ebrahimzadeh 2003; Go, Robinson, and Thierfelder 2016). This is known as the spending effect.

In addition to the spending effect, the pulling effect also results in the appreciation of the exchange rate. As discussed earlier, the pulling effect occurs when the oil resources sector offers higher factor payments and motivates the movement of production factors from the manufacturing sector to the oil resources sector. While the prices of manufactured goods are determined by the global market, an increase in the prices of factors of production will raise the production costs of the manufacturing sector. As a consequence, the profitability of the manufacturing sector will reduce, leaving the manufacturers no choice but to reduce their production. Accordingly, the export of manufactured goods will also reduce (Rajan and Subramanian 2011). Based on Smith (2019), when the production factors shift away from the non-tradable sector, the supply of non-tradable goods will reduce. Meanwhile, the demand for non-tradable products will increase because of higher disposable income. The combinations of these factors will consequently increase the prices of non-tradable goods. As a result of the increase in the prices of the non-tradable sector relative to the tradable goods, the exchange rate will appreciate and dampen the competitiveness of the manufacturing sector by making the manufactured goods more expensive in the global market. Besides, the exchange rate appreciation will also cause imports to become cheaper, which might result in a trade deficit. According to Mikesell (1997), oil-abundant countries usually impose restrictions on imports and provide subsidies for exports as a response to the increasing trade deficit. However, these policies actually distort the export of the manufacturing sector by attracting more investments that further appreciate the exchange rate.

In terms of the volatility of oil prices, it impedes the export of the manufacturing sector by triggering exchange rate volatility that reduces the share of manufactured exports in total exports. Based on Kathuria and Sabat (2020), one of the indicators for the exchange rate in oil-exporting countries is the oil prices. An increase in oil prices represents the transfer of wealth from oil-importing countries to oil-exporting countries (Turhan, Sensoy, and Hacihasanoglu 2014; Turhan, Hachisananoglu, and Soytas 2014). As a result, the inflow of export rents will undoubtedly appreciate the exchange rate. However, since the oil prices are highly volatile, the

export rent will also have high volatility, which will result in fluctuations in the exchange rate that impedes the export of manufactured goods (Gylfason 2001; Kumar 2019). Besides, the volatility of oil prices will generate uncertainty that reduces investments in the manufacturing sector, increases the production costs and thus, reduces the demand for manufactured goods. In order to maintain or enhance the competitiveness of exports of manufactured goods, investments will be one of the requisites because they provide more funds to the manufacturing companies to adopt more advanced technologies that improve production capacity and the quality of products. Additionally, there are some extra costs incurred before the manufactured goods are exported to other countries such as cost of acquiring information and costs of creating a distribution network. Thus, when investments in manufacturing sector are reduced due to the uncertainty from the fluctuations in oil prices, manufacturing companies might be forced to reduce exports due to credit constraints (Gylfason 2001; 2002; Akman and Bozkurt 2016; Peluffo 2016).

As one of the popular articles on the natural resource curse, Sachs and Warner (2001) had empirically proven that overdependence on natural resources, including oil and natural gas, dampens the export of manufactured goods by reducing their competitiveness in the international market. Ansari (2016) also mentioned that Dutch disease will result in deindustrialization through the appreciation of the exchange rate arising from the oil resource boom. In the research of Gritsenko and Efimova (2020), the authors studied the interpretation of the natural resource curse in Russia's Arctic region. In the research, the spending effect of Dutch disease was explained as a situation in which non-resource economic sectors become uncompetitive due to the inflation and exchange rate appreciation arising from the increase in disposable income. In contrast, Erdoğan, Yıldırım, and Gedikli (2020) argued that based on Dutch disease theory, when oil-abundant countries export oil resources, the inflow of foreign currency will appreciate the exchange rate. As a result, the competitiveness of non-resource tradable sectors will reduce as they become more expensive, while imports become cheaper in the global market. In addition to the theoretical explanations, some studies proved the existence of Dutch disease empirically. For instance, Oomes and Kalcheva (2011) situated their study in Russia in order to determine whether the economy of Russia is suffering from Dutch disease. In doing so, the authors proved empirically that Russia is having all four symptoms of Dutch disease because its exchange rate is appreciated, making the manufactured goods more expensive in the global market. Besides, the findings of higher wages in the country and increasing share of the services sector in employment also indicated the presence of the spending effect and pulling effect of Dutch disease.

Regarding the volatility of oil prices, the existence of the relationship between oil prices and the exchange rate had been proven by Chen and Chen (2007). In the research, the authors employed monthly panel data from January 1972 to October 2005 for the Group of Seven (G7) countries. In doing so, the authors found that oil price is one of the determinants of the exchange rate. In other words, the fluctuations in oil prices will trigger the volatility of the exchange rate that impedes the export of the manufacturing sector. Another study by Nouira, Hadj Amor, and Rault (2019) investigated the impacts of the volatility of oil prices on the exchange rate in MENA countries. Daily time-series data from 1 January 2001 to 29 December 2017 was

employed, and was empirically proved that the fluctuations in oil prices will trigger the volatility of the exchange rate. On the other hand, in the study of Senadza and Diaba (2018),11 Sub-Sarahan African countries were chosen as the sample to study the impacts of the exchange rate volatility on trading. In doing so, the authors empirically proved that although the exchange rate volatility does not significantly impact imports, it causes negative effects on exports in the short-term.

Based on the theoretical explanations and the empirical results in the existing research, another hypothesis regarding the impacts of oil rent dependence on export of the manufacturing sector was proposed:

H_2: Oil rent dependence negatively impacts the export of the manufacturing sector.

3.11.3 Moderating Role of Financial Development

Financial development can be defined as the improvement in terms of the quality, quantity and efficiency of financial services (Calderón and Liu 2003; Badeeb and Lean 2017). Based on the existing research, financial development was claimed to have moderation effects on the impacts of oil rent dependence (Moradbeigi and Law 2016; Rongwei and Xiaoying 2020). One of the main reasons is because of its role in achieving optimal resources allocation. More specifically, when a country is having a high level of financial development, the well-developed financial sector will allocate the windfall of oil rent into real economic sectors which are conducive to sustainable economic growth (Fisman and Love 2004; Adu, Marbuah, and Mensah 2013; Ben Naceur, Cherif, and Kandil 2014; Jiang, Luo, and Zhou 2020). As mentioned before, oil rent dependence will result in the pulling effect which occurs when the factors of production shift from the manufacturing sector to the oil resources sector. However, if an oil-abundant country has a high level of financial development, the highly-developed financial sector will collect and process information for investment projects, and thus allocates scarce resources to the most productive investments (Bena and Ondko 2012). In this instance, instead of shifting the resources away from the manufacturing sector, resources including the windfall of oil rent will be allocated effectively, and thereby, promote industrialization rather than deindustrialization.

Moreover, due to the importance of technological innovations in the production of the manufacturing sector, Hsu, Tian, and Xu (2014) theorized that with a high level of financial development, the innovation process will become more effective as a well-developed financial system will help in production cost reduction, resources allocation, projects evaluation and risk management. In other words, financial development improves the production of the manufacturing sector by triggering innovations in the manufacturing sector. Besides, resources allocation among productive investments also allows the financial sector to attract foreign direct investments that come together with the advanced technologies and knowledge, which not only promote innovations, but also enhance production capacities (Liu et al. 2020). Other than these, based on Rongwei and Xiaoying (2020), although oil rent dependence dampens economic growth by crowding-out human capital development and technological innovations, a highly-developed financial sector can reverse the negative effects by utilizing the oil rent as additional financial support for human capital development and technological innovations.

Indeed, the financial support provided for non-resource sectors, including the manufacturing sector, also allows companies to expand their production capacity. In the research of Xu and Tan (2020), it was found that financial development has moderation effects on the impacts of oil rent dependence. The authors also further explained that as financial sector developed, the efficiency of resources utilization will be improved because the limited financial resources will be allocated into investments with better productivity and output growth which consequently optimize and upgrade traditional industries. In other words, the existence of a highly-developed financial system in the economy will not only enhance oil rent utilization, but also have the potential to transform the oil rent into blessing rather than a curse, thus, positively contributing to the productivity of the manufacturing sector.

Additionally, financial development also has the capability of improving the effectiveness of monetary policies by providing information that allows the central bank to control the inflation rate (Agoba et al. 2017). Therefore, financial development can control the inflation rate arising from oil rent dependence and thus, prevent it from impeding the competitiveness of manufactured goods in the global market. On the other hand, it is also argued that in order to protect the country from the oil curse, the financial sector should further developed along with the increase in oil rent dependence. This is because a well-functioned financial system will not only enhances macroeconomic stability, but also allows the country to effectively manage the volatility of oil prices (Jarrett, Mohaddes, and Mohtadi 2019). As a result, the adverse impacts of the exchange rate volatility on the export of the manufacturing sector can be mitigated. In the research of Nieminen (2020), it is also argued that financial development improves the manufactured exports by providing financial support to the exporters who are suffering from financial constraints. Besides, the author also found that financial development contributes positively to export diversification, which reduces the country's vulnerability to external shocks, including oil price shocks. Accordingly, it can be concluded that financial development not only promotes the export of manufactured goods through oil rent utilization, but also reduces the negative impacts of oil price volatility on manufactured exports. Indeed, the moderation effects of financial development also can be reflected when the negative effects of the exchange rate volatility triggered by the fluctuations in oil prices tend to be less severe in oil-abundant countries with a higher level of financial development (van der Ploeg and Poelhekke 2009b).

Additionally, Moradbeigi and Law (2016) also proved empirically that financial development able to moderate the relationship between oil rent dependence and economic growth volatility. Specifically, the presence of a highly-developed financial system can offset the negative impacts of oil price volatility on economic growth. Following this research, Moradbeigi and Law (2017) and Law and Moradbeigi (2017) showed that the impacts of oil rent dependence vary along with the degree of financial development. A more developed financial system will offset the negative impacts of oil rent dependence by channeling oil rent into more productive investments. In addition, Rongwei and Xiaoying (2020) also claimed that when a country is having a highly-developed financial system, financial resources will be channeled into the real economy and consequently, offset the negative effects of oil rent dependence. Nonetheless, the authors also concluded that underdeveloped financial system will allocate financial resources

to the virtual economy which in turn exacerbate the adverse effects of the oil curse. This demonstrated that whether the financial system will strengthen or weaken the negative effects of the oil curse is dependent on the level of financial development. In the research of Sun, Cai, and LeiviskaÂ¨ (2020), the authors also proposed that the impacts of oil rent depend on the level of financial development, however, they argued that the oil resources will only benefit economic growth within a reasonable range (2.445-2.625). In contrast, while Erdoğan, Yıldırım, and Gedikli (2020) also proved the moderation effect of financial development on the impacts of oil rent dependence, the results indicated that only when the financial development exceeds 45%, then the oil rent will be transformed into a blessing while there is no significant moderation effect if the financial development is below 45%.

According to the theoretical explanations, another two hypotheses regarding the moderation effects of financial development on the relationship between oil rent dependence and the production of the manufacturing sector, as well as the relationship between oil rent dependence and the export of the manufacturing sector were proposed:

H_3: Financial development is able to moderate the impacts of oil rent dependence on the production of the manufacturing sector.

H_4: Financial development is able to moderate the impacts of oil rent dependence on the export of the manufacturing sector.

3.11.4 Moderating Role of Government Intervention

Based on Cambridge dictionary, government intervention can be defined as the actions of government in intervening the operations of financial market or certain industries. Among the existing research, it was noticeable that almost every study that was conducted based on the topic of the oil curse had provided policy recommendations. The reason is that the governments of oil-abundant countries have the responsibility and authority that allow them to protect their countries from the oil curse through economic diversification and upgrade of the manufacturing sector (Li et al. 2019). In most oil-dependent countries with a low level of corruption, good governance and well-established institutions, oil rent usually contributes to a major portion of the government's revenue, thus relaxing their budget constraints and allowing them to invest in financial development and other productive investments (Damette and Seghir 2018). Larsen (2005) and Holden (2013) also proved that the government is able to moderate the impacts of oil rent dependence by showing that government intervention is the main reason that protects Norway from oil curse and achieve sustainable economic growth. Based on Bjorvatn, Farzanegan, and Schneider (2012), whether oil and natural gas resources are blessing or curse for a country's economy depends on the government. Thus, it is reasonable to believe that government interventions have moderation effects on the impacts of oil rent dependence on the production and export of the manufacturing sector.

As discussed earlier, one of the key roles of financial development is optimal resource allocation. Hence, it is suggested that if the government implements a policy that aims at promoting financial development, the scarce resources will be allocated to productive investments, especially in the manufacturing sector which is conducive to economic growth (Moradbeigi and Law 2017). Additionally, it was empirically proven by Shahbaz et al. (2019)

that if the government utilizes the oil rent to invest in human capital development, it will help the country to reduce the negative impacts of the oil curse. This is because human capital is considered one of the important factors for technological innovations and financial development, investments in education will indirectly mitigate the pulling effect of Dutch disease by promoting financial development that stimulates optimal resources allocation (Rongwei and Xiaoying 2020). The idea that human capital development mitigates the impacts of the oil curse was also supported by Sun et al. (2020). Based on the authors, investment in education will increase the amount of skilled-labour in the economy and thus, enhance the process of financial development through the utilization of oil resources that further offsets the adverse effects of oil rent dependence.

Based on Henriques and Sadorsky (2011), implementing policies that target to reduce the dependency on oil and natural gas resources and increase the dependency on renewable energy will not only reduce the negative impacts of fluctuations in oil prices on investments, but also mitigates the exchange rate volatility that adversely impacts the export of the manufacturing sector. Biresselioglu et al. (2019) also proposed that government can establish wealth funds that aim at collecting and utilizing oil rent to diversify the economy and thus, reducing the country's vulnerability to external shocks, such as the oil price shock. Moreover, the establishment of wealth funds also help countries in utilizing oil rent to achieve sustainable economic growth, reduce corruption, conflict and income inequality. Ouoba (2016) further explained that in order to ensure the funds are fully utilized, it is necessary to establish fiscal policies to govern the spending of the oil rent. Olayungbo (2019) also suggested that the government can moderate the impacts of oil rent dependence by diversifying the export revenue. This is because although the fluctuation in oil prices is out of the control of the government. Attaining export diversification will not only reduce the exchange rate volatility which tend to dampen the export of the manufacturing sector, therefore, reducing the country's vulnerability to the oil price shock (Eregha and Mesagan 2016). In contrast, Kim and Lin (2017) argued that natural resources only positively contributes to economic development when the country is having low level of government intervention. More specifically, the authors showed that low level of government intervention will actually strengthen the positive impacts of natural resources dependence. The findings of this research also further confirmed by Wu, Li, and Li (2018), who claimed that increase in government interventions will lead to institution weakening effect which is able to dampen the economic growth by impeding efficiency of resources allocation.

In summary, literature demonstrated that government intervention is able to moderate the impacts of oil rent dependence. Since this research studied the moderation effect of government interventions on the impacts of oil rent dependence on the production of the manufacturing sector, as well as on the exports of the manufacturing sector, the following hypotheses were proposed:

H_5: Government intervention is able to moderate the impacts of oil rent dependence on the production of the manufacturing sector.

H_6: Government intervention is able to moderate the impacts of oil rent dependence on the export of the manufacturing sector.

This research proposed that oil rent dependence negatively impacts the production and export of the manufacturing sector. Besides, financial development is likely to moderate the impacts of oil rent dependence on the production and export of the manufacturing sector. Moreover, this study also suggested that government intervention is able to moderate the impacts of oil rent dependence on the production and export of the manufacturing sector. The theoretical framework for this study is illustrated in Figure 3.1 Theoretical Framework.

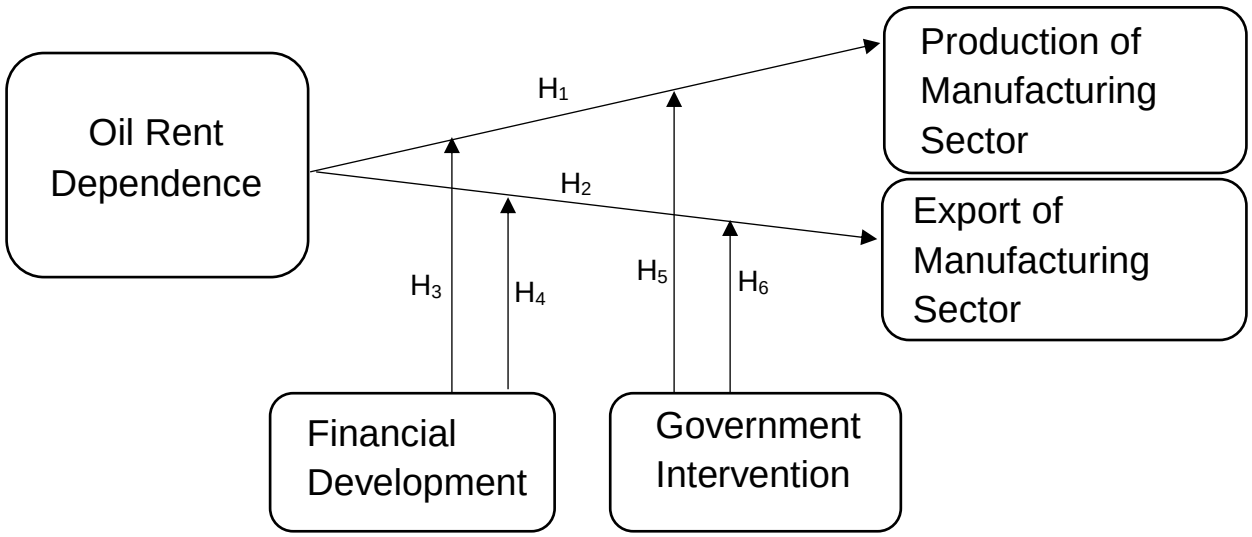


Figure 3.1 Theoretical Framework

3.12 Chapter Summary

This chapter documented the Dutch disease theory that explains the impacts of oil rent dependence on the production and export of the manufacturing sector. This chapter provided an overview of Dutch disease theory and its impacts on the production and export of the manufacturing sector. Dutch disease dampens the production of the manufacturing sector through the pulling effect. More precisely, production factors, particularly labour, will shift

away from the manufacturing sector to the oil resources sector, thus, resulting in deindustrialization. On the other hand, another effect of Dutch disease, namely the spending effect dampens the manufacturing sector through inflation and appreciation of the exchange rate, causing the manufactured exports to become more expensive relative to the world market prices.

Based on Dutch disease theory and discussions about financial development and government interventions in the literature, several hypotheses were examined: (i) the impacts of oil rent dependence on the production and export of the manufacturing sector (ii) the moderation effects of financial development on the impacts of oil rent dependence on production and export of the manufacturing sector (iii) the moderation effects of government interventions on the impacts of oil rent dependence on the production and export of the manufacturing sector. In the next chapter, the research methodology to examine these hypotheses will be presented.

CHAPTER 4
RESEARCH METHODOLOGY

4.1 Introduction

This chapter outlined the details of the methodology employed in the research. Firstly, the data and the data sources will be explained in detail, followed by the explanations of econometric models. Further, the estimation techniques applied in this research were explained. Overall, time series analysis was applied in this research to investigate the relationship between oil rent dependence and the manufacturing sector, together with the moderating effect of financial development and government interventions on this relationship.

4.2 Data Explanations and Data Sources

In this research, annual secondary time series data, which covered the period of 1970-2019, was employed. As discussed earlier, this research situated in Malaysia as around 15% of GDP and 27% of total government revenue was contributed by oil and natural gas resources, indicating the high level of dependency on oil rent in Malaysia (Badeeb, Lean, and Clark 2017; Badeeb, Szulczyk, and Lean 2021). Due to this reason, Malaysia's economy is very vulnerable to the oil price shock (Central Intelligence Agency 2018). Meanwhile, the existing literature also argued that oil rent dependence impeded Malaysia's manufacturing sector through Dutch disease (Badeeb, Szulczyk, and Lean 2021). The main reason that Malaysia tends to be the best-case study is that Malaysia's manufacturing sector, which is one of the most important economic sectors for sustainable economic growth, is suffering. This can be proved by the decline in the share of the manufacturing sector in Malaysia's GDP and its growth rate. The research employs this period because numerous economic changes happened within this period, including an increase in the significance of oil and natural gas resources for Malaysia's economy and the transformation of Malaysia's economy from an agriculture-based to manufacturing-based.

The variables for this research were oil rent dependence, production of manufacturing sector, export of manufacturing sector, financial development, government intervention, agriculture value-added, wage rate, level of infrastructure and gross domestic product (GDP). The data of the variables were obtained from several sources, which are World Development Indicators, Department of Statistics Malaysia, United Nations Conference on Trade and Development, and Federal Reserve Bank of St. Louis.

Oil Rent Dependence

Oil rent refers to the difference between the production value of crude oil at world price, and their total production cost, whereas oil rent dependence is defined as the degree to which the country's economy depends on the oil rent (Wu, Li, and Li 2018). Over the years, many indicators have been identified and used to measure natural resource dependence: (i) exports

of natural resources to GDP ratio (Jeffrey Sachs and Warner 1995; Brunnschweiler and Bulte 2008; Boschini, Pettersson, and Roine 2013; Kim and Lin 2017; Damette and Seghir 2018) (ii) mineral production to GDP ratio (Papyrakis and Gerlagh 2004) (iii) resource revenues in real term (Mehrara 2009) (iv) share of resources revenue in total government revenue (Bjorvatn, Farzanegan, and Schneider 2012) (v) ratio of mining company practitioners to total population which indicates the importance of resource industry for the whole economy (Song et al. 2020) (vi) the portion of natural capital in total country wealth (Cockx and Francken 2016) (vii) percentage of resource-based industry employees in whole economy (Li et al. 2019).

It is noticeable that in some studies of natural resource curse, natural resources rent was used as the indicator (Khan et al. 2020; Sun et al. 2020). Nonetheless, according to Shahbaz et al. (2019), this indicator reflects natural resource abundance instead of natural resource dependence. Natural resource dependence should be measured by the ratio of natural resources rent to GDP, reflecting the level of dependency on natural resources. Thus, since this research focused on Malaysia's oil rent dependence, the indicator for oil rent dependence is the ratio of oil rent to GDP, which is widely-used in the literature, such as Aljarallah (2020), Dell'Anno (2020), Lashitew and Werker (2020), Matallah (2020) and Majumder, Raghavan, and Vespignani (2020). This indicator indicates the country's dependency on oil resources (Badeeb, Szulczyk, and Lean 2021). The data of the indicator was collected from World Development Indicators.

Production of Manufacturing Sector

Following the research of Kafando (2018), Liew and Chan (2018) and Amadu and Samuel (2020), the share of value-added of manufacturing sector in GDP was used as the proxy for the production of the manufacturing sector. The data was obtained from World Development Indicators. According to World Bank (2021), the value-added of the manufacturing sector refers to the net output of the sector, which is calculated by subtracting the intermediate inputs from total outputs. In the research of Amadu and Samuel (2020), this indicator was explained as the total additional output produced by the manufacturing sector. In addition, this indicator can be considered an evaluation tool that analyses the production capacity and capability of the manufacturing sector to expand, increase market share, become more competitive in the international market and grow.

Export of Manufacturing Sector

For the export of the manufacturing sector, there are several indicators have been identified by existing research. The value of the manufacturing exports in current US$ was used by Iwanow and Kirkpatrick (2009). In contrast, Sheridan (2014) used the share of manufactured exports in GDP as the indicator, whereas the quantity of classified manufactures exports was employed by Hunegnaw (2017). Unlike these studies, following Demetriades, Al-Jebory, and Kamperis (1993), the share of manufactures exports in total exports was used as the indicator in this research. The data of this indicator was obtained from Department of Statistics Malaysia.

Financial Development

Financial development refers to the improvement in terms of quality, quantity and efficiency of financial services (Calderón and Liu 2003; Badeeb and Lean 2017). Just like oil rent dependence, many indicators have been used for financial development in the literature.

However, although many existing studies only used one indicator to measure the financial development (Dogan, Altinoz, and Tzeremes 2020; Yıldırım et al. 2020a; Shen et al. 2021; Han et al. 2022), one indicator would not be enough to measure financial development accurately as it does not include the multidimensional approach of financial development. Therefore, following Asif et al. (2020), several proxies were employed in this research to measure financial development from different aspects.

The first proxy for financial development was the share of domestic credit to private sector by banks in GDP, which was widely-used in the literature (Moradbeigi and Law 2016; Rewilak 2017; Shahbaz, Naeem, et al. 2018; Dwumfour and Ntow-Gyamfi 2018; Guan et al. 2020; Khan et al. 2020). This indicator refers to the financial resources channelled from financial institutions to the private sector (Yıldırım et al. 2020). There are several reasons that this indicator is employed in this research. Firstly, it is connected with both investment and growth. Since private investment is crucial in stimulating economic growth, it means that accessibility of financial resources will directly affect private sector investments. This indicator accurately reflects the financial resources provided to the private sector (Erdoğan, Yıldırım, and Gedikli 2020). Second, during the process of financial development, it is necessary to perform the outlines of transitional economies to increase the loans, especially the loan provided to the private sector. The banks will only be considered as highly efficient when more loans are provided for the productive private sector (Ying Ma and Jalil 2008).

Another indicator of financial development was the share of broad money in GDP, which is a basic measurement of the size of the financial sector (Bittencourt 2012; Ur Rehman and Hysa 2021). The higher the ratio, the higher the level of financial development (Lynch 1996). More specifically, broad money can be calculated by adding all the currency outside the banks, the demand and interest-bearing liabilities of banks, and nonbank financial intermediaries. This indicator was considered the broadest measure for the activities of financial intermediations as it consists of banks, central banks and other types of financial institutions (Estrada, Park, and Ramayandi 2010).

Government Intervention

Government interventions refer to the government actions that aim to achieve their objectives by intervening in the market. More specifically, it reflects the control of government and resources allocation (Wang et al. 2021). Based on Wu, Li, and Li (2018), government expenditure is the main mechanism for the government to interfere the economy. The main function of government expenditure is to rectify the ineffective resources allocation in order to make up for the market mechanism. Therefore, although the index of the relationship between government and the domestic market was used to measure government intervention by Xie and Zhang (2020) and Chang et al. (2021), the ratio of general government final consumption expenditure to GDP, which covered all the government expenditure on purchasing goods and services was employed as the indicator of government interventions in this research.

Control Variables

According to Allen (2017), Nielsen and Raswant (2018), and Spector (2021), including the control variables in the regression will allow the researcher to control the impacts of the extraneous factors, which in turn, improves the result accuracy. Thus, several variables were included as the control variables in this research. Following Mesagan and Bello (2018),

agriculture value-added was employed as the control variable. This is because the agriculture sector provides input for the manufacturing sector's production. Indeed, the positive relationship between the agriculture sector and manufacturing sector has been empirically proved by existing research, such as Kafando (2018). Therefore, in order to control the effects of agriculture value-added over the production of the manufacturing sector, agriculture value added in constant 2015US$ was used as the indicator.

Moreover, following Liew and Chan (2018), wage rate, represented by the ratio of labour compensation to GDP, was included as the control variable due to its influence over the manufacturing value-added. Typically, an increase in wage rate is always expected to increase the production costs of the manufacturing sector, which in turn, reduces the production of the manufacturing sector. Indeed, if manufacturers offer a higher wage to the skilled workers, it will result in a positive relationship between the wage rate and the production of the manufacturing sector as more skilled workers are hired to improve the productivity of the manufacturing sector (Liew and Chan 2018).

Besides, based on Su et al. (2020), the level of infrastructure is positively correlated with the export of the manufacturing sector. On the one hand, a well-developed infrastructure will help in the cost discovery process and hence, exhibits positive impacts on manufactured export. On the other hand, a lack of investment in infrastructure will increase production costs, resulting in lower profitability and unnecessary delays in economic activities (Rehman, Noman, and Ding 2020). In the research of Ahmad, Jaini, and Zamzamir (2015), by employing different variables of infrastructure, the authors also showed that infrastructure positively impacted the trade of Malaysia regardless of the indicator employed, indicating that improvement of the infrastructure will increase trade volume. Therefore, following Khanna and Sharma (2021), fixed telephone subscriptions per 100 people was used in this research to measure the level of infrastructure. Based on World Bank (2021), this indicator refers to the total active number of analogue fixed telephone lines, subscriptions of voice-over-IP (VoIP), fixed wireless local loop (WLL), ISDN voice-channel equivalents and fixed public payphones.

Moreover, following the studies of Su et al. (2020), the level of country's economic development, which used GDP per capita as the indicator, was also selected as the control variable due to its positive impacts on the export of the manufacturing sector. According to Töngür, Türkcan, and Ekmen-Özçelik (2020), the GDP of exporting country represents the export capacity, indicating that the higher the GDP, the larger the export capacity. The positive relationship between the level of economic development and export has been empirically proved by research such as Persson (2013) and Töngür, Türkcan, and Ekmen-Özçelik (2020).

Table 4.1 List of Research's Variables

Variable	Description	Definition	Source
ORD	Oil Rent Dependence	Share of oil rent in GDP. It is calculated by subtracting the extraction cost per unit from the	World Development

		estimated world price of oil resource per unit and multiplies by the quantities that the country extract (Matallah 2020).	Indicators (2020)
MVA	Production of Manufacturing Sector	Manufacturing, value added to GDP ratio. It refers to the total additional output produced by manufacturing industry (Amadu and Samuel 2020).	World Development Indicators (2020)
EXP	Export of Manufacturing Sector	Share of manufactured export in total exports.	Department of Statistics Malaysia (2020d)
FD1	Financial Development	Share of domestic credit to private sector by banks in GDP. It measures the role played by banks in credit allocation for private sector accurately.	World Development Indicators (2020)
FD2		Share of broad money in GDP. Broad money can be calculated by adding all the currency outside the banks, the demand and interest-bearing liabilities of banks and nonbank financial intermediaries (Estrada, Park, and Ramayandi 2010).	World Development Indicators (2020)
GOVI	Government Intervention	Share of general government final consumption expenditure in GDP. It includes government expenditures on purchasing goods and services, national defence and security but excluded military expense (World Bank 2021).	World Development Indicators (2020)
AVA	Agriculture Value Added	Agriculture value added in constant 2015US$	United Nations Conference on Trade and Development (2020)
WR	Wage Rate	Share of labour compensation in GDP. It can be defined as the monetary that used to compensate the employees to perform the job assigned (Liew and Chan 2018).	Federal Reserve Bank of St. Louis (2020)
INFRA	Level of Infrastructure	Fixed telephone subscriptions (per 100 people). It refers to the total active number of analogue fixed telephone lines, subscriptions of voice-over-IP (VoIP), fixed wireless local loop (WLL), ISDN voice-channel equivalents and fixed public payphones (World Bank 2021).	World Development Indicators (2020)

GDP	Gross Domestic Product	GDP per capita in constant 2015 US$.	United Nations Conference on Trade and Development (2020)

4.3 Econometric Models

In this research, eight respective econometric models were constructed, and several econometric techniques were employed to address research questions. Among these models, two of them investigated the impacts of oil rent dependence on the production and export of the manufacturing sector. On the other hand, six econometric models were built to determine the moderation effects of financial development and government interventions on the impacts of oil rent dependence on the production and export of the manufacturing sector.

4.3.1 Oil Rent Dependence and Production of Manufacturing Sector

As mentioned earlier, the theoretical explanations of the impacts of oil rent dependence claimed that oil rent dependence dampens the manufacturing sector from two aspects, production and export. Since the manufacturing sector is classified as the main driver of Malaysia's economic growth, it means that oil rent dependence might indirectly negatively affects economic growth by dampening the manufacturing sector. In this section, the relationship between oil rent dependence and the production of the manufacturing sector was examined empirically.

Based on Dutch disease theory, which is widely discussed in the literature on oil curse, oil rent dependence will crowd-out the manufacturing sector. More specifically, in the oil-dependent countries, where oil resources contributed major portion of the government's total revenue, the factors of production, especially labour, will shift away from productive sectors, such as the manufacturing sector, to oil resources sector due to higher marginal productivity. Unlike the oil resources sector, which offers higher wages to attract labour, the upper-bound price of manufactured goods in the international market prevents the manufacturers from offering higher wages and competing with the oil resources sector. As a result, the manufacturing sector will suffer from deindustrialization due to the reduction in employment and production (Moradbeigi and Law 2017; Hien et al. 2020). Furthermore, the windfall of oil rent also reduces the willingness of investors to invest in the manufacturing sector, which tends to be more conducive to sustainable economic growth, thus limiting the development of the manufacturing sector. As discussed earlier, the skills and knowledge generated in the manufacturing sector will improve the productivity of other economic sectors and create a virtuous cycle in the economy (Mikesell 1997; Erling Roed Larsen 2006). Therefore, in the case of the shrinkage of the manufacturing sector, it will consequently lead to detrimental effects on the country's economic growth as the learning-by-doing, and spillover effects, which tend to be stronger in the manufacturing sector, will be crowded-out by oil rent dependence. Accordingly, the relationship between oil rent dependence and the production of the manufacturing sector is expected to be negative.

Among the existing research, the production of the manufacturing sector was usually measured by its output, which can be denoted by the value-added of the manufacturing sector. Accordingly, the dependent variable for the econometric model of the relationship between oil rent dependence and the production of the manufacturing sector is the share of value added of manufacturing sector in GDP, which refers to the net output of the manufacturing sector. It is calculated by subtracting the intermediate inputs from the total output (Coad and Vezzani 2019). Oil rent dependence was the independent variable on the right-hand side of the equation, whereas agriculture value-added and wage rate were the control variables. It is noticeable that natural resource rent per capita was used in studying the natural resource curse in some empirical studies. Nonetheless, it is important to bear in mind that if oil rent per capita is employed, it represents oil resource abundance instead of oil rent dependence (Brunnschweiler 2008; Shahbaz, Naeem et al. 2018). According to Cheng, Li, and Liu (2020), the indicator of oil resource abundance is unable to prove the existence of oil curse. This is because unlike oil rent dependence, which consists of oil resource abundance, the indicators of oil resource abundance do not come together with oil rent dependence. It only indicates how much oil resources are possessed by the country without showing the level of country's dependency. In contrast, oil rent dependence consists of oil rent abundance as when a country is highly dependent on oil and natural gas resources, it also means that the country is endowed with these resources. As a result, these empirical studies, which used natural resource rent per capita or natural resources rent as the indicators, found that natural resource is positively correlated with financial development and economic growth (Shahbaz et al. 2019; Lashitew and Werker 2020).

Therefore, following the model in the research of Yilanci, Aslan, and Ozgur (2021) and Yang et al. (2021), the following model which contain different variables were constructed to investigate the impacts of oil rent dependence on the production of the manufacturing sector:

$$MVA_t = \varphi_0 + \varphi_1 ORD_t + \varphi_2 AVA_t + \varphi_3 WR_t + v_t \quad (1)$$

where MVA is the production of the manufacturing sector, ORD is the share of oil rent in GDP, AVA is the agriculture value added in constant 2015US$, WR is wage rate and v is error term.

4.3.2 Oil Rent Dependence and Export of Manufacturing Sector

It has been widely recognized in the literature that export is conducive to economic growth, especially the export of the manufacturing sector. In the theory of the export-led-growth hypothesis, export promotes economic growth by utilizing scarce resources, attracting foreign direct investment, and thus, increasing the total output (Petchko 2018). Given the crucial role of both the export and manufacturing sector in economic growth, this section focused on the impacts of oil rent dependence on the export of the manufacturing sector.

The export of oil and natural gas resources is insufficient for a country to achieve sustainable economic growth. Based on Sheridan (2014), the country which focuses on manufactured export tends to have faster growth than country focuses on exporting primary products as the formers are usually technology-intensive products, which can create positive spillovers. However, in oil-dependent countries, although the total export remains unchanged, an increase in dependency on oil resources will increase their share of total export. In other words, the export composition will be skewed away from the manufacturing sector, which generates skills and knowledge that benefit the other economic sectors. As a matter of fact, the appreciation of

the exchange rate, which arises from highly dependent on oil resources, will crowd-out the manufactured export by making them become more costly and uncompetitive in the global market (Gylfason 2001; Mironov and Petronevich 2015; Adekoya 2020; Barczikay, Biedermann, and Szalai 2020). In addition to the exchange rate appreciation, the boom-bust cycle caused by oil rent dependence also stimulates the exchange rate volatility, which reduces investment and dampens the export of the manufacturing sector (Gylfason and Zoega 2006; van der Ploeg and Poelhekke 2009a).

Thus, this section focused on the relationship between oil rent dependence and the export of the manufacturing sector. This research aimed at investigating how oil rent dependence affects the exports of the manufacturing sector in Malaysia. Accordingly, another econometric model was built with the export of the manufacturing sector as the dependent variable, while oil rent dependence as the independent variable and level of infrastructure and GDP per capita act as the control variables. Following the research of Nawaz, Lahiani, and Roubaud (2019), the model with different variables was:

$$EXP_t = \beta_0 + \beta_1 ORD_t + \beta_2 INFRA_t + \beta_3 GDP_t + \varepsilon_t \quad (2)$$

where EXP refers to the share of manufactured exports in total exports, ORD is share of oil rent in GDP, $INFRA$ is level of infrastructure, GDP represents GDP per capita in constant 2015US$ and ε is the error term.

4.3.3 Financial Development and Relationship between Oil Rent Dependence and Production of Manufacturing Sector

Among the literature, financial development has been widely recognized as the key element in transforming “oil curse” into “oil blessing”. The reason behind this is mainly due to its role in achieving optimal resources allocation. It is believed that the financial sector can allocate the oil rent into productive investments, which in turn, leads to the “oil blessing” phenomenon. Following the research of Moradbeigi and Law (2016), who proved the moderation effects of financial development on oil rent dependence-economic growth nexus empirically, this research was going to specifically investigate how financial development moderates the relationship between oil rent dependence and the production of the manufacturing sector.

Based on Rongwei and Xiaoying (2020), financial development is able to weaken the negative impacts that arise from oil rent dependence. Due to its ability in promoting effective resources allocation. Instead of shifting the factors of production to the oil resources sector and resulting in the contraction of the manufacturing sector, the financial system will utilize the oil rent in promoting human capital development by investing in the education sector. Consequently, technological innovation, which plays a crucial part in the production of the manufacturing sector, will be stimulated. In other words, with the high level of financial development, the crowding-out effects of oil rent dependence on the manufacturing sector can be eliminated. In addition to resources allocation, the financial system also plays an important part in capital accumulation. In an oil-abundant country, which receives an enormous amount of oil rent, it is expected that the financial sector is having a high level of liquidity as the government receives and deposits more taxes from the oil industry while the oil companies also receive more oil rent and deposit them in banks. As a result, more financial support is expected for real economic sectors, including the manufacturing sector (Bhattacharyya and Hodler 2014; Dwumfour and

Ntow-Gyamfi 2018). With more sources of funding, the manufacturing sector will be able to adopt more advanced technology and thus, improve its production.

In view of the above theoretical discussions, this research concentrates on the moderation effects of financial development on the nexus between oil rent dependence and the production of the manufacturing sector. In this section, a new empirical attempt was provided to investigate the moderating role of financial development and thus, establish the empirical foundation for previous theoretical discussions. Based on Moradbeigi and Law (2016; 2017), financial development is expected to mitigate the adverse effects of oil rent dependence.

Regarding the econometrics models in this section, the dependent variable was the production of the manufacturing sector. In contrast, the variables on the right-hand side were the indicators of oil rent dependence, financial development, agriculture value-added, wage rate and the interaction term between oil rent dependence and financial development. The purpose of this interaction term is to examine how financial development moderates the relationship between oil rent dependence and the production of the manufacturing sector. Thus, following the research of Rongwei and Xiaoying (2020), the following econometrics models that contain distinct variables are constructed:

$$MVA_t = \delta_0 + \delta_1 ORD_t + \delta_2 FD1_t + \delta_3 (ORD_t * FD1_t) + \delta_4 AVA_t + \delta_5 WR_t + \varsigma_t \quad (3)$$

$$MVA_t = \varrho_0 + \varrho_1 ORD_t + \varrho_2 FD2_t + \varrho_3 (ORD_t * FD2_t) + \varrho_4 AVA_t + \varrho_5 WR_t + \xi_t \quad (4)$$

where MVA is production of manufacturing sector, ORD is share of oil rent in GDP, $FD1, and\ FD2$ are the indicators of financial development, AVA is agriculture value added, WR is wage rate and ς is error term. $(ORD * FD1)\ and\ (ORD * FD2)$ are interaction term between oil rent dependence and financial development indicators which used to determine how financial development moderates the relationship between oil rent dependence and production of manufacturing sector. At the margin, the impacts of increased in financial development can be computed by determining the partial derivatives of production of manufacturing sector with respect to oil rent dependence.

$$\frac{\partial MVA}{\partial ORD} = \delta_1 + \delta_3 FD1_t \quad (5)$$

$$\frac{\partial MVA}{\partial ORD} = \varrho_1 + \varrho_3 FD2_t \quad (6)$$

The equation (5) and (6) indicate how the impacts of oil rent dependence on the production of the manufacturing sector change along with financial development. If $\delta_1\ and\ \varrho_1$ are positive and the estimated coefficients of the interaction term between oil rent dependence and financial development is positive, it means that the increase in financial development will strengthen the nexus between oil rent dependence and production of manufacturing sector. In contrast, if the estimated coefficients of the interaction terms between oil rent dependence and financial development are negative, it implies that an increase in financial development will weaken the relationship between oil rent dependence and the production of the manufacturing sector. Finally, agriculture value-added and wage rate are added to the econometrics models to capture their effects on the production of the manufacturing sector as Shifa (2015) found that increase in the agriculture sector is having a positive relationship with the manufacturing sector. In

contrast, Liew and Chan (2018) found a negative relationship between wage rate and manufacturing value-added.

4.3.4 Financial Development and Relationship between Oil Rent Dependence and Export of Manufacturing Sector

As discussed earlier, in addition to the production of the manufacturing sector, oil rent dependence will stimulate pulling effect and spending effect of Dutch disease, which impede the export of the manufacturing sector through inflation and appreciation of the exchange rate. Therefore, following the last section, this section was going to investigate the moderation effect of financial development on the relationship between oil rent dependence and the export of the manufacturing sector.

In oil-dependent countries where crude oil resources are used to be the largest contributor to total export, the manufacturing sector is always impeded by Dutch disease from the aspect of exports through exchange rate appreciation and inflation. Besides, it has been found that oil-dependent countries are always accompanied by low-level financial development (Guan et al. 2020; Dogan, Altinoz, and Tzeremes 2020; Rongwei and Xiaoying 2020). In this case, instead of effectively utilizing the oil rent, the underdeveloped financial system will exacerbate the negative effects of oil rent dependence by dampening investment quality. Although oil-dependent countries can increase their total investment through the spending of oil rent, it does not mean that sustainable economic growth will be stimulated. This is always the case for oil-dependent countries. In these countries, they always have a high investment rates, but low economic growth rates. The reason behind this is the existence of an underdeveloped financial system that dampens the quality of investment (Nili and Rastad 2007). Nonetheless, the highly-developed financial sector can reverse the negative impacts of oil rent dependence. This is because the effectiveness of the financial system in resources allocation will be higher, which channels the scarce resources into more productive investments. As a consequence, the financial sector will not only boost economic growth but also reduce the effects of foreign capital inflows on exchange rate appreciation. Overall, it can be concluded that whether oil rent dependence exhibits a positive or negative impact is partly dependent on financial development, which demonstrates that financial development has a moderating effect on the relationship between oil rent dependence and the export of the manufacturing sector (Sun, Cai, and LeiviskaÂ¨ 2020).

Hence, this section concentrates on studying the moderating effects of financial development on the relationship between oil rent dependence and the export of the manufacturing sector. In contrast to the last section, this section aimed at investigating whether financial development weakens or strengthens the effects of oil rent dependence on the export of the manufacturing sector. Based on Rongwei and Xiaoying (2020), it was anticipated that although the country is highly dependent on oil rent, with a high level of financial development, it will be able to transform the adverse impacts of oil rent dependence on the exports of the manufacturing sector into positive impacts.

The regression in which exports of the manufacturing sector was the dependent variable while the independent variables were oil rent dependence and financial development and control variables were level of infrastructure and GDP was formed. Another two interaction terms between oil rent dependence and financial development were formed to capture the moderation

effects of financial development on the relationship between oil rent dependence and the exports of the manufacturing sector. Therefore, following the research of Law and Moradbeigi (2017), the econometric models with different variables were constructed:

$$EXP_t = \sigma_0 + \sigma_1 ORD_t + \sigma_2 FD1_t + \sigma_3 (ORD_t * FD1_t) + \sigma_4 INFRA_t + \sigma_5 GDP_t + \kappa_t \quad (7)$$

$$EXP_t = \Phi_0 + \Phi_1 ORD_t + \Phi_2 FD2_t + \Phi_3 (ORD_t * FD2_t) + \Phi_4 INFRA_t + \Phi_5 GDP_t + \ell_t \quad (8)$$

where EXP is export of manufacturing sector, ORD is share of oil rent in GDP, $INFRA$ is fixed telephone subscriptions per 100 people and GDP represents GDP per capita in constant 2015US$. ($ORD * FD1$) and ($ORD * FD2$) are interaction terms between oil rent dependence and financial development indicators which capture the moderation effect of financial development on relationship between oil rent dependence and export of manufacturing sector. At the margin, the impacts of increased in financial development can be computed by determining the partial derivatives of export of manufacturing sector with respect to oil rent dependence.

$$\frac{\partial EXP}{\partial ORD} = \sigma_1 + \sigma_3 FD1_t \quad (9)$$

$$\frac{\partial EXP}{\partial ORD} = \Phi_1 + \Phi_3 FD2_t \quad (10)$$

Equation (9) and (10) indicate the impacts of financial development on the relationship between oil rent dependence and the export of the manufacturing sector. On the one hand, if $\sigma_3, and\ \Phi_3 < 0$, it means that financial development is playing a negative role on the positive role of oil rent dependence in improving the export of the manufacturing sector, indicating a weaker relationship between oil rent dependence and the export of the manufacturing sector. On the other hand, if $\sigma_3\ and\ \Phi_3 > 0$, it means that financial development is having a strengthening effect on the positive role of oil rent dependence in improving the export of the manufacturing sector, indicating a stronger oil rent dependence-manufacturing export nexus.

Equation (9) and (10) represent how the impacts of oil rent dependence on the export of the manufacturing sector change along with an increase in financial development. The sign of $\sigma_3\ and\ \Phi_3$ determining whether financial development positively or negatively impacts the role of oil rent dependence on the export of the manufacturing sector. Finally, fixed telephone subscriptions per 100 people, $INFRA$ was also included as the indicator for level of infrastructure, which is claimed to be able to influence the export of the manufacturing sector by assisting in the cost discovery process (Su et al. 2020). Gross domestic product per capita, GDP, was also included to control the impacts of level of economic development, which also represents the export capacity of the country (Su et al. 2020; Töngür, Türkcan, and Ekmen-Özçelik 2020).

4.3.5 Government Intervention and Relationship between Oil Rent Dependence and Production of Manufacturing Sector

Along with financial development, government intervention, which refers to the government's actions that aim at achieving their objectives by intervening in the market, is also claimed to have moderation effects on the relationship between oil rent dependence and the production of the manufacturing sector. Therefore, this section concentrates on how government intervention moderates the impacts of oil rent dependence on the production of the manufacturing sector.

As mentioned earlier, most of the governments of oil-abundant countries, just like Malaysia, have exclusive ownership over crude oil resources. Due to this reason, the government can moderate the impacts of oil rent dependence on the country's economic sectors and economic growth through government intervention. In oil-abundant countries, whether crude oil resources is going to exhibit a positive or negative impact is partly dependent on institutional quality. This is because if the government is able to establish a strong institutional framework, it will not only protect the country's manufacturing sector from the oil curse but also achieve economic prosperity through oil rent utilization (Yilanci, Aslan, and Ozgur 2021). Besides, since the spending of oil rent is under the control of the government, it means that if the government spend oil rent in investing human capital development and technological innovation, the combination of skilled workers, knowledge workers and advance technology will improve the production of the manufacturing sector and thus, stimulate sustainable economic growth (Qiang and Jian 2020). Nonetheless, if the oil rent is used to fulfil the interest of elites or to buy off the opponents, it will only exacerbate the adverse effects of the oil curse.

In addition to the above discussions, the existing research provided many policy recommendations that theoretically indicate the moderation effects of government intervention (Eregha and Mesagan 2016; Parcero and Papyrakis 2016; Haseeb et al. 2021). Therefore, in contrast to the last two sections, this section concentrated on the role of government intervention in moderating the relationship between oil rent dependence and the production of the manufacturing sector.

In this section, the econometric model comprised of the dependent variable, which was the production of the manufacturing sector, independent variables formed by oil rent dependence, agriculture value-added, wage rate, government intervention and an interaction term between oil rent dependence and government interventions, which investigated how government interventions moderate the relationship between oil rent dependence and production of the manufacturing sector. Inspired by Rahim et al. (2021), the model with different variables was constructed:

$$MVA_t = \eta_0 + \eta_1 ORD_t + \eta_2 GOVI_t + \eta_3 (ORD_t * GOVI_t) + \eta_4 AVA_t + \eta_5 WR_t + \vartheta_t \qquad (11)$$

where MNF is production of manufacturing sector, ORD is share of oil rent in GDP, $GOVI$ is government intervention, AVA is agriculture value added, WR is wage rate and ϑ is error term. $(ORD * GOVI)$ is interaction term between oil rent dependence and government intervention, which investigated how government interventions moderate the relationship between oil rent dependence and the production of the manufacturing sector. At the margin, the impacts of increased in government interventions can be computed by determining the partial derivatives of the production of the manufacturing sector with respect to oil rent dependence.

$$\frac{\partial MVA}{\partial ORD} = \eta_1 + \eta_3 GOVI_t \qquad (12)$$

Equation (12) indicates how the impacts of oil rent dependence on the production of the manufacturing sector change along with government intervention. If η_1 is positive and the estimated coefficient of the interaction term between oil rent dependence and government intervention is positive, it means that the increase in government intervention will strengthen the nexus between oil rent dependence and production of manufacturing sector. In contrast, if the estimated coefficient of interaction term between oil rent dependence and government

intervention is negative, it means that increase in government intervention will weaken the relationship between oil rent dependence and production of manufacturing sector.

4.3.6 Government Intervention and Relationship between Oil Rent Dependence and Export of Manufacturing Sector

In the literature on the oil curse, it has been widely recognized that the exclusive ownership over the oil resources has caused government intervention to play a crucial role in determining whether the abundance of crude oil resources exhibits positive or negative effects (Bjorvatn, Farzanegan, and Schneider 2012). Thus, following the last section, this section is concerned with the role of government intervention in moderating the relationship between oil rent dependence and the export of the manufacturing sector.

In oil-abundant countries where the government has control over the management of oil rent, the government can directly moderate the impacts of oil rent dependence through policy implementation. If the government of oil-dependent countries utilize the oil rent in investing in highly-competitive and productive non-resources sectors such as the manufacturing sector, it will be able to diversify its export composition and thus, achieve the objective of economic diversification. In actual fact, trade diversification not only reduces the country's vulnerability toward the external shock such as oil prices shock but also attracts more foreign direct investment, which stimulates the growth of economic sectors and creates more employment opportunities (Ahmed, Mahalik, and Shahbaz 2016; Mania and Rieber 2019). Accordingly, it will protect the export of the sector through the reduction in vulnerability to oil prices shock, which stimulates the exchange rate volatility. Indeed, it is not guaranteed that government intervention will transform an "oil curse" into an "oil blessing" phenomenon. This is because the inflow of oil rent might lead to poor decision-making. In this case, the government intervention will only exacerbate the adverse impacts of oil rent dependence and further impede the export of the manufacturing sector rather than strengthens the positive impacts brought by the of oil resources (Paul Stevens 2004). Moreover, the research of Wu, Li and Li (2018) also empirically proved that although government intervention contributes positively to economic growth in the short-term, natural resource dependence will lead to higher government intervention, which dampens economic growth through institution weakening effect. Due to these findings, the authors proposed that the excess government intervention should be reduced.

Given the above discussions, it is suggested that government intervention is able to moderate the impacts of oil rent dependence. Nonetheless, since there is no consensus on whether government intervention will dampen or strengthen the impacts of oil rent dependence, this section was going to study how government intervention moderates the relationship between oil rent dependence and the export of the manufacturing sector.

Just like the previous sections, an econometric model was constructed to address the research question. In the regression, the export of the manufacturing sector acts as the dependent variable, while the independent variables consisted of oil rent dependence, government intervention, level of infrastructure and GDP. An interaction term between oil rent dependence and government intervention was also added to the regression in order to capture the moderation effects of government intervention on the impact of oil rent dependence on the export of the manufacturing sector. The model inspired by Rahim et al. (2021) with different variables was:

$$EXP_t = \omega_0 + \omega_1 ORD_t + \omega_2 GOVI_t + \omega_3 (ORD_t * GOVI_t) + \omega_4 INFRA_t + \omega_5 GDP_t + \psi_t \quad (13)$$

where EXP refers to the export of manufacturing sector, ORD is share of oil rent in GDP, $GOVI$ is government intervention, $INFRA$ is fixed telephone subscriptions per 100 people, GDP represents GDP per capita in constant 2015US$ and ψ is error term. $(ORD * GOVI)$ is the interaction term between oil rent dependence and government intervention which captures the moderation effect of government intervention on relationship between oil rent dependence and export of manufacturing sector. At the margin, the impacts of increased in government intervention can be computed by determining the partial derivatives of export of manufacturing sector with respect to oil rent dependence.

$$\frac{\partial EXP}{\partial ORD} = \omega_1 + \omega_3 GOVI_t \quad (14)$$

The equation (14) indicates how the impacts of oil rent dependence on the export of the manufacturing sector change along with the level of government intervention. If ω_1 is positive and the estimated coefficient of the interaction term between oil rent dependence and government intervention is positive, it means that the increase in government intervention will strengthen the nexus between oil rent dependence and the export of the manufacturing sector. In contrast, if the estimated coefficient of the interaction term between oil rent dependence and government intervention is negative, it means that an increase in government intervention will weaken the relationship between oil rent dependence and the export of the manufacturing sector.

4.4 Estimation Techniques

4.4.1 Unit Root Test

Prior to the cointegration test, the unit root test was conducted to study the properties of time series data. Unit root test refers to the procedure that aims at investigating the stationarity of the variables statistically (Shrestha and Bhatta 2018). Conducting the unit root test will prevent the phenomenon of spurious and obtain biased results (Belloumi 2014). Time series data is only considered stationary when its mean and variance are time-invariant, which means that they remain constant over the time, and there is also no trend and seasonality effect. In contrast, time-series data is considered non-stationary if the mean or variance or both of them vary over the time. In this case, an integrated process will be conducted to know how many times it needs to be differenced to become stationary. If time series data only needed to be differenced one time to become stationary, then it is known as integrated of order 1, denoted as I(1). In this research, augmented Dickey-Fuller (ADF) test and Philips-Perron test were conducted. Both tests examined the null hypothesis of non-stationary against the alternative hypothesis of stationary. More precisely, whether the null hypothesis of the unit root test will be rejected is based on the significant level, which refers to the probability of the event that might occur (Riffenburgh 2012). In this research, the null hypothesis of a unit root will be rejected if the probability value is lower than or similar to 10% level of significance.

4.4.2 Cointegration Test

After studying the properties of time series data through the unit root test, a cointegration test was also conducted to investigate the long-run relationship between the variables. Prior to the

discussions of the Autoregressive Distributed Lag (ARDL) bounds test, it is crucial to understand the concept of the cointegration test.

The term "cointegration" refers to the process of formulating the phenomenon in which the linear combinations of non-stationary time series components are stationary. In other words, when the linear combinations of two or more non-stationary time-series variables are cointegrated, it means that a stationary series is formed (Johansen 2015; Tu, Fan, and Fan 2019; Shi, Worden, and Cross 2019). The cointegration test not only aims at examining the impacts of these linear combinations but also investigating the relationship between them (Chan 2001).

There are several approaches can be applied for the cointegration test, which are single equation static regression by Engle and Granger (1987), vector autoregressions by Johansen and Juselius (1990) and Autoregressive Distributed Lag (ARDL) bounds test. For the first two approaches, they have their pros and cons. In terms of Engle and Granger (1987) approach, it has an advantage of having extremely consistent and intuitive estimators of coefficients, whereas Johansen and Juselius (1990) approach can avoid certain drawbacks of single-equation cointegration test by conducting the test according to the likelihood ratio principle (Arize 1996; Li, Wang, and Liu 2013). Nonetheless, it is important to note that these two approaches can only be conducted when the time series variables have the same integration of order. In other words, these two approaches cannot be conducted if we are having a mixture of I(0) and I(1). Therefore, in this research, ARDL bounds test was employed.

Among the existing research, it is noticeable that ARDL bounds test is the most commonly applied approach for cointegration test due to its several advantages. Firstly, ARDL bounds test can be applied to the time-series variables with different integration of order. However, the dependent variables in ARDL bounds test must be I(1) and the independent variables can be either I(0) or I(1) only (Tursoy and Faisal 2018; Sarkodie and Owusu 2020). In other words, ARDL bounds test cannot be conducted if one of the variables is I(2). Therefore, unit root test is needed to apply prior to ARDL bounds test to ensure the variables meet these requirements. Secondly, this approach has better performance when the sample size is small, which is suitable for this research in which the sample size is 50. Besides, ARDL bounds test can be considered the best cointegration approach if the lag order of time series variables can be changed in order to obtain the result with higher robustness. Additionally, the endogeneity and serial correlation issues, which arise from time series variables, can be solved by conducting ARDL bounds test (Yilanci, Aslan, and Ozgur 2021). Another advantage of ARDL bounds test is it allows us to obtain an unbiased estimator of a long-run model. Unlike Engle and Granger (1987) and Johansen and Juselius (1990), who requested the regressors to have the same lags, the regressors in the ARDL bounds test are allowed to have different lags. Lastly, both long-run and short-run relationships can be investigated at the same time (Pesaran, Shin, and Smith 2001).

For the equations (1), (2), (3), (4), (7), (8), (11) and (13), they only indicate the long-run relationship between the variables. Therefore, in order to conduct ARDL bounds test, the natural logarithm had been imposed on all the variables while the short-run dynamics are also

added into these equations so that both short-run and long-run relationship can be investigated at the same time. The ARDL cointegration equations for this research is as follows:

$$\Delta MVA_t = \varphi_0 + \varphi_1 MVA_{t-1} + \varphi_2 ORD_{t-1} + \varphi_3 AVA_{t-1} + \varphi_4 WR_{t-1} + \sum_{i=1}^{p} \varphi_5 \Delta MVA_{t-i} + \sum_{i=1}^{p} \varphi_6 \Delta ORD_{t-i} + \sum_{i=1}^{p} \varphi_7 \Delta AVA_{t-i} + \sum_{i=1}^{p} \varphi_8 \Delta WR_{t-i} + v_t \quad (15)$$

$$\Delta EXP_t = \beta_0 + \beta_1 EXP_{t-1} + \beta_2 ORD_{t-1} + \beta_3 INFRA_{t-1} + \beta_4 GDP_{t-1} + \sum_{i=1}^{p} \beta_5 \Delta EXP_{t-i} + \sum_{i=1}^{p} \beta_6 \Delta ORD_{t-i} + \sum_{i=1}^{p} \beta_7 \Delta INFRA_{t-i} + \sum_{i=1}^{p} \beta_8 \Delta GDP_{t-i} + \varepsilon_t \quad (16)$$

$$\Delta MVA_t = \delta_0 + \delta_1 MVA_{t-1} + \delta_2 ORD_{t-1} + \delta_3 FD1_{t-1} + \delta_4 (ORD * FD1)_{t-1} + \delta_5 AVA_{t-1} + \delta_6 WR_{t-1} + \sum_{i=1}^{p} \delta_7 \Delta MVA_{t-i} + \sum_{i=1}^{p} \delta_8 \Delta ORD_{t-i} + \sum_{i=1}^{p} \delta_9 \Delta FD1_{t-i} + \sum_{i=1}^{p} \delta_{10} \Delta (ORD * FD1)_{t-i} + \sum_{i=1}^{p} \delta_{11} \Delta AVA_{t-i} + \sum_{i=1}^{p} \delta_{12} \Delta WR_{t-i} + \varsigma_t \quad (17)$$

$$\Delta MVA_t = \varrho_0 + \varrho_1 MVA_{t-1} + \varrho_2 ORD_{t-1} + \varrho_3 FD2_{t-1} + \varrho_4 (ORD * FD2)_{t-1} + \varrho_5 AVA_{t-1} + \varrho_6 WR_{t-1} + \sum_{i=1}^{p} \varrho_7 \Delta MVA_{t-i} + \sum_{i=1}^{p} \varrho_8 \Delta ORD_{t-i} + \sum_{i=1}^{p} \varrho_9 \Delta FD2_{t-i} + \sum_{i=1}^{p} \varrho_{10} \Delta (ORD * FD2)_{t-i} + \sum_{i=1}^{p} \varrho_{11} \Delta AVA_{t-i} + \sum_{i=1}^{p} \varrho_{12} \Delta WR_{t-i} + \xi_t \quad (18)$$

$$\Delta EXP_t = \sigma_0 + \sigma_1 EXP_{t-1} + \sigma_2 ORD_{t-1} + \sigma_3 FD1_{t-1} + \sigma_4 (ORD * FD1)_{t-1} + \sigma_5 INFRA_{t-1} + \sigma_6 GDP_{t-1} + \sum_{i=1}^{p} \sigma_7 \Delta EXP_{t-i} + \sum_{i=1}^{p} \sigma_8 \Delta ORD_{t-i} + \sum_{i=1}^{p} \sigma_9 \Delta FD1_{t-i} + \sum_{i=1}^{p} \sigma_{10} \Delta (ORD * FD1)_{t-i} + \sum_{i=1}^{p} \sigma_{11} \Delta INFRA_{t-i} + \sum_{i=1}^{p} \sigma_{12} \Delta GDP_{t-i} + \kappa_t \quad (19)$$

$$\Delta EXP_t = \Phi_0 + \Phi_1 EXP_{t-1} + \Phi_2 ORD_{t-1} + \Phi_3 FD2_{t-1} + \Phi_4 (ORD * FD2)_{t-1} \quad (20)$$
$$+\sigma_5 INFRA_{t-1} + \Phi_6 GDP_{t-1} + \sum_{i=1}^{p} \Phi_7 \Delta EXP_{t-i} + \sum_{i=1}^{p} \Phi_8 \Delta ORD_{t-i}$$
$$+ \sum_{i=1}^{p} \Phi_9 \Delta FD2_{t-i} + \sum_{i=1}^{p} \Phi_{10} \Delta (ORD * FD2)_{t-i} + \sum_{i=1}^{p} \Phi_{11} \Delta INFRA_{t-i}$$
$$+ \sum_{i=1}^{p} \Phi_{12} \Delta GDP_{t-i} + \ell_t$$

$$\Delta MVA_t = \eta_0 + \eta_1 MVA_{t-1} + \eta_2 ORD_{t-1} + \eta_3 GOVI_{t-1} + \eta_4 (ORD * GOVI)_{t-1} \quad (21)$$
$$+\eta_5 AVA_{t-1} + \eta_6 WR_{t-1} + \sum_{i=1}^{p} \eta_7 \Delta MVA_{t-i} + \sum_{i=1}^{p} \eta_8 \Delta ORD_{t-i}$$
$$+ \sum_{i=1}^{p} \eta_9 \Delta GOVI_{t-i} + \sum_{i=1}^{p} \eta_{10} \Delta (ORD * GOVI)_{t-i} + \sum_{i=1}^{p} \eta_{11} \Delta AVA_{t-i}$$
$$+ \sum_{i=1}^{p} \eta_{12} \Delta WR_{t-i} + \theta_t$$

$$\Delta EXP_t = \omega_0 + \omega_1 EXP_{t-1} + \omega_2 ORD_{t-1} + \omega_3 GOVI_{t-1} + \omega_4 (ORD * GOVI)_{t-1} \quad (22)$$
$$+\omega_5 INFRA_{t-1} + \omega_6 GDP_{t-1} + \sum_{i=1}^{p} \omega_7 \Delta EXP_{t-i} + \sum_{i=1}^{p} \omega_8 \Delta ORD_{t-i}$$
$$+ \sum_{i=1}^{p} \omega_9 \Delta GOVI_{t-i} + \sum_{i=1}^{p} \omega_{10} \Delta (ORD * GOVI)_{t-i} + \sum_{i=1}^{p} \omega_{11} \Delta INFRA_{t-i}$$
$$+ \sum_{i=1}^{p} \omega_{12} \Delta GDP_{t-i} + \psi_t$$

where $\varphi_{1,2,3,4,}, \beta_{1,2,3,4}, \delta_{1,2,3,4,5,6}, \varrho_{1,2,3,4,5,6,} \sigma_{1,2,3,4,5,6}, \Phi_{1,2,3,4,5,6,} \eta_{1,2,3,4,5,6}$ *and* $\omega_{1,2,3,4,5,6}$ show long-run coefficients whereas $\varphi_{5,6,7,8,}$, $\beta_{5,6,7,8}, \delta_{7,8,9,10,11,12}, \varrho_{7,8,9,10,11,12,} \sigma_{7,8,9,10,11,12}, \Phi_{7,8,9,10,11,12}, \eta_{7,8,9,10,11,12}$ *and* $\omega_{,7,8,9,10,11,12}$ show short-run coefficients. For Δ, it represents the first difference operator while $v_t, \varepsilon_t, \varsigma_t, \xi_t, \kappa_t, \ell_t, \theta_t$ *and* ψ_t are the error terms. p refers to the lag period of each independent variable. Following the research of Pesaran, Shin, and Smith (2001), the popular Wald or F-statistic test was also applied in ARDL bounds test in order to determine the existence of cointegration relationship. For the models of ARDL, the cointegration relationship among the variables was studied based on the following hypotheses respectively:

$H_0: \varphi_1 = \varphi_2 = \varphi_3 = \varphi_4 = 0$

$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$

$H_\mathbf{0}: \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = \delta_6 = 0$

$H_0: \varrho_1 = \varrho_2 = \varrho_3 = \varrho_4 = \varrho_5 = \varrho_6 = 0$

$H_\mathbf{0}: \sigma_1 = \sigma_2 = \sigma_3 = \sigma_4 = \sigma_5 = \sigma_6 = 0$

$H_0: \Phi_1 = \Phi_2 = \Phi_3 = \Phi_4 = \Phi_5 = \Phi_6 = 0$

$H_0: \eta_1 = \eta_2 = \eta_3 = \eta_4 = \eta_5 = \eta_6 = 0$

$H_0: \omega_1 = \omega_2 = \omega_3 = \omega_4 = \omega_5 = \omega_6 = 0$

These null hypotheses implied that there is no cointegration among the variables and they were tested against the following alternative hypotheses:

$H_1: \varphi_1 \neq \varphi_2 \neq \varphi_3 \neq \varphi_4 \neq 0$

$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$

$H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq \delta_6 \neq 0$

$H_1: \varrho_1 \neq \varrho_2 \neq \varrho_3 \neq \varrho_4 \neq \varrho_5 \neq \varrho_6 \neq 0$

$H_1: \sigma_1 \neq \sigma_2 \neq \sigma_3 \neq \sigma_4 \neq \sigma_5 \neq \sigma_6 \neq 0$

$H_1: \Phi_1 \neq \Phi_2 \neq \Phi_3 \neq \Phi_4 \neq \Phi_5 \neq \Phi_6 \neq 0$

$H_1: \eta_1 \neq \eta_2 \neq \eta_3 \neq \eta_4 \neq \eta_5 \neq \eta_6 \neq 0$

$H_1: \omega_1 \neq \omega_2 \neq \omega_3 \neq \omega_4 \neq \omega_5 \neq \omega_6 \neq 0$

The alternative hypothesis indicated the existence of cointegration among the variables. In order to test the null hypothesis against the alternative hypothesis, F-test was applied. The critical values are classified into upper bound and lower bound. The upper bound critical value assumes that each variable is I(1), whereas the lower bound critical value assumes that each variable is I(0). The computed F-statistics value was compared with upper and lower bound critical values. If the computed value is less than the lower bound critical value, then the null hypothesis of no cointegration cannot be rejected, indicating no long-run relationship between dependent and independent variables. If the computed value exceeds the upper bound critical value, the null hypothesis of no cointegration is rejected, concluding that there is cointegration among the variables and proving the existence of a long-term relationship among the variables. However, if the computed value lies between the lower bound and upper bound critical value, then the result will be considered inconclusive.

It is important to remember that the ARDL bounds test is highly sensitive to the lags length (Badeeb, Lean, and Smyth 2016). Although there are different model selection criteria, such as Hannah-Quinn Information Criterion and Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), which also known as Schwarz Information Criterion, was used to choose the optimal number of lags for ARDL models. This criterion is the statistical measure that evaluates the time series models comparatively. While AIC was developed by Akaike (1973), BIC was developed by Schwarz (1978). The difference between them is when the parameter is increased with the purpose of increasing the goodness of fit, BIC will penalize more as compared with AIC. BIC has an advantage in controlling the differences in the number of free parameters, which is very important when comparing models with the different number of parameters (Witnauer, Urcelay, and Miller 2014). During the determination of optimal lag length, it will begin with the model that has the largest number of lags. In this research, since annual time series data was employed, it is expected that the optimal number of lags will be

either 1 or 2 (Wooldridge 2012). The model with the lowest BIC score will be chosen as a lower score represents a better fit.

Following ARDL equations, Error Correction Models (ECM) were also created. The idea behind ECM is that part of the disequilibrium that arises from the last period will be corrected during the next period. In each model, a cointegration term, Error Correction Term (ECT), was added to restrict the long-term behaviour of the dependent variable and allow the short-term dynamics adjustment. As a result, the long-run disequilibrium will be slowly corrected. The coefficient of lagged ECT also can act as an alternative to determine the existence of the relationship between the variables (Kremers, Ericsson, and Dolado 1992). If lagged ECT appears to be negative and significant, it indicates the presence of a long-term relationship. In contrast to the determination of long-run relationship, the short-run causality will be examined through F-statistics (Liu 2009; Li, Wang, and Liu 2013; Tursoy and Faisal 2018; Ahmed, Zhang, and Cary 2021). The equations stated below are used to measure the long-run effects of independent variables on the dependent variables, where ECT is used to investigate the existence of the relationship between the variables along with the long-run equilibrium adjustment speed.

$$\Delta MVA_t = \varphi_0 + \sum_{i=1}^{p} \alpha_1 \Delta MVA_{t-i} + \sum_{i=1}^{p} \alpha_2 \Delta ORD_{t-i} + \sum_{i=1}^{p} \alpha_3 \Delta AVA_{t-i} + \sum_{i=1}^{p} \alpha_4 \Delta WR_{t-i} + \tau_1 ECT_{t-1} + v_t \quad (23)$$

$$\Delta EXP_t = \beta_0 + \sum_{i=1}^{p} \gamma_1 \Delta EXP_{t-i} + \sum_{i=1}^{p} \gamma_2 \Delta ORD_{t-i} + \sum_{i=1}^{p} \gamma_3 \Delta INFRA_{t-i} + \sum_{i=1}^{p} \gamma_4 \Delta GDP_{t-i} + \tau_2 ECT_{t-1} + \varepsilon_t \quad (24)$$

$$\Delta MVA_t = \delta_0 + \sum_{i=1}^{p} \vartheta_1 \Delta MVA_{t-i} + \sum_{i=1}^{p} \vartheta_2 \Delta ORD_{t-i} + \sum_{i=1}^{p} \vartheta_3 \Delta FD1_{t-i} + \sum_{i=1}^{p} \vartheta_4 \Delta (ORD * FD1)_{t-i} + \sum_{i=1}^{p} \vartheta_5 \Delta AVA_{t-i} + \sum_{i=1}^{p} \vartheta_6 \Delta WR_{t-i} + \tau_3 ECT_{t-1} + \varsigma_t \quad (25)$$

$$MVA_t = \varrho_0 + \sum_{i=1}^{p} j_1 \Delta MVA_{t-i} + \sum_{i=1}^{p} j_2 \Delta ORD_{t-i} + \sum_{i=1}^{p} j_3 \Delta FD2_{t-i} + \sum_{i=1}^{p} j_4 \Delta (ORD * FD2)_{t-i} + \sum_{i=1}^{p} j_5 \Delta AVA_{t-i} + \sum_{i=1}^{p} j_6 \Delta WR_{t-i} + \tau_4 ECT_{t-1} + \xi_t \quad (26)$$

$$EXP_t = \sigma_0 + \sum_{i=1}^{p} \phi_1 \Delta EXP_{t-i} + \sum_{i=1}^{p} \phi_2 \Delta ORD_{t-i} + \sum_{i=1}^{p} \phi_3 \Delta FD1_{t-i} + \sum_{i=1}^{p} \phi_4 \Delta (ORD * FD1)_{t-i} + \sum_{i=1}^{p} \phi_5 \Delta INFRA_{t-i} + \sum_{i=1}^{p} \phi_6 \Delta GDP_{t-i} + \tau_5 ECT_{t-1} + \kappa_t \quad (27)$$

$$EXP_t = \Phi_0 + \sum_{i=1}^{p} \vartheta_1 \Delta EXP_{t-i} + \sum_{i=1}^{p} \vartheta_2 \Delta ORD_{t-i} + \sum_{i=1}^{p} \vartheta_3 \Delta FD2_{t-i} + \sum_{i=1}^{p} \vartheta_4 \Delta (ORD * FD2)_{t-i} + \sum_{i=1}^{p} \vartheta_5 \Delta INFRA_{t-i} + \sum_{i=1}^{p} \vartheta_6 \Delta GDP_{t-i} + \tau_6 ECT_{t-1} + \ell_t \quad (28)$$

$$MVA_t = \eta_0 + \sum_{i=1}^{p} \lambda_1 \Delta MVA_{t-i} + \sum_{i=1}^{p} \lambda_2 \Delta ORD_{t-i} + \sum_{i=1}^{p} \lambda_3 \Delta GOVI_{t-i} + \sum_{i=1}^{p} \lambda_4 \Delta (ORD * GOVI)_{t-i} + \sum_{i=1}^{p} \lambda_5 \Delta AVA_{t-i} + \sum_{i=1}^{p} \lambda_6 \Delta WR_{t-i} + \tau_7 ECT_{t-1} + \theta_t \quad (29)$$

$$EXP_t = \omega_0 + \sum_{i=1}^{p} \varpi_1 \Delta EXP_{t-i} + \sum_{i=1}^{p} \varpi_2 \Delta ORD_{t-i} + \sum_{i=1}^{p} \varpi_3 \Delta GOVI_{t-i} + \sum_{i=1}^{p} \varpi_4 \Delta (ORD * GOVI)_{t-i} + \sum_{i=1}^{p} \varpi_5 \Delta INFRA_{t-i} + \sum_{i=1}^{p} \varpi_6 \Delta GDP_{t-i} + \tau_8 ECT_{t-1} + \psi_t \quad (30)$$

4.4.4 Diagnostic Test

Once the relationship between the variables has been determined, the next step of time-series analysis will be conducting diagnostic tests and stability tests, which aim at ensuring the health of the econometrics models. Diagnostic test is an evaluation tool that specifically analyses the econometric models in a narrow scope to determine the problem of the models. In this research, several tests were applied, including serial correlation, misspecification, heteroscedasticity and stability tests.

4.4.4.1 Serial Correlation

Although goodness-of-fit can be investigated through the R-Squared test, it is also necessary to carry out other diagnostic tests to examine the health of the econometric models in detail. The first test was the serial correlation test. If it is found that the errors of a certain period are repeated in the next period, the correlation between them is known as serial correlation. It is important to note that serial correlation only occurs when the errors are taken sequentially throughout the study period (Anderson 1954). In order to determine the presence of serial correlation, Lagrange Multiplier (LM) test was applied in this research as it can be conducted for any order of autocorrelation and any model, no matter it includes lagged dependent variable. Just like the cointegration test, the null hypothesis was also tested against the alternative hypothesis in the LM test. The null hypothesis implies no serial correlation, whereas the alternative hypothesis states that there is a serial correlation. If the result shows that the null hypothesis cannot be rejected, it means that there is no autocorrelation and the errors are simply white noise.

4.4.4.2 Misspecification

Another issue that might arise is model misspecification which occurs when the model fails to reflect the exact situation of the research. Any specification error such as omitted variables and problems of simultaneous equations will be classified as misspecification as it will result in

dependence between independent variables and error terms. If a misspecified model is employed, it might result in a biased outcome and impede the consistency of estimators of coefficients (Plosser, Schwert, and White 1982; Hayashi, Bentler and Yuan 2011). Therefore, it is necessary to test the presence of model misspecification to ensure the adequacy and reliability of the model. Among the existing research, Ramsey Regression Equation Specification Error Test (RESET) is widely applied to detect misspecification (Badeeb, Lean, and Smyth 2016; Badeeb and Lean 2017; Badeeb, Szulczyk, and Lean 2021). In this test, the null hypothesis of the correct specification was tested against the alternative hypothesis of misspecification. If the results indicate that the null hypothesis cannot be rejected, it means that the econometric models employed in the research are correctly specified.

4.4.4.3 Heteroscedasticity Test

Moreover, heteroscedasticity, which refers to the situation in which the error term has inconstant variances, was also investigated. In the case of constant variances, it will be considered homoscedastic. The main reason for conducting the heteroscedasticity test is that the presence of heteroscedasticity will impair the regression analysis by increasing the variance of the distribution of estimated coefficients, thus causing them no longer be the minimum variance. Besides, it also impedes the validity of the statistical test, which assumes the presence of uncorrelated and uniform modelling errors, which means that the variance does not vary together with the modelled effects. Indeed, several types of tests can be conducted to determine the presence of heteroscedasticity, such as Bartlett test, Breusch Pagan test, Score test and F-statistics. The null hypothesis of the heteroscedasticity test states that the data is homoscedastic, while the alternative hypothesis implies that the data is heteroscedasticity (Greer 2012).

4.4.4.4 Stability

Finally, to ensure the stability of long-run coefficients, which is used to form the Error Correction Term (ECT), and short-run coefficients, cumulative sum (CUSUM) and cumulative sum of square (CUSUMSQ) tests were applied. Instability can be caused by an inadequate model of short-run dynamics characterizing departures from the long-run relationships. Therefore, it is necessary to include the short-run dynamics while we test the constancy of the long-run relationships. The difference between CUSUM and CUSUMSQ tests is CUSUM test is conducted based on the cumulative sum of recursive residuals according to the first set of n observations, whereas CUSUMSQ is conducted based on the squared recursive residuals (Bahmani-Oskooee 2001). Graphically, there were two straight lines in the graph that represented the critical bounds of 5% level of significance. The null hypothesis will be rejected if there is any point that does not lie within the critical bounds.

4.4.5 Robustness Check

Following the diagnostic and stability tests, another common exercise in time series analysis, robustness check was also conducted in this research to ensure that estimated coefficients in the regression model behave in the same way even if the researchers modify the regression specification (Lu and White 2014). In this study, the robustness check was conducted by investigating the sensitivity of results to the data frequency and additional control variables (Mehrara 2009; Cockx and Francken 2016; Law, Kutan, and Naseem 2018). More precisely,

the annual time series data was replaced with quarterly data, which was obtained through the quadratic match-sum method and more control variables were also included in the models. Although interpolation methods are widely-applied in the studies, the quadratic match-sum method was applied as this method mitigates the variations of point-to-point during the conversion of low-frequency data to high-frequency data. In other words, the quadratic match-sum method can be considered more convenient as compared with the interpolations methods (Shahbaz et al. 2018). This method employed local quadratic polynomial from the observations with lower-frequency data to fill in the observation with higher frequency data. The quadratic polynomial was formed by employing the sets of three adjacent points of actual data and fitting the quadratic. Doing so will ensure that the sum of interpolated quarterly data is equal to the actual annual data (Santric-Milicevic, Vasic, and Terzic-Supic 2016; Sharif et al. 2020). However, the quarterly data is only used for robustness check as it is not the actual data for the variables, which means that the results from the robustness check is less accurate than the result of annual data.

Based on Lu and White (2014), the most common method for robustness test is by adding or removing independent variables. Therefore, following the research of Mohtadi and Castells-Quintana (2021), in addition to the replacement of annual data with quarterly data, the additional control variables, which are investment represented by the share of gross fixed capital formation in GDP and foreign direct investment represented by the share of net inflow of foreign direct investment in GDP are included in the production and export models respectively. On the one hand, the reason behind the inclusion of investment as the control variable is because it has been proved that an increase in investment in the manufacturing sector will consequently increase the production of the manufacturing sector (Jamaliah 2016). On the other hand, foreign direct investment is also included as an additional control variable. The inflows of foreign direct investment into the manufacturing sector will promote the manufactured export by improving the product's quality (Rahmaddi and Ichihashi 2013; Anwar and Sun 2018; Su et al. 2020). Therefore, investment and foreign direct investment are included in the models for robustness check.

4.4.6 Causality Test

When the ARDL bounds test indicates that the time-series variables are cointegrated, it only indicates the existence of a long-run relationship and the direction of causality is ignored. Thus, Toda and Yamamoto (1995) and Dolado and Lütkepohl (1996) (TYDL) causality test was applied to determine the relationship pattern between the variables. The main reason this method was applied is that it can be conducted without concerning the order of integration of the variables and the existence of cointegration between the variables (Oladipo 2010). The relationship among the variables can be categorized into the unidirectional and bidirectional relationships. An unidirectional relationship can be either unidirectional causality from X to Y or Y to X, while a bidirectional relationship means that X and Y affect each other (Ciuiu, Bãdileanu, and Georgescu 2015; Al-yahyaee et al. 2019). In this test, the VAR model is estimated with $p = k + d_{max}$, where k represents the optimal lag length while d_{max} represents the maximum order of integration. According to the research of Dolado and

Lütkepohl (1996), $d_{max} = 1$ was employed as it has better performance as compared to other orders of integration. Accordingly, VAR models are estimated as follows:

$$\begin{bmatrix} y_{1t} \\ y_{2t} \\ \vdots \\ y_{it} \end{bmatrix} = \begin{bmatrix} A_1 \\ A_2 \\ \vdots \\ A_i \end{bmatrix} + \begin{bmatrix} B_{11.1} & B_{12.1} \\ B_{21.1} & B_{22.1} \\ & \vdots \\ B_{i1.1} & B_{i2.1} \end{bmatrix} \begin{bmatrix} y_{1t-1} \\ y_{2t-1} \\ \vdots \\ y_{it-1} \end{bmatrix} + \cdots + \begin{bmatrix} B_{11.k} & B_{12.k} \\ B_{21.k} & B_{22.k} \\ & \vdots \\ B_{i1.k} & B_{i2.k} \end{bmatrix} \begin{bmatrix} y_{1t-k} \\ y_{2t-k} \\ \vdots \\ y_{kt-k} \end{bmatrix}$$
$$+ \begin{bmatrix} B_{11.p} & B_{12.p} \\ B_{21.p} & B_{22.p} \\ & \vdots \\ B_{i1.p} & B_{i2.p} \end{bmatrix} \begin{bmatrix} y_{1t-p} \\ y_{2t-p} \\ \vdots \\ y_{it-p} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \vdots \\ \varepsilon_{it} \end{bmatrix}$$

while k represents the optimal lag length, it is determined by the Schwarz Information Criterion (SIC). Lastly, Wald test was applied to determine the direction of the causality.

4.6 Chapter Summary

To sum up everything that has been discussed in this chapter, the variables and their data have been discussed. This chapter also discusses the econometric models and estimation techniques employed in this research. While Autoregressive Distributed Lag (ARDL) bounds test was applied for the cointegration test, Toda and Yamamoto (1995) and Dolado and Lütkepohl (1996) (TYDL) causality test was also employed to investigate the direction of causality along with several diagnostic tests and stability test which applied to ensure the health of econometric models.

CHAPTER 5
EMPIRICAL RESULTS AND DISCUSSION

5.1 Introduction

The results of this study are presented in this chapter. Since one of the research objectives was to investigate the impacts of oil rent dependence on the production and export of Malaysia's manufacturing sector, the first section is related to how oil rent dependence affects the production of the manufacturing sector followed by the impacts of oil rent dependence on the export of the manufacturing sector. This step is very important in exploring the role played by oil rent in Malaysia because unlike other oil-abundant countries, it remain unclear whether the possession of crude oil resources is blessing or a curse for Malaysia. Next, this research proceeded to determine the moderating role of financial development on the relationship between oil rent dependence and the manufacturing sector. Based on the existing literature, one of the main functions of the financial sector is to allocate financial resources effectively across economic sectors (Levine 2005). In other words, the financial sector can moderate the impacts of oil rent dependence through its function of resources allocation. In addition to financial development, this study also examined the moderation effects of government intervention on the relationship between oil rent dependence and the manufacturing sector. In Malaysia, the government has exclusive ownership over the oil resources, which means that the spending of oil rent is under the management of Malaysia's government (Doraisami 2015; U.S. Energy Information Administration 2021). This ownership allows Malaysia's government to spend the oil rent through different mechanisms, for example, public finance expenditure and regulations.

5.2 Descriptive Statistics

Descriptive statistics can be defined as the numerical summaries of data sets. More specifically, it summarizes the information of the variables regarding their characteristics and data distribution. Although descriptive statistics are simple concepts for statistical analysis, the crucial role played by descriptive statistics cannot be overlooked as it allows us to understand and compare the distribution of data sets (Lee 2020).

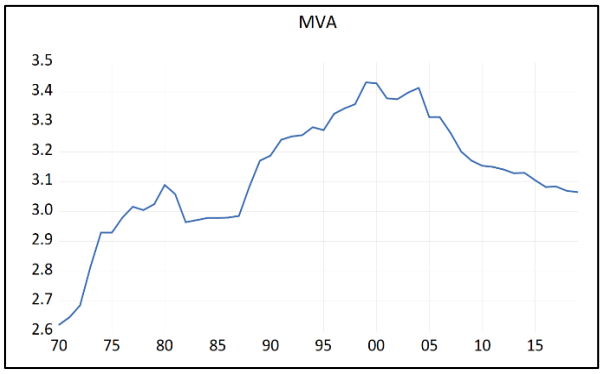
The descriptive statistics of the variables applied in this research were presented in **Table 5.1**. While the production of the manufacturing sector ranged between 2.6220 and 3.4319 from 1970 to 2019, the export of the manufacturing sector ranged between 1.8886 and 3.2222 in the same period. Besides, it was also noticeable that oil rent dependence had experienced fluctuations during the study period, with a minimum value of 0.4615 and a maximum value of 4.1989. Moreover, the results shown in **Table 5.1** also revealed that the share of domestic credit to private sector by banks in GDP had experienced an increasing trend between 3.0581 and 5.0427 during the study period. In contrast, the share of broad money in GDP ranged from 3.7112 to 4.9471. On the other hand, the interaction terms between oil rent dependence and financial development witnessed fluctuations during the study period, and this might be due to the fluctuations in the oil rent dependence indicator.

In terms of the government intervention, it was also found that the share of general government final consumption expenditure in GDP ranged from 2.2792 to 2.9577 during the period of 1970-2019. Similar with the interaction term between oil rent dependence and financial development, the interaction term between oil rent dependence and government interventions also experienced fluctuations during the study period, and the reason might be due to the fluctuations in the oil rent dependence indicator. Regarding agriculture value added, it exhibited a stable increase with 8.5888 as a minimum value and 10.1569 as maximum value, whereas the wage rate ranged between 0.9264 and 1.1851 during the study period. For level of infrastructure which was represented by the fixed telephone subscriptions per 100 people, experienced fluctuations during the study period, with 0.0381 as the minimum value and 3.1597 as the maximum value. GDP per capita in constant 2015US$ ranged from 7.3646 to 9.3406 from 1970 to 2019. As indicated by the standard deviation, the interaction term between oil rent dependence and financial development tend to be more volatile than the other variables and the reason behind might be due to the fluctuations of the oil prices.

Table 5.1 Descriptive Statistics

	MVA	**EXP**	**ORD**	**FD1**	**FD2**	**ORD ∗ FD1**	**ORD ∗ FD2**	**GOVI**	**ORD ∗ GOVI**	**AVA**	**WR**	**INFRA**	**GDP**
Mean	3.1249	2.3014	1.5887	4.3904	4.6289	6.8645	7.2978	2.6138	4.1888	9.6105	1.1345	2.0748	8.5018
Median	3.1293	2.1891	1.6226	4.6501	4.8024	6.9761	7.1858	2.5877	4.0923	9.6470	1.1851	2.6775	8.6187
Maximum	3.4319	3.2222	4.1989	5.0427	4.9471	12.8405	15.5831	2.9577	12.2005	10.1659	1.1851	3.1597	9.3406
Minimum	2.6220	1.8886	0.4615	3.0581	3.7112	1.6240	1.8902	2.2792	1.1681	8.5888	0.9264	0.0381	7.3646
Standard Deviation	0.1954	0.3426	0.6258	0.5570	0.3437	2.3004	2.5854	0.1642	1.8168	0.3874	0.0923	1.0288	0.5347

Note: MVA is natural logarithm of share of manufacturing value added in GDP; EXP is natural logarithm of share of manufactured export in total export; ORD is natural logarithm of share of oil rent in GDP; $FD1$ is the natural logarithm of share of domestic credit to private sector by banks in GDP; $FD2$ is natural logarithm of share of broad money in GDP; $ORD * FD1$ is the interaction term between oil rent dependence and share of domestic credit to private sector by banks in GDP; $ORD * FD2$ is interaction term between oil rent dependence and share of broad money in GDP; $GOVI$ is natural logarithm of share of general government final consumption expenditure in GDP; $ORD * GOVI$ is natural logarithm of interaction term between share of oil rent in GDP and share of general government final consumption expenditure in GDP; AVA is natural logarithm of agriculture value added in constant 2015 US$; WR is natural logarithm of share of labour compensation in GDP; $INFRA$ is natural logarithm of fixed telephone subscriptions per 100 people; GDP is natural logarithm of gross domestic product per capita in constant 2015 US$


MVA
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3.3
3.2
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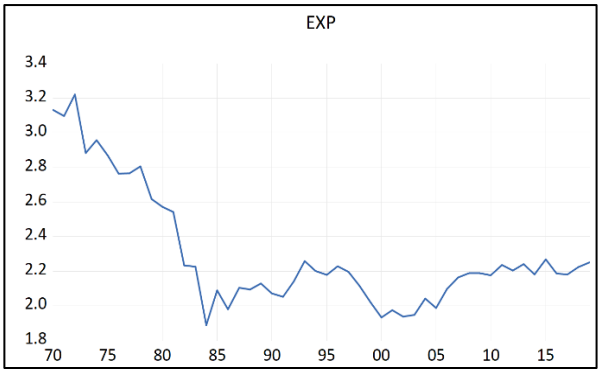
70 75 80 85 90 95 00 05 10 15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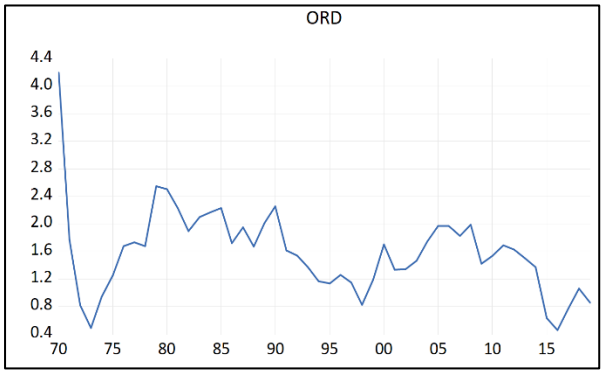
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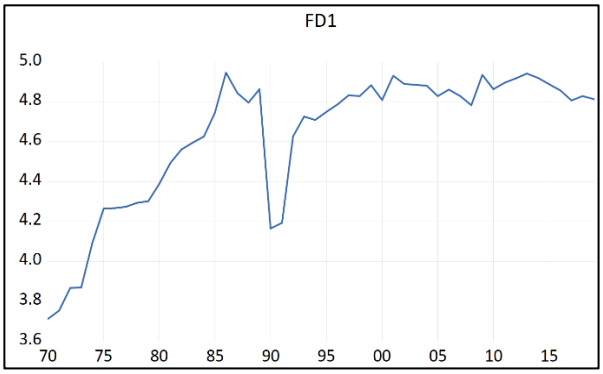
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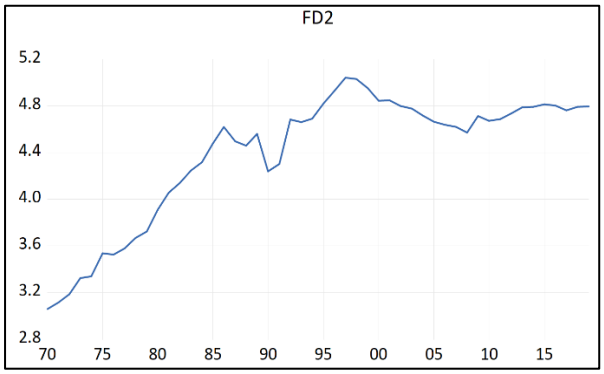
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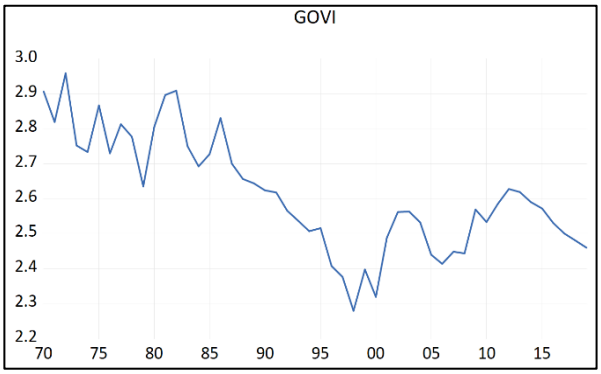
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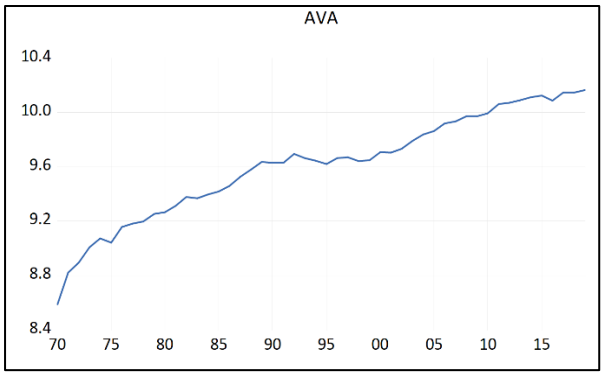
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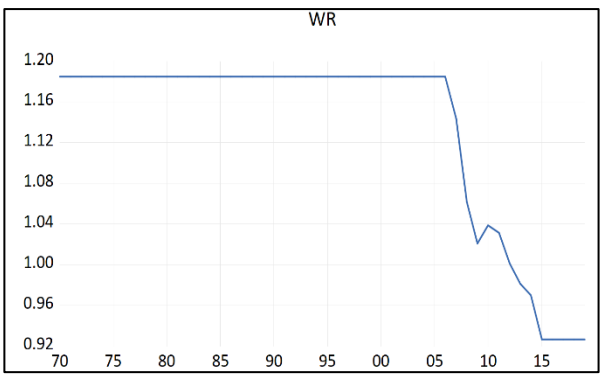
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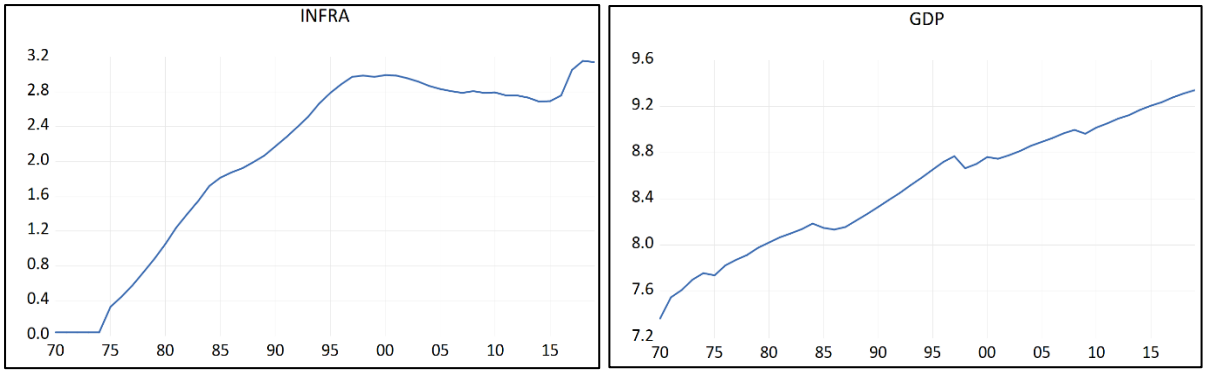


Figure 5.1 Time series plots of variables in natural logarithm (1970-2019)

5.3 Unit Root Test

Although the ARDL bounds test can be applied when the variables have different order of integration, it is only applicable when the variables are either I(0) or I(1). Therefore, in this section, this research determined the integration order of the variables in order to ensure that none of the variables was I(2). The unit root tests conducted in this research were augmented Dickey-Fuller (ADF) unit root test and Phillips-Perron (PP) unit root test. The null hypothesis for both tests was that the time series contains a unit root, and it was tested against the alternative hypothesis. The results of the unit root test were presented in **Table 5.2**.

The results suggested that the results for oil rent dependence, all interaction terms, agriculture value added and gross domestic product rejected the null hypothesis, indicating that these variables were stationary at level. On the other hand, for production and export of the manufacturing sector, financial development, government intervention, wage rate and the level of infrastructure, the results of the unit root test did not reject the null hypothesis at level, which means that they contained unit root at level with trend and intercept. Therefore, this research proceeded to apply the unit root test for the first difference and the results rejected the null hypothesis, implying that these variables were non-stationary at level but stationary at first difference.

Given the results of the unit root tests, oil rent dependence, interaction term between oil rent dependence and financial development, interaction term between oil rent dependence and government intervention, agriculture value added and gross domestic product were considered I(0), whereas the other variables, which are production and export of the manufacturing sector, financial development, government intervention, wage rate and the level of infrastructure were considered I(1). Based on Pesaran, Shin, and Smith (2001), since all the variables applied in this section were either I(0) or I(1), the results of the unit root tests confirmed that the ARDL bounds test can be applied for the cointegration test. According to the results presented in **Table 5.2**, it was also noticeable that the results for the ADF unit root tests were further confirmed by the results of the PP unit root test.

Table 5.2 Results of ADF and PP Unit Root Tests

	ADF Unit Root Test		PP Unit Root Test		Results
	Trend and Intercept		Trend and Intercept		
	Level	1st Difference	Level	1st Difference	
MVA	-1.2916	-5.2747***	-1.3972	-5.2768***	I(1)
EXP	-1.5058	-10.3477***	-1.5341	-9.9089***	I(1)
ORD	-8.1135***		-8.8170***		I(0)
FD1	-1.5525	-6.8334***	-1.5431	-6.8332***	I(1)
FD2	-2.8033	-6.5604***	-2.6917	-7.6317***	I(1)
ORD ∗ FD1	-6.0735***		-6.5832***		I(0)
ORD ∗ FD2	-6.8037***		-7.3234***		I(0)
GOVI	-2.7870	-8.7617***	-2.6848	-9.7755***	I(1)
ORD ∗ GOVI	-9.0939***		-8.9701***		I(0)
AVA	-5.8837***		-5.4260***		I(0)
WR	-0.5552	-5.3704***	-0.7391	-3.9420**	I(1)
INFRA	-1.3751	-4.2485***	-0.9132	-4.1811***	I(1)
GDP	-4.1247**		-4.0323**		I(0)

Note: *** and ** denote significant at 1% and 5% level respectively. For ADF unit toot test, the optimal lag length is chose automatically by using Schwarz Information Criterion whereas for PP unit root test, Newey-West Bandwidth is employed.

5.4 Impact of Oil Rent Dependence on Production of Manufacturing Sector

This section concentrates on the first hypothesis of this research, which is oil rent dependence negatively impacts the production of the manufacturing sector. Accordingly, this section focuses on the first research objective, which was investigating the impacts of oil rent dependence on the production of Malaysia's manufacturing sector. Over the years, the impacts of oil rent dependence on the production of the manufacturing sector had been widely-discussed, but only from a theoretical perspective and empirical evidence is still lacking. The main reason that this research focused on Malaysia is that it was found that Malaysia is suffering from premature deindustrialization, which can be defined as the decline in the manufacturing sector and the reason behind this might be oil rent dependence (Asyraf et al. 2019; Badeeb, Szulczyk, and Lean 2021).

Since the descriptive statistics and the results of unit root tests of the variables were presented in the last two sections, thus, the results of cointegration test were presented in this section along with the results of the diagnostic test, stability test, and TYDL causality test.

5.4.1 Cointegration Test

ARDL bounds test was also applied in order to examine the existence of long-run relationship between the variables. Since this test was sensitive to the number of lags, lags up to two years

were imposed in this model. The optimal lag length was determined by using Schwarz Information Criterion (SIC).

In order to determine the existence of the relationship between the variables, the F-test was first applied in the ARDL bounds test. Among existing studies, the critical values were usually obtained from Pesaran, Shin, and Smith (2001) or Narayan (2005). In Pesaran, Shin, and Smith (2001), the upper bound critical values were computed under the assumption that each variable was I(1), whereas the lower bound critical values were tabulated under the assumption that each variable was I(0). However, in this research, the critical values generated by Pesaran, Shin, and Smith (2001) were inappropriate to be applied because it is more suitable for larger sample sizes ranging from 500 to 40,000. In contrast, Narayan (2005) had computed the critical values for a smaller sample size, which was 30 to 80. Thus, since the sample size for this research was 50, the critical values computed by Narayan (2005) were more suitable to be employed. The results of F-statistics are presented in **Table 5. 3**.

Table 5. 3 Results of ARDL Bounds Test

Dependent Variable	**Optimum Lag**	**F-Statistics**	$\boldsymbol{ECT_{t-1}(t-Ratio)}$	**Results**
MVA	(2,1,2,0)	4.7633**	-0.2335(-4.5298)***	Cointegration
Critical Values	**Lower Bound**		**Upper Bound**	
1%	4.865		6.360	
5%	3.500		4.700	
10%	2.873		3.973	

Note: Critical values obtained from Narayan (2005) with unrestricted intercept and no trend.
*** and ** denote significance at 1% and 5% level respectively.

Based on the results presented in **Table 5. 3**, it was found that the value of F-statistics was larger than the upper bound critical values at 5% significance level, indicating the presence of a long-run relationship between the variables. Besides, the presence of long-run relationship between the variables was further confirmed by the estimated coefficient of lagged Error Correction Term (ECT), which was negative and significant at 1% level.

5.4.2 Diagnostic Test

In order to confirm the health of the econometric model, several diagnostic tests were applied. For instance, Lagrange Multiplier (LM) test was conducted to test the serial correlation, Autoregressive conditional heteroscedasticity (ARCH) test was applied to examine the heteroscedasticity, and Ramsey Regression Equation Specification Error (RESET) test was carried out to check for misspecification. Also, the cumulative sum of recursive (CUSUM) and

cumulative sum of squares of recursive (CUSUMSQ) were applied to ensure the stability of the model.

According to the results presented in Table 5.4, it was demonstrated that the probability for each test exceeded the 10% level, indicating that they were insignificant. In other words, all null hypotheses such as the null hypothesis of no serial correlation, the null hypothesis of no conditional heteroscedasticity, and the null hypothesis of correct specification were accepted. Besides, the plots of the CUSUM and CUSUMSQ tests also provided evidence of the stability of the coefficients. While the plot of CUSUM test lies between the boundaries, it was found that the plot of the CUSUMSQ test exceeded the boundaries from 2009 to 2012, and the reason behind was due to Global Financial Crisis. Although Global Financial Crisis happened in 2008, Malaysia only experienced the full effects of Global Financial Crisis in 2009, according to Bank Negara Malaysia (2010).

Table 5.4 Results of Diagnostic Tests

Dependent Variable	**MVA**
LM	1.5696 [0.2179]
ARCH	1.4014 [0.2573]
Ramsey RESET	0.7650 [0.4725]
CUSUM	S
CUSUMSQ	S

Note: S represents stable model. P-values are presented in brackets.

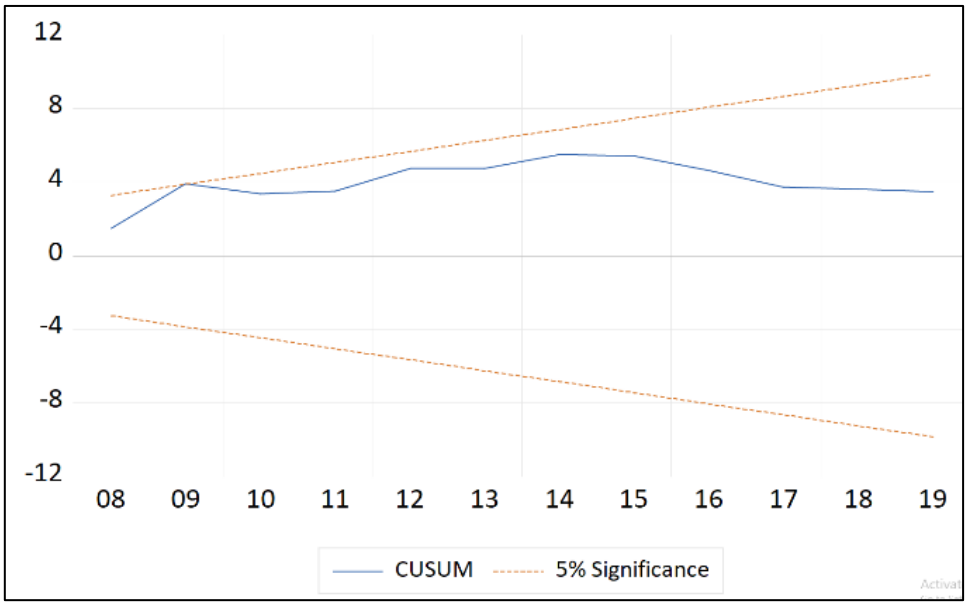


Figure 5.2 Plot of Cumulative Sum of Recursive

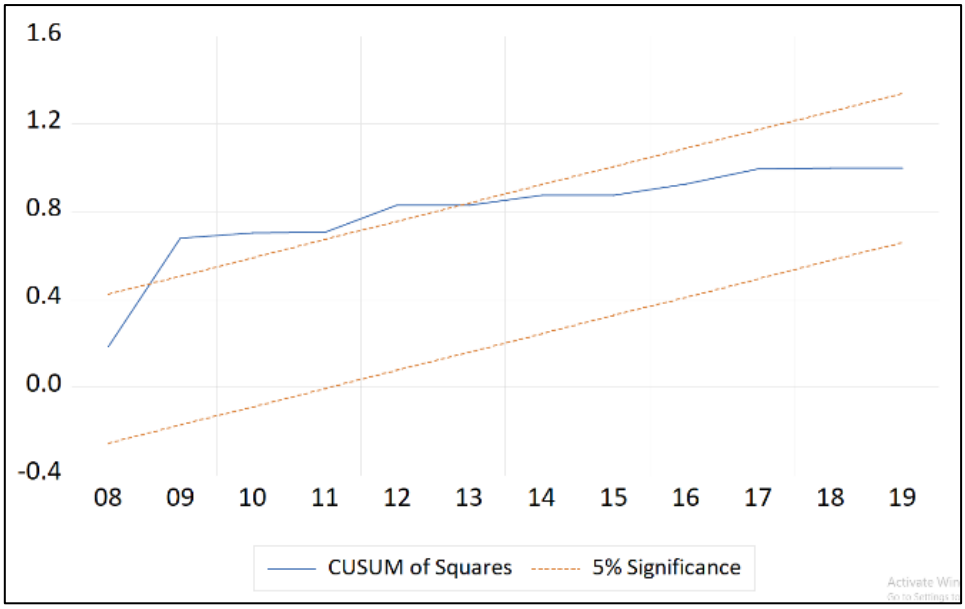


Figure 5.3 Plot of Cumulative Sum of Squares of Recursive

5.4.3 Long-Run and Short-Run Analyses

Since the existence of long-run relationship between the variables was confirmed, this research proceeded to conduct long-run analysis to study the impacts of oil rent dependence on the production of the manufacturing sector. More specifically, while it was claimed that the oil rent dependence adversely impacts the production of manufacturing sector through Dutch disease, it is also important to note that Dutch disease is a long-term effect (Onuoha and Elegbede 2018; Taguchi and Khinsamone 2018). This is because although the oil resource boom will induce the movement of production factors, such as labour, to shift out of the manufacturing sector into the oil resources sector, it is impossible for the production factors to shift out from the manufacturing sector within a short-term. In other words, the pulling effect of Dutch disease occurs in the long run instead of the short run. Therefore, the long-run analysis is conducted in order to determine whether oil rent dependence strengthens or weakens the production of the manufacturing sector through Dutch disease in the long-run. The results of the long-run analysis are presented in **Table 5.5**.

Based on the results, it was found that the estimated coefficient of oil rent dependence was negative and significant at 5% level, indicating that a 1% increase in oil rent dependence will reduce the production of the manufacturing sector by 0.11%. According to Dutch disease theory, the reason might be due to the pulling effect, which is also known as “direct deindustrialization”. More specifically, during the oil resource boom, the demand for the factors of production, such as labour will increase in the oil resources sector. In this case, a higher wage rate will be offered by the oil resources sector, thereby, inducing the movement of labour away from the manufacturing sector and service sector into the oil resources sector. As a result, it will reduce the production of both the manufacturing sector and services sector through the decline in employment. However, this is not the complete case. Since the prices of manufactured goods are determined by the demand in international market, the decline in the supply in the services sector will increase their prices and wages, which further shift labour

away from the manufacturing sector and lead to the contraction of the production of the manufacturing sector (Algieri 2011).

In contrast, the results also showed that the estimated coefficient of agriculture value added was positive and significant at 1% level, implying that a 1% increase in agriculture value added will increase the production of the manufacturing sector by 0.54%. This result agreed with the findings of Shifa (2015), which found that the growth in the agriculture sector is positively correlated with growth in the manufacturing sector. Based on the author, the agriculture sector contribute to the manufacturing sector through market creation, which means that it helps the manufacturing sector to gain more market share. In the research of Mellor and Johnston (2012), the authors also argued that compared with the development policies which mainly focus on the capital-intensive industry, the increase in demand arising from the expansion of the agriculture sector will lead to the rapid growth of the manufacturing employment and output.

Regarding the wage rate, it was found to have a negative and significant impact on the production of the manufacturing sector. This is because when wages increase in the domestic market, it will consequently increase the production costs of manufacturing sector and force the manufacturers to increase product prices. However, as mentioned earlier, the prices of manufactured goods are determined by the demand from the global market, that is to say, the manufacturers cannot raise their prices. As a result, the profitability will definitely be reduced and the manufacturers will be forced to reduce their production.

On the other hand, oil prices volatility arises from the low elasticity of supply in the short-term, meaning that the impacts of oil price volatility tend to be stronger in the short-term (Eia 2020; U.S. Energy Information Administration 2020). Hence, along with the long-run analysis, a short-run analysis was also conducted, and the results are presented in Table 5.6 Results of Short-run Analysis. Similar to the results of the long-run analysis, short-run results also revealed that oil rent dependence is negatively impacts the production of the manufacturing sector. More specifically, a 1% increase in the share of oil rent in GDP will reduce the production of the manufacturing sector by 0.02% in the short-run. Moreover, the results also revealed that the estimated coefficient of agriculture value added was positive and significant at 5% level, indicating a positive relationship between agriculture value added and the production of the manufacturing sector in the short-run. Likewise, the results of the short-run analysis also indicated that the wage rate negatively impacts the production of the manufacturing sector, a 1% increase in wage rate will reduce the production of the manufacturing sector by 0.51%.

Table 5.5 Results of Long-run Analysis

	MVA
C	-1.0105** (-1.9643)
ORD	-0.1067** (-2.2892)
AVA	0.5422***

	(4.5308)
WR	-2.1722*** (-5.5166)

Note: *** and ** denote significant at 1% and 5% level respectively. T-statistics are presented in parentheses.

The results presented in Table 5.6 revealed that the estimated coefficient of lagged Error-Correction Term was negative and significant at 1% level, which further confirmed the existence of a long-run relationship between the variables. Besides, this estimated coefficient also indicated that the deviation from long-run equilibrium after a shock was corrected by around 23.35%.

Table 5.6 Results of Short-run Analysis

Dependent Variable	**MVA**
$\Delta\mathbf{ORD}(-\mathbf{1})$	-0.0249*** (-2.7205)
$\Delta\mathbf{AVA}(-\mathbf{1})$	0.1266** (2.3041)
$\Delta\mathbf{WR}$	-0.5071*** (-3.0453)
$\mathbf{ECT_{t-1}}$	-0.2335*** (-4.5298)

Note: *** and ** denote significant at 1% and 5% level. T-statistics are presented in parenthesis.

5.4.4 TYDL Causality Test

Following the examination of the relationship between the variables, the TYDL causality test was conducted in order to determine the direction of causality between the variables. Based on the results shown in Table 5.7, there is no causal relationship between the variables in this model. In other words, one can assert that although oil rent dependence is found to adversely impact the production of the manufacturing sector, the impact is transmitted through other variables.

Table 5.7 Results of TYDL Causality Test

	MVA
ORD → MVA	2.1005
AVA → MVA	2.1285
WR→ MVA	2.3544
MVA → ORD	0.3940
MVA → AVA	2.3908

MVA → WR	0.7934

5.5 Impacts of Oil Rent Dependence on Export of Manufacturing Sector

This section focuses on the second hypothesis of this study, which was oil rent dependence negatively impact the export of the manufacturing sector. Due to the crucial role played by the manufactured export in Malaysia's economic development, this section concentrated on examining the impacts of oil rent dependence on the export of Malaysia's manufacturing sector. According to Sachs and Warner (2001), the contribution made by manufactured export tends to be smaller in oil-abundant countries due to higher prices in the global market, which consequently reduces the competitiveness of manufactured goods in the international market. More specifically, during the oil resource boom, an increase in disposable income caused by the increase in the export of crude oil resources will result in inflation and appreciation of the exchange rate, rendering the manufactured export uncompetitive. Besides, oil resource boom will also shift the factors of production away from non-resource tradable sectors, such as manufacturing sector, to oil resources sector, thus, reducing the export and the competitiveness of the manufacturing sector (Horváth and Zeynalov 2016; Funk, Treviño, and Oriaifo 2021).

The results of the ARDL bounds test which was conducted for cointegration test, diagnostic test, stability test, long-run, and short-run analyses and TYDL causality test were presented in this section.

5.5.1 Cointegration Test

ARDL bounds test began with computing the values of F-statistics to determine the existence of a long-run relationship between the variables. Due to the sample size in this research, lags up to two years were imposed in this model. The optimum lag length was determined by SIC.

Since the sample size of this research was 50, the critical values generated by Narayan (2005) were applied because it is more suitable for a smaller sample size compared with the critical values computed by Pesaran, Shin, and Smith (2001), which were computed for larger sample sizes. The results of the ARDL bound test are presented in **Table 5.8**.

The results of the ARDL bounds test revealed that the value of F-statistics was larger than upper bound critical value at 5% level, indicating the presence of a long-run relationship between the variables in this model. Additionally, the estimated coefficient of lagged ECT, which was negative and significant at 1% level also confirmed the existence of the relationship between the variables.

Table 5.8 Results of ARDL Bounds Test

Dependent Variable	**Optimum Lag**	**F-Statistics**	$\boldsymbol{ECT_{t-1}(t-Ratio)}$	**Results**

EXP	(2,0,0,2)	4.9774**	-0.3624(-4.6263)***	Cointegration
Critical Values	**Lower Bound**		**Upper Bound**	
1%	4.865		6.360	
5%	3.500		4.700	
10%	2.873		3.973	

Note: *** and ** denote significant at 1% and 5% level respectively. Critical values are obtained from Narayan (2005) with unrestricted intercept and no trend.

5.5.2 Diagnostic Test

In order to confirm the health of the econometric model, several diagnostic tests were applied. For instance, LM test was conducted to test the serial correlation, ARCH test was applied to examine the heteroscedasticity, and RESET test was conducted to check the misspecification. The CUSUM and CUSUMSQ tests were applied in this section to ensure the stability of the model.

According to the results presented in **Table 5.9**, it was demonstrated that the probability for each test was insignificant as the probability values had exceeded the 10% level, indicating all null hypotheses, namely the null hypothesis of no serial correlation, the null hypothesis of no conditional heteroscedasticity, and the null hypothesis of correct specification were accepted. Besides, the plots of the CUSUM and CUSUMSQ tests provided evidence for the stability of the coefficients. Similar to the plots of the CUSUM and CUSUMSQ tests in the last section, the plot of the CUSUM test in this section was also found to lie between the boundaries, whereas the plot of the CUSUMSQ test exceeded the boundaries, and the reason behind was due to Asian Financial Crisis during that period. Based on Nguyen et al. (2021), among the Southeast-Asian countries, Malaysia was claimed to be the country that was most affected by the financial crisis from 1993 to 1997.

Table 5.9 Results of Diagnostic Tests

Dependent Variable	**EXP**
LM	1.6609 [0.2035]
ARCH	1.6874 [0.1970]
Ramsey RESET	1.0728 [0.2900]
CUSUM	S
CUSUMSQ	S

Note: S represents stable model. P-values are presented in brackets.

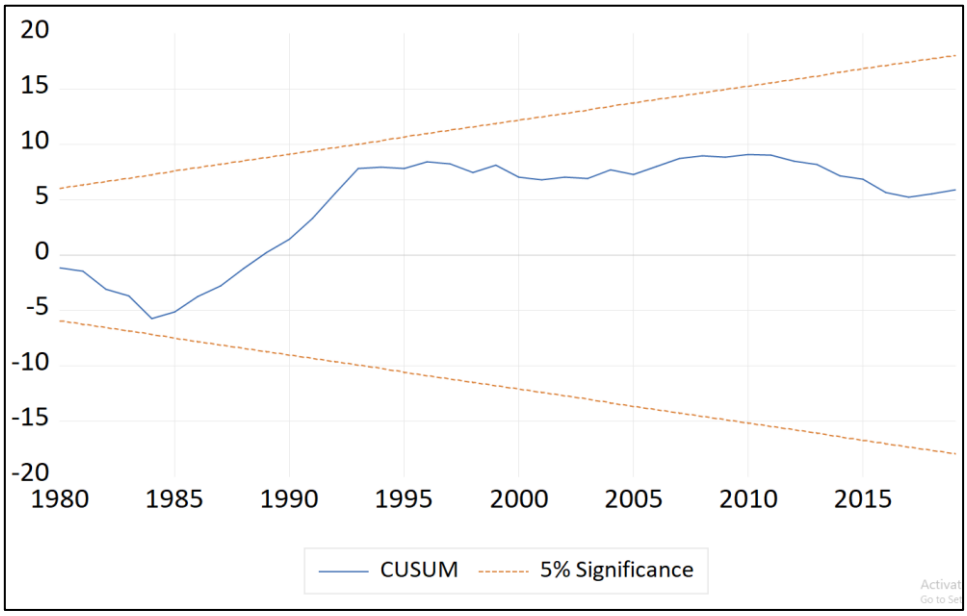


Figure 5.4 Plot of Cumulative Sum of Recursive

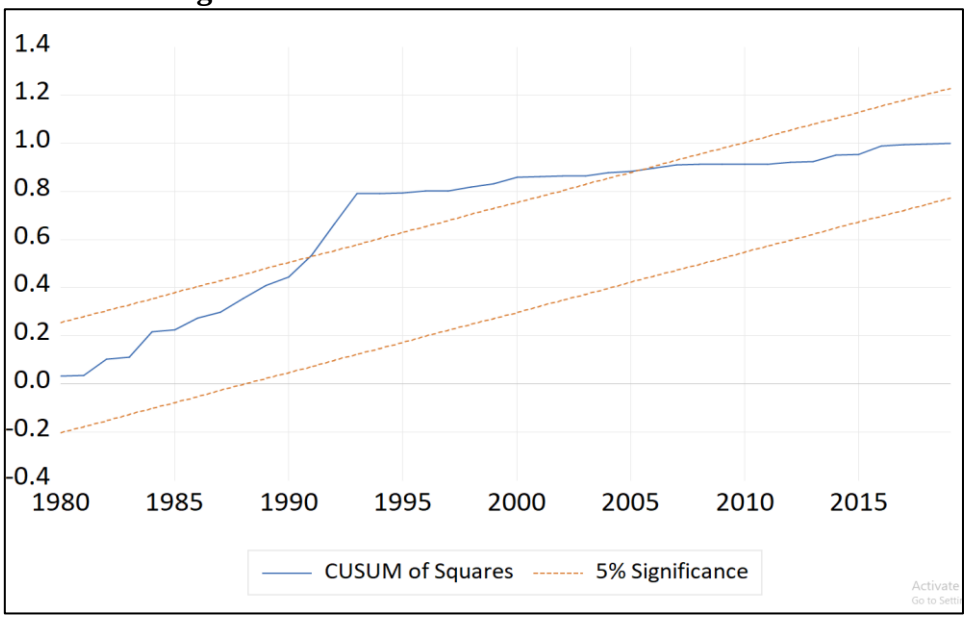


Figure 5.5 Plot of Cumulative Sum of Squares of Recursive

5.5.3 Long-Run and Short-Run Analyses

Following the cointegration test, this research proceeded to conduct long-run analysis because the spending effect of Dutch disease which occurs when oil resources boom leads to appreciation of exchange rate and thus reduce the competitiveness of manufactured exports in global market is also considered as a long-term effect (Barczikay, Biedermann, and Szalai 2020). This study proceeded to determine the long-run coefficients of the variables through ARDL procedures in order to determine whether oil rent dependence strengthens or dampens the manufactured exports through the spending effect of Dutch disease in the long-run. The results of the long-run analysis are presented in **Table 5.10**.

The empirical results showed that the estimated coefficient of oil rent dependence was negative but insignificant, indicating that the oil rent dependence did not have any significant impact on the export of the manufacturing sector. In other words, even though Doraisami (2015) had found that while the share of manufactured exports declines when there is an increase in the share of the mining sector, the oil rent dependence is not one of the reasons behind the decreasing trend of manufactured exports as it does not have any significant impact on it. According to Abidin and Loke (2008), the decline in the export of the manufacturing sector can be attributed to the emergence of China as a strong competitor and the slowdown trend in E&E industry. Besides, the reduction in export of the Malaysia's manufactured goods can be explained by the fact that the demand for E&E products, which is always acts as the largest contributor to the total exports, had been reduced due to a decline in consumption in the United States, Europe countries and Japan (Nambiar 2013).

On the one hand, it was surprising to find that the level of infrastructure is negatively and significantly impacts the export of the manufacturing sector. It was claimed that infrastructure plays a crucial role in promoting exports by connecting domestic companies with the international market. The findings of this research showed that Malaysia is lacking in infrastructure (Rehman, Noman, and Ding 2020). This finding validated the argument of Chandran and Devadason (2017), who claimed that Malaysia does not have sufficient R&D infrastructure that allows manufacturers to improve their competitiveness by enhancing efficiency and reducing time-to-market. Along with this research, the report of Economic Planning Unit (2018) also claimed that the issues of lacking infrastructure have impeded Malaysia's economic growth. More specifically, Malaysia does not have sufficient transport infrastructures, such as railway tracks, to transfer the containers between seaports and dry ports. For instance, the Prai Bulk Cargo Terminal (PBCT) is suffering from issues of space constraints as there is only one railway track, which allows them to transfer the containers to the Penang Port (Jeevan, Chen, and Lee 2015). In addition to transport infrastructure, inadequate broadband infrastructure in industrial areas also prevent manufacturers from improving their efficiency and gaining a better access to the global market (CEDAR 2018).

On the other hand, the estimated coefficient of GDP per capita was found to be positive and significant at 5% level, indicating that a 1% increase in GDP per capita will increase the export of the manufacturing sector by 0.42%. This result implies that instead of the export-led growth hypothesis, the growth-led exports hypothesis referring to the situation in which economic growth acts as the main driver for exports is applied in Malaysia (Panta, Devkota, and Banjade 2022). According to the growth-led exports hypothesis, economic growth will lead to an increase in the inflow of foreign direct investments which come along with advanced technology and skills. Consequently, the efficiency of the manufacturing sector will be improved, causing the sector to become more competitive in the international market and allowing the manufacturers to export more (Dar et al. 2013; Odhiambo 2021; Ben-Salha, Abid, and Montasser 2022). This result validated the findings of Ahmad and Harnhirun (1995) and Arnade and Vasavada (1995), who asserted a growth-led hypothesis for Malaysia.

Following the long-run analysis, short-run analysis was also conducted in this study because the oil price volatility, which is stronger in the short-term, will induce the exchange rate volatility which in turn impedes the export of the manufacturing sector (Gylfason and Zoega 2006). Therefore, with the purpose of examining whether the impacts of oil rent dependence on manufactured exports in the short-run, short-run analysis was conducted and the results are presented in **Table 5.11**. Similar to the results in the long-run analysis, the results revealed that oil rent dependence did not have a significant impact on the export of the manufacturing sector in the short-run. Furthermore, the empirical finding also showed that the estimated coefficient of the level of infrastructure was negative and significant at 1% level, indicating the adverse impacts of level of infrastructure on the export of the manufacturing sector in the short-run. Likewise, GDP per capita was also positively correlated with the export of the manufacturing sector in the short-run. More precisely, a 1% increase in GDP per capita will raise the manufacturing export by 0.15% in the short-run.

Table 5.10 Results of Long-Run Analysis

	EXP
$\mathbf{C}$	-1.8900** (2.5979)
$\mathbf{ORD}$	-0.0751 (-1.1702)
$\mathbf{INFRA}$	-0.3534*** (-3.3881)
$\mathbf{GDP}$	0.4223** (2.2489)

Note: *** and ** denote significant at 1% and 5% level respectively. T-statistics are presented in parentheses.

The results revealed that the estimated coefficient of lagged ECT was negative and significant at 1% level, which further confirmed the existence of a long-run relationship between the variables. Besides, this estimated coefficient also indicated that the deviation from the long-run equilibrium after a shock was corrected by around 36.2%.

Table 5.11 Results of Short-Run Analysis

	EXP
$\Delta\mathbf{ORD}$	-0.0272 (-1.0736)
$\Delta\mathbf{INFRA}$	-0.1281* (-1.9490)
$\Delta\mathbf{GDP}(-\mathbf{1})$	0.1530* (1.9231)
$\mathbf{ECT_{t-1}}$	-0.3624*** (-4.6263)

Note: *** and * denote significant at 1% and 10% level respectively. T-statistics are presented in parentheses.

5.5.4 TYDL Causality Test

Following the long-run and short-run analysis, this research proceeded to apply the TYDL causality test with the purpose of determining the direction of causality between the variables. The results of TYDL causality test are presented in **Table 5.12**.

The results revealed that there was a unidirectional causality relationship running from the export of the manufacturing sector to oil rent dependence. This result was contradicting Corden and Neary (1982), which claimed that oil rent dependence dampens the export of the manufacturing sector.

Moreover, the causality relationship between GDP per capita and the export of the manufacturing sector was also found to be a unidirectional causality relationship running from the GDP per capita to the manufactured exports, which further confirmed the growth-led exports hypothesis for Malaysia. In other words, GDP per capita played a crucial role in promoting the export of the manufacturing sector in Malaysia.

On the other hand, it was also noticeable that while the results presented in Section 5.5.3 **Long-Run and Short-Run Analyses** indicated the negative impacts of infrastructure level on manufactured export, the results of the TYDL causality test revealed that there was no causal relationship between the variables. The absence of causality relationship between the level of infrastructure and manufactured exports can be explained by the fact that the negative impacts were transmitted through other variables.

Table 5.12 Results of TYDL Causality Test

	EXP
ORD → EXP	0.0502
INFRA → EXP	0.8038
GDP → EXP	5.2316**
EXP → ORD	4.6425**
EXP → INFRA	0.1128
EXP → GDP	1.8330

Note: ** denotes significance at 5% level.

5.6 Financial Development and Relationship between Oil Rent Dependence and Production of Manufacturing Sector

In contrast to the previous sections, this section focused on another hypothesis, which was financial development is able to moderate the impacts of oil rent dependence on the production

of the manufacturing sector. Given the crucial role played by financial development in stimulating sustainable economic growth through effective resources allocation, this section aimed at investigating the moderating role of financial development on the relationship between oil rent dependence and the production of the manufacturing sector. Based on Moradbeigi and Law (2017), a highly-developed financial sector can mitigate the negative impacts of oil rent dependence by channeling the oil rent into real economic sectors which are conducive to economic growth. More precisely, in the presence of a high level of financial development, financial system will not only allocate more financial resources to manufacturers, allowing them to conduct technological innovations, but also diversify the risks of technological innovations (Rongwei and Xiaoying 2020). In this instance, innovation will take place in the manufacturing sector and ultimately raises production of this sector. Therefore, two econometric models were constructed in order to examine the moderation effects of financial development on the nexus between oil rent dependence and the production of the manufacturing sector by employing interaction terms between oil rent dependence and financial development indicators.

In the following subsections, the results of the ARDL bounds test conducted for cointegration test, diagnostic test, stability test, long-run and short-run analyses, and TYDL causality test are presented.

5.6.1 Cointegration Test

ARDL bounds test began with computing the values of F-statistics in order to determine the existence of long-run relationship between the variables. Since annual data was employed in this research, lags up to two years were imposed in these models to account for serial correlation (Wooldridge 2012). The optimum lag length was determined by SIC.

In contrast to the previous sections, the main objective of this section was to investigate the moderating role of financial development on the relationship between oil rent dependence and the production of the manufacturing sector. Therefore, several indicators were employed as measurements of financial development. This is because one indicator would not be enough to measure financial development accurately as it does not include the multidimensional approach of financial development. Accordingly, the optimal lag length for each model was determined when the share of domestic credit to private sector by banks in GDP and the share of broad money in GDP were used as financial development indicators respectively.

Since the sample size for this research was 50, the critical values tabulated by Narayan (2005) were employed in this research. The results of ARDL bounds tests are summarized in **Table 5.13**.

According to the results shown in **Table 5.13**, it was found that the values of F-statistics of each model were greater than upper bounds critical values at 5% level, indicating the presence of long-run relationship between the variables in each model. Furthermore, the estimated coefficients of lagged ECT of both models were negative and significant at 1% level, which further confirmed the variables are cointegrated with each other in both models.

Table 5.13 Results of ARDL Bounds Test

Model	Optimum Lag	F-Statistics	$ECT_{t-1}(t-Ratio)$	Results
FD1 Model	(2,0,0,1,0,0)	4.7412**	-0.3079(-5.6652)***	Cointegration
FD2 Model	(1,0,2,1,0,0,)	5.4578**	-0.2890(-6.0873)***	Cointegration
Critical Values	**Lower Bound**		**Upper Bound**	
1%	3.955		5.583	
5%	2.900		4.218	
10%	2.435		3.600	

Note: *** and ** denote significant at 1% and 5% level respectively. Critical values are obtained from Narayan (2005) with unrestricted intercept and no trend.

5.6.2 Diagnostic Test

Several diagnostic tests were applied in this research in order to ensure the health of the econometric model. For instance, LM test was conducted to test the serial correlation, ARCH test was applied to examine the heteroscedasticity, and RESET test was carried out to check the misspecification. CUSUM and CUSUMSQ tests were applied to ensure the stability of the model.

According to **Table 5.14**, the results revealed that all null hypotheses, namely the null hypothesis of no serial correlation, the null hypothesis of no conditional heteroscedasticity, and the null hypothesis of correct specification, were accepted as all results were insignificant. Besides, unlike the results of the CUSUM and CUSUMSQ presented in the previous sections, the plots of both the CUSUM and CUSUMSQ tests for FD1 Model lie between the boundaries, indicating the stability of the coefficients. In contrast, while the plot of the CUSUM test in the FD2 Model lay between the boundaries, the plot of the CUSUMSQ test exceeded the boundaries from 2014 to 2016, and it was mainly due to the oil supply glut and the plunge in oil prices during that period (Stocker, Baffes, and Vorisek 2018).

Table 5.14 Results of Diagnostic Tests

	FD1 Model	FD2 Model
LM	1.5165 [0.2328]	1.3886 [0.2625]
ARCH	2.0217 [0.1448]	1.6099 [0.2117]
Ramsey RESET	0.0664 [0.9359]	0.2008 [0.8189]

CUSUM	S	S
CUSUMSQ	S	S

Note: S represents stable model. P-values are presented in brackets.

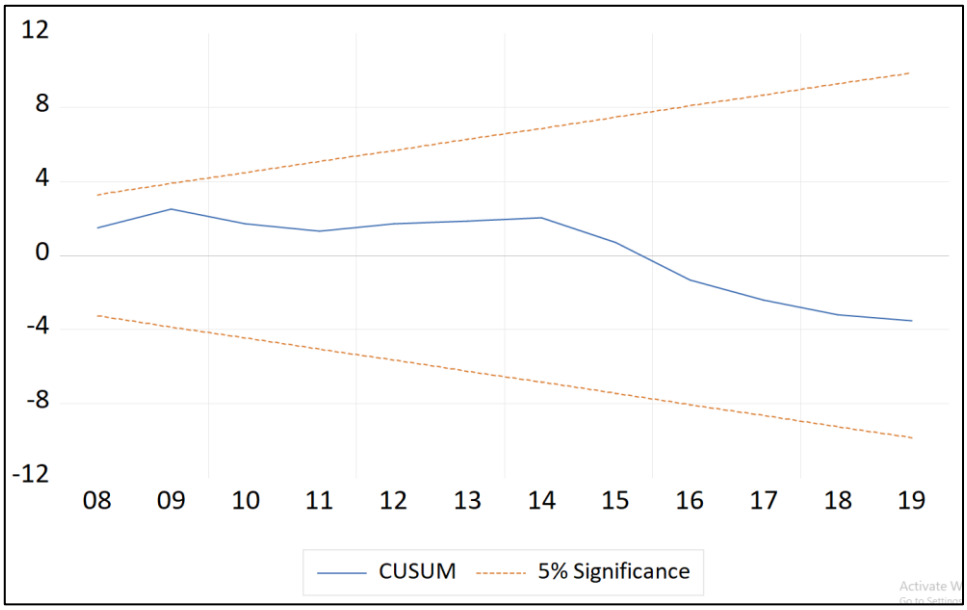


Figure 5.6 Plot of Cumulative Sum of Recursive (FD1 Model)

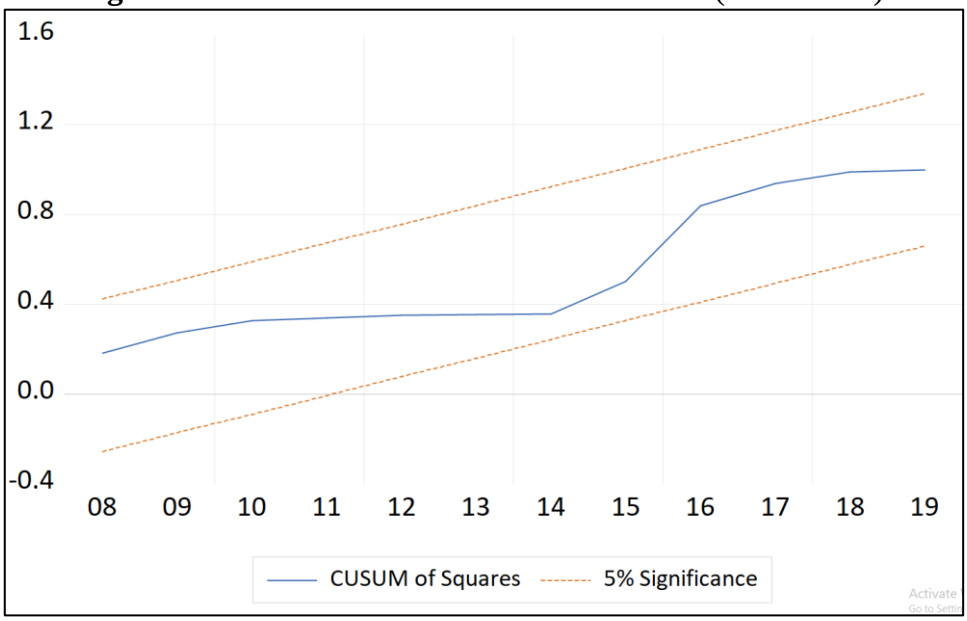


Figure 5.7 Plot of Cumulative Sum of Squares of Recursive Residuals (FD1 Model)

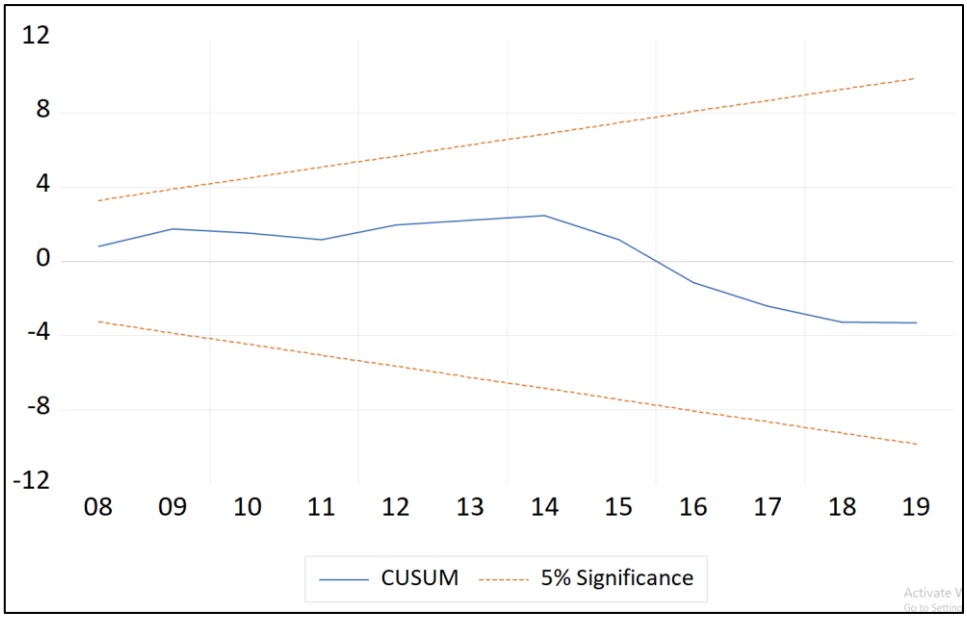


Figure 5.8 Plot of Cumulative Sum of Recursive (FD2 Model)

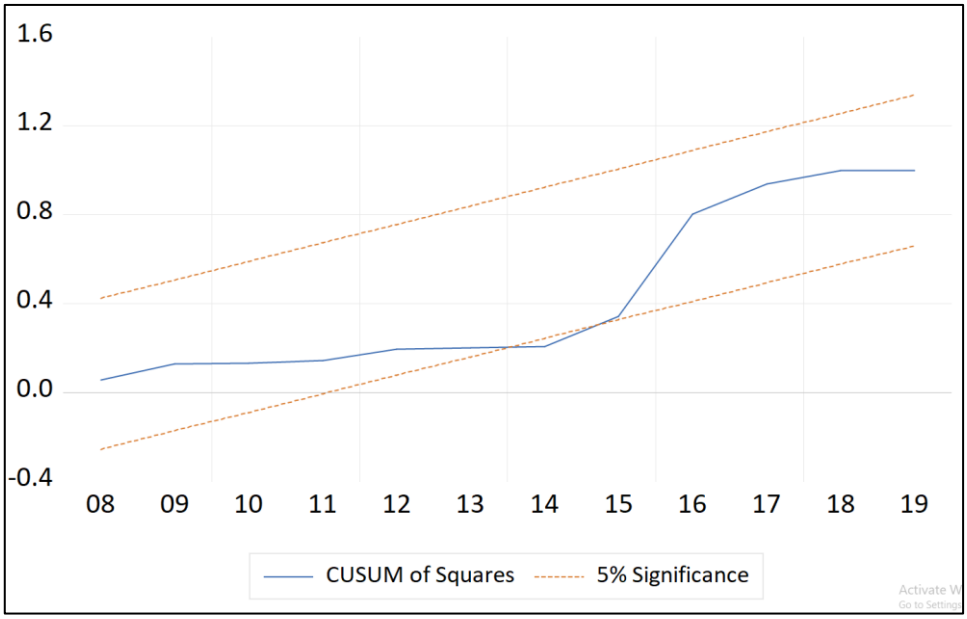


Figure 5.9 Plot of Cumulative Sum of Squares of Recursive Residuals (FD2 Model)

5.6.3 Long-Run and Short-Run Analyses

Following the cointegration test, this research proceeded to conduct long-run analysis. The long-run coefficients of the variables were obtained through ARDL procedures and the results are presented in **Table 5.15**.

Although the results of Model 1 showed that the oil rent dependence is adversely impacts the production of the manufacturing sector, it was found that the oil rent dependence positively impacts the production of the manufacturing sector once the financial development indicator was added to the models. The positive impacts of oil rent dependence validated the findings of Atil et al. (2020) and Dogan, Altinoz, and Tzeremes (2020), which also found the positive

impacts of oil rent dependence. The endowment of crude oil resources can improve the facilitation of the import of technology, which consequently improves labour efficiency. As a result, the production of the manufacturing sector can be improved through the adoption of advanced technology.

The empirical findings revealed that when the share of domestic credit to private sector by banks in GDP and the share of broad money in GDP were used as indicators for financial development, a positive relationship between financial development and the production of the manufacturing sector was found. These results were unsurprising because one of the important roles of financial development is to stimulate productive investments by enhancing the processing of investment information. Indeed, oil rent can contribute to the production of the manufacturing sector by acting as an additional source of funds for the manufacturers.

According to Moradbeigi and Law (2014), oil rent is considered a double-edged sword, meaning that it has both positive and negative impacts. Although the findings of the models in this section indicated the positive impacts of oil rent dependence, the empirical results of the long-run analysis also revealed that the estimated coefficient for the interaction term between oil rent dependence and financial development indicators in both models are was negative and significant at 1% level, indicating that the positive impacts of oil rent dependence on the production of the manufacturing sector were weakened by financial development in Malaysia. Due to the weakening effect of financial development, the positive impacts of oil rent dependence will be reduced, causing the negative impacts to become more significant and outweigh the positive impacts. In other words, it can be argued that the adverse impacts of oil rent dependence on the production of the manufacturing sector transmitted through financial development in Malaysia. These results also suggested that the poor performance of Malaysia's financial sector tends to allocate the oil rent into virtual economic sectors instead of real economic sectors which are conducive to economic growth (Xu and Tan 2020). More specifically, in the presence of underdeveloped financial sector, the profitability of financial institutions will be more obvious, causing the oil rent to be allocated to virtual economic sectors with higher rates of return and circulation rates. As a result, it will exhibit a crowding-out effect on other real economic sectors, such as the manufacturing sector (Rongwei and Xiaoying 2020).

Moreover, it was also found that the estimated coefficient of agriculture value added in constant 2015US$ was positive and significant at 1% level, indicating the positive impacts of agriculture value added on the production of the manufacturing sector. These findings were unsurprising because the output of the agriculture sector was highly demanded by Malaysia's manufacturing sector, which used agricultural products as inputs (Yusof Saari, Alias, and Chik 2013).

In terms of the estimated coefficient of the wage rate, it was also found to be negative and significant at 1% level in each model, suggesting that it was negatively correlated with the production of the manufacturing sector. This is because when the wage rate increases, it will also raise the production costs of the manufacturing sector, which in turn, reduces profitability. In this case, the manufacturers will be forced to reduce their production.

Along with the results of the long-run analysis, the results of the short-run analysis are also presented in **Table 5.16**. Similar to the long-run results, the results also revealed that oil rent dependence and financial development were positively correlated with the production of the manufacturing sector in the short-run. However, the results also found that the significant positive impacts of oil rent dependence on the production of the manufacturing sector were weakened by financial development in the short-run, as indicated by the negative sign of interaction term between oil rent dependence and the financial development indicators. Likewise, agriculture value added is also found to have positive impacts on production of manufacturing sector while wage rate is adversely impacts in the short-run.

Table 5.15 Results of Long-run Analysis

	FD1 Model	**FD2 Model**
$\mathbf{C}$	-2.1385*** (-2.7314)	-1.7946** (-2.5922)
$\mathbf{ORD}$	0.5926*** (2.9619)	1.1374*** (3.3691)
$\mathbf{FD1}$	0.2088** (2.3563)	
$\mathbf{ORD} * \mathbf{FD1}$	-0.1753*** (-3.2852)	
$\mathbf{FD2}$		0.4367** (2.4799)
$\mathbf{ORD} * \mathbf{FD2}$		-0.2860*** (-3.5967)
$\mathbf{AVA}$	0.6786*** (3.8403)	0.5098*** (3.0426)
$\mathbf{WR}$	-2.5632*** (-5.8364)	-2.4029*** (-6.8735)

Note: *** and * denote significant at 1% and 10% level. T-statistics are presented in parenthesis.

The results revealed that the estimated coefficients of lagged ECT were negative and significant at 1% level, which further confirmed the existence of long-run relationship between the variables in both of these models. Besides, the results also indicated that the deviation from the long-run equilibrium after a shock were corrected by around 31.0% and 28.9% per year, respectively.

Table 5.16 Results of Short-Run Analysis

	FD1 Model	**FD2 Model**
$\Delta\mathbf{ORD}$	0.1825** (2.5472)	0.3287*** (2.7979)
$\Delta\mathbf{FD1}$	0.0643** (2.1598)	
$\Delta\mathbf{ORD} * \mathbf{FD1}\ (-\mathbf{1})$	-0.0540*** (-2.8366)	

$\Delta \mathbf{FD2}(-\mathbf{1})$		0.1262** (2.3717)
$\Delta \mathbf{ORD} * \mathbf{FD2}\ (-\mathbf{1})$		-0.0826*** (-3.0017)
$\Delta \mathbf{AVA}$	0.2090*** (2.7310)	0.1473** (2.0929)
$\Delta \mathbf{WR}$	-0.7893*** (-3.7338)	-0.6945*** (-3.6337)
$\mathbf{ECT_{t-1}}$	-0.3079*** (-5.6652)	-0.2890*** (-6.0873)

Note: *** and ** denote significant at 1% and 5% level respectively. T-statistics are presented in parenthesis.

5.6.4 TYDL Causality Test

Following the long-run and short-run analysis, this research proceeded to determine the direction of causality between the variables in both econometric models. The results revealed that there is no causality relationship between the variables. In other words, the impacts of the variables are transmitted through the other variables.

Table 5.17 Results of TYDL Causality Test

	FD1 Model	**FD2 Model**
ORD → MVA	0.2253	0.2905
FD1 → MVA	0.2490	
(ORD * FD1) → MVA	0.6090	
FD2 → MVA		0.0465
(ORD * FD2) → MVA		0.5618
AVA → MVA	0.1700	0.0186
WR → MVA	1.1944	1.2115
MVA → ORD	0.1548	0.0033
MVA → FD1	0.1201	
MVA → (ORD * FD2)	0.2179	
MVA → FD2		0.2838
MVA → (ORD*FD2)		0.0261
MVA → AVA	0.2518	0.0548
MVA → WR	0.7608	0.4364

5.7 Financial Development and Relationship between Oil Rent Dependence and Export of Manufacturing Sector

This section focuses on another hypothesis related to the moderating role of financial development, which was financial development is able to moderate the impacts of oil rent dependence on the export of the manufacturing sector. Given the crucial role played by financial development in oil-abundant countries, this section aims at investigating the

moderating role of financial development on the relationship between oil rent dependence and the export of the manufacturing sector. Although the volatility of oil rent will stimulate the exchange rate volatility that will reduce the export of the manufacturing sector, the presence of a well-developed financial system will reduce the adverse impacts arising from the fluctuations in oil prices (Gylfason and Zoega 2006; Moradbeigi and Law 2016). More specifically, the well-functioning financial sector can reduce the uncertainty arising from the fluctuations in oil prices, enhance the credibility of the government, and thus, strengthens the positive impacts of oil rent through the function of resources allocation. Therefore, two econometric models were constructed in order to examine the moderation effect of financial development on the relationship between oil rent dependence and the export of the manufacturing sector by employing interaction terms between oil rent dependence and financial development.

In the following subsections, the results of descriptive statistics, unit root test, ARDL bounds test conducted for cointegration test, diagnostic test, stability test, long-run and short-run analyses, and TYDL causality test are presented.

5.7.1 Cointegration Test

ARDL bounds test began with computing the values of F-statistics in order to determine the existence of long-run relationship between the variables in these models. Lags up to two years were applied in these models.

Since the sample size for this research was 50, the critical values generated by Narayan (2005) for F-test were employed. According to the results presented in **Table 5.18**, ARDL of (2,0,0,0,0,2) and (2,0,0,0,0,2) for these two models respectively.

Based on the results of ARDL bounds test, it was found that the value of F-statistics for both models lay between the lower bound and upper bound critical values, making the results inconclusive. Therefore, this research proceeded to determine the estimated coefficients of ECT. According to Kremers, Ericsson, and Dolado (1992), ECT can be considered an alternative way of determining the existence of cointegration between the variables. In doing so, the results revealed that the estimated coefficients of ECT for both models were negative and significant at 1% level, indicating that cointegration existed in each model.

Table 5.18 Results of ARDL Bounds Test

Model	**Optimum Lag**	**F-Statistics**	$\boldsymbol{ECT_{t-1}(t-Ratio)}$	**Results**
FD1 Model	(2,0,0,0,0,2)	3.3258	-0.3921(-4.7519)***	Cointegration
FD2 Model	(2,0,0,0,0,2)	3.2792	-0.3436(-4.7185)***	Cointegration
Critical Values	**Lower Bound**		**Upper Bound**	
1%	3.955		5.583	

5%	2.900	4.218
10%	2.435	3.600

Note: *** and ** denote significant at 1% and 5% level. Critical values are obtained from Narayan (2005) with unrestricted intercept and no trend.

5.7.2 Diagnostic Test

Table 5.19 summarizes the results of a few diagnostic tests, namely LM test conducted to test the serial correlation, ARCH test applied to examine the heteroscedasticity, and Ramsey RESET test for checking the misspecification. CUSUM and CUSUMSQ tests were applied to ensure the stability of the model.

According to the results presented in **Table 5.19**, it was demonstrated that the probability for each test was insignificant, indicating that all null hypotheses, namely the null hypothesis of no serial correlation, the null hypothesis of no conditional heteroscedasticity, and the null hypothesis of correct specification were accepted. Besides, the plots of the CUSUM and CUSUMSQ tests provided evidence for the stability of the coefficients as they lay between the boundaries.

Table 5.19 Results of Diagnostic Tests

	FD1 Model	**FD2 Model**
LM	0.8500 [0.4358]	2.3294 [0.1119]
ARCH	1.5727 [0.2192]	1.9521 [0.1544]
Ramsey RESET	1.5167 [0.2331]	1.8361 [0.1740]
CUSUM	S	S
CUSUMSQ	S	S

Note: S represents stable model. P-values are presented in brackets.

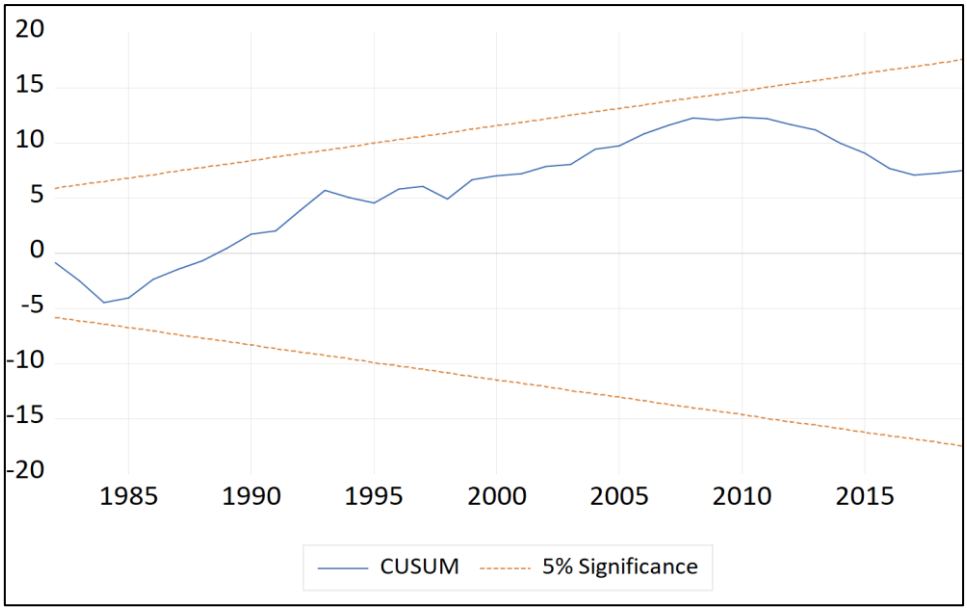


Figure 5.10 Plot of Cumulative Sum of Recursive (FD1 Model)

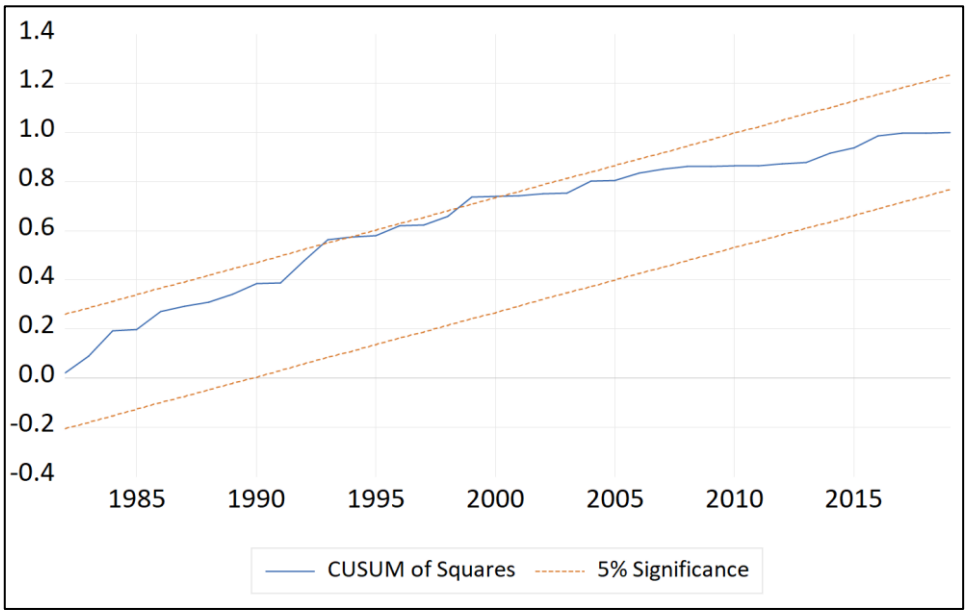


Figure 5.11 Plot of Cumulative Sum of Squares of Recursive Residuals (FD1 Model)

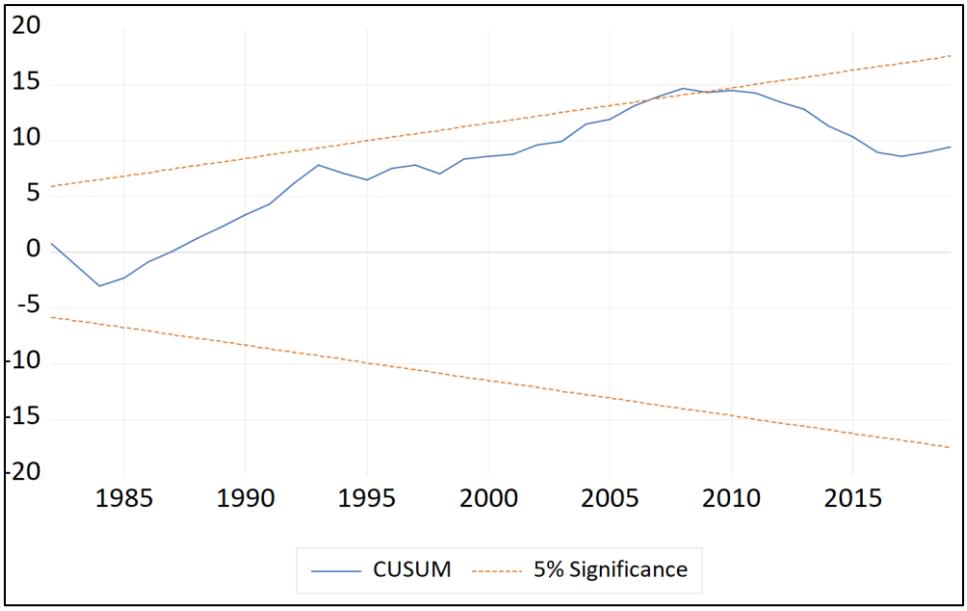


Figure 5.12 Plot of Cumulative Sum of Recursive (FD2 Model)

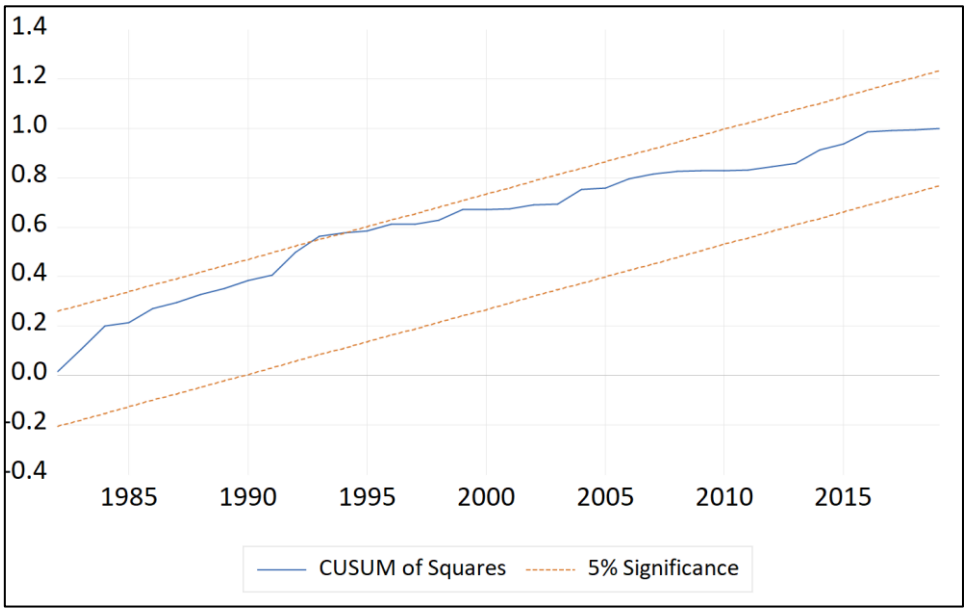


Figure 5.13 Plot of Cumulative Sum of Squares of Recursive Residuals (FD2 Model)

5.7.3 Long-Run and Short-Run Analyses

This research proceeded to derive the estimated coefficients of the long-run analysis. The results of the long-run analysis are presented in **Table 5.20**.

Based on the results of the long-run analysis presented in **Table 5.20**, similar to the results of Model 2 in Section 5.3, the findings revealed that when the share of domestic credit to private sector by banks in GDP and the share of broad money in GDP were employed as indicators for financial development, the estimated coefficients of oil rent dependence were positive but insignificant, indicating that oil rent dependence did not have a significant impact on the export of the manufacturing sector. These results were in line with the results presented in Section 5.5.3 **Long-Run and Short-Run Analyses**.

On the one hand, the empirical results also showed that financial development, which was represented by the share of domestic credit to private sector by banks in GDP and the share of broad money in GDP, did not have any significant impact on the export of the manufacturing sector. This finding was contradicting the argument of Beck (2002), which claimed that a high level of financial development will provide comparative advantages for the manufacturing sector, which in turn improve the manufacturing exports.

Moreover, the results also revealed that financial development did not moderate the relationship between oil rent dependence and the export of the manufacturing sector, as indicated by the estimated coefficients of the interaction terms between oil rent dependence and financial development, which were negative but insignificant. These results suggested that Malaysia's financial sector was not developed enough to foster the efficiency of oil rent allocations, which would benefit the exports of the manufacturing sector. Erdoğan, Yıldırım, and Gedikli (2020) argued that in the presence of an underdeveloped financial sector, the impacts of oil rent dependence tend to be insignificant. Nonetheless, the presence of a highly-developed financial sector will lead to an oil blessing phenomenon because the windfall of oil rent will be channeled into more productive investments that are pro-growth (Moradbeigi and Law 2017).

Along with the results of the long-run analysis, the results for the short-run analysis are summarized in **Table 5.21** Results of Short-Run Analysis. It was noticeable that the results for the short-run analysis were similar to the results of the long-run analysis. More specifically, the impact of oil rent dependence was found to be insignificant in the short-run in the models, in which the share of domestic credit to private sector by banks in GDP and the share of broad money in GDP were used as indicators for financial development. Furthermore, the results also showed that financial development did not have any significant impact on the export of the manufacturing sector in the short-run. The interaction terms between the oil rent dependence and financial development indicator were also insignificant in the short-run, indicating the presence of an underdeveloped financial sector in Malaysia. Similar to the results of the long-run analysis, the results also revealed that the estimated coefficients of the level of infrastructure were insignificant in both models in the short-run. Furthermore, the impact of GDP on the exports of the manufacturing sector was also found to be positive but insignificant in both models.

Table 5.20 Results of Long-Run Analysis

	FD1 Model	**FD2 Model**
C	-1.4249 (-1.4373)	-2.1224** (-2.3180)
ORD	0.0375 (0.0864)	0.0536 (0.0663)
FD1	-0.2554 (-0.7161)	
ORD ∗ FD1	-0.0314 (-0.2825)	

FD2		0.2815 (0.6027)
ORD ∗ FD2		-0.0328 (-0.1743)
INFRA	-0.1822 (-0.7856)	-0.3882*** (-3.2261)
GDP	0.3346 (1.6378)	0.3900* (1.8417)

Note: ***, ** and ** denote significant at 1%, 5% and 10% level respectively. T-statistics are in the parenthesis.

The results revealed that the estimated coefficients of ECT were negative and significant at 1% level, which further confirmed the existence of long-run relationship between the variables in the models. Besides, the estimated coefficient of ECT also indicated that the deviation from the long-run equilibrium after a shock were corrected by around 39.2% and 34.4% per year, respectively.

Table 5.21 Results of Short-Run Analysis

	FD1 Model	**FD2 Model**
ΔORD	0.0147 (0.0854)	0.0184 (0.0658)
ΔFD1	-0.1001 (-0.7346)	
ΔORD ∗ FD1	-0.0123 (-0.2708)	
ΔFD2		0.0967 (0.6178)
ΔORD ∗ FD2		-0.0112 (-0.1710)
ΔINFRA	-0.0714 (-0.7215)	-0.1334* (-1.8885)
ΔGDP(-1)	0.1312 (1.5411)	0.1340 (1.5678)
ECT_{t-1}	-0.3921*** (-4.7519)	-0.3436*** (-4.7185)

Note: *** and * denote significant at 1% and 10% level respectively. T-statistics are in the parenthesis.

5.7.4 TYDL Causality Test

Following the cointegration test, it was found that the variables were cointegrated with each other in both models, thus, this study proceeded to determine the direction of causality between the variables. The results of TYDL causality test are presented in **Table 5.22**.

According to the results of TYDL causality test, it was revealed that the causality relationship between the exports of the manufacturing sector and GDP per capita was a unidirectional causal relationship running from GDP per capita to manufactured exports. This further confirmed that

instead of an export-led growth hypothesis, a growth-led exports hypothesis is applied for Malaysia. Besides, along with the findings of Section 5.5.4 **TYDL Causality Test**, it was also found that there was a unidirectional relationship between manufactured exports and oil rent dependence, the relationship, however, ran from the export of the manufacturing sector to oil rent dependence. Additionally, the results also showed that the unidirectional causality ran from manufactured exports to the interaction term between oil rent dependence and financial development. These results inferred that GDP per capita plays an important role in increasing manufactured exports, which in turn reduces the level of dependency on oil rent and strengthens the efficiency of the financial sector in oil rent utilization.

Table 5.22 Results of TYDL Causality Test

	FD1 Model	**FD2 Model**
ORD → EXP	1.9957	0.1341
FD1 → EXP	0.8112	
(ORD ∗ FD1) → EXP	2.0977	
FD2 → EXP		0.2973
(ORD ∗ FD2) → EXP		0.1245
INFRA → EXP	0.2197	0.3265
GDP → EXP	3.4447*	4.2024**
EXP → ORD	6.3917**	3.4616*
EXP → FD1	0.0739	
EXP → (ORD ∗ FD1)	7.2463***	
EXP → FD2		2.3467
EXP → (ORD ∗ FD2)		4.2414**
EXP → INFRA	0.0276	0.3167
EXP → GDP	1.1694	2.2428

Note: ***, ** and * denote significance at 1%, 5% and 10% level respectively.

5.8 Government Intervention and Relationship between Oil Rent Dependence and Production of Manufacturing Sector

This section concentrates on the fifth hypothesis of this research, which stated that government intervention is able to moderate the impacts of oil rent dependence on the production of the manufacturing sector. Along with financial development, it was claimed that government intervention is able to moderate the impacts of oil rent dependence. Therefore, this section aims at examining how government interventions moderate the impact of oil rent dependence on the production of the manufacturing sector. Although Malaysia's government has exclusive ownership over the oil and natural gas resources, which consequently allows them to manage the spending of oil rent, it was claimed that excessive government interventions will result in inefficiency of oil rent allocation. More specifically, when a country is overdependent on oil rent, the state economy will tend to have a larger proportion, and thus, put the country's economy in a position that is strongly influenced by the planned economy. In this case, the government plays a leadership role in economic development, which in turn reduces the efficiency of oil rent allocation (Wu, Li, and Li 2018; Du, Zhang, and Li 2020). Therefore, an econometric model was formed in order to investigate the moderating role of government intervention on the relationship between oil rent dependence and the production of the manufacturing sector by employing the interaction term between oil rent dependence and government interventions.

The results of descriptive statistics, unit root test, ARDL bounds test conducted for cointegration test, diagnostic test, stability test, long-run and short-run analyses and TYDL causality test are presented in the following subsections.

5.8.1 Cointegration Test

In order to determine the existence of the relationship between the variables, ARDL bounds test started by computing the values of F-statistics. Since annual time series data was applied in this research, lags up to two years were imposed in this model and the optimum lag length was determined through SIC.

Since the sample size of this research was 50, the critical values generated by Narayan (2005) were applied as it is more suitable for smaller sample sizes compared with the critical values computed by Pesaran, Shin, and Smith (2001), which were computed for larger sample sizes. The results of the ARDL bound test are shown in **Table 5.23**.

Based on the results of the ARDL bounds test, it was revealed that the value of F-statistics was larger than the upper bound critical values at 5% level, indicating the presence of long-run relationship between the variables in this model. Additionally, the estimated coefficient of lagged ECT, which was negative and significant at 1% level also further confirmed the existence of the relationship in this model.

Table 5.23 Results for ARDL bounds test

Dependent Variable	Optimum Lag	F-Statistics	$ECT_{t-1}(t-Ratio)$	Results
MVA	(1,1,0,1,0,0)	4.4697**	-0.2864(-5.4928)***	Cointegration
Critical Values	**Lower Bound**		**Upper Bound**	
1%	3.955		5.583	
5%	2.900		4.218	
10%	2.435		3.600	

Note: *** and ** denote significant at 1% and 5% level respectively. Critical values are obtained from Narayan (2005) with unrestricted intercept and no trend.

5.8.2 Diagnostic Test

Several diagnostic tests and stability tests were conducted in order to ensure the health of the econometric model. More specifically, LM test was conducted to test the serial correlation, ARCH test was applied to examine the heteroscedasticity, and RESET test was employed to check the misspecification. Moreover, CUSUM and CUSUMSQ tests were applied to ensure the stability of the coefficients.

According to the results presented in **Table 5.24**, the null hypothesis of no serial correlation, the null hypothesis of no conditional heteroscedasticity, and the null hypothesis of correct specification were accepted because the probability values for each diagnostic test presented in brackets were more than 10% level, indicating that they were insignificant. Moreover, the plots of the CUSUM and CUSUMSQ tests also provided evidence for the stability of the coefficients in the model. Nonetheless, it was noticeable that the plot of the CUSUM test exceeded the boundaries and the reason might be due to the oil supply glut and oil price collapse during that period.

Table 5.24 Results for Diagnostic Tests

Dependent Variable	**MVA**
LM	0.9401 [0.3995]
ARCH	1.5424 [0.2252]
Ramsey RESET	0.1810 [0.8351]
CUSUM	S
CUSUMSQ	S

Note: S represents stable model. P-values are presented in brackets.

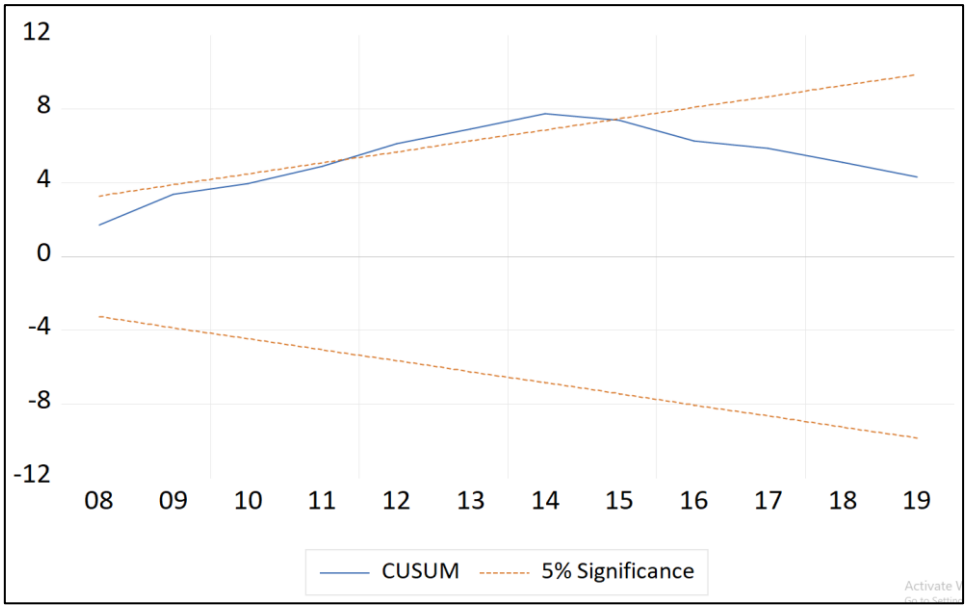


Figure 5.14 Plot of Cumulative Sum of Recursive

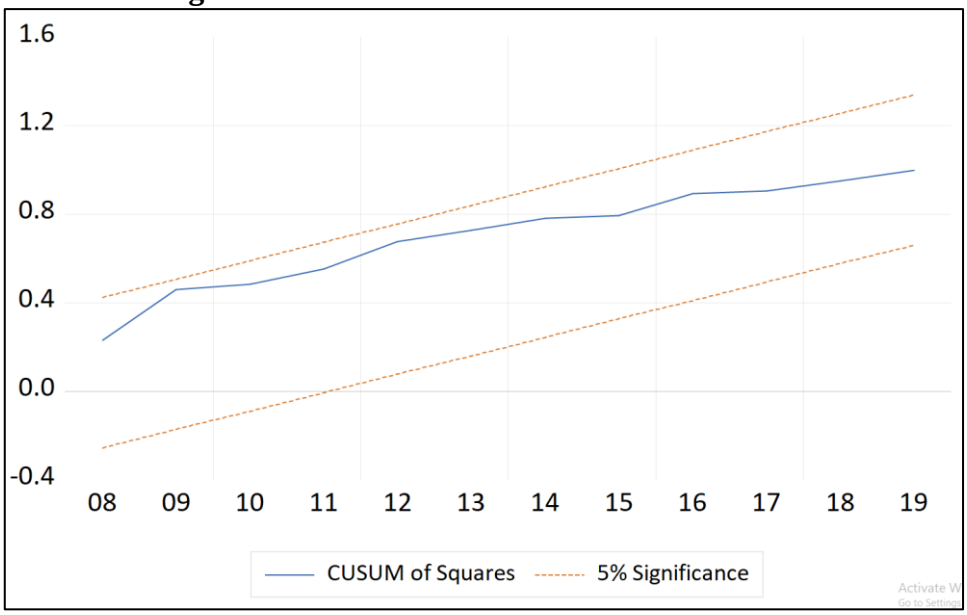


Figure 5.15 Plot of Cumulative Sum of Squares of Recursive Residuals

5.8.3 Long-Run and Short-Run Analyses

Following the cointegration test, this research proceeded to derive the estimated coefficients of the long-run analysis. The results of the long-run analysis and short-run analysis are presented in **Table 5.25** and **Table 5.26** respectively.

Similar to the results in Section 5.4.3 **Long-Run and Short-Run Analyses**, it was also found that the estimated coefficient of oil rent dependence was negative and significant at 10% level, indicating that oil rent dependence adversely impacted the production of the manufacturing sector. More precisely, a 1% increase in the share of oil rent in GDP will reduce the production of the manufacturing sector by 1.10% and the reason is due to the pulling effect of Dutch

disease. Dutch disease theory postulates that the demand from a booming sector, which is the oil resources sector, for the production factors will increase during the oil resources boom. In this instance, higher prices will be offered by the companies from oil resources sector which in turn shift the factors of production such as labour out of the manufacturing sector and non-tradable sectors into the oil resources sector. As a result, it will lead to deindustrialization by reducing the employment and the production of the manufacturing sector (Moradbeigi and Law 2017). It is important to note that the oil resource boom will raise disposable income, which will increase the demand for products from the non-tradable sector. As increase in demand along with the decline in the supply of non-tradable products will increase the prices and wages, which further shift the labour out of the manufacturing sector, leading to the reduction of production in the manufacturing sector (Corden and Neary 1982; Algieri 2011).

On the other hand, the result showed that government interventions had a negative and significant impact on the production of the manufacturing sector, as indicated by the negative sign of the estimated coefficient of the government intervention indicator. This result suggested that there was excessive government intervention in Malaysia. According to Wang (2018), a high level of government intervention will actually result in deadweight loss arising from the inefficiency in allocating scarce resources. This is because the state government usually has a higher preference to invest in industries that allow them to achieve their goals, such as reducing the unemployment rate and increasing the competitiveness in the global market. Although these goals seem to be beneficial for society and the country's economy, excessive government interventions will encourage more resources to be allocated to certain industries and thus dampen the efficiency of resources allocation (Hao and Lu 2018). In Malaysia, it was also noticeable that the government started to concentrates on state-owned enterprises (SOEs), which were responsible to assist the Malay community in saving mobilization and capital accumulation through the implementation of New Economic Policy (NEP) (Athukorala 2005; Ali, Ramakrishnan, and Faisal 2022). The execution of this policy meant that Malaysia's fiscal policy was inextricably linked with the goals of NEP, which in turn caused the public-private distinction to become blurred because the government will tended to allocate more resources to the public sector (Doraisami 2015). In this instance, it will impede private investments that play a vital role in improving the production of the manufacturing sector (Karim and Yin 2015).

Moreover, it was also found that the estimated coefficient of the interaction term between oil rent dependence and government interventions was positive and significant at 10% level, indicating that the negative impacts of oil rent dependence on the production of the manufacturing sector were weakened by government interventions. The weakening effect of government interventions indicated the success of Malaysia's government in reducing the level of dependency on oil rent through economic diversification. Since Sixth Malaysia Plan, the continued expansion of the manufacturing sector had encouraged the government to diversify the economy and modernize the lagging industries to improve the efficiency and competitiveness of the industrial sector (Economic Planning Unit 1991). More specifically, National Information Technology Agenda (NITA) was introduced during the Seventh Malaysia Plan to attain economic diversification and the status of knowledge-based economy. Several incentives were also provided to both foreign and local manufacturers to encourage them to

involve in diversification projects and upgrade the manufacturing sector into high value-added activities. For instance, temporary waiver of equity policy, tax incentives for ICT and R&D expenditure, and funding incentives for enterprises to invest in R&D (Economic Planning Unit 2005; 2010).

On the one hand, as a control variable, the estimated coefficient of agriculture value added was found to be positive but insignificant, indicating that it did not have any significant impact on the production of the manufacturing sector in the long-run. In contrast, another control variable, which was the wage rate, was found to have a negative and significant impact on the production of the manufacturing sector. More specifically, the result revealed that a 1% increase in the wage rate will reduce the production of the manufacturing sector by 1.61%. The reason is that an increase in the wage rate will consequently raise the production costs of the manufacturing sector, which in turn, reduces their profitability. In this instance, manufacturers will be forced to reduce their production.

Along with the results of the long-run analysis, the results of the short-run analysis are presented in **Table 5.26**, which are similar to the long-run analysis. More specifically, both oil rent dependence and government interventions were found to have a negative and significant impact on the production of the manufacturing sector in the short-run. In contrast, the estimated coefficient of the interaction term between oil rent dependence and government interventions was also negative and significant at 10% level, indicating government interventions were able to weaken the negative impacts of oil rent dependence on the production of the manufacturing sector in the short-run. Similarly, the results also revealed that agriculture value added did not have any significant impact whereas the wage rate had a negative and significant impact on the production of the manufacturing sector in the short-run.

Table 5.25 Results for Long-run Analysis

Dependent Variable	MVA
C	-0.4997 (0.7026)
ORD	-1.1040* (-1.7839)
GOVI	-1.1284*** (-3.5171)
ORD ∗ GOVI	0.4001* (1.8046)
AVA	0.2711 (1.4891)
WR	-1.6143*** (-3.3349)

Note: ***, ** and ** denote significant at 1%, 5% and 10% level respectively. T-statistics are in the parenthesis

Based on the results presented in **Table 5.26**, it was noticeable that the estimated coefficient of lagged ECT was negative and significant at 1% level, which further confirmed the presence of the relationship between the variables in this model. Besides, it also indicates that the deviation

from the long-run equilibrium following a shock is corrected by approximately 28.64% per year respectively.

Table 5.26 Results for Short-run Analysis

Dependent Variable	MVA
$\Delta \mathbf{ORD}(-\mathbf{1})$	-0.3162* (-1.9163)
$\Delta \mathbf{GOVI}$	-0.3232*** (-3.4479)
$\Delta \mathbf{ORD} * \mathbf{GOVI}(-\mathbf{1})$	0.1146* (1.9292)
$\Delta \mathbf{AVA}$	0.0776 (1.2724)
$\Delta \mathbf{WR}$	-0.4624** (-2.6085)
$\mathbf{ECT_{t-1}}$	-0.2864*** (-5.4928)

Note: ***, ** and ** denote significant at 1%, 5% and 10% level respectively. T-statistics are in the parenthesis.

5.8.4 TYDL Causality Test

Similar to previous sections, TYDL causality test was applied after the investigation of the long-run relationship between the variables to determine the direction of the causality among the variables. The results of TYDL causality test are presented in **Table 5.27**.

The results revealed that there was no causal relationship between the variables in this model. In other words, one can assert that although most of the variables in this model were found to have significant impacts on the production of the manufacturing sector, these impacts were transmitted through other mechanisms.

Table 5.27 Results of TYDL Causality Test

	MVA
$\mathbf{ORD} \rightarrow \mathbf{MVA}$	1.3487
$\mathbf{GOVI} \rightarrow \mathbf{MVA}$	0.2188
$(\mathbf{ORD} * \mathbf{GOVI}) \rightarrow \mathbf{MVA}$	1.8936
$\mathbf{AVA} \rightarrow \mathbf{MVA}$	1.3074
$\mathbf{WR} \rightarrow \mathbf{MVA}$	1.3352
$\mathbf{MVA} \rightarrow \mathbf{ORD}$	0.1569
$\mathbf{MVA} \rightarrow \mathbf{GOVI}$	0.0159
$\mathbf{MVA} \rightarrow (\mathbf{ORD} * \mathbf{GOVI})$	0.2998
$\mathbf{MVA} \rightarrow \mathbf{AVA}$	0.2711
$\mathbf{MVA} \rightarrow \mathbf{WR}$	0.6633

5.9 Government Intervention and Relationship between Oil Rent Dependence and Export of Manufacturing Sector

Given the important role of the government in oil-abundant countries, this section targets to examine the moderation effects of government interventions on the impacts of oil rent dependence on the export of the manufacturing sector. Although it was claimed that oil rent dependence is able to dampen the export of the manufacturing sector by appreciating the exchange rate or stimulating the exchange rate volatility, it was also argued that these issues can be mitigated with appropriate government interventions such as establishing stabilization funds or implementing the macroeconomic policies along with flexible interventions in the foreign exchange market. In this instance, oil-abundant countries not only can reduce the negative impacts arising from oil rent dependence, but also ensure that the windfall of oil rent is allocated to productive investments (Guzman, Ocampo, and Stiglitz 2018). Thus, in this section, an econometric model was constructed to examine how government intervention moderates the impacts of oil rent dependence on the export of the manufacturing sector by employing an interaction term between oil rent dependence and government interventions.

Similar to the previous sections, the results of descriptive statistics, unit root test, ARDL bounds test conducted for cointegration test, diagnostic test, stability test, long-run and short-run analyses and TYDL causality test are presented in the following subsections.

5.9.1 Cointegration test

Along with the unit root tests, the cointegration test was also conducted in order to determine the existence of the relationship between the variables. Similar to previous sections, ARDL bounds test was applied and it was begun with computing the values of F-statistics. Since the annual time series data was applied in this research, lags up to two years were imposed in this model and the optimum lag length was determined through SIC.

Since the sample size of this research was 50, the critical values generated by Narayan (2005) were applied as it is more suitable for a smaller sample size, of 30 to 80 compared with the critical values computed by Pesaran, Shin, and Smith (2001), which are computed for a larger sample size, of 500 to 40,000. The results of ARDL bound test are shown in **Table 5.28**.

According to the results presented in **Table 5.28**, it was noticeable that the value of F-statistics was greater than the upper bound critical value at 5% level, indicating the presence of long-run relationship between the variables. Based on Kremers, Ericsson, and Dolado (1992), ECT also can act as an alternative in determining the existence of the relationship between the variables. The estimated coefficients of lagged ECT for this model was found to be negative and significant at 1% level, which further confirmed the existence of the relationship between the variables.

Table 5.28 Results of ARDL Bounds Test

Dependent Variable	Optimum Lag	F-Statistics	$ECT_{t-1}(t-Ratio)$	Results

EXP	(1,2,1,2,0,2)	4.9417**	-0.6749(-5.8318)***	Cointegration
Critical Values	**Lower Bound**		**Upper Bound**	
1%	3.955		5.583	
5%	2.900		4.218	
10%	2.435		3.600	

Note: *** and ** denote significant at 1% and 5% level respectively. Critical values are obtained from Narayan (2005) with unrestricted intercept and no trend.

5.9.2 Diagnostic Test

In order to ensure the health of the econometric model, several diagnostic tests and stability tests were applied in this section. More precisely, LM test was conducted to test the serial correlation, ARCH test was applied to examine the heteroscedasticity, and RESET test was conducted to check the misspecification. Moreover, CUSUM and CUSUMSQ tests were applied to ensure the stability of the coefficients.

Based on the results presented in **Table 5.29**, it was noticeable that the null hypothesis of no serial correlation, the null hypothesis of no conditional heteroscedasticity, and the null hypothesis of correct specification were accepted because the probability value for each diagnostic test presented in brackets was more than 10% level, indicating that they were insignificant. Moreover, the plots of the CUSUM and CUSUMSQ tests also provided evidence for the stability of the coefficients in the model. However, it is also found that the plot of the CUSUM test exceeded the boundaries during the study period, and the reason was due to Gulf War and Asian Financial Crisis.

Table 5.29 Results for Diagnostic Tests

Dependent Variable	**EXP**
LM	1.6304 [0.2117]
ARCH	0.7581 [0.4747]
Ramsey RESET	0.4727 [0.6276]
CUSUM	S
CUSUMSQ	S

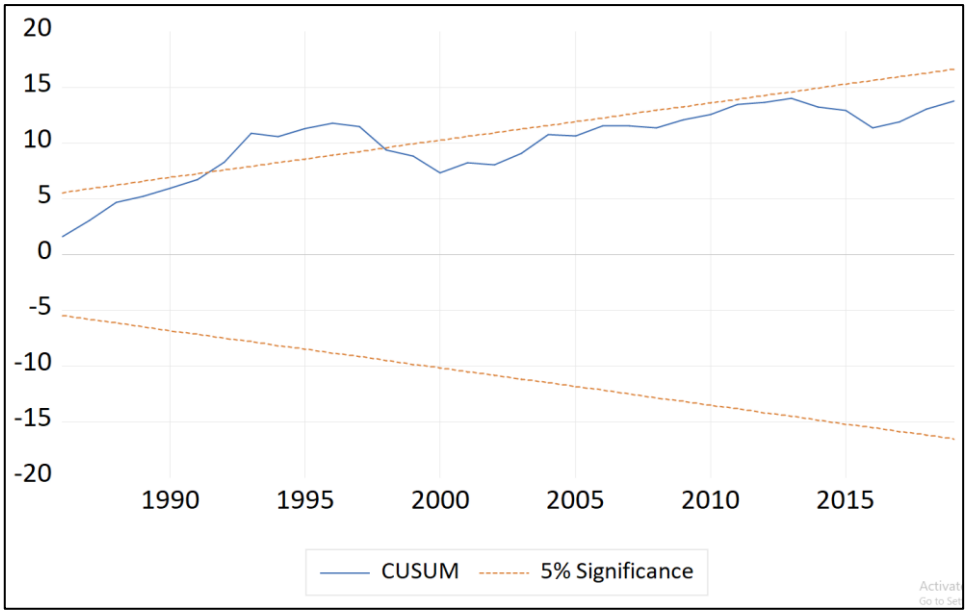


Figure 5.16 Plot of Cumulative Sum of Recursive

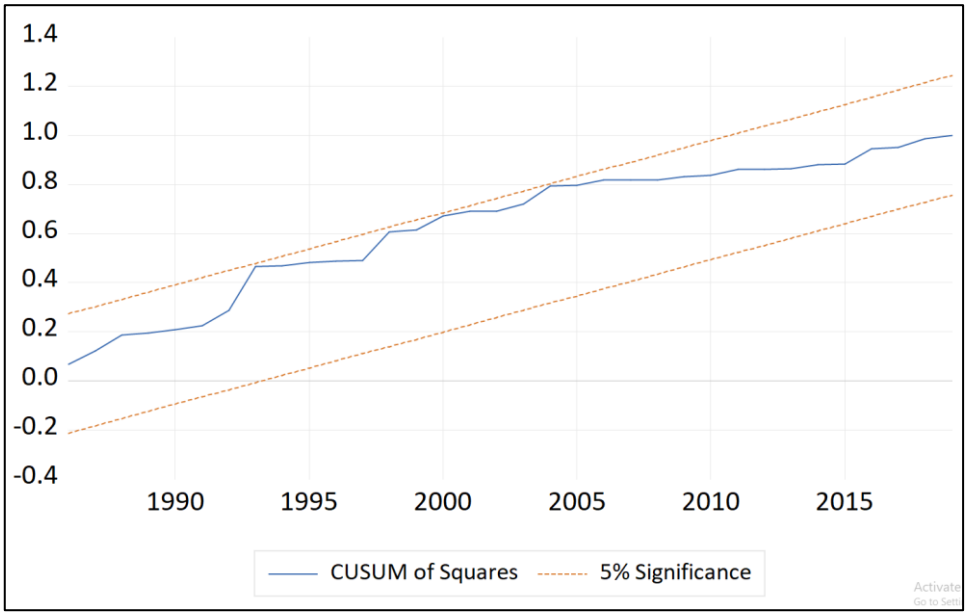


Figure 5.17 Plot of Cumulative Sum of Squares of Recursive Residuals

5.9.3 Long-Run and Short-Run Analyses

Following the cointegration test, this research proceeded to derive the estimated coefficients of variables from the long-run and short-run analyses. The results for the long-run and short-run analyses are presented in **Table 5.30** and **Table 5.31**, respectively.

Based on the results shown in **Table 5.30**, it was found that the estimated coefficient of oil rent dependence was negative but insignificant, implying that oil rent dependence did not have any significant impact on the export of the manufacturing sector in the long-run. In other words, as discussed in previous sections, instead of being dampened by oil rent dependence, the decline in the manufacturing export in Malaysia was mainly due to the emergence of China as a strong competitor in the international market and the slowdown trend in the E&E industry, which was the largest contributor for Malaysia's manufacturing export (Abidin and Loke 2008).

However, the most interesting finding in this section was the negative sign of government interventions. More specifically, the estimated coefficient of government interventions was negative and significant at 1% level, indicating the negative impacts of government interventions on the manufacturing export in Malaysia. This result suggested that the actions taken by Malaysia's government reduced manufacturing export, which was claimed to be the key engine of country's economic growth. More specifically, the government tends to promote the export of the manufacturing sector by implementing imports restrictions and providing export subsidies. In doing so, although more investments will be attracted and flowed into the manufacturing sector, the investments in the high-cost import-substitute manufacturing industry will also increase. As a result, it will lead to more distortions in the manufacturing export as the more expensive manufactured goods will further dampen the competitiveness of tradable sectors in the global market (Mikesell 1997).

In contrast, the result revealed that government interventions did not have any significant moderation effect on the relationship between oil rent dependence and manufacturing export as indicated by the estimated coefficient of the interaction term between oil rent dependence and government interventions, which was positive but insignificant. The absence of moderation effect of government interventions on the impact of oil rent dependence on the manufacturing export actually indicated the inefficiency of Malaysia's government in managing the spending of oil rent. In other words, although the Malaysian government was able to reduce the oil rent dependence by diversifying their revenue stream, they were unable to foster the efficiency of oil rent utilization. This finding was in agreement with Doraisami (2015), who argued that the windfall of oil rent allows Malaysia's government to invest in unproductive activities and to pursue their own political interests.

Moreover, similar to the results in Section 5.3.5, the estimated coefficient of the level of infrastructure was found to be negative and significant at 1% level, indicating the presence of negative impacts of the infrastructure level on the export of the manufacturing sector. More precisely, a 1% increase in the level of infrastructure will reduce the export of the manufacturing sector by 0.55% in the long-run. This result can be explained by the fact that Malaysia lacks infrastructures, which not only increases the production costs and reduces the profitability of the manufacturing sector, but also causes the country to lose the chance to connect to the global market (Rehman, Noman, and Ding 2020).

In contrast, the GDP was found to have a positive and significant impact on the export of the manufacturing sector. More specifically, a 1% increase in GDP per capita will raise the export of the manufacturing sector by 0.42%. In fact, GDP per capita represents the export capacity of Malaysia. If Malaysia is having a higher GDP per capita, it not only means that more manufactured goods can be exported but also more varieties of manufactured goods (Töngür, Türkcan, and Ekmen-Özçelik 2020).

Along with the results of the long-run analysis, the results of the short-run analysis are also presented in **Table 5.31** and they were found to be similar to the results of the long-run analysis. More precisely, oil rent dependence did not have any significant impact on the export of the manufacturing sector in the short-run whereas the government interventions was found to have a significant and negative impact on manufactured exports. Moreover, the estimated coefficient of the interaction term between oil rent dependence and government interventions was positive but insignificant, indicating that government interventions did not have any significant

moderation effect on the relationship between oil rent dependence and the manufacturing export in the short-run. Similar to the results in the long-run analysis, the results in the short-run analysis also revealed that the level of infrastructure had a negative impact on the export of the manufacturing sector, whereas GDP positively contributed to the manufacturing export in the short-run.

Table 5.30 Results for Long-Run Analysis

Dependent Variable	**EXP**
C	-0.6911 (-0.7266)
ORD	-0.8539 (-1.2329)
GOVI	-1.4613*** (-3.0892)
ORD ∗ GOVI	0.3137 (1.2176)
INFRA	-0.5488*** (-6.7167)
GDP	0.4243*** (4.3397)

Note: ***, ** and ** denote significant at 1%, 5% and 10% level respectively. T-statistics are in the parenthesis.

According to the results shown in **Table 5.31**, it was also noticeable that the estimated coefficient of lagged ECT was negative and significant at 1% level, which further confirmed the presence of the relationship between the variables in the models. Moreover, the result also indicated that the deviation from the long-run equilibrium following a shock is corrected by approximately 67.49% per year respectively.

Table 5.31 Results for Short-run Analysis

Dependent Variable	**EXP**
$\Delta\mathbf{ORD}(-1)$	-0.5763 (-1.1102)
$\Delta\mathbf{GOVI}$	-0.9863** (-2.3648)
$\Delta\mathbf{ORD} * \mathbf{GOVI}(-1)$	0.2117 (1.0998)
$\Delta\mathbf{INFRA}$	-0.3704*** (-3.7346)
$\Delta\mathbf{GDP}(-1)$	0.2864*** (3.3438)
$\mathbf{ECT_{t-1}}$	-0.6749*** (-5.8318)

Note: ***, ** and ** denote significant at 1%, 5% and 10% level respectively. T-statistics are in the parenthesis.

5.9.4 TYDL Causality Test

After examining the long-run relationship between the variables and finding that the variables were cointegrated with each other in this model, this research proceeded to determine the direction of causality by conducting TYDL causality test. The results of TYDL causality test are presented in **Table 5.32**.

Based on the results, it was found that the causal relationship between GDP per capita and the manufactured export was a unidirectional causality running from GDP per capita to the export of the manufacturing sector. Similarly, there was also a unidirectional causality which goes from the manufactured exports to oil rent dependence. Additionally, the causality relationship between the export of the manufacturing sector and the interaction term between oil rent dependence and government interventions was also found to be a unidirectional causality, but it runs from the manufactured exports to the interaction term. These results highlighted the important role played by GDP per capita in promoting the export of the manufacturing sector, which in turn, has a causal impact on the level of dependency on oil rent and the government's spending of oil rent.

Table 5.32 Results of TYDL Causality Test

	EXP
ORD → EXP	0.5660
GOVI → EXP	1.4895
(ORD ∗ GOVI) → EXP	0.4737
INFRA → EXP	0.0298
GDP → EXP	5.8708**
EXP → ORD	3.1234*
EXP → GOVI	0.5183
EXP → (ORD ∗ GOVI)	3.9566**
EXP → INFRA	0.2695
EXP → GDP	2.1980

Note: ** and * denote significance at 5% and 10% respectively.

5.10 Robustness Check

Since the robustness of the results was of particular interest for an empirical study, following the research of Mehrara (2009), Cockx and Francken (2016), and Law, Kutan, and Naseem

(2018), this research proceeded to investigate the sensitivity of results to the data frequency and additional control variables. More specifically, the annual data from 1970 to 2019 was converted to quarterly data for the purpose of robustness check. Unlike the annual data, which was the real data for each variable, quarterly data was obtained through quadratic match-sum method, which is claimed to be more convenient in comparison with interpolation method (Sbia, Shahbaz, and Hamdi 2014; Shahbaz et al. 2017; Shahbaz, Zakaria, et al. 2018; Sharif et al. 2020). Besides, the investment, which was proxied by the share of gross fixed capital formation in GDP, and foreign direct investment represented by the share of net inflow of foreign direct investment in GDP were included in the models for robustness check. Generally, the results of the robustness check validated the findings of ARDL bounds test.

Based on the results of the robustness check presented in **Table 5.33**, the estimated coefficient of oil rent dependence was negative, and the impacts of the control variables, which were agriculture value added and wage rate on the production of the manufacturing sector, were also similar to the results of ARDL bounds test. Along with these results, the robustness test also supported the previous findings, which showed that although oil rent dependence positively contributed to the production of the manufacturing sector, Malaysia's financial development had weakening effects on these positive impacts, which consequently caused the negative impacts of oil rent dependence to outweigh the positive impacts. Additionally, the findings of the robustness test also revealed that oil rent dependence did not have any significant impact on the export of the manufacturing sector, while financial development did not have any significant moderation effect on this relationship. Moreover, the robustness test also validated the previous findings by showing that that oil rent dependence did not have any significant impact on the manufacturing export, and government interventions significantly and negatively impacted the export of the manufacturing sector. Similarly, the estimated coefficient of the interaction term between oil rent dependence and government interventions was also positive but insignificant, implying that government interventions did not moderate the nexus between oil rent dependence and the export of the manufacturing sector.

However, according to the results presented in **Table 5.33**, it was noticeable that the results showed that government interventions did not moderate the relationship between oil rent dependence and the production of the manufacturing sector. These results were different from the previous findings that found that government interventions have weakening effect on the adverse impacts of oil rent dependence on the production of the manufacturing sector. The difference between the findings of ARDL bounds test with annual data and the robustness check could be due to the increase in data frequency. Based on Lepot, Aubin, and Clemens (2017), uncertainty will increase along with an increase in data frequency, which in turn, yields unsatisfactory results.

Table 5.33 Results for Robustness Test

Model	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Dependent Variable	MVA	EXP	MVA	MVA	EXP	EXP	MVA	EXP
C	-0.0335** (-2.1005)	-0.0110 (-0.4915)	-0.0703*** (-3.4547)	-0.0682*** (-2.7327)	0.0015 (0.0559)	0.0422 (1.1134)	0.0027 (0.1241)	-0.0113 (-0.2855)
ORD	-0.0739* (-1.9647)	-0.0533 (-1.1332)	1.0053*** (3.6343)	0.5533*** (3.3997)	0.2429 (0.4130)	0.1868 (0.6520)	-0.5850 (-1.1610)	0.4488 (0.5382)
$FD1$	-	-	0.3257** (2.4797)	-	-0.2668 (-0.7650)	-	-	-
$ORD * FD1$	-	-	-0.2542*** (-3.7996)	-	-0.0481 (-0.3431)	-	-	-
$FD2$	-	-	-	0.2037** (2.2349)	-	-0.3389 (-1.3875)	-	-
$ORD * FD2$	-	-	-	-0.1656*** (-3.6635)	-	-0.0686 (-0.9000)	-	-
$GOVI$	-	-	-	-	-	-	-0.7542*** (-2.8298)	-0.0363 (-0.0641)
$ORD * GOVI$	-	-	-	-	-	-	0.1996 (1.1056)	-0.1843 (-0.6061)
AVA	0.5907*** (5.2637)	-	0.5977*** (5.2384)	0.6297*** (3.6838)	-	-	0.3357** (2.2434)	-
WR	-2.1701*** (-5.1521)	-	-2.4541*** (-8.1566)	-2.5236*** (-6.3095)	-	-	-1.6290*** (-3.7742)	-
INV	-0.0485 (-0.3954)	-	-0.0814 (-1.0364)	-0.0640 (-0.7699)	-	-	-0.0410 (-0.4623)	-
$INFRA$	-	-0.4239*** (-4.9126)	-	-	-0.2939** (-2.5475)	-0.1655 (-0.9988)	-	-0.4641*** (-4.7853)
GDP	-	0.4512*** (2.7637)	-	-	0.4722** (2.4928)	0.2906* (1.9028)	-	0.4625*** (3.1212)
FDI	-	0.0435 (0.8272)	-	-	-0.0113 (-0.2083)	0.0357 (0.8776)	-	0.0466 (0.9445)

Note: ***, ** and * denote significant at 1%, 5% and 10% respectively.

5.11 Discussion

In the previous sections, the impacts of oil rent dependence on the production and export of the manufacturing sector in Malaysia were examined empirically. Besides, the moderation effects of financial development and government interventions on the relationship between oil rent dependence and the manufacturing sector were also investigated. Eight econometric models were tested to determine the long-run and short-run relationship between the variables. The findings presented in the previous sections will be discussed in this section.

Overall, the results have provided a few main findings related to the research questions. Therefore, in order to answer the research questions, they will be used to guide the structure of this section. Firstly, the impacts of oil rent dependence on the production of the manufacturing sector will be discussed, followed by the impacts of oil rent dependence on the export of the manufacturing sector. In order to answer the second research question, the moderation effect of financial development on the relationship between oil rent dependence and the production of the manufacturing sector will be discussed, followed by the discussion on how financial development moderates the relationship between oil rent dependence and the export of the manufacturing sector. Finally, the moderating role of government interventions will also be discussed. More specifically, this section will discuss how government interventions moderate the impacts of oil rent dependence on the production of the manufacturing sector, as well as the impacts of oil rent dependence on the export of the manufacturing sector.

RQ1: *What is the impact of oil rent dependence on the production and export of manufacturing sector?*

With the purpose of answering the first research question, two econometric models were constructed by using the share of oil rent in GDP as the indicator because it represents the degree to which the country's economy relies on oil rent (Badeeb, Szulczyk, and Lean 2021). Based on the results, it was found that oil rent dependence had a negative impact on the production of the manufacturing sector. This result provided an explanation as to why the share of manufacturing value added in GDP is experiencing a decreasing trend in Malaysia. Although Chandran, Gopi Krishnan, and Devadason (2017) argued that the decrease in Malaysia's manufacturing value added is mainly due to the low level of technological innovation and human capital accumulation, the results of this study indicated that oil rent dependence might be the main reason behind the lack of technological innovation and human capital development in Malaysia. This is because an oil resource boom will lead to the crowding-out effect, which refers to the situation in which the key drivers of economic growth, such as human capital accumulation, technological innovation and investment in physical capital, will be ignored when oil resources exploitation becomes the main engine of economic growth (Wu, Li, and Li 2018). In other words, although low level of technological innovation and human capital accumulation were claimed to be the reasons behind the decline in the production of Malaysia's manufacturing sector, it is mainly due to the high level of dependency on oil rent which consequently crowds-out the technological innovation and human capital accumulation.

Based on the existing literature, the oil resource boom will cause the country to be overconfident in oil resources because the wealth generated by the oil resources can simply be extracted instead of produced, which means that people can earn income through the extraction of oil resources instead of participating in other industries or innovation that have a higher risk (Humphreys, Sachs, and Stiglitz 2007). In this case, the importance of technological innovation and human capital accumulation in triggering economic growth will be ignored while inappropriate attention and expenditure will be devoted to education (Gylfason 2001). Meanwhile, it was also found that the wages offered by the oil resources industry in Malaysia are higher than by the manufacturing sector. Based on the report of Department of Statistics Malaysia (2016; 2017), it was found that the average salary in the oil resources industry in 2015 was RM13,310, whereas the average salary in the manufacturing sector was RM3,175. According to Dutch disease theory, an oil resource boom will induce the movement of production factors out of other tradable sectors, such as the manufacturing sector, into the oil resources sector by offering higher prices. In a situation in which the profitability of the oil resources sector is higher than other entrepreneur activities, skilled-workers and innovators will shift away from the manufacturing sector into the oil resources sector, thus, dampening technological innovation (Sachs and Warner 2001). Indeed, more attention and factors of production will also be devoted to the oil resources sector rather than technological innovation that is conducive to the manufacturing sector and economic growth, consequently reducing the production of the manufacturing sector (Namazi and Mohammadi 2018).

Moreover, the results of this research also revealed that oil rent dependence did not have any significant impact on the export of the manufacturing sector in Malaysia. As mentioned in the previous chapter, Dutch disease theory postulates that the oil resource boom is able to dampen the export of the manufacturing sector through the appreciation of the exchange rate, which in turn, reduces the competitiveness of the manufacturing sector in the international market. In Malaysia, it seemed that the spending effect of Dutch disease did not take place. In other words, although Doraisami (2015) found that the share of manufactured exports in total exports declined when the share of mining export increased, the oil rent dependence was not the main reason behind that because it did not have any significant impact on the export of the manufacturing sector. Moreover, while studying Dutch disease theory in regard to resource-dependent countries, Chang, Lin, and Lin (2021) found that Malaysia is having a stable exchange rate, which further confirmed that the spending effect of Dutch disease does not exist in Malaysia.

Indeed, the absence of adverse impacts of oil rent dependence on manufactured exports can also be attributed to the presence of a well-diversified export structure in Malaysia. According to Ramos (2020), export diversification plays an important role in protecting the country from Dutch disease phenomenon. For Malaysia, it is considered highly-diversified not only in terms of the economy, but also in terms of export (Hong 2021; World Bank 2021). In this instance, although it was claimed that oil rent dependence will result in exchange rate volatility, which will consequently reduce the export of the manufacturing sector, attaining export diversification had helped the country in stabilizing the exchange rate and improving the value added and the quality of manufactured goods, thereby protecting manufactured exports from

the spending effect of Dutch disease (Gylfason 2001; Gylfason and Zoega 2006; Osakwe, Santos-Paulino, and Dogan 2018). Moreover, the literature also claimed that the emergence of China as a strong competitor in the international market and the slowdown trend in E&E industry are the main reasons for the decline in manufactured exports in Malaysia (Lall and Albaladejo 2004; Abidin and Loke 2008; Chan 2017).

In a nutshell, it can be argued that based on the findings of this research, oil rent dependence negatively impacts the production of the manufacturing sector in Malaysia, and the adverse impacts are transmitted through the pulling effect of Dutch disease. More specifically, oil rent dependence crowds-out the human capital accumulation and technological innovation by offering higher wages and inducing the movement of production factors, especially labours, out of the manufacturing sector. On the other hand, one can also assert that instead of being dampened by oil rent dependence, the decreasing trend of manufactured exports can be explained by the inability of Malaysia's manufacturing sector to compete in the global market and the slowdown trend in the E&E sector.

RQ2: *How financial development moderates the impacts of oil rent dependence on production and export of manufacturing sector?*

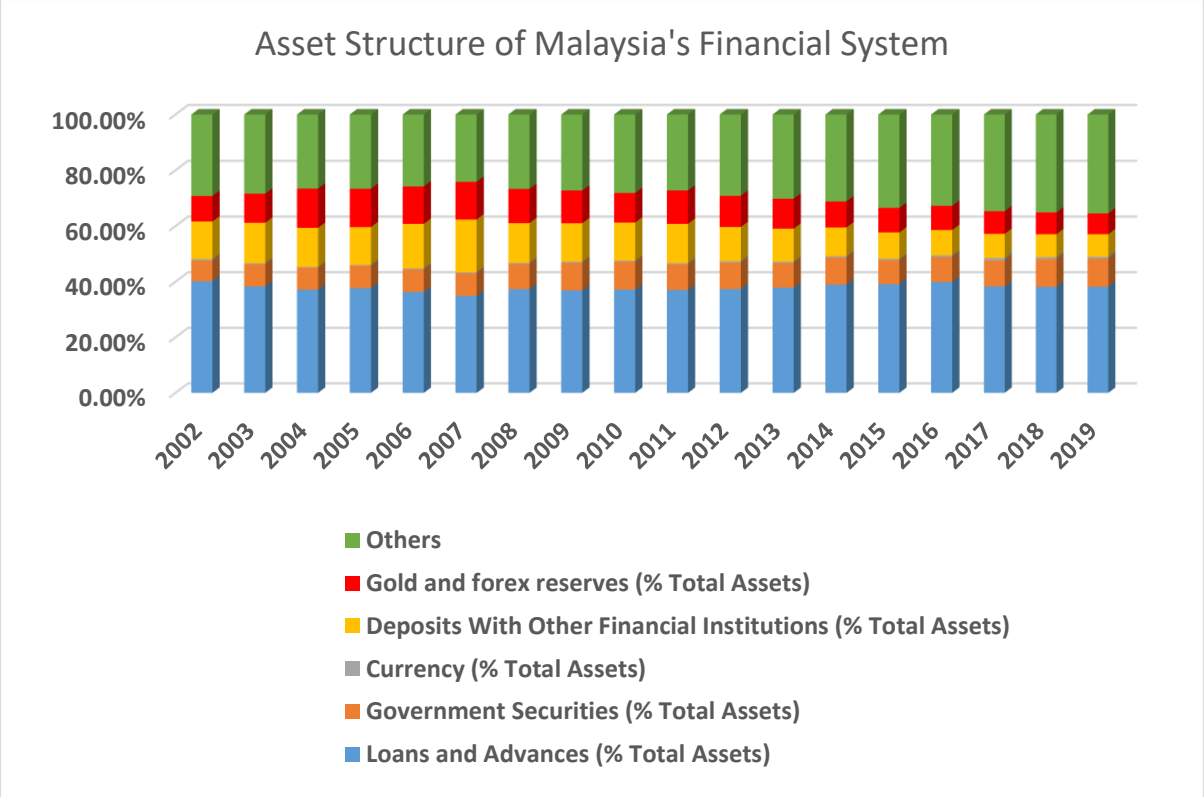
The second research question was concerning the moderating role of financial development on the relationship between oil rent dependence and the manufacturing sector. Therefore, several econometric models were formed with the purpose of capturing the moderation effect of financial development on the impacts of oil rent dependence on the production and export of the manufacturing sector. The results revealed that oil rent dependence had a positive and significant impact on the production of the manufacturing sector in Malaysia. This result illustrated how oil rent dependence is able to promote sustainable economic growth by contributing to the manufacturing sector in the country. Based on the results, oil rent dependence provided more financial resources for the manufacturers to expand their production, which in turn, contributed to the country's economic growth. However, the result also indicated that in contrast to the findings of Moradbeigi and Law (2016; 2017), which found that financial development is able to mitigate the negative impacts of oil rent dependence, Malaysia's financial development actually weakened the positive effects of oil rent dependence on the production of the manufacturing sector. The reason was due to the presence of an underdeveloped financial sector in the country (Ang and McKibbin 2007; Badeeb, Lean, and Smyth 2016).

The existence of an underdeveloped financial sector can be attributed to the fact that although both the banking sector and stock market are classified as the main components of financial development, both components are underdeveloped in Malaysia (Tan and Mohamad Shafi 2021). It is important to note that even though the banking sector is the largest component of Malaysia's financial system, the products offered by banking institutions are insufficient or outdated for the banking sector to manage the windfall of oil rent and channel the oil rent into productive investments effectively (Ali, Ramakrishnan, and Faisal 2022). In addition, based on Oh (1999), Malaysia's banking sector is overextended for politically connected firms which consequently results in a higher share of substandard loans in non-performing loans. More

specifically, Malaysia's political-connected firms (13% of existing companies) tend to use their political connections to influence the allocation of the government. As a result, Malaysia's financial system becomes inefficient in resources allocation (Al-dhamari and Ku Ismail 2015; Shahzad et al. 2021).

Other than the banking sector, although Malaysia was claimed to have the top leading stock market among Southeast Asian countries, Malaysia's stock market is considered inefficient when it is compared with the stock markets of countries, like Japan, United States and Germany (Kristoufek and Vosvrda 2013). More precisely, Malaysia's stock market is suffering from issues of market inefficiency, which means that the stock market is unable to reflect the real values of the stocks listed in Bursa Malaysia (Kim and Shamsuddin 2008; Tuyon and Ahmad 2016). Since Malaysia's corporate sector relies on the stock market to obtain financial resources, the inefficiency of the stock market prevents Malaysia's companies, including firms from the manufacturing sector, from accessing financial resources that are required to finance their economic activities (Ali, Ramakrishnan, and Faisal 2022).

By referring to the asset structure of Malaysia's banking system presented in Figure 5.23, most financial resources are allocated to loans and advances. Although Beck et al. (2014) claimed that the credit allocated to businesses will stimulate sustainable economic growth, Soh, Chong, and Chuah (2017) asserted that the majority of the loans are actually allocated to households instead of businesses. The reason is that more and more companies started to meet their financial needs through the capital market since Asian Financial Crisis, which consequently forced the banking sector, the largest component of Malaysia's financial system, to revise its business diversification strategy and focus on the household sector (Endut and Toh 2009). As a result, Malaysia nowadays is found to have a high level of household debt, which was claimed to be able to dampen the banking stability that plays a crucial role in fostering the efficiency of resources allocation including oil rent allocation (Nizar and Karim 2021). In fact, in the case that more credit is allocated to the household sector, fewer financial resources will be available for the manufacturing sector that meets its financial needs through external financial resources instead of equity. Moreover, just like Asian Financial Crisis and Great Recession in 2007, a high level of household debt will increase the country's vulnerability to the financial crisis and thereby, lead to an economic recession (Lazonick 2017; Lombardi, Mohanty, and Shim 2017; Kim 2020). Most of the household debts in Malaysia are utilized for the purchase of the real estate. In this instance, it will fuel the real estate bubble and increase the risk assets accumulated by banks. When the bubble bursts due to excessive risk-taking in the country's economy, the prices of real estate will plunge and the borrowers will be unable to repay the loan. By then, not only that credit risk will become more severe, but it will also be more difficult for the manufacturing companies to obtain more financial resources (Holt 2009; Canepa and Khaled 2018).



Asset Structure of Malaysia's Financial System
Source: Bank Negara Malaysia (2020b)

Moreover, another explanation for the weakening effect of financial development is the arguments by Moradbeigi and Law (2016), which claimed that only the presence of a highly developed financial sector can help countries in mitigating the adverse effects of oil price volatility. Malaysia is actually a country that is highly vulnerable to external shocks, especially the oil price shock, which can be reflected by the oil crash in 2014 (Central Intelligence Agency 2018) . The reason behind the high vulnerability might be due to the presence of an underdeveloped financial system in the country (Ang and McKibbin 2007; Badeeb, Lean, and Smyth 2016). More specifically, a low level of financial development will exacerbate the negative impacts of oil price volatility, which not only impedes technological innovation, but also creates uncertainties that reduce investments and cause manufacturers to reduce their production (van der Ploeg and Poelhekke 2009b; Elder and Serletis 2011).

In summary, one can argue that the presence of an underdeveloped financial sector in Malaysia has acted as a mechanism through which oil rent dependence negatively affects the production of the manufacturing sector in Malaysia. Although one of the ways to result in an oil blessing phenomenon is by allocating the oil rent into real economic sectors like the manufacturing sector, the presence of a poorly developed financial sector will only reduce the efficiency of oil rent allocation which consequently dampens the positive impacts of oil rent dependence on the production of the manufacturing sector (Law and Moradbeigi 2017). Since oil rent causes both positive and negative impacts, the weakening effect of financial development will not only reduce the positive impacts of oil rent dependence, but also cause the adverse impacts of

oil rent dependence on production of the manufacturing sector to outweigh the positive impacts, and become more significant in Malaysia.

Furthermore, similar to the findings mentioned earlier, the results also revealed that oil rent dependence did not have any significant impact on the export of the manufacturing sector in Malaysia. Although the manufacturing sector in oil-abundant countries is always expected to improve their export performance by having access to more sources of funding provided by the export of oil resources, the poorly-developed financial sector will actually prevent the companies from accessing these additional financial resources. As a result, the results of this research not only revealed that financial development did not have any significant impact on the export of the manufacturing sector, but also indicated that financial development did not moderate the relationship between oil rent dependence and the export of the manufacturing sector. According to Erdoğan, Yıldırım, and Gedikli (2020), the impacts of oil rent dependence on real economic sectors tend to be insignificant in the presence of an underdeveloped financial sector. This is because only when the financial sector is highly-developed, more investment opportunities will be provided, and the manufacturing sector will be able to access to more sources of funding. In contrast, the presence of an underdeveloped financial system will tend to allocate the financial resources provided by oil resources to the virtual economy that has a higher return on investment (Rongwei and Xiaoying 2020). More specifically, Securities Commission Malaysia claimed that more than RM16 billion of cryptocurrency and digital assets had been traded between the period of August 2020 and September 2021 and it is expected to increase in the future, which indicated the interest of Malaysian investors in allocating their scarce financial resources into virtual economy. In this case, it will not only fuel the virtual economic bubble (Shang 2019) but also prevent the oil rent from benefiting the manufactured exports, which were claimed to be the key engine of Malaysia's economic growth (Chandran and Munusamy 2009). In fact, the recent decreasing trend of manufactured exports in Malaysia can be classified as a sign of the presence of an underdeveloped financial sector in Malaysia that prevents the manufacturing sector from accessing the financial resources needed to improve and compete in the global market.

Additionally, the absence of a direct impact of financial development on the export of the manufacturing sector also can be attributed to the fact that instead of stimulating economic growth by improving the efficiency of resources allocation, Malaysia's financial sector did not promote economic growth (Anwar and Sun 2011). This is because rather than allocating the financial resources into productive investments, the majority of the credit was used to purchase real estate. According to the annual report of Bank Negara Malaysia (2019), while most of the credits were allocated to household debts, around 53.2% of the household debts were contributed by residential property loans, which also accounted for 12.6% of the total bank's credit.

With the purpose of summarizing the answers to the second research question, it can be concluded that based on the findings of this study, financial development has a weakening effect on the positive relationship between oil rent dependence and the production of the manufacturing sector. The weakening effect of financial development is transmitted through qualitative channel because the financial sector is unable to improve the production of

manufacturing sector by allocating the windfall of oil rent into productive economic activities such as production of the manufacturing sector. Indeed, the absence of moderation effect of financial development on the relationship between oil rent dependence and manufactured exports can also be explained by the presence of an underdeveloped financial sector in Malaysia that is unable to channel the capital accumulated by oil resources into manufactured exports. In fact, although Malaysia's financial sector is found to allocate credits to the private sector which is supposed to be more efficient than the public sector, most of them are being used for purchasing real estate and personal property rather than invest in corporate sectors (Bank Negara Malaysia 2017; 2018; 2019). As a result, it not only results in lower investment quality, but also leads to inefficient oil rent allocation. In this instance, the positive impacts brought by the oil rent are impeded and the manufacturing sector will not be able to access more sources of funding to improve their production and export.

RQ3: *How government intervention moderates the impacts of oil rent dependence on the production and export of manufacturing sector?*

For **RQ3** of this research, it addressed how government intervention moderates the impacts of oil rent dependence on the production and export of the manufacturing sector in Malaysia. According to the previous findings of this study, it was found that oil rent dependence had adverse effects on the production of the manufacturing sector. This result was unsurprising because as mentioned above, the presence of an underdeveloped financial sector had weakened the positive impacts of oil rent, causing the negative impacts to outweigh the positive impacts. In addition to financial development, oil rent dependence also impeded the production of the manufacturing sector through the pulling effect of Dutch disease. It seemed that the higher prices offered by the oil resources sector had induced the movement of factors of production from the manufacturing sector into the oil resources sector, and thereby dampening the production of the manufacturing sector. However, the results also revealed that an increase in government intervention weakened the negative impacts of oil rent dependence on the production of the manufacturing sector. This was due to the efforts made by Malaysia's government in reducing the level of dependency on oil resources. Over the years, several actions were taken by Malaysia's government to reduce the level of dependency on oil resources. For instance, Industrial Master Plans 1, 2 and 3 were implemented in order to promote the development of higher value-added activities and reduce the dependency on primary commodities, especially oil and natural gas resources. The successes of these plans were reflected by the robust growth of the manufacturing sector and the decline in the share of oil export in total exports (Bahrain 2016). Indeed, the success of industrial policy can also be evidenced by the status of Malaysia as a leading exporter of E&E products (World Bank 2021). More specifically, Malaysia has exported around 7% of the semiconductors in the world, and it is also the largest trading partner with United States in terms of semiconductors where around 24% of semiconductors there are imported from Malaysia (MIDA 2021).

Another explanation for the weakening effect of government interventions on the adverse impacts of oil rent dependence on the production of the manufacturing sector is the diversification policies implemented by Malaysia's government. Theoretically, diversification not only mitigates the negative impacts of oil price shocks but also gradually allocates the

resources into productive investments, which in turn, protects the manufacturing sector from being dampened by Dutch disease (Joya 2015). In Malaysia, where the economy is mainly driven by oil resources which contributed to around 15% of GDP and 28% of total government revenue, the government had implemented several diversification strategies in order to promote the development of the manufacturing and services sectors (Ali Ahmed and Wadud 2011; Bank Negara Malaysia 2014; Shangle and Solaymani 2020; Badeeb, Szulczyk, and Lean 2021). The successes of these diversification strategies were reflected by the diversified economy in Malaysia, which not only helped the country face the economic risks arising from the global environment, but also maintained the macroeconomic stability as well as financial stability of the country, as reflected by the stable inflation rate, current account surplus and healthy labour market (Bank Negara Malaysia 2019). Indeed, the success of the diversification strategies also can be reflected when the production of the agriculture and mining sectors declined. Based on Bank Negara Malaysia (2019), although the declined in the production of these sectors reduced the gross exports of Malaysia by 1.7%, the adverse impacts had been mitigated by the existence of a well-diversified product base and export market.

On the other hand, the adverse impacts of government interventions on the production of the manufacturing sector can be attributed to the fact that strong government interventions not only weaken the effects of monetary policies in inhibiting overinvestments, but also allow corporates in certain industries access to more sources of fundings and bank credit through political connections, which in turn, reduces the efficiency of investments and financial resources allocation (Zhao, Chen, and Hao 2018). In the research of Jamil (2017), the author claimed that Malaysia has strong government interventions because the government tends to accommodate the needs of the Malay community. More specifically, the public sector was found to play a dominant role in Malaysia's economy, and it was due to the NEP implemented by Malaysia's government in 1970. Due to the implementation of this policy, the government tended to support SOEs which were responsible to help the Malay community in savings mobilization and capital accumulation. In this case, it weakened the private sector that is more efficient in resources utilization. Due to the crucial role played by the private sector in improving the production of manufacturing sector, the weakened private sector adversely impacted the production of the manufacturing sector (Karim and Yin 2015; Ali, Ramakrishnan, and Faisal 2022). Moreover, the implementation of NEP encouraged the financial sector to allocate more financial resources to SOEs, causing less credit to be allocated to the manufacturing sector. In the case that manufacturers were unable to access financial resources needed for production, they were forced to reduce their productivity.

In summary, the diversification policies implemented by Malaysia's government in reducing the level of dependency on oil rent have weakened the adverse impacts of oil rent dependence on the production of the manufacturing sector. As the country continues to diversify its economic structure, the dependency on oil rent will be reduced and thus, protect the country from Dutch disease, by widening the production structure (Wiig and Kolstad 2012; Bergougui and Murshed 2021).

On the other hand, the findings of this research also indicated that oil rent dependence did not have any significant impact on the export of the manufacturing sector in Malaysia. In other

words, the spending effect of Dutch disease, which was claimed to be able to dampen the manufacturing export, did not take place in Malaysia. Accordingly, this study did not identify any moderation effect of government interventions on the relationship between oil rent dependence and the export of the manufacturing sector. Based on Wu, Li, and Li (2018), public spending is one of the mechanisms for the government to intervene in the country's economy because it can solve issues of resources allocation. Since the spending of oil rent is under the control of Malaysia's government, the absence of a moderation effect from government interventions can be explained by the fact that the oil rent was not spent on promoting manufactured exports. In fact, according to Bank Negara Malaysia, it was found that the public investments were mostly focused on the oil and gas industry rather than other productive sectors like the manufacturing sector. As a result, even though the share of oil revenue in total government revenue showed a decreasing trend before 2016, it started to rise again after that year. The reason might be due to the continuous government spending on this industry. In fact, it was also claimed that the windfall of oil rent had allowed the Malaysian government to invest in unproductive activities and pursue their political interests (Doraisami 2015).

Furthermore, the negative effects of government interventions on the export of the manufacturing sector could be due to the import restrictions imposed by the Malaysian government. More specifically, when a tariff was levied, it increased the prices of imported goods. In this case, it also motivated domestic manufacturers to increase their prices. Although the increase in the prices of manufactured goods maximized their revenue, it also reduced the competitiveness of manufactured exports in the international market (Mikesell 1997; Hergt 2020). In addition to the import restrictions, the policy of priority sector lending might be another reason for the adverse effects of government intervention. More precisely, the banking institution, which is the largest component for Malaysia's financial sector, had been requested to provide credits to the priority sectors, including Bumiputera-owned SMEs and affordable housing (Bank Negara Malaysia 2014b). Consequently, less bank credit was allocated to the manufacturing sector to improve manufactured exports.

To summarize the answer to the third research question, it can be argued that according to the findings of this research, government intervention weakens the negative impacts of oil rent dependence on the production of the manufacturing sector. This weakening effect is transmitted through the policies aiming at reducing oil rent dependence and diversification strategies implemented by the Malaysian government, such as tax reform initiatives, Medium-Term Revenue Strategy (MTRS) and Industrial Malaysia Plan. In doing so, the Malaysian government has succeeded in establishing a well-diversified economy with the presence of robust manufacturing and services sector (Badeeb, Szulczyk, and Lean 2021). Nonetheless, it can be concluded that government intervention does not moderate the relationship between oil rent dependence and the manufacturing sector. The reason is due to the inefficient spending of oil rent by the government which tends to focus on the oil and gas industry instead of the manufacturing sector. In other words, although Malaysia's government has made diversification its key policy agenda, it is still insufficient to fully utilize oil rent in promoting the manufacturing export, which is the main driver of Malaysia's economic growth (Chandran and Munusamy 2009).

CHAPTER 6
CONCLUSION

6.1 Introduction

According to the hypothesis of the oil curse, the manufacturing sector tends to suffer from stagnation when the country is overdependent on oil rent. The reason is due to Dutch disease, one of the main mechanisms for the oil curse which postulates that oil rent dependence is able to dampen the manufacturing sector through the pulling effect and spending effect. In other words, a high level of dependency on oil rent can weaken the role of the manufacturing sector in triggering capital accumulation and technological innovation that promote the growth of other real economic sectors through linkage and spillover effects and thus, stimulating sustainable economic growth.

The main objective of this research was to examine the impacts of oil rent dependence on the production and export of the manufacturing sector, as well as the moderating role of financial development and government intervention on the relationship in the context of Malaysia. These analyses are crucial as the findings would reveal the possible reasons for the stagnation of Malaysia's manufacturing sector and the role of financial development and government intervention in moderating the impacts of oil rent dependence on the manufacturing sector. In this chapter, Section 6.2 summarizes the findings of this study, while contributions of this research and policy implications are presented in Section 6.3 and 6.4, respectively. Furthermore, the limitations of the study will be presented in Section 6.5, whereas the recommendations for future studies are shown in Section 6.6. Lastly, the conclusion of this research is presented in Section 6.7.

6.2 Key Findings

According to the empirical evidence of this research, one of the key findings is oil rent dependence negatively affects the production of Malaysia's manufacturing sector. In other words, the high level of dependency on oil rent is one of the main causes for the stagnation of the manufacturing sector in Malaysia. In contrast, although a decreasing trend is indicated for manufactured exports in Malaysia, the results revealed that oil rent dependence does not have any significant impact on the export of the manufacturing sector.

Based on the findings of this study, overdependence on oil rent in Malaysia is negatively associated with manufacturing value added. This can be explained by the fact that although the windfall of oil rent is expected to promote the expansion of the manufacturing sector by providing additional financial resources, it actually acts as an inhibition to the growth of the manufacturing sector. The reason is due to the higher profitability of the oil resources sector which consequently induces the movement of production factors, such as labour, out of the manufacturing sector into the oil resources sector. In fact, Dutch disease theory also postulates that oil rent dependence is likely to result in deindustrialization by impeding the production of

the manufacturing sector through pulling effect. Therefore, it can be concluded that the findings of this research are in line with the related literature (Corden 2012; Moradbeigi and Law 2017; Taguchi and Khinsamone 2018; Zhan et al. 2021; Badeeb, Szulczyk, and Lean 2021).

On the other hand, it is surprising that oil rent dependence does not have any significant impact on the export of the manufacturing sector. In fact, Dutch disease theory postulates that the oil resource boom will lead to inflation and appreciation of the exchange rate which consequently reduce the competitiveness of the manufacturing sector in the global market, thus reducing manufactured exports (Torvik 2001; Papyrakis and Gerlagh 2004; Frankel 2012). However, the absence of significant impact of oil rent dependence on the export of manufacturing sector indicates that the spending effect of Dutch disease does not take place in Malaysia, which means that oil rent dependence is not one of the causes of the decreasing trend of manufactured exports.

Following the analysis of the impacts of oil rent dependence on the manufacturing sector, this study also found that the adverse impacts of oil rent dependence channels through financial development in Malaysia's manufacturing sector. More specifically, it is found that oil rent dependence positively contributes to the production of the manufacturing sector, but financial development weakens these positive impacts by channelling the oil rent into unproductive investments, causing the negative impacts to outweigh the positive impacts. In other words, financial development can be considered the mechanism by which the negative impacts of oil rent dependence are transmitted to dampen the production of the manufacturing sector. Over the years, it is noticeable that oil-dependent countries are having a lower level of financial development. While it is found that Malaysia is having a high level of dependency on oil rent, the country is also found to have an underdeveloped financial sector, which leads to inefficient allocation of oil rent across the economic sectors. In fact, when the financial sector is underdeveloped, the financial sector will have more preference to allocate the windfall of oil rent to virtual economic sectors with higher profitability. In the case that the financial resources accumulated by the oil resources sector are channelled into unproductive investments, the positive impacts of oil rent will definitely be reduced as it not only prevents real economic sectors, especially the manufacturing sector from accessing the capital for expansion of manufacturing sector, but also endangers economic growth by fuelling the virtual economic bubble (Rongwei and Xiaoying 2020).

Another key finding of this study is that financial development does not have any significant moderation effect on the relationship between oil rent dependence and the export of the manufacturing sector. The reason for the absence of the moderation effect of financial development might be the presence of an underdeveloped financial sector in Malaysia (Ang and McKibbin 2007; Badeeb, Lean, and Smyth 2016). Specifically, this result suggests that Malaysia's financial sector is not developed enough to foster the efficiency of oil rent utilization, which is conducive to the export of the manufacturing sector. In fact, literature has suggested that the oil-blessing phenomenon only occurs when the financial sector is highly-developed. However, in the case of an underdeveloped financial sector, private investments which are more effective will be replaced by public investments (Erdoğan, Yıldırım, and

Gedikli 2020). In this instance, the development of productive economic activities, including the export of the manufacturing sector, will suffer. Besides, it is surprising that the findings revealed the absence of any significant role of financial development in the export of the manufacturing sector in Malaysia. This result means that Malaysia's financial sector does not motivate manufactured exports by providing the required capital. In fact, when the financial sector is highly-developed, more external finance will be provided to the manufacturing sector, which in turn provides a comparative advantage to this sector and increase the share of manufactured export in total exports and in the global market (Beck 2002). In other words, the absence of the positive role of financial development in manufactured exports can be attributed to the presence of an underdeveloped financial sector in Malaysia.

Along with the moderation effects of financial development, the findings of this study revealed that government interventions have a weakening effect on the relationship between oil rent dependence and the production of the manufacturing sector. More specifically, the oil rent dependence is having a negative role in improving the production of the manufacturing sector. However, the adverse impacts of oil rent dependence decline along with an increase in government interventions. This is because the diversification strategies implemented by Malaysia's government strengthen the role of the manufacturing sector in promoting sustainable economic growth and reducing reliance on oil rent. In this case, the adverse impacts of oil rent dependence, such as the crowding-out effect, on the manufacturing sector and the uncertainty arising from oil price volatility will be reduced. Moreover, the empirical evidence revealed the negative impacts of government interventions on the production of the manufacturing sector. This means that there are excessive government interventions in Malaysia and the government has more preference to allocate scarce financial resources to certain industries to help the government achieve its socioeconomic goals. Although investment in these industries might help improve the scale of the economy and competitiveness in the international market, but excessive government interventions will actually dampen the efficiency of resources allocation (Hao and Lu 2018). In fact, greater government intervention also dampens private investments and increases the dominant role of the public sector through government spending (Cohen, Coval, and Malloy 2011). Since private investments tend to be more efficient than public investments, the dampening effect on private investments by excessive government interventions will consequently impede the production of the manufacturing sector (Banerjee 2011).

In contrast, the study also indicated that government intervention does not moderate the relationship between oil rent dependence and the export of the manufacturing sector. The absence of the moderating role of government interventions might be due to the inefficiency of Malaysia's government in managing the spending of oil rent. The oil rent might be used to invest in unproductive activities and to pursue political interests. In fact, although Malaysia receives windfall of oil rent by exporting the crude oil resources, it is claimed that the politicians have used these financial resources to promote their affirmative action agendas. Although these actions have benefitted their political interests, it leads to economic distortions, causing Malaysia to be caught in the middle-income trap (Doraisami 2015). In other words, even though several diversification strategies have been implemented to diversify the economic

structure, Malaysia's government is not efficient enough in managing the spending of oil rent. Additionally, the finding also revealed that government intervention is playing a negative role in promoting the export of the manufacturing sector. This is because when the government intervention is strong, the positive impacts of investment will reduce as the firms can assess more sources of funding through political connections, which in turn, leads to inefficient allocations of resources (Zhao, Chen, and Hao 2018). Indeed, the high level of government interventions in Malaysia will also encourage investors to shift their investments into industries preferred by the government and consequently result in a deadweight loss. More precisely, without excessive government interventions, scarce resources can be allocated effectively according to the comparative advantages of economic activities. However, excessive government intervention may encourages the entrepreneurs to shift away from these productive activities into less efficient activities, and thereby impedes productive economic activities, including manufactured exports (J. Wang 2018; Y. Hao and Lu 2018).

In a nutshell, it can be argued that Malaysia's manufacturing sector is affected negatively by oil rent dependence which not only impedes the production of the manufacturing sector directly through Dutch disease mechanism, but also exhibits indirect impacts through financial development. In terms of the direct impacts of oil rent dependence on the production of the manufacturing sector, Dutch disease theory postulates that the oil resource boom will increase the wages offered to the labour in the oil resources sector, which consequently induces the movement of labour out of the manufacturing sector. In this case, it will result in deindustrialization through the reduction in employment and manufacturing output. On the other hand, the indirect impact has proven that the financial sector in Malaysia is underdeveloped, which in turn leads to inefficient allocations of oil rent across economic sectors. Indeed, the absence of any role of financial development on the relationship between oil rent dependence and manufactured exports also indicates the existence of an underdeveloped financial sector in Malaysia. Similarly, oil-dependent countries are always found to have low levels of financial development. Thus, it is unsurprising to find the presence of an underdeveloped financial sector in Malaysia. In addition, one also can assert that although Malaysia's government has implemented several diversification strategies to diversify the economic structure, the strategies developed by the government are not good enough to fully utilize oil rent in promoting the development of the manufacturing sector. In fact, the adverse impacts of oil rent dependence can only be reduced, and an "oil blessing" phenomenon only can be achieved, when the policies are well-established. This is because when the government policies are effective, Malaysia's government can act as the main driver of economic growth by channelling the oil rent into real economic sectors which in turn, enhances the industrialization in the country (Zhou and Zhao 2022). However, in the presence of ineffective policies, the process of industrializations might be impeded as the government intervention through government spending will result in inefficient resources allocation. In short, government interventions should be reduced.

6.3 Research Contributions

This research was conducted with reference to a large amount of research on the oil curse, financial development and government intervention. It is worth mentioning that this study not only contributes to the existing literature by becoming the first research to examine the relationship between oil rent dependence and the production of the manufacturing sector, as well as between oil rent dependence and the export of the manufacturing sector, along with the moderation role of financial development and government intervention in the context of Malaysia, but also contributes in other different ways.

Firstly, by applying the time series analysis, this study is the first empirical study that specifically examines the existence of the oil curse in Malaysia's manufacturing sector. The symptoms of the oil curse are detected when oil rent dependence is found to adversely impact the production of the manufacturing sector via Dutch disease and financial development. To the best of our knowledge, most published articles about the oil curse focused on the nexus between oil rent dependence and economic growth, while the impacts on the manufacturing sector were only discussed from the theoretical perspective. In other words, there is no empirical evidence regarding the relationship between oil rent dependence and the manufacturing sector. Thus, the theoretical discussions motivated us to examine the relationship between oil rent dependence and the manufacturing sector empirically by adopting the time series framework. While most of the authors carried out their research by applying the cross-country panel data analysis, this study was conducted on a country-specific basis. The reason is that impacts of oil rent dependence are different across countries due to the difference in the economic structure and the policies implemented by the governments (Mikesell 1997). In other words, by conducting the research based on a country-specific basis, this study will be able to provide policy implications for Malaysia's policymakers based on the country's economic situation. Overall, the findings of this research not only provides empirical evidence and deeper insights on how oil rent dependence impacts the manufacturing sector through Dutch disease, but also provide country-specific policy implications for Malaysia's policymakers.

Besides, although there is a lot of existing research which studied the moderation effects of financial development, this research is the first to provide an empirical attempt on identifying the moderating role of financial development on the relationship between oil rent dependence and the manufacturing sector. In comparison with other empirical studies which used only one indicator to measure financial development, this study is one of the very few research that employed two indicators as the measurement of financial development (Dogan, Altinoz, and Tzeremes 2020; Guan et al. 2020; Rongwei and Xiaoying 2020).

Moreover, this research also contributes by investigating the moderating role of government interventions on the nexus between oil rent dependence and the manufacturing sector with the purpose of providing policy recommendations based on the country's situation. Among the existing research, instead of focusing on the moderation effects of government intervention, the authors concentrated on how the adverse impacts of natural resource dependence can be transmitted through government intervention or how the impacts of natural resource

dependence differ in the extent of government interventions. Moreover, previous studies also focused on the relationship between natural resource dependence and economic growth. In other words, this research is the first empirical study to investigate the moderation effects of government intervention on the impacts of oil rent dependence on the production and export of the manufacturing sector.

6.4 Policy Implications

Given that the manufacturing sector is the key driver of Malaysia's economic growth, the sustainable development of this sector is a crucial step in achieving sustainable economic growth. More specifically, the enhancement of the manufacturing sector will strengthen its role in capital accumulation, technological innovation, and the stimulation of growth of other economic sectors through spillover effects. Therefore, developing the manufacturing sector and alleviating the competitive obstacles to the expansion of this sector should be the main policy agenda for the country. According to the findings of this research, the following policy recommendations are provided for Malaysia 's policymakers:

1. **Malaysia's government should pay more attention to the adverse impacts brought by oil rent dependence on the role of the manufacturing sector in promoting economic growth.**

Due to the crucial role of the manufacturing sector in sustainable economic growth, Malaysia's government is recommended to reduce the level of dependency on oil rent, enhance oil rent utilization and promote the development of the manufacturing sector in order to achieve economic goals. While diversification should continue to be the key policy agenda, the government should increase their investment on real economic sectors, especially manufacturing sector. More specifically, since Malaysia's government has control over the spending of oil rent, the oil rent can be channelled into the manufacturing sector. In doing so, it will not only stimulate the growth of manufacturing and other real economic sectors but also diversify the sources of government revenue, which in turn, reduce the country's reliance on the oil rent. Moreover, government also can encourage the investors to invest in manufacturing sector by providing more incentives to investors. For instance, the government can encourage the financial institutions to allocate more long-term credit to manufacturing companies, which not only promotes the expansion of the manufacturing sector, but also lead to efficient resources allocation. Indeed, including the manufacturing sector as part of the priority sector loan will also encourage the financial sector to allocate more credit to the manufacturing sector, which in turn, allows manufacturers to improve their productivity and benefit other real economic sectors through forward and backward linkages.

2. **Financial sector reform should be carried out to ensure the financial sector meets the requirements needed to improve the production and export of the manufacturing companies by creating an entrepreneurship environment**.

While it is claimed that financial development is able to allocate resources effectively to productive investments, it is found that Malaysia's financial development is acting as one of the mechanisms of the oil curse. Therefore, if the government is able to develop a well-designed

and well-developed financial sector, it will be able to protect the manufacturing sector from Dutch disease by reducing the uncertainty among investors, which arises from oil price volatility, and allocating the oil rent effectively to productive economic activities. Quality and compliance institutions and governance frameworks can be established to strengthen financial development. More specifically, the financial system should be under surveillance by Malaysia's government to ensure the problems are identified and responded timely. In addition to positively influence the operations of the financial sector, doing so will also prevent the occurrence of misconduct or abuse. Indeed, policymakers also need to pursue strategies that can strengthen the efficiency of financial institutions so that they are able to identify productive investments by collecting and processing information in a more effective and efficient way. For instance, Malaysia's government can provide incentives for the financial institutions to adopt automation software, which not only can conduct a large volume of transactions effectively at a lower cost and faster speed but also reduce fraud risks and credit risks. Indeed, the adoption of automation software alone is not enough for the financial sector's efficiency improvement, it is also crucial that financial institutions improve their labour productivity. Therefore, it is recommended that the financial institutions can provide training for the employees, establish a better reward system or create a clear employee review scorecard that aims at improving employee performance (Reimink 2019).

3. **Malaysia government should increase their expenditure on the infrastructure in order to promote the export of manufacturing sector.**

Since the findings of this research indicated the lack of infrastructure in Malaysia as reflected by the adverse impacts of the level of infrastructure on the export of the manufacturing sector, thus Malaysia's government is recommended to increase their investment in infrastructure. For instance, since Prai Bulk Cargo Terminal (PBCT) has insufficient railway tracks for the transferring of containers, the Malaysian government can build more railway tracks to increase the frequency and capacity of trains, which in turn, solves the issues of insufficient space capacities. Moreover, the government is also recommended to further develop the existing dry ports or build more dry ports to allow the seaports to accommodate more container traffic. In addition to infrastructure improvement, the government can also set up more educational infrastructure to provide training for the employees from the manufacturing sector or provide subsidies for employee training. In doing so, it will not only help the manufacturing companies to provide higher quality services by enhancing employee performance, but also help the manufacturers gain competitive advantages. Besides, Human Capital Development Corporation can cooperate with manufacturers in organizing training courses for undergraduates or providing employee training that aims at upskilling employees based on organizational needs. In the research of Dhar (2015), the author also claimed that investing in employee training will raise the company's productivity. Accordingly, Malaysia's government is suggested to increase investments in infrastructure and employee training, which in turn, positively contribute to the production and export of the manufacturing sector.

4. **Policies aiming at increasing the inflow of foreign direct investments into the manufacturing sector should be implemented.**

Since it is found that the production of the manufacturing sector is dampened by oil rent dependence in Malaysia, it is suggested to implement policies that attract more foreign investors to invest in the manufacturing sector. Although subsidies and tax reductions are the most common policies for encouraging foreign direct investments, Malaysia's government can also attract more foreign direct investments by joining the World Association of Investment Promotion Agencies, which allows members to promote their countries as investment destinations and exchange their experiences in attracting foreign direct investments. In doing so, the Malaysian government will be able to learn more lessons from other members regarding how to encourage foreign investments in a more effective way. Moreover, according to the U.S. Department of State (2018), although Malaysia's government targets to make foreign direct investment one of the key engines for the country's economic growth, its investment promotion policies are impeded by the restrictions placed on investments in some economic sectors, including manufacturing sector. Therefore, the government is recommended to lower the barriers for foreign direct investments by removing those restrictions. In the research by Hao et al. (2021), the authors also argued that Dutch disease phenomenon can be reversed through foreign direct investments as the inflow of foreign investments is usually associated with more advanced technology and knowledge, which are able to improve the production of the manufacturing sector.

5. **An oil fund responsible for managing the spending of oil rent should be established and managed by an independent management institution.**

Although it is claimed that Malaysia is vulnerable to external shocks especially oil price shocks, with the presence of a well-established fiscal policy and oil fund, the country will be able to reduce the adverse impacts of oil price volatility because part of the oil fund can serve as a "reservoir dam" to prevent economic fluctuations arising from oil price volatility. Therefore, an oil fund responsible for managing the spending of oil rent can be established and managed by an independent institution to ensure there is no corruption and the oil rent is not used in pursuing personal interests. In addition to the establishment of the oil fund, Malaysia's government also needs to develop and implement a fiscal policy that clearly defines situations that allow the oil fund to be used along with the percentage of oil rent that is required to be channelled into the oil fund annually. Indeed, the fiscal policy must clearly state the portion of the wealth that is required to invest in a diversified portfolio and foreign assets so that the country can receive foreign currency income. In doing so, it will not only help the country attain oil rent utilization but also reverse Dutch disease phenomenon.

6.5 Research Limitations

Although this research has contributed to the existing literature in several ways as discussed before, this study was subject to a few limitations regarding data availability. Specifically, financial development has different dimensional approaches. Although the Financial Development Index developed by IMF is able to measure the multidimensional approach of financial development, the data is only available after 1980. Therefore, due to the unavailability of data of the Financial Development Index, two other indicators of financial development were employed in this research.

6.6 Future Studies Recommendation

While this research concentrated on the impacts of oil rent dependence on the manufacturing sector along with the moderating role of financial development and government intervention, there are also a few recommendations that can be provided for future studies. Firstly, if the data of the financial development indicators are available, more indicators can be included to measure financial development. Indeed, if the data is available in the future, the financial development index developed by IMF which is capable of covering the multidimensional approach to financial development can be employed. That way, the moderation effects of financial development on the impacts of oil rent dependence can be investigated in more detail.

In addition, it is also recommended to investigate the impacts of oil rent dependence on other economic sectors in Malaysia. More specifically, if data is available, future studies can take into account an examination of whether the impacts of oil rent dependence will differ across economic sectors in Malaysia. Another suggestion for future studies is to determine the threshold level that financial development must attain to transform the weakening effect of financial development on the positive impacts of oil rent dependence into a strengthening effect.

Lastly, future research could consider investigating the moderation effects of other factors, such as human capital accumulation, institutional quality, R&D, and trade openness, on the impacts of oil rent dependence on Malaysia's manufacturing sector, which in turn, allows the researchers to provide policy implications for policymakers. Hence, if data is available, researching these aspects will unquestionably be fruitful.

6.7 Concluding Remarks

Over the years, achieving sustainable economic growth is always the main economic target for most countries, including oil-abundant countries. The desire of achieving this target has encouraged them to improve their competitiveness in the international economy and solve their economic issues. Nonetheless, it is important to note that although the manufacturing sector is one of the requirements for achieving sustainable economic growth, the existence of the manufacturing sector alone is insufficient for maintaining or improving the sustainability of economic growth. It is necessary for the country to achieve sustainable growth in the manufacturing sector in order to strengthen the sustainability of economic growth. For oil-abundant countries, it is always expected that they are able to generate robust growth of manufacturing sector by allocating the oil rent into this sector. With the purpose of achieving this objective, one can assert that the improvement of institutional quality and financial sector reform are the main focuses for the policymakers in oil-abundant countries during the establishment and implementation of policies so that they are able to fully utilize the oil rent in promoting the development of the manufacturing sector.

In Malaysia, although several industrial policies have been implemented by the government in order to promote the development of the manufacturing sector, it is found that the manufacturing sector is experiencing a decreasing trend. This research highlighted that the high

level of dependency on oil rent plays an essential role in this situation, which validates the findings of previous research on this topic.

More specifically, the negative impacts of oil rent dependence are actually transmitted indirectly through the presence of the underdeveloped financial sector in Malaysia. While the windfall of oil rent is expected to be able to benefit the growth of the manufacturing sector by providing more financial resources, the underdeveloped financial sector in Malaysia has allocated the oil rent to unproductive investments instead of real economic sectors, especially the manufacturing sector. As the proverb goes, every coin has two sides; oil rent is not an exception as it also consists of advantages and disadvantages. The high level of dependency on oil rent also induces the movement of production factors, such as labour, out of the manufacturing sector into the oil resources sector by offering higher wages. In this case, it will lead to the contraction of the manufacturing sector by reducing employment and dampening the production of the manufacturing sector. The crowding-out effect of oil rent dependence on the manufacturing sector will become more significant in the existence of the underdeveloped financial sector, which allocates the oil rent into the virtual economy, thus, preventing the real economic sectors to access more sources of funding. In other words, it can be concluded that the adverse impacts of oil rent dependence channel through financial development in Malaysia's manufacturing sector. An obvious symptom of these impacts of oil rent dependence in Malaysia is the presence of the weakening effect of financial development on the significant positive impacts of oil rent dependence, which consequently causes the negative impacts of oil rent dependence to outweigh the positive impacts.

Although it is found that oil rent dependence is having negative impacts on the production of the manufacturing sector, it is also found that Malaysia's government is able to mitigate these negative impacts by reducing its reliance on oil rent. More precisely, Malaysia's government has implemented several diversification strategies in terms of government revenue and economy in order to reduce the level of dependency on oil rent. Due to the implementation of these strategies, Malaysia's government succeeded in creating a well-diversified economy with the presence of a robust manufacturing sector. One of the most obvious signs of the success of these diversification strategies is the weakening effect of government intervention on the adverse impacts of oil rent dependence on the production of the manufacturing sector.

It is also worth mentioning that although oil rent dependence impedes the manufacturing sector through Dutch disease and financial development, it does not mean that it is unsolvable. By continuously making diversification the key policy agenda, Malaysia's government will be able to generate robust growth in the manufacturing sector by reducing its reliance on oil rent. The success of Malaysia's diversification strategies can be evidenced by the weakening effect of government intervention on the adverse impacts of oil rent dependence on the production of the manufacturing sector.

Lastly, it is important to bear in mind that the oil curse phenomenon which is transmitted via Dutch disease in Malaysia's manufacturing sector is evitable. Even if it is found that Malaysia's manufacturing sector is suffering from Dutch disease symptoms due to oil rent dependence, there are also countries that succeeded in evading the oil curse and achieving sustainable

growth in the manufacturing sector. In other words, it is necessary for oil-abundant countries like Malaysia to learn from other oil-abundant countries in order to formulate policies that can develop an appropriate institution for the management of oil rent which in turn promotes the growth of the manufacturing sector, and the sustainability of economic growth.

Reference List

Abdullah, Zainab Bte. 1986. “Plans for Coal Use in Malaysia.” *Energy* 11 (11–12): 1097-1102. https://doi.org/10.1016/0360-5442(86)90046-0.

Abidin, Mahani Zainal, and Wai Heng Loke. 2008. “Revealed Comparative Advantage of Malaysian Exports: The Case for Changing Export Composition.” *Asian Economic Papers* 7 (3): 130-147. https://doi.org/10.1162/asep.2008.7.3.130.

Adams, Dawda, Subhan Ullah, Pervaiz Akhtar, Kweku Adams, and Samir Saidi. 2019. “The Role of Country-Level Institutional Factors in Escaping the Natural Resource Curse: Insights from Ghana.” *Resources Policy* 61: 433-400. https://doi.org/10.1016/j.resourpol.2018.03.005.

Adekoya, Oluwasegun B. 2020. “Revisiting Oil Consumption-Economic Growth Nexus: Resource-Curse and Scarcity Tales.” *Resources Policy* 70: 1-14. https://doi.org/10.1016/j.resourpol.2020.101911.

Adeyeye, Patrick Olufemi, Oladapo Fapetu, Olufemi Adewale Aluko, and Stephen Oseko Migiro. 2015. “Does Supply-Leading Hypothesis Hold in a Developing Economy? A Nigerian Focus.” *Procedia Economics and Finance* 30: 30-37. https://doi.org/10.1016/s2212-5671(15)01252-6.

Adu, George, George Marbuah, and Justice Tei Mensah. 2013. “Financial Development and Economic Growth in Ghana: Does the Measure of Financial Development Matter?” *Review of Development Finance* 3 (4): 192-203. https://doi.org/10.1016/j.rdf.2013.11.001.

Agoba, Abel Mawuko, Joshua Abor, Kofi A. Osei, and Jarjisu Sa-Aadu. 2017. “Central Bank Independence and Inflation in Africa: The Role of Financial Systems and Institutional Quality.” *Central Bank Review* 17 (4): 131-146. https://doi.org/10.1016/j.cbrev.2017.11.001.

Agüero, Jorge M., Carlos Felipe Balcázar, Stanislao Maldonado, and Hugo Ñopo. 2021. “The Value of Redistribution: Natural Resources and the Formation of Human Capital under Weak Institutions.” *Journal of Development Economics* 148: 1-12. https://doi.org/10.1016/j.jdeveco.2020.102581.

Ahmad, Jaleel, and Somchai Harnhirun. 1995. “Unit Roots and Cointegration in Estimating Causality between Exports and Economic Growth: Empirical Evidence from the ASEAN Countries.” *Economics Letters* 49 (3): 321-334. https://doi.org/10.1016/0165-1765(95)00678-9.

Ahmad, Nor Asma Binti, Azila binti Jaini, and Zaminor binti Zamzamir@Zamzamin. 2015. “The Impact of Infrastructure on Trade in Malaysia.” *Journal of Entrepreneurship and Business* 3 (2): 42-49. https://doi.org/10.17687/jeb.0302.04.

Ahmed, Abdullahi D. 2016. “Integration of Financial Markets, Financial Development and Growth: Is Africa Different?” *Journal of International Financial Markets, Institutions and Money* 42: 43-59. https://doi.org/10.1016/j.intfin.2016.01.003.

Ahmed, Khalid, Mantu Kumar Mahalik, and Muhammad Shahbaz. 2016. “Dynamics between Economic Growth, Labor, Capital and Natural Resource Abundance in Iran: An Application of the Combined Cointegration Approach.” *Resources Policy* 49: 213-221. https://doi.org/10.1016/j.resourpol.2016.06.005.

Ahmed, Zahoor, Bin Zhang, and Michael Cary. 2021. “Linking Economic Globalization, Economic Growth, Financial Development, and Ecological Footprint: Evidence from Symmetric and Asymmetric ARDL.” *Ecological Indicators* 121: 1-12. https://doi.org/10.1016/j.ecolind.2020.107060.

Akaike, Hirotogu. 1992. “Information Theory and an Extension of the Maximum Likelihood Principle.” *Breathroughs in Statistics*: 610-624 . https://doi.org/10.1007/978-1-4612-0919-5_38.

Akinci, Gönül Yüce, Merter Akinci, and Ömer Yilmaz. 2014. “Financial Development-Economic Growth Nexus: A Panel Data Analysis upon OECD Countries.” *Hitotsubashi Journal of Economics* 55 (1): 33-50. https://www.jstor.org/stable/43296269.

Akman, Engin, and Ibrahim Bozkurt. 2016. “On the Mixed Indirect Effects of Oil Prices on International Trade.” *OPEC Energy Review* 40 (4): 374-396. https://doi.org/10.1111/opec.12087.

Al-dhamari, Redhwan, and Ku Nor Ku Ismail. 2015. “Cash Holdings, Political Connections, and Earnings Quality: Some Evidence from Malaysia.” *International Journal of Managerial Finance* 11 (2): 215-231. https://doi.org/10.1108/IJMF-02-2014-0016.

Al-yahyaee, Khamis Hamed, Walid Mensi, Idries Mohammad Wanas Al-Jarrah, and Aviral Kumar Tiwari. 2019. “Testing for the Granger-Causality between Returns in the U.S. and GIPSI Stock Markets.” *Physica A: Statistical Mechanics and Its Applications* 531: 1-13. https://doi.org/10.1016/j.physa.2019.04.186.

Aladejare, Samson Adeniyi. 2018. “Resource Price, Macroeconomic Distortions, and Public Outlay: Evidence from Oil-Exporting Countries.” *International Economic Journal* 32 (2): 199-218. https://doi.org/10.1080/10168737.2018.1481128.

Algieri, Bernardina. 2011. “The Dutch Disease: Evidences from Russia.” *Economic Change and Restructuring* 44 (3): 243-277. https://doi.org/10.1007/s10644-011-9101-4.

Ali, Adnan, Suresh Ramakrishnan, and Faisal. 2022. “Financial Development and Natural Resources. Is There a Stock Market Resource Curse?” *Resources Policy* 75: 1-16. https://doi.org/10.1016/j.resourpol.2021.102457.

Ali Ahmed, Huson Joher, and I. K.M.Mokhtarul Wadud. 2011. “Role of Oil Price Shocks on Macroeconomic Activities: An SVAR Approach to the Malaysian Economy and Monetary Responses.” *Energy Policy* 39 (12): 8062-8069. https://doi.org/10.1016/j.enpol.2011.09.067.

Aljarallah, Ruba A. 2020. “Natural Resource Dependency, Institutional Quality and Human Capital Development in Gulf Countries.” *Heliyon* 6 (7): 1-11. https://doi.org/10.1016/j.heliyon.2020.e04290.

Aljarallah, Ruba A. 2021. “An Assessment of the Economic Impact of Natural Resource Rents in Kingdom of Saudi Arabia.” *Resources Policy* 72: 1-11. https://doi.org/10.1016/j.resourpol.2021.102070.

Allen, Mike. 2017. *The SAGE Encyclopedia of Communication Research Methods*. *The SAGE Encyclopedia of Communication Research Methods*. https://doi.org/10.4135/9781483381411.

Almozaini, Majed S. 2017. “Oil Booms and Macroeconomic Activities in Opec Countries: The Cases of Saudi Arabia, Nigeria, and Venezuela.” *Journal of Energy and Development* 43 (1):125-142. https://www.jstor.org/stable/26539570.

Alssadek, Marwan, and James Benhin. 2021. “Oil Boom, Exchange Rate and Sectoral Output: An Empirical Analysis of Dutch Disease in Oil-Rich Countries.” *Resources Policy* 74: 1-14. https://doi.org/10.1016/j.resourpol.2021.102362.

Altunc, O. Faruk, and Celil Aydın. 2013. “The Relationship between Optimal Size of Government and Economic Growth: Empirical Evidence from Turkey, Romania and Bulgaria.” *Procedia - Social and Behavioral Sciences* 92: 66-75. https://doi.org/10.1016/j.sbspro.2013.08.639.

Aluko, Olufemi A., and Muazu Ibrahim. 2020. “Institutions and the Financial Development–Economic Growth Nexus in Sub-Saharan Africa.” *Economic Notes* 49 (3): 333-355. https://doi.org/10.1111/ecno.12163.

Amadu, Ismaila, and Fambon Samuel. 2020. “Power Supply and Manufacturing Growth: Evidence from Cameroon.” *Energy Policy* 147: 1-7. https://doi.org/10.1016/j.enpol.2020.111922.

Ampofo, Gideon Kwaku Minua, Jinhua Cheng, Daniel Akwasi Asante, and Philip Bosah. 2020. “Total Natural Resource Rents, Trade Openness and Economic Growth in the Top Mineral-Rich Countries: New Evidence from Nonlinear and Asymmetric Analysis.” *Resources Policy* 68: 1-17. https://doi.org/10.1016/j.resourpol.2020.101710.

Amundsen, Inge. 2014. “Drowning in Oil: Angola’s Institutions and the resource Cursé.” *Comparative Politics* 46 (2): 169-189. https://doi.org/10.5129/001041514809387333.

Anderson, R. L. 1954. “The Problem of Autocorrelation in Regression Analysis.” *Journal of the American Statistical Association* 49 (265): 113-129. https://doi.org/10.1080/01621459.1954.10501219.

Ang, James B. 2007. “Financial Deepening and Economic Development in Malaysia.” *Economic Papers* 26 (3): 249-260. https://doi.org/10.1111/j.1759-3441.2007.tb00434.x.

Ang, James B., and Warwick J. McKibbin. 2007. “Financial Liberalization, Financial Sector Development and Growth: Evidence from Malaysia.” *Journal of Development Economics* 84 (1): 215-233. https://doi.org/10.1016/j.jdeveco.2006.11.006.

Ansari, Dawud. 2016. “Resource Curse Contagion in the Case of Yemen.” *Resources Policy* 49: 444-454. https://doi.org/10.1016/j.resourpol.2016.08.001.

Anser, Muhammad Khalid, Zahid Yousaf, Abdelmohsen A. Nassani, Xuan Vinh Vo, and Khalid Zaman. 2020. "Evaluating 'Natural Resource Curse' Hypothesis under Sustainable Information Technologies: A Case Study of Saudi Arabia." *Resources Policy* 68: 1-15. https://doi.org/10.1016/j.resourpol.2020.101699.

Anwar, Sajid, and Sizhong Sun. 2011. "Financial Development, Foreign Investment and Economic Growth in Malaysia." *Journal of Asian Economics* 22 (4): 335-342. https://doi.org/10.1016/j.asieco.2011.04.001.

Anwar, Sajid, and Sizhong Sun. 2018. "Foreign Direct Investment and Export Quality Upgrading in China's Manufacturing Sector." *International Review of Economics and Finance* 54: 289-298. https://doi.org/10.1016/j.iref.2017.09.009.

Arize, A. C. 1996. "Cointegration Test of a Long-Run Relation between the Trade Balance and the Terms of Trade in Sixteen Countries." *North American Journal of Economics and Finance* 7 (2): 203-215. https://doi.org/10.1016/S1062-9408(96)90011-X.

Arnade, Carlos, and Utpal Vasavada. 1995. "Causality Between Productivity and Exports in Agriculture: Evidence from Asia and Latin America." *Journal of Agricultural Economics* 46 (2): 174-186. https://doi.org/10.1111/j.1477-9552.1995.tb00764.x.

Asekunowo, Victor O., and Sam A. Olaiya. 2012. "Crude Oil Revenue and Economic Development in Nigeria (1974-2008)." *OPEC Energy Review* 36 (2): 138-169. https://doi.org/10.1111/j.1753-0237.2011.00205.x.

Asif, Muhammad, Khan Burhan Khan, Muhammad Khalid Anser, Abdelmohsen A. Nassani, Muhammad Moinuddin Qazi Abro, and Khalid Zaman. 2020. "Dynamic Interaction between Financial Development and Natural Resources: Evaluating the 'Resource Curse' Hypothesis." *Resources Policy* 65: 1-14. https://doi.org/10.1016/j.resourpol.2019.101566.

Asimakopoulos, Stylianos, and Yiannis Karavias. 2016. "The Impact of Government Size on Economic Growth: A Threshold Analysis." *Economics Letters* 139: 65-68. https://doi.org/10.1016/j.econlet.2015.12.010.

Asyraf, Tengku Mohamed, Devendran Nadaraja, Afi f Shamri, and Rubin Sivabalan. 2019. "Is Malaysia Experiencing Premature Deindustrialisation?" *BNM Quarterly Bulletin* First quar (2016): 19-25. https://www.bnm.gov.my/documents/20124/766189/p3ba.pdf.

Athukorala, Prema- chandra. 2005. "Trade Policy in Malaysia: Liberalization Process, Structure of Protection, and Reform Agenda." *Asean Economic Bulletin* 22 (1): 19-34. https://doi.org/10.1355/ae22-1c.

Atil, Ahmed, Kishwar Nawaz, Amine Lahiani, and David Roubaud. 2020. "Are Natural Resources a Blessing or a Curse for Financial Development in Pakistan? The Importance of Oil Prices, Economic Growth and Economic Globalization." *Resources Policy* 67: 1-11. https://doi.org/10.1016/j.resourpol.2020.101683.

Atkinson, Giles, and Kirk Hamilton. 2003. "Savings, Growth and the Resource Curse Hypothesis." *World Development* 31 (11): 1793-1807. https://doi.org/10.1016/j.worlddev.2003.05.001.

Attiah, Eman. 2019. “The Role of Manufacturing and Service Sectors in Economic Growth: An Empirical Study of Developing Countries.” *EUROPEAN RESEARCH STUDIES JOURNAL* XXII (Issue 1): 112-127. https://doi.org/10.35808/ersj/1411.

Auty, Richard. 2002. *Sustaining Development in Mineral Economies*. *Sustaining Development in Mineral Economies*. https://doi.org/10.4324/9780203422595.

Auty, Richard, and Alan Gelb. 1986. “Oil Windfalls in a Small Parliamentary Democracy: Their Impact on Trinidad and Tobago.” *World Development* 14 (9): 1161-1175. https://doi.org/10.1016/0305-750X(86)90118-X.

Auty, Richard M. 2007. “Natural Resources, Capital Accumulation and the Resource Curse.” *Ecological Economics* 61 (4): 627-634. https://doi.org/10.1016/j.ecolecon.2006.09.006.

Ayadi, Rym, Emrah Arbak, Sami Ben Naceur, and Willem Pieter De Groen. 2015. “Financial Development, Bank Efficiency, and Economic Growth across the Mediterranean.” *Economic and Social Development of the Southern and Eastern Mediterranean Countries*: 1-14. https://doi.org/10.1007/978-3-319-11122-3_14.

Aye, Goodness C., Vincent Dadam, Rangan Gupta, and Bonginkosi Mamba. 2014. “Oil Price Uncertainty and Manufacturing Production.” *Energy Economics* 43: 41-47. https://doi.org/10.1016/j.eneco.2014.02.004.

Badeeb, Arwa, Alexander Brook, and Karen S. Lee. 2021. “Dark Cortical Rim: An MRI Feature of Polycystic Ovarian Syndrome.” *Abdominal Radiology* 46 (3): 1148-1156. https://doi.org/10.1007/s00261-020-02749-3.

Badeeb, Ramez Abubakr, and Hooi Hooi Lean. 2017. “Financial Development, Oil Dependence and Economic Growth: Evidence from the Republic of Yemen.” *Studies in Economics and Finance* 34 (2): 281-298. https://doi.org/10.1108/SEF-07-2014-0137.

Badeeb, Ramez Abubakr, Hooi Hooi Lean, and Jeremy Clark. 2017. “The Evolution of the Natural Resource Curse Thesis: A Critical Literature Survey.” *Resources Policy* 51: 123-134. https://doi.org/10.1016/j.resourpol.2016.10.015.

Badeeb, Ramez Abubakr, Hooi Hooi Lean, and Muhammad Shahbaz. 2020. “Are Too Many Natural Resources to Blame for the Shape of the Environmental Kuznets Curve in Resource-Based Economies?” *Resources Policy* 68: 1-11. https://doi.org/10.1016/j.resourpol.2020.101694.

Badeeb, Ramez Abubakr, Hooi Hooi Lean, and Russell Smyth. 2016. “Oil Curse and Finance-Growth Nexus in Malaysia: The Role of Investment.” *Energy Economics* 57: 154-165. https://doi.org/10.1016/j.eneco.2016.04.020.

Badeeb, Ramez Abubakr, Kenneth R. Szulczyk, and Hooi Hooi Lean. 2021. “Asymmetries in the Effect of Oil Rent Shocks on Economic Growth: A Sectoral Analysis from the Perspective of the Oil Curse.” *Resources Policy* 74: 1-11. https://doi.org/10.1016/j.resourpol.2021.102326.

Bahmani-Oskooee, Mohsen. 2001. “How Stable Is M2 Money Demand Function in Japan?” *Japan and the World Economy* 13 (4): 455-461. https://doi.org/10.1016/S0922-1425(01)00064-0.

Bahrain, Manama. 2016. “Economic Diversification in Oil-Exporting Arab Countries.” https://www.imf.org/external/np/pp/eng/2016/042916.pdf.

Banerjee, Pradeep. 2011. “Microeconomic Policy Environment – An Analytical Guide for Managers.” *IIMB Management Review* 23 (3): 190-191. https://doi.org/10.1016/j.iimb.2011.06.007.

Bank Negara Malaysia. 2001. “Bank Negara Malaysia Annual Report 2000.” Putrajaya. https://www.bnm.gov.my/documents/20124/830811/ch05.pdf.

Bank Negara Malaysia. 2006. “Small and Medium Enterprise (SME) Annual Report 2005.” *Small and Medium Enterprises (SMEs).*

Bank Negara Malaysia. 2010. “Annual Report 2009.” Putrajaya. https://www.bnm.gov.my/documents/20124/830447/ar2009_book.pdf.

Bank Negara Malaysia. 2011. “Financial Sector Blueprint 2011-2020.” Putrajaya. https://www.bnm.gov.my/documents/20124/828520/BNM_FSBP_FULL_en.pdf/dc02e341-99c4-2907-7a67-b33914a5bf8a?t=1585101941414.

Bank Negara Malaysia. 2013. “Annual Report 2012.” Putrajaya. https://www.bnm.gov.my/documents/20124/830190/ar2012_book.pdf.

Bank Negara Malaysia. 2014a. “Bank Negara Malaysia Annual Report 2013.”

Bank Negara Malaysia. 2014b. “Lending / Financing to the Priority Sectors 2015-2016.” Putrajaya. https://islamicbankers.files.wordpress.com/2013/12/20141226-lending-and-financing-to-priority-sectors-2015-2016.pdf.

Bank Negara Malaysia. 2015. “Annual Report 2014.” Putrajaya. https://www.bnm.gov.my/documents/20124/829724/ar2014_book.pdf.

Bank Negara Malaysia. 2016. “Bank Negara Malaysia Annual Report 2015.”

Bank Negara Malaysia. 2017. “Bank Negara Malaysia Annual Report 2016.” Putrajaya. https://www.bnm.gov.my/documents/20124/829203/ar2016_book.pdf.

Bank Negara Malaysia. 2018. “Bank Negara Malaysia Annual Report 2017.” Putrajaya. https://www.bnm.gov.my/documents/20124/829200/ar2017_book.pdf.

Bank Negara Malaysia. 2019. “Bank Negara Malaysia Annual Report 2018.” Putrajaya. https://www.bnm.gov.my/documents/20124/791626/ar2018_book.pdf.

Bank Negara Malaysia. 2020a. “Economic and Monetary Review.”

Bank Negara Malaysia. 2020b. “Sources And Uses Of Funds Of The Financial System.” https://www.bnm.gov.my/stats_fsitem.

Barczikay, Tamás, Zsuzsánna Biedermann, and László Szalai. 2020. “An Investigation of a Partial Dutch Disease in Botswana.” *Resources Policy* 67: 1-8. https://doi.org/10.1016/j.resourpol.2020.101665.

Basri, Nurliyana Mohd, Zulkefly Abdul Karim, and Noorasiah Sulaiman. 2020. “The Effects of Factors of Production Shocks on Labor Productivity: New Evidence Using Panel Var Analysis.” *Sustainability (Switzerland)* 12 (20): 1-23. https://doi.org/10.3390/su12208710.

Beck, Thorsten. 2002. “Financial Development and International Trade: Is There a Link?” *Journal of International Economics* 57 (1): 107-131. https://doi.org/10.1016/S0022-1996(01)00131-3.

Beck, Thorsten. 2012. “Finance and Oil: Is There a Resource Curse in Financial Development?” *SSRN Electronic Journal*: 1-37. https://doi.org/10.2139/ssrn.1769803.

Beck, Thorsten, Berrak Büyükkarabacak, Felix K. Rioja, and Neven T. Valev. 2014. “Who Gets the Credit? And Does It Matter? Household vs. Firm Lending across Countries.” *B.E. Journal of Macroeconomics*: 1-41. https://doi.org/10.1515/1935-1690.2262.

Beck, Thorsten, Samuel Muzele Maimbo, Issa Faye, and Thouraya Triki. 2013. *Financing Africa Through the Crisis and Beyond*. *Economic Development Quarterly*. Vol. 27.

Bekhet, Hussain Ali, and Nor Salwati Othman. 2018. “The Role of Renewable Energy to Validate Dynamic Interaction between CO2 Emissions and GDP toward Sustainable Development in Malaysia.” *Energy Economics* 72: 47-61. https://doi.org/10.1016/j.eneco.2018.03.028.

Belloumi, Mounir. 2014. “The Relationship between Trade, FDI and Economic Growth in Tunisia: An Application of the Autoregressive Distributed Lag Model.” *Economic Systems* 38 (2): 269-287. https://doi.org/10.1016/j.ecosys.2013.09.002.

Ben-Salha, Ousama, Abir Abid, and Ghassen El Montasser. 2022. “Linear and Nonlinear Causal Linkages Between Exports and Growth in Next Eleven Economies.” *Journal of the Knowledge Economy*: 1–33. https://doi.org/https://doi.org/10.1007/s13132-022-00958-3.

Bena, Jan, and Peter Ondko. 2012. “Financial Development and the Allocation of External Finance.” *Journal of Empirical Finance* 19 (1): 1-25. https://doi.org/10.1016/j.jempfin.2011.11.002.

Benkhodja, Mohamed Tahar. 2014. “Monetary Policy and the Dutch Disease Effect in an Oil Exporting Economy.” *International Economics* 138: 78-102. https://doi.org/10.1016/j.inteco.2014.01.003.

Bergougui, Brahim, and Syed Mansoob Murshed. 2021. “Revisiting the Oil Wealth-Growth Nexus: The Role of Economic Norms in Avoiding the Oil Curse.” *Extractive Industries and Society* 8 (3): 1-11. https://doi.org/10.1016/j.exis.2021.100929.

Bhattacharyya, Sambit, and Roland Hodler. 2014. “Do Natural Resource Revenues Hinder Financial Development? The Role of Political Institutions.” *World Development* 57: 101-113. https://doi.org/10.1016/j.worlddev.2013.12.003.

Biresselioglu, Mehmet Efe, Muhittin Hakan Demir, Arsen Gonca, Onat Kolcu, and Ahmet Yetim. 2019. “How Vulnerable Are Countries to Resource Curse?: A Multidimensional Assessment.” *Energy Research and Social Science* 47: 93-101. https://doi.org/10.1016/j.erss.2018.08.015.

Bist, Jagadish Prasad. 2018. “Financial Development and Economic Growth: Evidence from a Panel of 16 African and Non-African Low-Income Countries.” *Cogent Economics and Finance* 6 (1): 1-17. https://doi.org/10.1080/23322039.2018.1449780.

Bittencourt, Manoel. 2012. “Financial Development and Economic Growth in Latin America: Is Schumpeter Right?” *Journal of Policy Modeling* 34 (3): 341-355. https://doi.org/10.1016/j.jpolmod.2012.01.012.

Bjørnland, Hilde C., Leif Anders Thorsrud, and Ragnar Torvik. 2019. “Dutch Disease Dynamics Reconsidered.” *European Economic Review* 119: 411-433. https://doi.org/10.1016/j.euroecorev.2019.07.016.

Bjorvatn, Kjetil, Mohammad Reza Farzanegan, and Friedrich Schneider. 2012. “Resource Curse and Power Balance: Evidence from Oil-Rich Countries.” *World Development* 40 (7): 1308-1316. https://doi.org/10.1016/j.worlddev.2012.03.003.

Blanco, Luisa. 2009. “The Finance–Growth Link in Latin America.” *Southern Economic Journal* 76 (1): 224-248. https://doi.org/10.4284/sej.2009.76.1.224.

Boschini, Anne, Jan Pettersson, and Jesper Roine. 2013. “The Resource Curse and Its Potential Reversal.” *World Development* 43: 19-41. https://doi.org/10.1016/j.worlddev.2012.10.007.

Brahmbhatt, Milan, Otaviano Canuto, and Ekaterina Vostroknutova. 2010. “Dealing with Dutch Disease.” *Economic Premise* 16: 1-7. https://doi.org/10.1016/j.worlddev.2012.10.007.

Brückner, Markus. 2010. “Natural Resource Dependence, Non-Tradables, and Economic Growth.” *Journal of Comparative Economics* 38 (4): 461-471. https://doi.org/10.1016/j.jce.2010.06.002.

Brunnschweiler, Christa N. 2008. “Cursing the Blessings? Natural Resource Abundance, Institutions, and Economic Growth.” *World Development* 36 (3): 399-419. https://doi.org/10.1016/j.worlddev.2007.03.004.

Brunnschweiler, Christa N., and Erwin H. Bulte. 2008. “The Resource Curse Revisited and Revised: A Tale of Paradoxes and Red Herrings.” *Journal of Environmental Economics and Management* 55 (3): 248-264. https://doi.org/10.1016/j.jeem.2007.08.004.

Bulte, Erwin H., Richard Damania, and Robert T. Deacon. 2005. “Resource Intensity, Institutions, and Development.” *World Development* 33 (7): 1029-1044. https://doi.org/10.1016/j.worlddev.2005.04.004.

Calderón, César, and Lin Liu. 2003. “The Direction of Causality between Financial Development and Economic Growth.” *Journal of Development Economics* 72 (1): 321-334. https://doi.org/10.1016/S0304-3878(03)00079-8.

Canepa, Alessandra, and Fawaz Khaled. 2018. “Housing, Housing Finance and Credit Risk.” *International Journal of Financial Studies* 6 (2): 1-23. https://doi.org/10.3390/ijfs6020050.

Canh, Nguyen Phuc, Christophe Schinckus, and Su Dinh Thanh. 2020. “The Natural Resources Rents: Is Economic Complexity a Solution for Resource Curse?” *Resources Policy* 69: 1-12. https://doi.org/10.1016/j.resourpol.2020.101800.

Carmignani, Fabrizio, and Desire Avom. 2010. “The Social Development Effects of Primary Commodity Export Dependence.” *Ecological Economics* 70 (2): 317-330. https://doi.org/10.1016/j.ecolecon.2010.09.003.

CEDAR. 2018. “Manufacturing in Malaysia: Main Issues and Challenges.” 2018. https://www.cedar.my/images/industryarticles/12.pdf.

Central Intelligence Agency. 2018. “The World Factbook East & Southeast Asia: Malaysia.” *The World Factbook*.

Chan, Tze-Haw. 2017. “Malaysia and China: The Trade Balances, Foreign Exchanges and Crises Impacts.” In *International Trade - On the Brink of Change*: 75-94. https://doi.org/10.5772/66977.

Chandran, V. G.R., and Evelyn S. Devadason. 2017. “Energizing the Manufacturing Sector Can Malaysia Move Forward?” *Journal of Southeast Asian Economies* 34 (3): 523-551. https://doi.org/10.1355/ae34-3f.

Chandran, V. G.R., K. K.V. Gopi Krishnan, and Evelyn S. Devadason. 2017. “Value-Added Performance in Malaysian Manufacturing: To What Extent Research and Development and Human Capital Matter?” *Institutions and Economies* 9 (4): 31-51. https://smartlib.umri.ac.id/assets/uploads/files/0ad7b-document-2-.pdf.

Chandran, V. G.R., and Munusamy. 2009. “Trade Openness and Manufacturing Growth in Malaysia.” *Journal of Policy Modeling* 31 (5): 637-647. https://doi.org/10.1016/j.jpolmod.2009.06.002.

Chang, Kuei Feng, Jin Xu Lin, and Shih Mo Lin. 2021. “Revisiting the Dutch Disease Thesis from the Perspective of Value-Added Trade.” *Resources Policy* 72: 1-16. https://doi.org/10.1016/j.resourpol.2021.102103.

Chang, Qingqing, Yisihong Zhou, Guangqiang Liu, Di Wang, and Xiaojie Zhang. 2021. “How Does Government Intervention Affect the Formation of Zombie Firms?” *Economic Modelling* 94: 768-779. https://doi.org/10.1016/j.econmod.2020.02.017.

Chekouri, Sidi Mohammed, Abderrahim Chibi, and Mohamed Benbouziane. 2017. “Algeria and the Natural Resource Curse: Oil Abundance and Economic Growth.” *Middle East Development Journal* 9 (2): 233-255. https://doi.org/10.1080/17938120.2017.1366772.

Chen, Sheng Tung, and Chien Chiang Lee. 2005. “Government Size and Economic Growth in Taiwan: A Threshold Regression Approach.” *Journal of Policy Modeling* 27 (9): 1051-1066. https://doi.org/10.1016/j.jpolmod.2005.06.006.

Chen, Shimin, Zheng Sun, Song Tang, and Donghui Wu. 2011. “Government Intervention and Investment Efficiency: Evidence from China.” *Journal of Corporate Finance* 17 (2): 259–271. https://doi.org/10.1016/j.jcorpfin.2010.08.004.

Chen, Shiu Sheng, and Hung Chyn Chen. 2007. “Oil Prices and Real Exchange Rates.” *Energy Economics* 29 (3): 390-404. https://doi.org/10.1016/j.eneco.2006.08.003.

Cheng, Ming Yu, and Hui Boon Tan. 2002. “Inflation in Malaysia.” *International Journal of Social Economics* 29 (5): 411-425. https://doi.org/10.1108/03068290210423532.

Cheng, Zhonghua, Lianshui Li, and Jun Liu. 2020. “Natural Resource Abundance, Resource Industry Dependence and Economic Green Growth in China.” *Resources Policy* 68: 1-11. https://doi.org/10.1016/j.resourpol.2020.101734.

Cherif, Reda, and Fuan Hasanov. 2015. “The Leap of the Tiger : How Malaysia Can Escape The.” *IMF Working Paper*.

Chiou-Wei, Song Zan, Zhen Zhu, and Yung Hsing Kuo. 2010. “Government Size and Economic Growth: An Application of the Smooth Transition Regression Model.” *Applied Economics Letters* 17 (14): 1405-1415. https://doi.org/10.1080/13504850902984295.

Choudhry, Taufiq. 2005. “Time-Varying Beta and the Asian Financial Crisis: Evidence from Malaysian and Taiwanese Firms.” *Pacific Basin Finance Journal* 13 (1): 93-118. https://doi.org/10.1016/j.pacfin.2004.06.001.

Chow, Sheung Chi, João Paulo Vieito, and Wing Keung Wong. 2019. “Do Both Demand-Following and Supply-Leading Theories Hold True in Developing Countries?” *Physica A: Statistical Mechanics and Its Applications* 513: 536-554. https://doi.org/10.1016/j.physa.2018.06.060.

Čihák, Martin, Asli Demirgüč-Kunt, Erik Feyen, and Ross Levine. 2013. “Financial Development in 205 Economies, 1960 to 2010.” *Journal of Financial Perspectives* 1 (2): 1-53. https://doi.org/10.3386/w18946.

Ciuiu, Daniel, Marina Bădileanu, and Luminita Izabell Georgescu. 2015. “Granger Causality Test and Chow Breakpoint Test on the Romanian Day Ahead Electricity Market.” *Procedia Economics and Finance* 22: 601-609. https://doi.org/10.1016/s2212-5671(15)00269-5.

Clark, Gregory, Kevin H. O’Rourke, and Alan M. Taylor. 2008. “Made in America? The New World, the Old, and the Industrial Revolution.” In *American Economic Review*. Vol. 98 (2): 523-528. https://doi.org/10.1257/aer.98.2.523.

Coad, Alex, and Antonio Vezzani. 2019. “Three Cheers for Industry: Is Manufacturing Linked to R&D, Exports, and Productivity Growth?” *Structural Change and Economic Dynamics* 50: 14-25. https://doi.org/10.1016/j.strueco.2019.04.006.

Cockx, Lara, and Nathalie Francken. 2016. “Natural Resources: A Curse on Education Spending?” *Energy Policy* 92: 394-408. https://doi.org/10.1016/j.enpol.2016.02.027.

Cohen, Lauren, Joshua Coval, and Christopher Malloy. 2011. “Do Powerful Politicians Cause Corporate Downsizing?” *Journal of Political Economy* 119 (6): 1105-1060. https://doi.org/10.1086/664820.

Cole, David C., and Edward S. Shaw. 1974. “Financial Deepening in Economic Development.” *The Journal of Finance* 29 (4): 1345-1348. https://doi.org/10.2307/2978421.

Corden, W. M. 1984. “Booming Sector and Dutch Disease Economics: Survey and Consolidation.” *Oxford Economic Papers* 36 (3): 359-380. https://doi.org/10.1093/oxfordjournals.oep.a041643.

Corden, W. M., and J. P. Neary. 1982. “Booming Sector and De-Industrialisation in a Small Open Economy.”*The Economic Hournal* 92 (368): 825-848.

Corden, W. Max. 2012. “Dutch Disease in Australia: Policy Options for a Three-Speed Economy.” *Australian Economic Review* 45 (3): 290-304. https://doi.org/10.1111/j.1467-8462.2012.00685.x.

Corrocher, Nicoletta, Camilla Lenzi, and Marie Louise Deshaires. 2020. “The Curse of Natural Resources: An Empirical Analysis of European Regions.” *Regional Studies* 54 (12): 1694-1708. https://doi.org/10.1080/00343404.2020.1763940.

Coxhead, Ian. 2007. “A New Resource Curse? Impacts of China’s Boom on Comparative Advantage and Resource Dependence in Southeast Asia.” *World Development* 35 (7): 1099-1119. https://doi.org/10.1016/j.worlddev.2006.10.012.

Damette, Olivier, and Majda Seghir. 2018. “Natural Resource Curse in Oil Exporting Countries: A Nonlinear Approach.” *International Economics* 156: 231-246. https://doi.org/10.1016/j.inteco.2018.04.001.

Dar, Arif Billah, Niyati Bhanja, Amaresh Samantaraya, and Aviral Kumar Tiwari. 2013. “Export Led Growth or Growth Led Export Hypothesis in India: Evidence Based on Time-Frequency Approach.” *Asian Economic and Financial Review* 3 (7): 869-880. https://archive.aessweb.com/index.php/5002/article/view/1059/1542.

Dell’Anno, Roberto. 2020. “Reconciling Empirics on the Political Economy of the Resource Curse Hypothesis. Evidence from Long-Run Relationships between Resource Dependence, Democracy and Economic Growth in Iran.” *Resources Policy* 68: 1-13. https://doi.org/10.1016/j.resourpol.2020.101807.

Demetriades, P., A. Al-Jebory, and G. Kamperis. 1993. “Manufacturing Exports, Economic Growth and the Current Account in a Small Island Economy: Simulation Results from an Econometric Model for Cyprus.” *World Development* 21 (2): 259-268. https://doi.org/10.1016/0305-750X(93)90021-Z.

Department of Statistics Malaysia. 2010a. “Malaysia External Trade Statistics 2010.” *Department of Statistics, Malaysia*, no. July. https://www.dosm.gov.my/v1/images/stories/files/LatestReleases/trade/bi/Dec10/External_Trade_DisBI.pdf.

Department of Statistics Malaysia. 2010b. “Report on the Annual Survey of Manufacturing Industries, 2009.” Department of Statistics Malaysia. 2010. https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=92&bul_id=Mi85c0NGMEE5UE5QblNudEFPQS80dz09&menu_id=SjgwNXdiM0JlT3Q2TDBlWXdKdUVldz09.

Department of Statistics Malaysia. 2012. “Malaysia External Trade Statistics December 2011.” Department of Statistics Malaysia. 2012. https://www.dosm.gov.my/v1/images/stories/files/LatestReleases/trade/bi/Dec11/External_Trade_DisBI.pdf.

Department of Statistics Malaysia. 2013. “Malaysia External Trade Statistics December 2012.” Department of Statistics Malaysia. 2013. https://www.dosm.gov.my/v1/images/stories/files/LatestReleases/trade/bi/Dec12/External_Trade_Dec12_BI.pdf.

Department of Statistics Malaysia. 2014. “Malaysia External Trade Statistics December 2013.” Department of Statistics Malaysia. 2014. https://www.dosm.gov.my/v1/images/stories/files/LatestReleases/trade/bi/Dec13/External_Trade_Dec13_BI.pdf.

Department of Statistics Malaysia. 2015. “Malaysia External Trade Statistics December 2014.” Department of Statistics Malaysia. 2015. https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=139&bul_id=eFEzSHN5bXF0ZjFGZFZ2Vm1GY05zUT09&menu_id=azJjRWpYL0VBYU90TVhpclByWjdMQT09#.

Department of Statistics Malaysia. 2016a. “Monthly External Trade Statistics December 2015.” Department of Statistics Malaysia. 2016. https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=139&bul_id=UnJpSUs4MUVORTlxbnJpOTQ4YWpqQT09&menu_id=azJjRWpYL0VBYU90TVhpclByWjdMQT09#:~:text=Total trade in December 2015,2.2%25 from a year ago.

Department of Statistics Malaysia. 2016b. “Monthly Manufacturing Statistics Malaysia, December 2015.” Department of Statistics Malaysia. 2016. https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=90&bul_id=MWE5MDY5Uk1jQlFtMGNJTHo3cy9LQT09&menu_id=SjgwNXdiM0JlT3Q2TDBlWXdKdUVldz09.

Department of Statistics Malaysia. 2017a. “Monthly External Trade Statistics December 2016.” Department of Statistics Malaysia. 2017. https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=RDlVYk9BV05FVlVOQXhpWnk2TGRTQT09.

Department of Statistics Malaysia. 2017b. “Petroleum and Natural Gas Industry Recorded the Highest Monthly Average Salaries & Wages of RM13,310.” Department of Statistics Malaysia. 2017. https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=412&bul_id=MTIrVVRwN3RFZzlLa0FHbWt0ODNIUT09&menu_id=TXdvYTlvQXVlTFhVOUJ6NVVESVBNUT09.

Department of Statistics Malaysia. 2018. “Monthly External Trade Statistics December 2017.” Department of Statistics Malaysia. 2018. https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=dWw2U285QXp3OEJsRHhqWXY0Vm5jQT09.

Department of Statistics Malaysia. 2019a. “Malaysia External Trade Statistics December 2018.” Department of Statistics Malaysia. 2019. https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=d0dHcDBzbnhta1VyTUhBQ1h4dkJFUT09.

Department of Statistics Malaysia. 2019b. “State Socioeconomic Report 2018.” Department of Statistics Malaysia. 2019. https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=102&bul_id=a0c3UGM3MzRHK1N1WGU5T3pQNTB3Zz09&menu_id=TE5CRUZCblh4ZTZMODZIbmk2aWRRQT09.

Department of Statistics, Malaysia. 2020. “Malaysia Economic Performance First Quarter 2020.” *Department of Statistics, Malaysia*, no. May.

Department of Statistics Malaysia. 2020a. “Malaysia External Trade December Statistics 2019.” Department of Statistics Malaysia. 2020. https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=139&bul_id=NlE3MTlRSkJaTEYrVlFhSGVWeWhGUT09&menu_id=azJjRWpYL0VBYU90TVhpclByWjdMQT09.

Department of Statistics Malaysia. 2020b. “Press Release: Demographic Statistics First Quarter 2020, Malaysia.” *Department of Statistics Malaysia*.

Department of Statistics Malaysia. 2020c. “Small and Medium Enterprises (SMEs) Performance 2019.” Department of Statistics Malaysia. 2020. https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=159&bul_id=VjM1enZ2RmlVRDVTNFAwRWZiZUs3QT09&menu_id=TE5CRUZCblh4ZTZMODZIbmk2aWRRQT09.

Department of Statistics Malaysia. 2020d. “Time Series Data.” 2020. https://www.dosm.gov.my/v1/index.php?r=column/ctimeseries&menu_id=bnk3bk0wTTkxOXVHaVg3SUFDMlBUUT09.

Department of Statistics Malaysia. 2021. “Gross Domestic Product (GDP) By State 2020.” 2021. https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=491&bul_id=YnhhZ2g5QlpZWG9RcVNwTGhLaHE4UT09&menu_id=TE5CRUZCblh4ZTZMODZIbmk2aWRRQT09.

Dhar, Rajib Lochan. 2015. “Service Quality and the Training of Employees: The Mediating Role of Organizational Commitment.” *Tourism Management* 46: 419-430. https://doi.org/10.1016/j.tourman.2014.08.001.

Ding, Ning, and Barry C. Field. 2005. “Natural Resource Abundance and Economic Growth.” *Land Economics* 81 (4): 496–502. https://doi.org/10.3368/le.81.4.496.

Dobrynskaya, Victoria, and Edouard Turkisch. 2010. “Economic Diversification and Dutch Disease in Russia.” *Post-Communist Economies* 22 (3): 283-302. https://doi.org/10.1080/14631377.2010.498680.

Dogan, Eyup, Buket Altinoz, and Panayiotis Tzeremes. 2020. “The Analysis of ‘Financial Resource Curse’ Hypothesis for Developed Countries: Evidence from Asymmetric Effects with Quantile Regression.” *Resources Policy* 68: 1-9. https://doi.org/10.1016/j.resourpol.2020.101773.

Dogan, Eyup, Mara Madaleno, and Buket Altinoz. 2020. “Revisiting the Nexus of Financialization and Natural Resource Abundance in Resource-Rich Countries: New Empirical Evidence from Nine Indices of Financial Development.” *Resources Policy* 69: 1-8. https://doi.org/10.1016/j.resourpol.2020.101839.

Dolado, Juan J., and Helmut Lütkepohl. 1996. “Making Wald Tests Work for Cointegrated VAR Systems.” *Econometric Reviews* 15 (4): 369-386. https://doi.org/10.1080/07474939608800362.

Doraisami, Anita. 2015. “Has Malasyia Really Escaped the Resources Curse? A Closer Look at the Political Economy of Oil Revenue Management and Expenditures.” *Resources Policy* 45: 98-108. https://doi.org/10.1016/j.resourpol.2015.03.008.

DOSM. 2020. “Press Release Current Population Estimates, Malaysia, 2020.” *Department of Statistics Malaysia*, no. July.

Du, Jianguo, Jing Zhang, and Xingwei Li. 2020. “What Is the Mechanism of Resource Dependence and High-Quality Economic Development? An Empirical Test from China.” *Sustainability (Switzerland)* 12 (19): 1-17. https://doi.org/10.3390/su12198144.

Durusu-Ciftci, Dilek, M. Serdar Ispir, and Hakan Yetkiner. 2017. “Financial Development and Economic Growth: Some Theory and More Evidence.” *Journal of Policy Modeling* 39 (2): 290-306. https://doi.org/10.1016/j.jpolmod.2016.08.001.

Dwumfour, Richard Adjei, and Matthew Ntow-Gyamfi. 2018. “Natural Resources, Financial Development and Institutional Quality in Africa: Is There a Resource Curse?” *Resources Policy* 59: 411-426. https://doi.org/10.1016/j.resourpol.2018.08.012.

Economic Planning Unit. 1991. “Sixth Malaysia Plan 1991-1995.” https://www.epu.gov.my/en/economic-developments/development-plans/rmk/sixth-malaysia-plan-1990-1995.

Economic Planning Unit. 2005. “Eighth Malaysia Plan 2001-2005.” *Journal of Petrology* 369 (1).

Economic Planning Unit. 2018. “Mid-Term Review of the Eleventh Malaysia Plan, 2016-2020.” *Economic Planning Unit, Prime’s Minister Department*.

Economic Planning Unit. 2021. “Twelfth Malaysia Plan 2021-2025.” *Economic Planning Unit, Prime Miniter’s Department*.

Ehigiamusoe, Kizito Uyi, and Mohamad Shaharudin Samsurijan. 2020. “What Matters for Finance-Growth Nexus? A Critical Survey of Macroeconomic Stability, Institutions, Financial and Economic Development.” *International Journal of Finance and Economics*m 26 (4): 5302-5320. https://doi.org/10.1002/ijfe.2066.

Eia. 2020. “What Drives Crude Oil Prices? An Analysis of 7 Factors That Influence Oil Markets, with Chart Data Updated Monthly and Quarterly.” *U.S. Energy Information Administration, Independent Statistics & Analysis*.

Eisgruber, Lasse. 2013. “The Resource Curse: Analysis of the Applicability to the Large-Scale Export of Electricity from Renewable Resources.” *Energy Policy* 57: 429-440. https://doi.org/10.1016/j.enpol.2013.02.013.

Elder, John, and Apostolos Serletis. 2011. “VOlatility in Oil Prices and Manufacturing Activity: An Investigation of Real Options.” *Macroeconomic Dynamics* 15 (SUPPL. 3): 379-395. https://doi.org/10.1017/S1365100511000630.

Endut, Norhana, and Geok Hua Toh. 2009. “Household Debt in Malaysia.” *Bank for International Settlements*: 107–16. https://www.bis.org/publ/bppdf/bispap46l.pdf.

Energy Commission. 2018. “2018 Malaysia Energy Statistics Handbook.” *Malaysia Energy Statistics Handbook*.

Engle, Robert F., and Clive W.J. Granger. 1987. “Co-Integration and Error Correction: Representation, Estimation, and Testing [Co-Integración y Corrección de Error: Representación, Estimación y Prueba].” *Econometrica* 55 (2): 251-276. https://doi.org/10.2307/1913236.

Erdoğan, Seyfettin, Durmuş Çağrı Yıldırım, and Ayfer Gedikli. 2020. “Natural Resource Abundance, Financial Development and Economic Growth: An Investigation on Next-11 Countries.” *Resources Policy* 65: 1-11. https://doi.org/10.1016/j.resourpol.2019.101559.

Eregha, P. B., and Ekundayo Peter Mesagan. 2016. “Oil Resource Abundance, Institutions and Growth: Evidence from Oil Producing African Countries.” *Journal of Policy Modeling* 38 (3): 603-619. https://doi.org/10.1016/j.jpolmod.2016.03.013.

Estrada, Gemma, Donghyun Park, and Arief Ramayandi. 2010. “Financial Development and Economic Growth in Developing Asia.” *ADB Economics Working Paper Series* 233. https://doi.org/10.2139/ssrn.1751833.

Farzanegan, Mohammad Reza. 2014. “Can Oil-Rich Countries Encourage Entrepreneurship?” *Entrepreneurship and Regional Development* 26 (9–10): 706-725. https://doi.org/10.1080/08985626.2014.981869.

Fathan, Ryanda Al, and Tika Arundina. 2019. “Finance-Growth Nexus: Islamic Finance Development in Indonesia.” *International Journal of Islamic and Middle Eastern Finance and Management* 12 (5): 698-711. https://doi.org/10.1108/IMEFM-09-2018-0285.

Federal Reserve Bank of St Louis. 2020. “Federal Reserve Economic Data.” 2020. https://fred.stlouisfed.org/.

Fisman, Raymond, and Inessa Love. 2004. “Financial Development and Intersectoral Allocation: A New Approach.” *Journal of Finance* 59 (6): 2785-2807. https://doi.org/10.1111/j.1540-6261.2004.00716.x.

Frankel, Jeffrey A. 2012. “The Natural Resource Curse: A Survey of Diagnoses and Some Prescriptions.” *HKS Faculty Research Working Paper Series*.

Funk, Charles, Len J. Treviño, and Juliet Oriaifo. 2021. “Resource Curse Impacts on the Co-Evolution of Emerging Economy Institutions and Firm Internationalization.” *International Business Review* 30 (4): 1-12. https://doi.org/10.1016/j.ibusrev.2020.101753.

G, Schwarz. 1978. “‘Estimating the Dimension of a Model.’” *The Annals of Statistics* 6 (2): 461-464. https://doi.org/10.2307/2958889.

Gallego, Jorge, Stanislao Maldonado, and Lorena Trujillo. 2020. “From Curse to Blessing? Institutional Reform and Resource Booms in Colombia.” *Journal of Economic Behavior and Organization* 178: 174-193. https://doi.org/10.1016/j.jebo.2020.07.006.

Gasmi, Farid, and Imène Laourari. 2018. “Has Algeria Suffered from the Dutch Disease? Evidence from 1960-2016 Data.” *Revue d’Economie Politique*. Vol. 127 (6): 1029-1058. https://doi.org/10.3917/redp.276.1029.

Gately, Dermot, M. A. Adelman, and James M. Griffin. 1986. “Lessons from the 1986 Oil Price Collapse.” *Brookings Papers on Economic Activity* 1986 (2): 237-284. https://doi.org/10.2307/2534475.

Ge, Wei, and Henry W. Kinnucan. 2017. “The Effects of Mongolia’s Booming Mining Industry on Its Agricultural Sector: A Test for Dutch Disease.” *Agricultural Economics (United Kingdom)* 48 (6): 781-791. https://doi.org/10.1111/agec.12374.

Gerelmaa, Lkhagva, and Koji Kotani. 2016. “Further Investigation of Natural Resources and Economic Growth: Do Natural Resources Depress Economic Growth?” *Resources Policy* 50: 312-321. https://doi.org/10.1016/j.resourpol.2016.10.004.

Ghali, Khalifa H. 1999. “Financial Development and Economic Growth: The Tunisian Experience.” *Review of Development Economics* 3 (3): 310-332. https://doi.org/10.1111/1467-9361.00070.

Ginevičius, Romualdas, Gitana Dudzevičiūtė, Martin Schieg, and Kęstutis Peleckis. 2019. “The Inter-Linkages between Financial and Economic Development in the European Union Countries.” *Economic Research-Ekonomska Istrazivanja* 32 (1): 3315-3332. https://doi.org/10.1080/1331677X.2019.1663436.

Go, Delfin S., Sherman Robinson, and Karen Thierfelder. 2016. “Natural Resource Revenue, Spending Strategies and Economic Growth in Niger.” *Economic Modelling* 52: 564-573. https://doi.org/10.1016/j.econmod.2015.10.001.

Greer, Monica. 2012. “The Economics (and Econometrics) of Cost Modeling.” In *Electricity Marginal Cost Pricing*: 101-132. https://doi.org/10.1016/b978-0-12-385134-5.00004-1.

Gregorio, Jose De, and Pablo E. Guidotti. 1995. “Financial Development and Economic Growth.” *World Development* 23 (3): 433–448. https://doi.org/10.1016/0305-750X(94)00132-I.

Gritsenko, Daria, and Elena Efimova. 2020. “Is There Arctic Resource Curse? Evidence from the Russian Arctic Regions.” *Resources Policy* 65: 564-573. https://doi.org/10.1016/j.resourpol.2019.101547.

Guan, Jialin, Dervis Kirikkaleli, Ayesha Bibi, and Weike Zhang. 2020. “Natural Resources Rents Nexus with Financial Development in the Presence of Globalization: Is the ‘Resource Curse’ Exist or Myth?” *Resources Policy* 66:1-9. https://doi.org/10.1016/j.resourpol.2020.101641.

Guo, Hui, and Kevin L. Kliesen. 2005. “Oil Price Volatility and U.S. Macroeconomic Activity.” *Federal Reserve Bank of St. Louis Review*: 669-684. https://doi.org/10.20955/r.87.669-84.

Gursel, Aysegul Petek, and Claudia P. Ostertag. 2016. “Impact of Singapore’s Importers on Life-Cycle Assessment of Concrete.” *Journal of Cleaner Production* 118: 140-150. https://doi.org/10.1016/j.jclepro.2016.01.051.

Guru, Biplab Kumar, and Inder Sekhar Yadav. 2019. “Financial Development and Economic Growth: Panel Evidence from BRICS.” *Journal of Economics, Finance and Administrative Science* 24 (47): 113-126. https://doi.org/10.1108/JEFAS-12-2017-0125.

Guzman, Martin, Jose Antonio Ocampo, and Joseph E. Stiglitz. 2018. “Real Exchange Rate Policies for Economic Development.” *World Development* 110: 51-62. https://doi.org/10.1016/j.worlddev.2018.05.017.

Gylfason, Thorvaldur. 2001. “Natural Resources, Education, and Economic Development.” *European Economic Review* 45 (4–6): 847-869. https://doi.org/10.1016/S0014-2921(01)00127-1.

Gylfason, Thorvaldur. 2002. “Natural Resources and Economic Growth: What Is the Connection?” In *Fostering Sustainable Growth in Ukraine*. https://doi.org/10.1007/978-3-642-57464-1_5.

Gylfason, Thorvaldur, and Gylfi Zoega. 2006. “Natural Resources and Economic Growth: The Role of Investment.” *World Economy* 29 (8): 1091-1115. https://doi.org/10.1111/j.1467-9701.2006.00807.x.

Haass, Felix, and Martin Ottmann. 2017. “Profits from Peace: The Political Economy of Power-Sharing and Corruption.” *World Development* 99: 60-74. https://doi.org/10.1016/j.worlddev.2017.07.006.

Hajamini, Mehdi, and Mohammad Ali Falahi. 2018. “Economic Growth and Government Size in Developed European Countries: A Panel Threshold Approach.” *Economic Analysis and Policy* 58: 1-13. https://doi.org/10.1016/j.eap.2017.12.002.

Hamdi, Helmi, and Rashid Sbia. 2013. “Dynamic Relationships between Oil Revenues, Government Spending and Economic Growth in an Oil-Dependent Economy.” *Economic Modelling* 35: 118-125. https://doi.org/10.1016/j.econmod.2013.06.043.

Hammond, John L. 2011. “The Resource Curse and Oil Revenues in Angola and Venezuela.” *Science and Society* 75 (3): 348-378. https://doi.org/10.1521/siso.2011.75.3.348.

Han, Jingwei, Chandrashekar Raghutla, Krishna Reddy Chittedi, Zhixiong Tan, and Mansoor Ahmed Koondhar. 2022. “How Natural Resources Affect Financial Development Development? Fresh Evidence from Top-10 Natural Resouce Abundant Countries.” *Resources Policy* 76: 1-7. https://doi.org/10.1016/j.resourpol.2022.102647.

Hao, Linna, Shabbir Ahmad, Hsu Ling Chang, and Muhammad Umar. 2021. “Knowledge Spill-over and Institutional Quality Role in Controlling Dutch Disease: A Case of BRICS Countries.” *Resources Policy* 72: 1-8. https://doi.org/10.1016/j.resourpol.2021.102114.

Hao, Ying, and Jing Lu. 2018. “The Impact of Government Intervention on Corporate Investment Allocations and Efficiency: Evidence from China.” *Financial Management* 47 (2): 383-419. https://doi.org/10.1111/fima.12188.

Haraguchi, Nobuya, Charles Fang Chin Cheng, and Eveline Smeets. 2017. “The Importance of Manufacturing in Economic Development: Has This Changed?” *World Development* 93: 293-315. https://doi.org/10.1016/j.worlddev.2016.12.013.

Haseeb, Muhammad, Sebastian Kot, Hafezali Iqbal Hussain, and Fakarudin Kamarudin. 2021. “The Natural Resources Curse-Economic Growth Hypotheses: Quantile–on–Quantile Evidence from Top Asian Economies.” *Journal of Cleaner Production* 279: 1-10. https://doi.org/10.1016/j.jclepro.2020.123596.

Hassan, Khalid, and Azrai Abdullah. 2015. “Effect of Oil Revenue and the Sudan Economy: Econometric Model for Services Sector GDP.” *Procedia - Social and Behavioral Sciences* 172: 223-229. https://doi.org/10.1016/j.sbspro.2015.01.358.

Hassan, M. Kabir, Benito Sanchez, and Jung Suk Yu. 2011. “Financial Development and Economic Growth: New Evidence from Panel Data.” *Quarterly Review of Economics and Finance* 51 (1): 88-104. https://doi.org/10.1016/j.qref.2010.09.001.

Havro, Gøril Bjerkhol, and Javier Santiso. 2011. “To Benefit from Plenty: Lessons from Chile and Norway.” *SSRN Electronic Journal*: 1-35 . https://doi.org/10.2139/ssrn.1318163.

Henri, Pr Atangana Ondoa. 2019. “Natural Resources Curse: A Reality in Africa.” *Resources Policy* 63: 1-13. https://doi.org/10.1016/j.resourpol.2019.101406.

Henriques, Irene, and Perry Sadorsky. 2011. “The Effect of Oil Price Volatility on Strategic Investment.” *Energy Economics* 33 (1): 79-87. https://doi.org/10.1016/j.eneco.2010.09.001.

Henry, Alexandre. 2019. “Transmission Channels of the Resource Curse in Africa: A Time Perspective.” *Economic Modelling* 82: 13-20. https://doi.org/10.1016/j.econmod.2019.05.022.

Hergt, Brian. 2020. “The Effects of Tariff Rates on the U.S. Economy: What the Producer Price Index Tells Us.” *Beyond the Numbers* 9 (13): 1–10. https://www.bls.gov/opub/btn/volume-9/pdf/the-effects-of-tarifff-rates-on-the-u-s-economy-what-the-producer-price-index-tells-us.pdf.

Herman, Emilia. 2016. “The Importance of the Manufacturing Sector in the Romanian Economy.” *Procedia Technology* 22: 976-983. https://doi.org/10.1016/j.protcy.2016.01.121.

Hien, Nguyen Phuc, Cao Thi Hong Vinh, Vu Thi Phuong Mai, and Le Thi Kim Xuyen. 2020. “Remittances, Real Exchange Rate and the Dutch Disease in Asian Developing Countries.” *Quarterly Review of Economics and Finance* 77: 131-143. https://doi.org/10.1016/j.qref.2019.10.006.

Hilmawan, Rian, and Jeremy Clark. 2019. “An Investigation of the Resource Curse in Indonesia.” *Resources Policy* 64: 1-17. https://doi.org/10.1016/j.resourpol.2019.101483.

Hirschman, Charles. 1982. “Industrial and Occupational Change in Peninsular Malaysia, 1947-70.” *Journal of Southeast Asian Studies* 13 (1): 9-32. https://doi.org/10.1017/S0022463400013977.

Hodler, Roland. 2006. “The Curse of Natural Resources in Fractionalized Countries.” *European Economic Review* 50 (6): 1367-1386. https://doi.org/10.1016/j.euroecorev.2005.05.004.

Holden, Steinar. 2013. “Avoiding the Resource Curse the Case Norway.” *Energy Policy* 63: 870-876. https://doi.org/10.1016/j.enpol.2013.09.010.

Holt, Jeff. 2009. “A Summary of the Primary Causes of the Housing Bubble and the Resulting Credit Crisis: A Non-Technical Paper.” *The Journal of Business Inquiry* 8 (1): 120-129. http:www.uvu.edu/woodbury/jbi/volume8.

Hong, Phi Minh. 2021. “The Importance of Export Diversification for Developing ASEAN Economies.” *ISEAS Perspective*, no. 80: 1–15. https://www.iseas.edu.sg/wp-content/uploads/2021/05/ISEAS_Perspective_2021_80.pdf.

Horváth, Roman, and Ayaz Zeynalov. 2016. “Natural Resources, Manufacturing and Institutions in Post-Soviet Countries.” *Resources Policy* 50: 141-148. https://doi.org/10.1016/j.resourpol.2016.09.007.

Hou, Jie, and Baizhou Li. 2020. “The Evolutionary Game for Collaborative Innovation of the IoT Industry under Government Leadership in China: An IoT Infrastructure Perspective.” *Sustainability (Switzerland)* 12 (9): 1-21. https://doi.org/10.3390/su12093648.

Hsu, Po Hsuan, Xuan Tian, and Yan Xu. 2014. “Financial Development and Innovation: Cross-Country Evidence.” *Journal of Financial Economics* 112 (1): 116-135. https://doi.org/10.1016/j.jfineco.2013.12.002.

Hubert Backhaus, Simon Karl, and Devika Nadarajah. 2019. “Investigating the Relationship between Industry 4.0 and Productivity: A Conceptual Framework for Malaysian Manufacturing Firms.” In *Procedia Computer Science*. Vol. 161: 696-706. https://doi.org/10.1016/j.procs.2019.11.173.

Humphreys, Macartan, Jeffrey D. Sachs, and Joseph E. Stiglitz. 2007. “Introduction: What Is the Problem with Natural Resource Wealth?” In *Escaping the Resource Curse*: 1-20. https://www8.gsb.columbia.edu/faculty/jstiglitz/sites/jstiglitz/files/2007_Resource_Curse_Introduction.pdf.

Hunegnaw, Fetene Bogale. 2017. “Real Exchange Rate and Manufacturing Export Competitiveness in Eastern Africa.” *Journal of Economic Integration* 32 (4): 891-912. https://doi.org/10.11130/jei.2017.32.4.932.

Ibrahim, M. H. 2000.“Public and Private Capital Formation and Economic Growth in Malaysia, 1961-1995.” *IIUM Journal of Economics and Management* 8 (1): 21–40. https://journals.iium.edu.my/enmjournal/index.php/enmj/article/view/56.

International Monetary Fund. Asia and Pacific Dept. 2018. “Malaysia: Selected Issues.” *IMF Staff Country Reports* 18 (62): 1-27. https://doi.org/10.5089/9781484345092.002.

Ismail, Suhaiza, and Fatimah Azzahra Harris. 2014. “Challenges in Implementing Public Private Partnership (PPP) in Malaysia.” *Procedia - Social and Behavioral Sciences* 164: 5-10 . https://doi.org/10.1016/j.sbspro.2014.11.044.

Iwanow, Tomasz, and Colin Kirkpatrick. 2009. “Trade Facilitation and Manufactured Exports: Is Africa Different?” *World Development* 37 (6): 1039-1050. https://doi.org/10.1016/j.worlddev.2008.09.014.

Jalili, Zahra, Mohammad Reza Salmani Bishak, Mohammad Ali Motafakker Azad, Behzad Salmani, and Jaafar Haghighat. 2019. “Resource-Economic Growth Nexus, Role of Governance, Financial Development, Globalization, and War: A Dynamic Approach.” *Journal of Economic Integration* 34 (3): 520-545. https://doi.org/10.11130/jei.2019.34.3.520.

Jamaliah. 2016. “The Effect of Investment to Value Added Production, Employment Absorption, Productivity, and Employees’ Economic Welfare in Manufacturing Industry Sector in West Kalimantan Province.” *Procedia - Social and Behavioral Sciences* 219: 387-393. https://doi.org/10.1016/j.sbspro.2016.05.060.

Jamil, Nurul Nazlia. 2017. “Economic Role of Politics and Corporate Governance: Reforms Captured in Malaysia’s Setting.” *International Journal of Law and Management* 59 (6): 839-853. https://doi.org/10.1108/ijlma-03-2016-0025.

Jarrett, Uchechukwu, Kamiar Mohaddes, and Hamid Mohtadi. 2019. “Oil Price Volatility, Financial Institutions and Economic Growth.” *Energy Policy* 126: 131-144. https://doi.org/10.1016/j.enpol.2018.10.068.

Javaid, Shahid Hussain. 2011. “Dutch Disease Investigated: Empirical Evidence from Selected South-East Asian Economies.” *Journal of Economic Cooperation and Development* 32 (4): 1-24. https://www.sbp.org.pk/repec/sbp/wpaper/wp31.pdf.

Jbir, R. 2013. “The Link between Oil Price and Dutch Disease.” *Energy Sources, Part B: Economics, Planning and Policy* 8 (4): 391-397. https://doi.org/10.1080/15567240903567654.

Jbir, R., and S. Zouari-Ghorbel. 2011. “Oil Price and Dutch Disease: The Case of Algeria.” *Energy Sources, Part B: Economics, Planning and Policy* 6 (3): 280-293. https://doi.org/10.1080/15567240802653993.

Jedidia, Khoutem Ben, Thouraya Boujelbène, and Kamel Helali. 2014. “Financial Development and Economic Growth: New Evidence from Tunisia.” *Journal of Policy Modeling* 36 (5): 883-898. https://doi.org/10.1016/j.jpolmod.2014.08.002.

Jeevan, Jagan, Shu Ling Chen, and Eon Seong Lee. 2015. “The Challenges of Malaysian Dry Ports Development.” *Asian Journal of Shipping and Logistics* 31 (1): 109-134. https://doi.org/10.1016/j.ajsl.2015.03.005.

Jia, Fei, Xiuying Ma, Xiangyun Xu, and Lijuan Xie. 2020. “The Differential Role of Manufacturing and Non-Manufacturing TFP Growth in Economic Growth.” *Structural Change and Economic Dynamics* 52: 174-186. https://doi.org/10.1016/j.strueco.2019.10.006.

Jiang, Chun, Yadi Zhang, Hafiz Waqas Kamran, and Sahar Afshan. 2021. “Understanding the Dynamics of the Resource Curse and Financial Development in China? A Novel Evidence Based on QARDL Model.” *Resources Policy* 72: 1-9. https://doi.org/10.1016/j.resourpol.2021.102091.

Jiang, Mingrui, Sumei Luo, and Guangyou Zhou. 2020. “Financial Development, OFDI Spillovers and Upgrading of Industrial Structure.” *Technological Forecasting and Social Change* 155: 1-10. https://doi.org/10.1016/j.techfore.2020.119974.

Johansen, Søren. 2015. “Time Series: Cointegration.” In *International Encyclopedia of the Social & Behavioral Sciences: Second Edition*: 322-330. https://doi.org/10.1016/B978-0-08-097086-8.42086-6.

Johansen, Søren, and Katarina Juselius. 1990. “Maximum Likelihood Estimation and Inference on Cointegration - With Applications to The Demand For Money .” *Oxford Bulletin of Economics and Statistics* 52 (2): 162-210. https://doi.org/10.1111/j.1468-0084.1990.mp52002003.x.

Kafando, Namalguebzanga Christian. 2018. “Does the Development of the Agricultural Sector Affect the Manufacturing Sector?” *Building a Resilient and Sustainable Agriculture in Sub-Saharan Africa*: 209-239. https://doi.org/10.1007/978-3-319-76222-7_10.

Karim, Noor Al-Huda Abdul, and Khoo Yin Yin. 2015. “Assessing the Relationships between Private Investment, Employment and Output in the Manufacturing Sector in Malaysia.” *Journal of Management Research* 7 (2): 422-432. https://doi.org/10.5296/jmr.v7i2.6943.

Karimi, Keyvan, Rahebe Ghasemzade, Payam Khodaei, and Payam Abdi. 2016. “The Effect of Government Spending on Macroeconomic Stability.” *Accounting*: 31-36. https://doi.org/10.5267/j.ac.2015.12.006.

Karimo, Tari Moses, and Oliver Ejike Ogbonna. 2017. “Financial Deepening and Economic Growth Nexus in Nigeria: Supply-Leading or Demand-Following?” *Economies* 5 (1): 1-18. https://doi.org/10.3390/economies5010004.

Kassouri, Yacouba, Halil Altıntaş, and Faik Bilgili. 2020. “An Investigation of the Financial Resource Curse Hypothesis in Oil-Exporting Countries: The Threshold Effect of Democratic Accountability.” *Journal of Multinational Financial Management* 56: 1-19. https://doi.org/10.1016/j.mulfin.2020.100639.

Kathuria, Vinish, and Jyotirmayee Sabat. 2020. “Is Exchange Rate Volatility Symmetric to Oil Price Volatility? An Investigation for India.” *Journal of Quantitative Economics* 18 (3): 525-550. https://doi.org/10.1007/s40953-020-00212-0.

Kaznacheev, Peter Felixovich. 2014. “Resource Rents and Economic Growth. Economic and Institutional Development in Countries with a High Share of Income from the Sale of Natural Resources. Analysis and Recommendations Based on International Experience.” *SSRN Electronic Journal*: 1-84. https://doi.org/10.2139/ssrn.2437871.

Khalifa Al-Yousif, Yousif. 2002. “Financial Development and Economic Growth Another Look at the Evidence from Developing Countries.” *Review of Financial Economics* 11 (2): 131-150. https://doi.org/10.1016/S1058-3300(02)00039-3.

Khan, Zeeshan, Muzzammil Hussain, Muhammad Shahbaz, Siqun Yang, and Zhilun Jiao. 2020. “Natural Resource Abundance, Technological Innovation, and Human Capital Nexus with Financial Development: A Case Study of China.” *Resources Policy* 65: 1-13. https://doi.org/10.1016/j.resourpol.2020.101585.

Khanna, Rupika, and Chandan Sharma. 2021. “Does Infrastructure Stimulate Total Factor Productivity? A Dynamic Heterogeneous Panel Analysis for Indian Manufacturing Industries.” *Quarterly Review of Economics and Finance* 79: 59-73. https://doi.org/10.1016/j.qref.2020.08.003.

Kim, Dong Hyeon, and Shu Chin Lin. 2017. “Natural Resources and Economic Development: New Panel Evidence.” *Environmental and Resource Economics* 66 (2): 363-391. https://doi.org/10.1007/s10640-015-9954-5.

Kim, Jae H., and Abul Shamsuddin. 2008. “Are Asian Stock Markets Efficient? Evidence from New Multiple Variance Ratio Tests.” *Journal of Empirical Finance* 15 (3): 518-532. https://doi.org/10.1016/j.jempfin.2007.07.001.

Kim, Yun K. 2020. “Household Debt Accumulation and the Great Recession of the United States: A Comparative Perspective.” *Review of Radical Political Economics* 52 (1): 26-49. https://doi.org/10.1177/0486613419868031.

Kitchen, Rob, and Nigel Thrift. 2009. *International Encyclopedia of Human Geography*. *International Encyclopedia of Human Geography*. https://doi.org/10.5860/choice.48-0052.

Kojo, Naoko C. 2015. “Demystifying Dutch Disease.” *Journal of International Commerce, Economics and Policy* 6 (2): 1-22. https://doi.org/10.1142/S1793993315500106.

Kremers, Jeroen J.M., Neil R. Ericsson, and Juan J. Dolado. 1992. “THE POWER OF COINTEGRATION TESTS.” *Oxford Bulletin of Economics and Statistics* 54 (3): 325-348. https://doi.org/10.1111/j.1468-0084.1992.tb00005.x.

Kristoufek, Ladislav, and Miloslav Vosvrda. 2013. “Measuring Capital Market Efficiency: Global and Local Correlations Structure.” *Physica A: Statistical Mechanics and Its Applications* 392 (1): 184-193. https://doi.org/10.1016/j.physa.2012.08.003.

Kumar, Satish. 2019. “Asymmetric Impact of Oil Prices on Exchange Rate and Stock Prices.” *Quarterly Review of Economics and Finance* 72: 41-51. https://doi.org/10.1016/j.qref.2018.12.009.

Lagunoff, Roger, and Stacey L. Schreft. 2001. “A Model of Financial Fragility.” *Journal of Economic Theory* 99 (1–2): 220-264. https://doi.org/10.1006/jeth.2000.2733.

Lall, Sanjaya, and Manuel Albaladejo. 2004. “China’s Competitive Performance: A Threat to East Asian Manufactured Exports?” *World Development* 32 (9): 1441-1466. https://doi.org/10.1016/j.worlddev.2004.03.006.

Larsen, Erling Roed. 2006. “Escaping the Resource Curse and the Dutch Disease?.” *American Journal of Economics and Sociology* 65 (3): 605-640. https://doi.org/10.1111/j.1536-7150.2006.00476.x.

Larsen, Erling Røed. 2005. “Are Rich Countries Immune to the Resource Curse? Evidence from Norway’s Management of Its Oil Riches.” *Resources Policy* 30 (2): 75-86. https://doi.org/10.1016/j.resourpol.2004.12.001.

Lartey, Emmanuel K.K. 2007. “Capital Inflows and the Real Exchange Rate: An Empirical Study of Sub-Saharan Africa.” *Journal of International Trade and Economic Development* 16 (3): 337-357. https://doi.org/10.1080/09638190701526667.

Lartey, Emmanuel K.K., Federico S. Mandelman, and Pablo A. Acosta. 2012. “Remittances, Exchange Rate Regimes and the Dutch Disease: A Panel Data Analysis.” *Review of International Economics* 20 (2): 377-395. https://doi.org/10.1111/j.1467-9396.2012.01028.x.

Lashitew, Addisu A., and Eric Werker. 2020. “Do Natural Resources Help or Hinder Development? Resource Abundance, Dependence, and the Role of Institutions.” *Resource and Energy Economics* 61: 1-12. https://doi.org/10.1016/j.reseneeco.2020.101183.

Law, Siong Hook, Ali M. Kutan, and N. A.M. Naseem. 2018. “The Role of Institutions in Finance Curse: Evidence from International Data.” *Journal of Comparative Economics* 46 (1): 36-44. https://doi.org/10.1016/j.jce.2017.04.001.

Law, Siong Hook, and Maryam Moradbeigi. 2017. “Financial Development and Oil Resource Abundance–Growth Relations: Evidence from Panel Data.” *Environmental Science and Pollution Research* 24 (28): 22458-22475. https://doi.org/10.1007/s11356-017-9871-y.

Lazonick, William. 2017. “Innovative Enterprise Solves the Agency Problem: The Theory of the Firm, Financial Flows, and Economic Performance.” *SSRN Electronic Journal*: 1-43. https://doi.org/10.2139/ssrn.3081556.

Lee, Jay. 2020. “Statistics, Descriptive.” *International Encyclopedia of Human Geography*: 13-20. https://doi.org/10.1016/b978-0-08-102295-5.10428-7.

Lepot, Mathieu, Jean Baptiste Aubin, and François H.L.R. Clemens. 2017. “Interpolation in Time Series: An Introductive Overview of Existing Methods, Their Performance Criteria and Uncertainty Assessment.” *Water (Switzerland)*: 1-20. https://doi.org/10.3390/w9100796.

Levine, Ross. 2005. “Chapter 12 Finance and Growth: Theory and Evidence.” *Handbook of Economic Growth* 1: 865-934. https://doi.org/10.1016/S1574-0684(05)01012-9.

Lew, Sharon, and Zuraidah Sulaiman. 2014. “Consumer Purchase Intention toward Products Made in Malaysia vs. Made in China: A Conceptual Paper.” *Procedia - Social and Behavioral Sciences* 130: 37-445. https://doi.org/10.1016/j.sbspro.2014.04.005.

Lewis, W. Arthur. 2013. *The Theory of Economic Growth*. *The Theory of Economic Growth*. https://doi.org/10.4324/9780203709665.

Lewison, Grant, Sameer Kumar, Chan Yuan Wong, Philip Roe, and Richard Webber. 2016. “The Contribution of Ethnic Groups to Malaysian Scientific Output, 1982–2014, and the Effects of the New Economic Policy.” *Scientometrics* 109 (3): 1877-1893. https://doi.org/10.1007/s11192-016-2139-3.

Li, Fuqiang, Zhenyu Wang, and Guohua Liu. 2013. “Towards an Error Correction Model for Dam Monitoring Data Analysis Based on Cointegration Theory.” *Structural Safety* 43: 12-20. https://doi.org/10.1016/j.strusafe.2013.02.005.

Li, Yumei, Bushra Naqvi, Ersin Caglar, and Chien Chi Chu. 2020. “N-11 Countries: Are the New Victims of Resource-Curse?” *Resources Policy* 67: 1-8. https://doi.org/10.1016/j.resourpol.2020.101697.

Li, Zhi, Shuai Shao, Xunpeng Shi, Yongping Sun, and Xiaoling Zhang. 2019. “Structural Transformation of Manufacturing, Natural Resource Dependence, and Carbon Emissions Reduction: Evidence of a Threshold Effect from China.” *Journal of Cleaner Production* 206: 920-927. https://doi.org/10.1016/j.jclepro.2018.09.241.

Liew Mei Yoke, Sok-Gee Chan. 2018. “THE IMPACT OF VALUE ADDED TAX ON MANUFACTURING PERFORMANCE IN ASEAN.” *SSRN Electronic Journal* 17 (1): 7-16. https://www.ijbel.com/wp-content/uploads/2019/01/ACC-52.pdf.

Lim, Chee Peng. 1987. “Changes in the Malaysian Economy and Trade Trends and Prospects.” *Trade Ad Structural Change in Pacific Asia*: 435-466. . https://www.nber.org/system/files/chapters/c6931/c6931.pdf.

Liu, Haiyun, Mollah Aminul Islam, Muhammad Asif Khan, Md Ismail Hossain, and Khansa Pervaiz. 2020. “Does Financial Deepening Attract Foreign Direct Investment? Fresh Evidence from Panel Threshold Analysis.” *Research in International Business and Finance* 53: 1-14. https://doi.org/10.1016/j.ribaf.2020.101198.

Liu, Yaobin. 2009. “Exploring the Relationship between Urbanization and Energy Consumption in China Using ARDL (Autoregressive Distributed Lag) and FDM (Factor Decomposition Model).” *Energy* 34 (11): 21486-214854. https://doi.org/10.1016/j.energy.2009.07.029.

Lombardi, Marco J., Madhusudan S. Mohanty, and Ilhyock Shim. 2017. “The Real Effects of Household Debt in the Short and Long Run.” *SSRN*: 1-42. https://www.bis.org/publ/work607.pdf.

Lu, Xun, and Halbert White. 2014. “Robustness Checks and Robustness Tests in Applied Economics.” *Journal of Econometrics* 178 (PART 1): 194-206. https://doi.org/10.1016/j.jeconom.2013.08.016.

Lucas, Robert E. 1988. “On the Mechanics of Economic Development.” *Journal of Monetary Economics* 22 (1): 3-42. https://doi.org/10.1016/0304-3932(88)90168-7.

Luedde-Neurath, R. 1988. “State Intervention and Export-Oriented Development in South Korea.” *Developmental States in East Asia*: 68-112. https://doi.org/10.1007/978-1-349-19195-6_3.

Lynch, David. 1996. “Measuring Financial Sector Development: A Study of Selected Asia-Pacific Countries.” *Developing Economies* 34 (1): 1-27. https://doi.org/10.1111/j.1746-1049.1996.tb00727.x.

Lynn Karl, Terry. 2004. “Oil-Led Development: Social, Political, and Economic Consequences.” *Encyclopedia of Energy*: 1-36. https://doi.org/10.1016/b0-12-176480-x/00550-7.

Ma, Yechi, Zhiguo Chen, Riazullah Shinwari, and Zeeshan Khan. 2021. “Financialization, Globalization, and Dutch Disease: Is Dutch Disease Exist for Resources Rich Countries?” *Resources Policy* 72: 1-11. https://doi.org/10.1016/j.resourpol.2021.102048.

Ma, Ying, and Abdul Jalil. 2008. “Financial Development, Economic Growth and Adaptive Efficiency: A Comparison between China and Pakistan.” *China and World Economy* 16 (6): 97-111. https://doi.org/10.1111/j.1749-124X.2008.00140.x.

Mahadevan, R. 2001. “Assessing the Output and Productivity Growth of Malaysia’s Manufacturing Sector.” *Journal of Asian Economics* 12 (4): 587-597. https://doi.org/10.1016/S1049-0078(01)00104-X.

Majid, M. Shabri Abd, and Mahrizal. 2007. “Does Financial Development Cause Economic Growth in the Asean-4 Countries?” *Savings and Development* 31 (4): 363-398. https://www.jstor.org/stable/41406460.

Majumder, Monoj Kumar, Mala Raghavan, and Joaquin Vespignani. 2020. “Oil Curse, Economic Growth and Trade Openness.” *Energy Economics* 91: 1-10. https://doi.org/10.1016/j.eneco.2020.104896.

Malaysia, Bank Negara. 2019. “Payment Statistics | Bank Negara Malaysia | Central Bank of Malaysia.” *Central Bank of Malaysia*.

Malaysian Communication and Multimedia Commission. 2006. “Industry Performance Report 2006.” *Malaysian Communication and Multimedia Commission*. https://www.mcmc.gov.my/skmmgovmy/files/4a/4a18e31c-28e0-446c-b45e-8c41f4ae4cd7/files/assets/basic-html/page-1.html#.

Mania, Elodie, and Arsène Rieber. 2019. “Product Export Diversification and Sustainable Economic Growth in Developing Countries.” *Structural Change and Economic Dynamics* 51: 138-151. https://doi.org/10.1016/j.strueco.2019.08.006.

Manu, Emmanuel K., Wen Xuezhou, Isaac O. Paintsil, Samuel Gyedu, and Albert H. Ntarmah. 2020. “Financial Development and Economic Growth Nexus in Africa.” *Business Strategy and Development* 3 (4): 506–521. https://doi.org/10.1002/bsd2.113.

Marques, António Cardoso, and Patrícia Silva Pires. 2019. “Is There a Resource Curse Phenomenon for Natural Gas? Evidence from Countries with Abundant Natural Gas.” *Resources Policy* 63: 1-11. https://doi.org/10.1016/j.resourpol.2019.101466.

Matallah, Siham. 2020. “Economic Diversification in MENA Oil Exporters: Understanding the Role of Governance.” *Resources Policy* 66: 1-11. https://doi.org/10.1016/j.resourpol.2020.101602.

Mavrotas, George, Syed Mansoob Murshed, and Sebastian Torres. 2011. “Natural Resource Dependence and Economic Performance in the 1970-2000 Period.” *Review of Development Economics* 15 (1): 124-138. https://doi.org/10.1111/j.1467-9361.2010.00597.x.

McKinnon, Ronald I. 1974. “Money and Capital in Economic Development.” Washington, D.C.: Brooklyn Institution

Meesook, K., H. Lee, O. Liu, Y. Khatri, N. Tamirisa, M. Moore, and M. H. Krysl. 2001. “Malaysia: From Crisis to Recovery.” *IMF Occasional Papers*, no. 207.

Mehlum, Halvor, Karl Moene, and Ragnar Torvik. 2006. “Cursed by Resources or Institutions?” *World Economy* 29 (8): 1117-1131. https://doi.org/10.1111/j.1467-9701.2006.00808.x.

Mehrara, Mohsen. 2009. “Reconsidering the Resource Curse in Oil-Exporting Countries.” *Energy Policy* 37 (3): 1165-1169. https://doi.org/10.1016/j.enpol.2008.10.040.

Mellor, John W., and Bruce F Johnston. 2012. “The World Food Equation: Interrelations Among Development, Employment, and Food Consumption.” *Journal of Economic Literature* 22 (2): 531-574. https://www.jstor.org/stable/2725066.

Mendez Ramos, Fabian. 2020. *Sudden Influxes of Resource Wealth to the Economy: Avoiding “Dutch Disease.” Sudden Influxes of Resource Wealth to the Economy: Avoiding “Dutch Disease.”* https://doi.org/10.1596/33614.

Menyah, Kojo, Saban Nazlioglu, and Yemane Wolde-Rufael. 2014. “Financial Development, Trade Openness and Economic Growth in African Countries: New Insights from a Panel Causality Approach.” *Economic Modelling* 37: 386-394. https://doi.org/10.1016/j.econmod.2013.11.044.

Mesagan, Ekundayo P., and Mustapha O. Bello. 2018. “Core Infrastructure and Industrial Performance in Africa: Do Institutions Matter?” *International Review of Economics* 65 (4): 539-562. https://doi.org/10.1007/s12232-018-0314-y.

Metaxas, Phillip Edmund, and Ernst Juerg Weber. 2016. “An Australian Contribution to International Trade Theory: The Dependent Economy Model.” *Economic Record* 92 (298): 494-497. https://doi.org/10.1111/1475-4932.12264.

MIDA. 2021. “Malaysia to Increase Efforts to Address Semiconductor Backlog Orders.” 2021. https://www.mida.gov.my/mida-news/malaysia-to-increase-efforts-to-address-semiconductor-backlog-orders/.

Mikesell, Raymond F. 1997. “Explaining the Resource Curse, with Special Reference to Mineral-Exporting Countries.” *Resources Policy* 23 (4): 191-199. https://doi.org/10.1016/s0301-4207(97)00036-6.

Ministry of Finance Malaysia. 2021. “Fiscal & Economic Data.” 2021. https://www.mof.gov.my/portal/en/economy/fiscal-economic-data.

Ministry of International Trade and Industry. 2018. *National Policy on Industry 4.0, Ministry of International Trade and Industry*. *Miti*.

Ministry of International Trade and Industry. 2020. “Trade & Economic Information Bookelt 2020.” https://www.miti.gov.my/miti/resources/Trade and Economic Information Booklet /TNEQ120.pdf.

Mironov, Valeriy V., and Anna V. Petronevich. 2015. “Discovering the Signs of Dutch Disease in Russia.” *Resources Policy* 46: 97-112. https://doi.org/10.1016/j.resourpol.2015.09.007.

MITI. 2018. “Industry4WRD Readiness Assessment.” *Ministry of International Trade and Industry*.

MOF. 2017. “Estimates of Federal Government Revenue.” *Ministry Of Finance*, 2017.

Mogotsi, Imogen. 2002. “Botswana’s Diamonds Boom: Was There a Dutch Disease?” *South African Journal of Economics* 70 (1): 128-155. https://doi.org/10.1111/j.1813-6982.2002.tb00041.x.

Mohit, Mohammad Abdul. 2009. “Structural Changes of The Malaysian Economy and Its Spatial Incidence on Regional Economic Growth.” *Planning Malaysia Journal* 7 (1): 25-46. https://doi.org/10.21837/pmjournal.v7.i1.70.

Mohtadi, Soran, and David Castells-Quintana. 2021. “The Distributional Dimension of the Resource Curse: Commodity Price Shocks and Income Inequality.” *Structural Change and Economic Dynamics* 59: 63-78. https://doi.org/10.1016/j.strueco.2021.08.002.

Mollaahmetoğlu, Ebubekir, and Burcąy Yasąr Akcąli. 2019. “The Missing-Link between Financial Development and Economic Growth: Financial Innovation.” In *Procedia Computer Science*. Vol. 158: 696-704. https://doi.org/10.1016/j.procs.2019.09.105.

Moradbeigi, Maryam, and Siong Hook Law. 2014. “Economic Growth Volatility and Resource Curse: The Role of Financial Development.” *Taylor’s Business Review (TBR)* 4 (2): 147-164. https://doi.org/10.7603/s40932-014-0003-y.

Moradbeigi, Maryam, and Siong Hook Law. 2016. “Growth Volatility and Resource Curse: Does Financial Development Dampen the Oil Shocks?” *Resources Policy* 48: 97-103. https://doi.org/10.1016/j.resourpol.2016.02.009.

Moradbeigi, Maryam, and Siong Hook Law. 2017. “The Role of Financial Development in the Oil-Growth Nexus.” *Resources Policy* 53: 164-175. https://doi.org/10.1016/j.resourpol.2017.06.016.

Morales, Jose Rodolfo. 2020. “Perpetuating Regional Asymmetries through Income Transfers.” *Spatial Economic Analysis* 16 (1): 73-96. https://doi.org/10.1080/17421772.2020.1714705.

Mosbacher, Jack. 2013. “Fighting the Resource Curse: Uganda’s Pivotal Moment.” *Washington Quarterly* 36 (4): 43-54. https://doi.org/10.1080/0163660X.2013.861710.

Naceur, Sami Ben, Mondher Cherif, and Magda Kandil. 2014. “What Drives the Development of the MENA Financial Sector?” *Borsa Istanbul Review* 14 (4): 212-223. https://doi.org/10.1016/j.bir.2014.09.002.

Namazi, Mehdi, and Emran Mohammadi. 2018. “Natural Resource Dependence and Economic Growth: A TOPSIS/DEA Analysis of Innovation Efficiency.” *Resources Policy* 59: 544-552. https://doi.org/10.1016/j.resourpol.2018.09.015.

Nambiar, Shankaran. 2013. “Malaysia and the Global Crisis: Impact, Response, and Rebalancing Strategies.” *The Global Financial Crisis and Asia: Implications and Challenges*: 1-27. https://doi.org/10.1093/acprof:oso/9780199660957.003.0011.

Narayan, Paresh Kumar. 2005. “The Saving and Investment Nexus for China: Evidence from Cointegration Tests.” *Applied Economics* 37 (17): 1979-1990. https://doi.org/10.1080/00036840500278103.

Nawaz, Kishwar, Amine Lahiani, and David Roubaud. 2019. “Natural Resources as Blessings and Finance-Growth Nexus: A Bootstrap ARDL Approach in an Emerging Economy.” *Resources Policy* 60: 277-287. https://doi.org/10.1016/j.resourpol.2019.01.007.

Nejati, Mehdi, and Mojtaba Bahmani. 2020. “The Economic Impacts of Foreign Direct Investment in Oil and Gas Sector: A CGE Analysis for Iranian Economy.” *Energy Strategy Reviews* 32: 1-14. https://doi.org/10.1016/j.esr.2020.100579.

Neo, H. 2009. “Resource and Environmental Economics.” In *International Encyclopedia of Human Geography*. https://doi.org/10.1016/B978-008044910-4.00225-X.

Neumayer, Eric. 2004. “Does the ‘Resource Curse’ Hold for Growth in Genuine Income as Well?” *World Development* 32 (10 SPEC.ISS.): 1627-1640. https://doi.org/10.1016/j.worlddev.2004.05.005.

Ngu, Heng Jong, Man Djun Lee, and Mohd Shahril Bin Osman. 2020. “Review on Current Challenges and Future Opportunities in Malaysia Sustainable Manufacturing: Remanufacturing Industries.” *Journal of Cleaner Production* 273:1-13. https://doi.org/10.1016/j.jclepro.2020.123071.

Nguyen, Ha Minh, Quan Thai-Thuong Le, Chi Minh Ho, Thang Cong Nguyen, and Duc Hong Vo. 2021. “Does Financial Development Matter for Economic Growth in the Emerging Markets?” *Borsa Istanbul Review*: 1-11. https://doi.org/10.1016/j.bir.2021.10.004.

Nielsen, Bo Bernhard, and Arpit Raswant. 2018. “The Selection, Use, and Reporting of Control Variables in International Business Research: A Review and Recommendations.” *Journal of World Business* 53 (6): 958-968. https://doi.org/10.1016/j.jwb.2018.05.003.

Nieminen, Mika. 2020. “Multidimensional Financial Development, Exporter Behavior and Export Diversification.” *Economic Modelling* 93: 1-12. https://doi.org/10.1016/j.econmod.2020.07.021.

Nili, Masoud, and Mahdi Rastad. 2007. “Addressing the Growth Failure of the Oil Economies: The Role of Financial Development.” *Quarterly Review of Economics and Finance* 46 (5): 726-740. https://doi.org/10.1016/j.qref.2006.08.007.

Nizar, Nurhuda, and Zulkefly Abdul Karim. 2021. “The Relationship between Household Credit and Banking Stability in Malaysia: Panel Evidence.” *Gadjah Mada International Journal of Business* 23 (2): 155-172. https://doi.org/10.22146/gamaijb.64451.

Norouzi, Nima, and Maryam Fani. 2020. “Black Gold Falls, Black Plague Arise - An Opec Crude Oil Price Forecast Using a Gray Prediction Model.” *Upstream Oil and Gas Technology* 5: 1-16. https://doi.org/10.1016/j.upstre.2020.100015.

Nouira, Ridha, Thouraya Hadj Amor, and Christophe Rault. 2019. “Oil Price Fluctuations and Exchange Rate Dynamics in the MENA Region: Evidence from Non-Causality-in-Variance and Asymmetric Non-Causality Tests.” *Quarterly Review of Economics and Finance* 73: 159-171. https://doi.org/10.1016/j.qref.2018.07.011.

Nouira, Ridha, and Mohamed Kouni. 2021. “Optimal Government Size and Economic Growth in Developing and MENA Countries: A Dynamic Panel Threshold Analysis.” *Middle East Development Journal* 13 (1): 59-77. https://doi.org/10.1080/17938120.2021.1898231.

Odhiambo, Nicholas M. 2021. “Is Export-Led Growth Hypothesis Still Valid for Sub-Saharan African Countries? New Evidence from Panel Data Analysis.” *European Journal of Management and Business Economics* 31 (1): 77-93. https://doi.org/10.1108/EJMBE-06-2020-0156.

Oh, Soo-Nam. 1999. “Towards a Sustainable Banking Sector - Malaysia.” *Rising to the Challenges in Asia: A Study of Financial Markets, Malaysia, Asian Development Bank* 8.

Oh, Tick Hui, Shen Yee Pang, and Shing Chyi Chua. 2010. “Energy Policy and Alternative Energy in Malaysia: Issues and Challenges for Sustainable Growth.” *Renewable and*

Sustainable Energy Reviews 19 (2): 257-280. https://doi.org/10.1016/j.rser.2009.12.003.

Ojaghlou, Mortaza. 2019. "Tourism-Led Growth and Risk of the Dutch Disease: Dutch Disease in Turkey." *International Business Research* 12 (7): 102-120. https://doi.org/10.5539/ibr.v12n7p103.

Ojakorotu, Victor, Richard Kamidza, and Segun Eesuola. 2018. "Oil Wealth Paradox and Its Implication for Sustainable Development in Angola and Nigeria." *Journal of African Foreign Affairs* 5 (1): 85-106. https://doi.org/10.31920/2056-5658/2018/v5n1a5.

Oladipo, Olajide S. 2010. "Does Saving Really Matter For Growth In Developing Countries? The Case Of A Small Open Economy." *International Business & Economics Research Journal (IBER)* 9 (4): 87-94. https://doi.org/10.19030/iber.v9i4.556.

Olaoye, Olumide O., Oluwatosin O. Eluwole, Aziz Ayesha, and Olugbenga O. Afolabi. 2020. "Government Spending and Economic Growth in ECOWAS: An Asymmetric Analysis." *Journal of Economic Asymmetries* 22: 1-15. https://doi.org/10.1016/j.jeca.2020.e00180.

Olayungbo, D. O. 2019. "Effects of Oil Export Revenue on Economic Growth in Nigeria: A Time Varying Analysis of Resource Curse." *Resources Policy* 64: 1-10. https://doi.org/10.1016/j.resourpol.2019.101469.

Olayungbo, D. Oluseun, and Kazeem A. Adediran. 2017. "Effects of Oil Revenue and Institutional Quality on Economic Growth with an ARDL Approach." *Energy and Policy Research* 4 (1): 44-54. https://doi.org/10.1080/23815639.2017.1307146.

Onuoha, Mgbeodichinma Eucharia, and Isa Olalekan Elegbede. 2018. "The Oil Boom Era: Socio-Political and Economic Consequences." *The Political Ecology of Oil and Gas Activities in the Nigerian Aquatic Ecosystem*: 83-99. https://doi.org/10.1016/B978-0-12-809399-3.00006-9.

Oomes, Nienke, and Katerina Kalcheva. 2011. "Diagnosing Dutch Disease: Does Russia Have the Symptoms?" *SSRN Electronic Journal*: 1-32. https://doi.org/10.2139/ssrn.1001659.

Opoku, Eric Evans Osei, Muazu Ibrahim, and Yakubu Awudu Sare. 2019. "The Causal Relationship between Financial Development and Economic Growth in Africa." *International Review of Applied Economics* 33 (6): 789-812. https://doi.org/10.1080/02692171.2019.1607264.

Osakwe, Patrick N., Amelia U. Santos-Paulino, and Berna Dogan. 2018. "Trade Dependence, Liberalization, and Exports Diversification in Developing Countries☆." *Journal of African Trade* 5 (1–2): 19-34. https://doi.org/10.1016/j.joat.2018.09.001.

Ouoba, Youmanli. 2016. "Natural Resources: Funds and Economic Performance of Resource-Rich Countries." *Resources Policy* 50: 108-116. https://doi.org/10.1016/j.resourpol.2016.09.003.

Panta, Humnath, Mitra Lal Devkota, and Dhruba Banjade. 2022. "Exports and Imports-Led Growth: Evidence from a Small Developing Economy." *Journal of Risk and Financial*

Management 15 (1): 1–14. https://doi.org/https://doi.org/10.3390/jrfm15010011.

Papyrakis, Elissaios, and Reyer Gerlagh. 2004. “The Resource Curse Hypothesis and Its Transmission Channels.” *Journal of Comparative Economics* 32 (1): 181-193. https://doi.org/10.1016/j.jce.2003.11.002.

Parcero, Osiris J., and Elissaios Papyrakis. 2016. “Income Inequality and the Oil Resource Curse.” *Resource and Energy Economics* 45: 159-177. https://doi.org/10.1016/j.reseneeco.2016.06.001.

Patrick, Hugh T. 1966. “Financial Development and Economic Growth in Underdeveloped Countries.” *Economic Development and Cultural Change* 14 (2): 174-189. https://doi.org/10.1086/450153.

Pegg, Scott. 2010. “Is There a Dutch Disease in Botswana?” *Resources Policy* 35 (1): 14-19. https://doi.org/10.1016/j.resourpol.2009.07.003.

Peluffo, Adriana. 2016. “The Role of Investments in Export Growth.” *Small Business Economics* 47 (1): 115-137. https://doi.org/10.1007/s11187-016-9714-0.

PEMANDU. 2010. “Economic Transformation Programme Report.” *Economic Planning Unit Malaysia*.

Pendergast, Shannon M., Judith A. Clarke, and G. Cornelis Van Kooten. 2011. “Corruption, Development and the Curse of Natural Resources.” *Canadian Journal of Political Science* 44 (2): 411-437. https://doi.org/10.1017/S0008423911000114.

Perez-Sebastian, Fidel, and Ohad Raveh. 2016. “The Natural Resource Curse and Fiscal Decentralization.” *American Journal of Agricultural Economics* 98 (1): 212-230. https://doi.org/10.1093/ajae/aav051.

Persson, Maria. 2013. “Trade Facilitation and the Extensive Margin.” *Journal of International Trade and Economic Development* 22 (5): 1-24. https://doi.org/10.1080/09638199.2011.587019.

Pesaran, M. Hashem, Yongcheol Shin, and Richard J. Smith. 2001. “Bounds Testing Approaches to the Analysis of Level Relationships.” *Journal of Applied Econometrics* 16 (3): 289-326. https://doi.org/10.1002/jae.616.

Petchko, Katerina. 2018. *How to Write About Economics and Public Policy*. https://doi.org/10.1016/c2016-0-04062-7.

Plan, Tenth Malaysia. 2010. “Tenth Malaysia Plan 2011-2015.” *The Economic Planning Unit*. Vol. 10.

Ploeg, Frederick Van Der. 2011. “Natural Resources: Curse or Blessing?” *Journal of Economic Literature* 49 (2): 366-420. https://doi.org/10.1257/jel.49.2.366.

Ploeg, Frederick van der, and Steven Poelhekke. 2009a. “The Volatility Curse: Revisiting the Paradox of Plenty.” *CESifo Working Paper Series*, no. 2616.

Ploeg, Frederick van der, and Steven Poelhekke. 2009b. “Volatility and the Natural Resource Curse.” In *Oxford Economic Papers*. Vol. 61 (4): 727-760. https://doi.org/10.1093/oep/gpp027.

Plosser, Charles I., G. William Schwert, and Halbert White. 1982. “Differencing as a Test of Specification.” *International Economic Review* 23 (3): 535-552. https://doi.org/10.2307/2526372.

Pradhan, Rudra P., Mak B. Arvin, Sara E. Bennett, Mahendhiran Nair, and John H. Hall. 2016. “Bond Market Development, Economic Growth and Other Macroeconomic Determinants: Panel VAR Evidence.” *Asia-Pacific Financial Markets* 23 (2): 535-552. https://doi.org/10.1007/s10690-016-9214-x.

Qiang, Qiu, and Chen Jian. 2020. “Natural Resource Endowment, Institutional Quality and China’s Regional Economic Growth.” *Resources Policy* 66: 1-9. https://doi.org/10.1016/j.resourpol.2020.101644.

Rahim, Syed, Muntasir Murshed, Sukru Umarbeyli, Dervis Kirikkaleli, Mahmood Ahmad, Muhammad Tufail, and Salman Wahab. 2021. “Do Natural Resources Abundance and Human Capital Development Promote Economic Growth? A Study on the Resource Curse Hypothesis in Next Eleven Countries.” *Resources, Environment and Sustainability* 4: 1-8. https://doi.org/10.1016/j.resenv.2021.100018.

Rahmaddi, Rudy, and Masaru Ichihashi. 2013. “The Role of Foreign Direct Investment in Indonesia’s Manufacturing Exports.” *Bulletin of Indonesian Economic Studies* 49 (3): 329-354. https://doi.org/10.1080/00074918.2013.850632.

Rahman, M., and M. Hossain. 2003. “Exchange Rate and Investment in the Manufacturing Sector of Bangladesh.” *Bangladesh Development Studies* 29 (1–2): 111-124. https://www.jstor.org/stable/40795674.

Rajan, Raghuram G., and Arvind Subramanian. 2011. “Aid, Dutch Disease, and Manufacturing Growth.” *Journal of Development Economics* 94 (1): 106-118. https://doi.org/10.1016/j.jdeveco.2009.12.004.

Ram, R. 1986. “Government Size and Economic Growth: A New Framework and Some Evidence from Cross-Section and Time-Series Data.” *American Economic Review* 76 (1): 191-203. https://www.jstor.org/stable/1804136.

Ramírez-Cendrero, Juan M., and Eszter Wirth. 2016. “Is the Norwegian Model Exportable to Combat Dutch Disease?” *Resources Policy* 48: 85-96. https://doi.org/10.1016/j.resourpol.2016.02.010.

Ramírez Cendrero, Juan M. 2014. “Has Bolivia’s 2006-12 Gas Policy Been Useful to Combat the Resource Curse?” *Resources Policy* 41 (1): 113-123. https://doi.org/10.1016/j.resourpol.2014.04.005.

Rasiah, Rajah. 2011. “Is Malaysia Facing Negative Deindustrialization?” *Pacific Affairs* 84 (4): 714-735. https://doi.org/10.5509/2011844715.

Rasiah, Rajah, and Yap Xiao Shan. 2016. “Institutional Support, Regional Trade Linkages and Technological Capabilities in the Semiconductor Industry in Malaysia.” *Asia Pacific Business Review* 22 (1): 165-179. https://doi.org/10.1080/13602381.2014.990210.

Rehman, Faheem Ur, Abul Ala Noman, and Yibing Ding. 2020. “Does Infrastructure Increase Exports and Reduce Trade Deficit? Evidence from Selected South Asian Countries Using a New Global Infrastructure Index.” *Journal of Economic Structures* 9 (1): 1-23. https://doi.org/10.1186/s40008-020-0183-x.

Rehner, Johannes, Sebastián A. Baeza, and Jonathan R. Barton. 2014. “Chile’s Resource-Based Export Boom and Its Outcomes: Regional Specialization, Export Stability and Economic Growth.” *Geoforum* 56: 35-45. https://doi.org/10.1016/j.geoforum.2014.06.007.

Reimink, Timothy J. 2019. “Six Strategies for Improving Banks’ Operating Efficiency.” Crowe Howarth. 2019. https://www.crowe.com/insights/banking-performance/six-strategies-for-improving-banks-operating-efficiency.

Rewilak, Johan. 2017. “The Role of Financial Development in Poverty Reduction.” *Review of Development Finance* 7 (2): 169-176. https://doi.org/10.1016/j.rdf.2017.10.001.

Ricardo, David. 1821. “On the Principles of Political Economy and Taxation (Third Edition).” In *Batoche Books - Kitchener 2001*. Vol. 92125.

Riffenburgh, Robert. 2012. *Statistics in Medicine*. *Statistics in Medicine*. https://doi.org/10.1016/C2010-0-64822-X.

Robinson, Joan. 1979. *The Generalisation of the General Theory and Other Essays*. *The Generalisation of the General Theory and Other Essays*. Palgrave Macmillan UK. https://doi.org/10.1007/978-1-349-16188-1.

Rongwei, Xie, and Zhai Xiaoying. 2020. “Is Financial Development Hampering or Improving the Resource Curse? New Evidence from China.” *Resources Policy* 67: 1-9. https://doi.org/10.1016/j.resourpol.2020.101676.

Ross, Michael L. 2019. “What Do We Know about Export Diversification in Oil-Producing Countries?” *Extractive Industries and Society* 6 (3): 792-806. https://doi.org/10.1016/j.exis.2019.06.004.

Rosser, Andrew. 2006. “The Political Economy of the Resource Curse: A Literature Survey.” *IDS Working Paper*, no. April.

S. Randhawa, Dipinder. 2011. “Banking and Capital Market Reforms in Malaysia.” *ASEAN ECONOMIC BULLETIN* 28 (3): 388-413. https://doi.org/10.1355/ae28-3g.

Sachs, J. 1999. “Managing Global Capitalism.” *Australian Economic Review* 32 (1): 3-16. https://doi.org/10.1111/1467-8462.00089.

Sachs, Jeffrey D. 2007. “How to Handle the Macroeconomics of Oil Wealth.” *Escaping the Resource Curse*: 174-197. https://policydialogue.org/files/publications/papers/Ch07.pdf.

Sachs, Jeffrey D., and Andrew M. Warner. 2001. “The Curse of Natural Resources.”

European Economic Review 45 (4–6): 827–388. https://doi.org/10.1016/S0014-2921(01)00125-8.

Sachs, Jeffrey, and Andrew Warner. 1995. "Natural Resource Abundance and Economic Growth." *National Bureau of Economic Research* : 1-54. https://doi.org/10.3386/w5398.

Salleh, N. M., A. K. Rosline, J. K.S. Len, and K. Ag Budin. 2016. "Collective Voice and Union Effectiveness: Is Relational Capital the Missing Link?" *Asia Pacific Human Resource Management and Organisational Effectiveness: Impacts on Practice*: 195-213. https://doi.org/10.1016/B978-0-08-100643-6.00009-9.

Sandbu, Martin E. 2006. "Natural Wealth Accounts: A Proposal for Alleviating the Natural Resource Curse." *World Development* 34 (7): 1153-1170. https://doi.org/10.1016/j.worlddev.2005.11.014.

Santric-Milicevic, M., V. Vasic, and Z. Terzic-Supic. 2016. "Do Health Care Workforce, Population, and Service Provision Significantly Contribute to the Total Health Expenditure? An Econometric Analysis of Serbia." *Human Resources for Health* 14 (1): 1-11. https://doi.org/10.1186/s12960-016-0146-3.

Sarkodie, Samuel Asumadu, and Phebe Asantewaa Owusu. 2020. "How to Apply the Novel Dynamic ARDL Simulations (Dynardl) and Kernel-Based Regularized Least Squares (Krls)." *MethodsX* 7: 1-11. https://doi.org/10.1016/j.mex.2020.101160.

Satti, Saqlain Latif, Abdul Farooq, Nanthakumar Loganathan, and Muhammad Shahbaz. 2014. "Empirical Evidence on the Resource Curse Hypothesis in Oil Abundant Economy." *Economic Modelling* 42: 421-429. https://doi.org/10.1016/j.econmod.2014.07.020.

Sbia, Rashid, Muhammad Shahbaz, and Helmi Hamdi. 2014. "A Contribution of Foreign Direct Investment, Clean Energy, Trade Openness, Carbon Emissions and Economic Growth to Energy Demand in UAE." *Economic Modelling* 36. https://doi.org/10.1016/j.econmod.2013.09.047.

Schumpeter, Joseph A. 2017. *The Theory of Economic Development*. *The Theory of Economic Development*. Routledge. https://doi.org/10.4324/9781315135564.

Şeker, Murat, and Federica Saliola. 2018. "A Cross-Country Analysis of Total Factor Productivity Using Micro-Level Data." *Central Bank Review* 18 (1): 18-27. https://doi.org/10.1016/j.cbrev.2018.01.001.

Senadza, Bernardin, and Desmond Delali Diaba. 2018. "Effect of Exchange Rate Volatility on Trade in Sub-Saharan Africa☆." *Journal of African Trade* 4 (1–2): 20-26. https://doi.org/10.1016/j.joat.2017.12.002.

Shahbaz, Muhammad, Mehmet Akif Destek, Ilyas Okumus, and Avik Sinha. 2019. "An Empirical Note on Comparison between Resource Abundance and Resource Dependence in Resource Abundant Countries." *Resources Policy* 60: 47-55. https://doi.org/10.1016/j.resourpol.2018.12.002.

Shahbaz, Muhammad, Thi Hong Van Hoang, Mantu Kumar Mahalik, and David Roubaud. 2017. "Energy Consumption, Financial Development and Economic Growth in India: New Evidence from a Nonlinear and Asymmetric Analysis." *Energy Economics* 63: 199-212. https://doi.org/10.1016/j.eneco.2017.01.023.

Shahbaz, Muhammad, Muhammad Naeem, Muhammad Ahad, and Iqbal Tahir. 2018. "Is Natural Resource Abundance a Stimulus for Financial Development in the USA?" *Resources Policy* 55: 223-232. https://doi.org/10.1016/j.resourpol.2017.12.006.

Shahbaz, Muhammad, Muhammad A. Nasir, and Amine Lahiani. 2020. "Role of Financial Development in Economic Growth in the Light of Asymmetric Effects and Financial Efficiency." *International Journal of Finance and Economics*: 1-23. https://doi.org/10.1002/ijfe.2157.

Shahbaz, Muhammad, Muhammad Zakaria, Syed Jawad Hussain Shahzad, and Mantu Kumar Mahalik. 2018. "The Energy Consumption and Economic Growth Nexus in Top Ten Energy-Consuming Countries: Fresh Evidence from Using the Quantile-on-Quantile Approach." *Energy Economics* 71: 282-301. https://doi.org/10.1016/j.eneco.2018.02.023.

Shahzad, Faisal, Asif Saeed, Ghazanfar Ali Asim, Fiza Qureshi, Ijaz Ur Rehman, and Saba Qureshi. 2021. "Political Connections and Firm Performance: Further Evidence Using a Generalised Quantile Regression Approach." *IIMB Management Review* 33 (3): 205-213. https://doi.org/10.1016/j.iimb.2021.08.005.

Shang, Yu. 2019. "Research on the Relationship between Virtual Economy and Real Economy Development in China." In *Journal of Physics: Conference Series*. Vol. 1237 (2): 1-9. https://doi.org/10.1088/1742-6596/1237/2/022098.

Shangle, Ai, and Saeed Solaymani. 2020. "Responses of Monetary Policies to Oil Price Changes in Malaysia." *Energy* 200: 1-10. https://doi.org/10.1016/j.energy.2020.117553.

Shao, Shuai, and Lili Yang. 2014. "Natural Resource Dependence, Human Capital Accumulation, and Economic Growth: A Combined Explanation for the Resource Curse and the Resource Blessing." *Energy Policy* 74 (C): 632-642. https://doi.org/10.1016/j.enpol.2014.07.007.

Shao, Shuai, Yan Zhang, Zhihua Tian, Ding Li, and Lili Yang. 2020. "The Regional Dutch Disease Effect within China: A Spatial Econometric Investigation." *Energy Economics* 88: 1-20. https://doi.org/10.1016/j.eneco.2020.104766.

Sharif, Arshian, Shekhar Mishra, Avik Sinha, Zhilun Jiao, Muhammad Shahbaz, and Sahar Afshan. 2020. "The Renewable Energy Consumption-Environmental Degradation Nexus in Top-10 Polluted Countries: Fresh Insights from Quantile-on-Quantile Regression Approach." *Renewable Energy* 150: 670-690. https://doi.org/10.1016/j.renene.2019.12.149.

Shen, Yijuan, Zhi Wei Su, Muhammad Yousaf Malik, Muhammad Umar, Zeeshan Khan, and Mohsin Khan. 2021. "Does Green Investment, Financial Development and Natural Resources Rent Limit Carbon Emissions? A Provincial Panel Analysis of China." *Science of the Total Environment* 755: 1-12.

https://doi.org/10.1016/j.scitotenv.2020.142538.

Sheridan, Brandon J. 2014. “Manufacturing Exports and Growth: When Is a Developing Country Ready to Transition from Primary Exports to Manufacturing Exports?” *Journal of Macroeconomics* 42: 1-13. https://doi.org/10.1016/j.jmacro.2014.06.002.

Shi, Haichen, Keith Worden, and Elizabeth J. Cross. 2019. “A Cointegration Approach for Heteroscedastic Data Based on a Time Series Decomposition: An Application to Structural Health Monitoring.” *Mechanical Systems and Signal Processing* 120: 16-31. https://doi.org/10.1016/j.ymssp.2018.09.036.

Shifa, Abdulaziz B. 2015. “Does Agricultural Growth Cause Manufacturing Growth?” *Economica* 82: 1107-1125. https://doi.org/10.1111/ecca.12142.

Shrestha, Min B., and Guna R. Bhatta. 2018. “Selecting Appropriate Methodological Framework for Time Series Data Analysis.” *Journal of Finance and Data Science* 4 (2): 71-89. https://doi.org/10.1016/j.jfds.2017.11.001.

Siakwah, Pius. 2017. “Are Natural Resource Windfalls a Blessing or a Curse in Democratic Settings? Globalised Assemblages and the Problematic Impacts of Oil on Ghana’s Development.” *Resources Policy* 52: 122-133. https://doi.org/10.1016/j.resourpol.2017.02.008.

Siegle, Joseph. 2005. “Governance Strategies to Remedy the Natural Resource Curse.” *International Social Science Journal* 57 (SUPPL. 1): 45-55. https://doi.org/10.1111/j.1468-2451.2009.00705.x.

Smith, Adam. 1776. “An Inquiry into the Wealth of Nations.” *Strahan and Cadell, London*.

Smith, Brock. 2019. “Dutch Disease and the Oil Boom and Bust.” *Canadian Journal of Economics* 52 (2): 584-623. https://doi.org/10.1111/caje.12376.

Soh, Jiaming, Amanda Chong, and Kue-Peng Chuah. 2017. “Household Credit, Growth and Inequality in Malaysia: Does the Type of Credit Matter?” *BIS Papers* 91 (91): 39-59. https://www.bis.org/publ/bppdf/bispap91c.pdf.

Solarin, Sakiru Adebola. 2020. “The Effects of Shale Oil Production, Capital and Labour on Economic Growth in the United States: A Maximum Likelihood Analysis of the Resource Curse Hypothesis.” *Resources Policy* 68: 1-11. https://doi.org/10.1016/j.resourpol.2020.101799.

Song, Malin, Xin Zhao, Yuping Shang, and Boyang Chen. 2020. “Realization of Green Transition Based on the Anti-Driving Mechanism: An Analysis of Environmental Regulation from the Perspective of Resource Dependence in China.” *Science of the Total Environment* 698: 1-12. https://doi.org/10.1016/j.scitotenv.2019.134317.

Song, Yue, Naiding Yang, Yanlu Zhang, and Jingbei Wang. 2019. “Suppressing Risk Propagation in R&D Networks: The Role of Government Intervention.” *Chinese Management Studies* 13 (4): 1019-1043. https://doi.org/10.1108/CMS-07-2018-0621.

Spector, Paul E. 2021. “Mastering the Use of Control Variables: The Hierarchical Iterative Control (HIC) Approach.” *Journal of Business and Psychology* 36 (5): 737-750. https://doi.org/10.1007/s10869-020-09709-0.

Stevens, P. 2005. “Resource Curse and How to Avoid It?” *The Journal of Energy and Development* 31 (1): 1-20. https://www.jstor.org/stable/24812676.

Stevens, Paul. 2004. “Resource Curse and Investment in Energy Industries.” *Encyclopedia of Energy*: 451-459. https://doi.org/10.1016/b0-12-176480-x/00548-9.

Stevens, Paul, and Evelyn Dietsche. 2008. “Resource Curse: An Analysis of Causes, Experiences and Possible Ways Forward.” *Energy Policy* 36 (1): 56-65. https://doi.org/10.1016/j.enpol.2007.10.003.

Stocker, Marc, John Baffes, and Dana Vorisek. 2018. “What Triggered the Oil Price Plunge of 2014-2016 and Why It Failed to Deliver an Economic Impetus in Eight Charts.” World Bank Blogs. 2018.

Su, Chi Wei, Khalid Khan, Ran Tao, and Muhammad Umar. 2020. “A Review of Resource Curse Burden on Inflation in Venezuela.” *Energy* 204: 1-11. https://doi.org/10.1016/j.energy.2020.117925.

Su, Xiaoyan, Sajid Anwar, Ying Zhou, and Xuan Tang. 2020. “Services Trade Restrictiveness and Manufacturing Export Sophistication.” *North American Journal of Economics and Finance* 51: 1-14. https://doi.org/10.1016/j.najef.2019.101058.

Sufian, Fadzlan, Fakarudin Kamarudin, and Annuar md. Nassir. 2016. “Determinants of Efficiency in the Malaysian Banking Sector: Does Bank Origins Matter?” *Intellectual Economics* 10 (1): 38-54. https://doi.org/10.1016/j.intele.2016.04.002.

Sun, Yanpeng, Aysegul Ak, Berna Serener, and Deping Xiong. 2020. “Natural Resource Abundance and Financial Development: A Case Study of Emerging Seven (E−7) Economies.” *Resources Policy* 67: 1-8. https://doi.org/10.1016/j.resourpol.2020.101660.

Sun, Zhi Qiang, Ze Xiang Cai, and Kauko LeiviskaÂ¨. 2020. “Does Financial Development Hamper or Improve the Resource Curse? Analysis Based on the Panel Threshold Effect Model.” *Mathematical Problems in Engineering* 2020: 1-10. https://doi.org/10.1155/2020/4365205.

Szirmai, Adam. 2012. “Industrialisation as an Engine of Growth in Developing Countries, 1950-2005.” *Structural Change and Economic Dynamics* 23 (4): 406-420. https://doi.org/10.1016/j.strueco.2011.01.005.

Szirmai, Adam, and Bart Verspagen. 2015. “Manufacturing and Economic Growth in Developing Countries, 1950-2005.” *Structural Change and Economic Dynamics* 34: 46-59. https://doi.org/10.1016/j.strueco.2015.06.002.

Taguchi, Hiroyuki, and Soukvisan Khinsamone. 2018. “Analysis of the ‘Dutch Disease’ Effect on the Selected Resource-Rich ASEAN Economies.” *Asia and the Pacific Policy Studies* 5 (2): 249-263. https://doi.org/10.1002/app5.233.

Tan, Yan Ling, and Roslina Mohamad Shafi. 2021. “Capital Market and Economic Growth in Malaysia: The Role of Ṣukūk and Other Sub-Components.” *ISRA International Journal of Islamic Finance* 13 (1): 102-117. https://doi.org/10.1108/IJIF-04-2019-0066.

The World Bank. 2016. “Malaysia Economic Monitor Leveraging Trade Agreements.” *The World Bank*.

Toda, Hiro Y., and Taku Yamamoto. 1995. “Statistical Inference in Vector Autoregressions with Possibly Integrated Processes.” *Journal of Econometrics* 66 (1–2): 225-250. https://doi.org/10.1016/0304-4076(94)01616-8.

Töngür, Ünal, Kemal Türkcan, and Seda Ekmen-Özçelik. 2020. “Logistics Performance and Export Variety: Evidence from Turkey.” *Central Bank Review* 20 (3): 143-154. https://doi.org/10.1016/j.cbrev.2020.04.002.

Torvik, Ragnar. 2001. “Learning by Doing and the Dutch Disease.” *European Economic Review* 45 (2): 285-306. https://doi.org/10.1016/S0014-2921(99)00071-9.

Trotsenburg, Axel Van. 2013. “The Financial Sector Is Part of Malaysia’s Success.” *The World Bank Organisation*.

Tu, Chengyi, Ying Fan, and Jianing Fan. 2019. “Universal Cointegration and Its Applications.” *IScience* 19. https://doi.org/10.1016/j.isci.2019.08.048.

Turhan, Ibrahim, Erk Hachisananoglu, and Ugur Soytas. 2014. “Oil Prices and Emerging Market Exchange Rates.” *Emerging Markets Finance and Trade* 49 (supp 1): 21–36. https://doi.org/10.2753/REE1540-496X4901S102.

Turhan, M. Ibrahim, Ahmet Sensoy, and Erk Hacihasanoglu. 2014. “A Comparative Analysis of the Dynamic Relationship between Oil Prices and Exchange Rates.” *Journal of International Financial Markets, Institutions and Money* 32 (1): 397-414. https://doi.org/10.1016/j.intfin.2014.07.003.

Tursoy, Turgut, and Faisal Faisal. 2018. “The Impact of Gold and Crude Oil Prices on Stock Market in Turkey: Empirical Evidences from ARDL Bounds Test and Combined Cointegration.” *Resources Policy* 55: 49-54. https://doi.org/10.1016/j.resourpol.2017.10.014.

Tuyon, Jasman, and Zamri Ahmad. 2016. “Behavioural Finance Perspectives on Malaysian Stock Market Efficiency.” *Borsa Istanbul Review* 16 (1): 43-61. https://doi.org/10.1016/j.bir.2016.01.001.

United Nations Conference on Trade and Development. 2020. “UNCTAD STAT.” 2020. https://unctadstat.unctad.org/EN//.

U.S. Department of State. 2018. “2018 Investment Climate Statements: Malaysia.” 2018. https://www.state.gov/reports/2018-investment-climate-statements/malaysia/.

U.S. Energy Information Administration. 2020. “Oil and Petroleum Products Explained Oil Prices and Outlook.” Eia. Gov. 2020. https://www.eia.gov/energyexplained/oil-and-

petroleum-products/prices-and-outlook.php#:~:text=The volatility of oil prices,fixed in the near term.

U.S. Energy Information Administration. 2021. “Country Analysis Executive Summary: Malaysia.” *Independent Statistic & Analysis*.

United Nations Educational Scientific and Cultural, and Organization. 2015. “UNESCO Global Science Report: Towards 2030.” *UNESCO Global Science Report: Towards 2030*.

Ur Rehman, Naqeeb, and Eglantina Hysa. 2021. “The Effect of Financial Development and Remittances on Economic Growth.” *Cogent Economics and Finance* 9 (1): 1-15. https://doi.org/10.1080/23322039.2021.1932060.

Usui, Norio. 1997. “Dutch Disease and Policy Adjustments to the Oil Boom: A Comparative Study of Indonesia and Mexico.” *Resources Policy* 23 (4): 151-162. https://doi.org/10.1016/s0301-4207(97)00023-8.

Wang, Jue. 2018. “Innovation and Government Intervention: A Comparison of Singapore and Hong Kong.” *Research Policy* 47 (2): 399-412. https://doi.org/10.1016/j.respol.2017.12.008.

Wang, Ke Liang, Bin Zhao, Li Li Ding, and Zhuang Miao. 2021. “Government Intervention, Market Development, and Pollution Emission Efficiency: Evidence from China.” *Science of the Total Environment* 757: 1-12. https://doi.org/10.1016/j.scitotenv.2020.143738.

Wang, Keying, Meng Wu, Yongping Sun, Xunpeng Shi, Ao Sun, and Ping Zhang. 2019. “Resource Abundance, Industrial Structure, and Regional Carbon Emissions Efficiency in China.” *Resources Policy* 60: 203-214. https://doi.org/10.1016/j.resourpol.2019.01.001.

Wang, Rong, Junlan Tan, and Shuangliang Yao. 2021. “Are Natural Resources a Blessing or a Curse for Economic Development? The Importance of Energy Innovations.” *Resources Policy* 72: 1-8. https://doi.org/10.1016/j.resourpol.2021.102042.

Wei, Hua, Syed Kumail Abbas Rizvi, Ferhana Ahmad, and Yuchen Zhang. 2020. “Resource Cursed or Resource Blessed? The Role of Investment and Energy Prices in G7 Countries.” *Resources Policy* 67: 1-11. https://doi.org/10.1016/j.resourpol.2020.101663.

Wei, Jiuchang, and Yang Liu. 2015. “Government Support and Firm Innovation Performance: Empirical Analysis of 343 Innovative Enterprises in China.” *Chinese Management Studies* 9 (1): 38-55. https://doi.org/10.1108/CMS-01-2015-0018.

Weinthal, Erika, and Pauline Jones Luong. 2006. “Combating the Resource Curse: An Alternative Solution to Managing Mineral Wealth.” *Perspectives on Politics* 4 (1): 35-53. https://doi.org/10.1017/S1537592706060051.

Wen, Jun, Hamid Mahmood, Samia Khalid, and Muhammad Zakaria. 2021. “The Impact of Financial Development on Economic Indicators: A Dynamic Panel Data Analysis.” *Economic Research-Ekonomska Istrazivanja*: 1-13 . https://doi.org/10.1080/1331677X.2021.1985570.

Whah, Chin Yee, and Ee Shiang Lim. 2018. “Policies and Performance of SMEs in Malaysia.” *Journal of Southeast Asian Economies* 35 (3): 470-487. https://doi.org/10.1355/ae35-3i.

Wiig, Arne, and Ivar Kolstad. 2012. “If Diversification Is Good, Why Don’t Countries Diversify More? The Political Economy of Diversification in Resource-Rich Countries.” *Energy Policy* 40 (1): 196-203. https://doi.org/10.1016/j.enpol.2011.09.041.

Wilson, Sigismond Ayodele. 2013. “Diamond Exploitation in Sierra Leone 1930 to 2010: A Resource Curse?” *GeoJournal* 78 (6): 997-1012. https://doi.org/10.1007/s10708-013-9474-1.

Witnauer, James E., Gonzalo P. Urcelay, and Ralph R. Miller. 2014. “The Error in Total Error Reduction.” *Neurobiology of Learning and Memory* 108: 119-135. https://doi.org/10.1016/j.nlm.2013.07.018.

Wooldridge, Jeffrey M. 2012. *Introductory Econometrics : A Modern Approach / Jeffrey M. Wooldridge. Introductory Econometrics : A Modern Approach*.

World Bank. 2003. *Sustainable Development in a Dynamic World Transforming Institutions, Growth, and Quality of Life. World Development Report 2003*.

World Bank. 2020. “World Development Indicators | Data.” *World Development Indicators*, no. July.

World Bank. 2021. “Malaysia Overview.” https://www.worldbank.org/en/country/malaysia/overview#1.

World Bank Group. 2018. “Malaysia Economic Monitor : The Quest for Productivity Growth.” *World Bank Group*, no. December 2016.

Wu, Sanmang, Li Li, and Shantong Li. 2018. “Natural Resource Abundance, Natural Resource-Oriented Industry Dependence, and Economic Growth: Evidence from the Provincial Level in China.” *Resources, Conservation and Recycling* 139: 169-171. https://doi.org/10.1016/j.resconrec.2018.08.012.

Xie, Jun, and Yifan Zhang. 2020. “Anti-Corruption, Government Intervention, and Corporate Cash Holdings: Evidence from China.” *Economic Systems* 44 (1): 1-23. https://doi.org/10.1016/j.ecosys.2020.100745.

Xu, Li, and Junlan Tan. 2020. “Financial Development, Industrial Structure and Natural Resource Utilization Efficiency in China.” *Resources Policy* 66: 1-10. https://doi.org/10.1016/j.resourpol.2020.101642.

Xue, Yawei, Xuanting Ye, Wei Zhang, Jian Zhang, Yu Liu, Chuanbao Wu, and Qi Li. 2020. “Reverification of the ‘Resource Curse’ Hypothesis Based on Industrial Agglomeration: Evidence from China.” *Journal of Cleaner Production* 275: 1-10. https://doi.org/10.1016/j.jclepro.2020.124075.

Yang, Jinxuan, Syed Kumail Abbas Rizvi, Zhixiong Tan, Muhammad Umar, and Mansoor

Ahmed Koondhar. 2021. “The Competing Role of Natural Gas and Oil as Fossil Fuel and the Non-Linear Dynamics of Resource Curse in Russia.” *Resources Policy* 72: 1-13. https://doi.org/10.1016/j.resourpol.2021.102100.

Yatim, Puan, Mohd Noor Mamat, Suhaiza Hanim Mohamad-Zailani, and Shamshubaridah Ramlee. 2016. “Energy Policy Shifts towards Sustainable Energy Future for Malaysia.” *Clean Technologies and Environmental Policy* 18 (6): 1685-1695. https://doi.org/10.1007/s10098-016-1151-x.

Yilanci, Veli, Murat Aslan, and Onder Ozgur. 2021. “Disaggregated Analysis of the Curse of Natural Resources in Most Natural Resource-Abundant Countries.” *Resources Policy* 71: 1-11. https://doi.org/10.1016/j.resourpol.2021.102017.

Yıldırım, Seda, Ayfer Gedikli, Seyfettin Erdoğan, and Durmuş Çağrı Yıldırım. 2020. “Natural Resources Rents-Financial Development Nexus: Evidence from Sixteen Developing Countries.” *Resources Policy* 68: 1-10. https://doi.org/10.1016/j.resourpol.2020.101705.

Yusof Saari, M., Emmy Farha Alias, and Norlaila Abdullah Chik. 2013. “The Importance of the Agricultural Sector to the Malaysian Economy: Analyses of Inter-Industry Linkages.” *Pertanika Journal of Social Science and Humanities* 21 (September): 173-188. http://psasir.upm.edu.my/id/eprint/30862/1/The%20Importance%20of%20the%20Agricultural%20Sector%20to%20the%20Malaysian.pdf.

Zhan, Zhan, Bushra Naqvi, Syed Kumail Abbas Rizvi, and Xiaotong Cai. 2021. “How Exchange Rate Regimes Are Exacerbating or Mitigating the Resource Curse?” *Resources Policy* 72: 1-7. https://doi.org/10.1016/j.resourpol.2021.102122.

Zhang, Qian, and Roy Brouwer. 2020. “Is China Affected by the Resource Curse? A Critical Review of the Chinese Literature.” *Journal of Policy Modeling* 42 (1): 133-152. https://doi.org/10.1016/j.jpolmod.2019.06.005.

Zhao, Jing, Xiao Chen, and Ying Hao. 2018. “Monetary Policy, Government Control and Capital Investment: Evidence from China.” *China Journal of Accounting Research* 11 (3): 233-254. https://doi.org/10.1016/j.cjar.2018.04.002.

Zhou, Bole, and Shouguo Zhao. 2022. “Industrial Policy and Corporate Investment Efficiency.” *Journal of Asian Economics* 78: 1-16. https://doi.org/10.1016/j.asieco.2021.101406.