Regional Industrial Evolution of Palm Oil Industry in Indonesia & Malaysia

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List of Acronyms

BPS	Badan Pusat Statistik (Statistics Indonesia)
CPO	Crude Palm Oil
CPKO	Crude Palm Kernel Oil
GAPKI	Gabungan Pengusaha Kelapa Sawit Indonesia
IMP	Industrial Masterplan
MPOB	Malaysian Palm Oil Board
PKO	Palm Kernel Oil
PTPN III	PT Perkebunan Nusantara III
SIMP	Salim Ivomas Pratama
SMART	Sinarmas Agro Resources and Technology
USDA	United States Department of Agriculture

Abstract

In recent years, world economy has proven as a powerful means for developing countries to promote economic growth. However, developing countries such as Indonesia and Malaysia to some extent have developed their economy from resources base sector. The goal in this paper therefore, is to highlight how Indonesia and Malaysia can move their position from producers of primary products to become lead countries in processed palm oil industry. In many important aspects, the development of palm oil sector is connected with institutional environment and historical events that is embedded in countries' economic system. For this reason, regions' competitiveness in palm oil industry requires the rebuilding and improvement of obsolete structures and institutions that allows palm oil sector to escape from "lock-in" situation.

Relevance to Development Studies

Globalisation has provided developing countries opportunity to integrate in global economy. This is understood from the presence of inter-firm relation that consists of wide range of activities that is divided between different actors. However, the benefit of globalisation has been questioned since it is believed as the source of disparity in global economy. As globalisation has increased opportunity of developing countries to be integrated in global value chain, yet their activities are limited in lower level of value chain. For this reason, using evolutionary economics approach, this paper provides the analysis how Indonesia and Malaysia, that started their economy from exporters of primary commodities has ended as the main producers of palm oil product. Hence it provides a framework to understand the effect of historical events on the behaviour of agents and institutional development which able to help developing countries to escape from economic "lock-in".

Keywords

Path Dependence, Regional "lock-in", Path Creation, Local Externalities, Increasing Return, upgrading process, palm oil, competitiveness

CHAPTER 1

INTRODUCTION

1.1. Research Problem

The sustainability of industries depends on their location within the value chain (Stearns et al., 1995). Industries in developing countries that are positioned at low level of the chain usually depend on narrow production process, which further create lower value added than industries in the upper chain. Moreover, simple economic activities that occur at the low level of chain possesses a low level of barrier to entry and economic rents which further harm the economic sustainability of countries that depend on this type of industry (Kaplinsky, 2000). As the integration of a country into global value chain is inevitable, the success of national industry will be determined by its position in global network. In this chain, economies become more fragmented and specialised, which means that a country possessing a higher level of competitiveness will enjoy higher value added in its economy.

This condition brings the notion of where an upgrading process is necessary to develop an industry's competitiveness within global value chain. However, achieving a high level of competitiveness is an output of evolutionary process that depends upon "context-specific, locally contingent nature of self-reinforcing economic development" (Martin and Sunley, 2006, pp. 238). Porter (1998) believes that the institutional environment of a particular region will have an influence on competitiveness. Thus, fulfilling these conditions will give local firms the opportunity to perform an upgrading process by increasing efficiency (process upgrading) or increasing unit value (product upgrading) (Humphrey & Schmitz, 2010).

However, in order to achieve further development, a particular industry will be influenced by its regional path dependence, which contains "sets of dynamic process" that create "irreversibility" and "indivisibility" that will drive structural action that adapts to such a condition (Antonelli, 1999). Such dynamic processes that depend on network externalities will also rely upon non-economic factor that influence knowledge creation, learning processes, and economic developments from particular region (Boschma, 2004).

In this sense, most of the analysis in the evolution process in the palm oil sector will use non-economic factors that are embedded in institutional environment and governing process that influence the role of actors within the system. An emphasis on how the institutional environment can influence economic behaviour is crucial since "critical mass" from economic agents is the substantial factor providing network externalities that can help an economy to perform technical advances (Witt, 1999).

1.2. Relevance & Justification

Palm oil is an important sector in both Indonesia and Malaysia. The two countries have been considered as the main producer of plantation crops since colonial times. This means both countries possess highly productive plantations in this market commodities. Moreover, this long historical process has made Indonesia and Malaysia the biggest palm oil producers in the world.

Since globalisation, the global economic system has create specialisation with developing countries as producers of primary product and developed countries are positioned as processing countries. The success of globalisation has being questioned since it has created huge variety in countries' development outcome. In some cases, there is little connection between the spread of economic activities and the distribution of economic benefit (Kaplinsky, 2000) because developing countries that depends on their activities at the lower level of value chain have a lower share in the global economy.

This research is important to analyse the evolution of palm oil sector in Indonesia and Malaysia. Though both countries have had different economic evolution processes, they have ended up as the two biggest palm oil producers in the world. It is interesting since both countries with different economic and political situations can achieve such great results in developing palm oil industry. In this sense, most of this research will assess institutional conditions that occur in their upgrading process and how this situation has affected path creation in the palm oil sector.

1.3. Objective & Research Question

This research will focus its analysis to understand how the institutional settings in Indonesia and Malaysia can have different impacts on evolution processes in the palm oil sector. Moreover, these processes will be viewed in the light of historical events that influence behaviour and strategies that are taken by economic agents in each region. In this sense, path dependence framework will be used to analyse the processes since it can provide a deeper assessment of technological "lock-in", increasing return, and institutional hysteresis approaches.

This objective leads into research question:

To what extent does institutional differentiation that has developed in Indonesia and Malaysia influence the recent conditions and/or evolution processes of the palm oil sector in both countries?

Sub-RQ1: How does each nation's specific circumstances affect Indonesia and Malaysia as the main producer of palm oil in the world? What sources of Regional Path Dependence have appeared?

Sub-RQ2: To what extent did regional "lock-in" become an obstacle to prevent the development of the palm oil sector in Indonesia and Malaysia? What type of "lock-in" occurred in these countries?

Sub-RQ3: How did Indonesia and Malaysia escape from this "lock-in" situation to bring about better industrial change? What are the historical events that influence this escape process?

1.4. Research Methods and Limitation

a. Research Methods

For the methodology of the research, a qualitative approach allows the research to understand the culture and situated aspect of actors' behaviour related with evolution of palm oil sector in Indonesia and Malaysia. The research will use macro-analysis approach with the economic system in Indonesia and

Malaysia along with economic externalities that influence their systems. Since this research uses macro level analysis, it has to cover a wide variety of information that only can be answered by means of qualitative research. For this reason, qualitative method adds a richness and empirical quality to the notion of recent discussion and quality of evolution process in palm oil industry which might be excluded by undertaking solely quantitative research.

This research uses case studies as a research method by conducting interview and observations. The interviews are intended to collect primary data in order to understand the activities within the value chain and upgrading process that is performed by actors. Since this research is developed to compare upgrading processes in Indonesia and Malaysia, it should consist of actors from different countries. Unfortunately, though the researcher succeeded in getting primary data from various actors in Indonesia that represent different roles in value chain, he failed to conduct the same activities in Malaysia although he contacted prospective actors to be interviewed. Instead, the researcher interviewed academic that had conducted research about special economic zones in Malaysia.

In the end, there are seven institutions that could provide primary and secondary data about evolution processes in palm oil value chain. Secondary data related to the economic situation in both regions was important to complete the understanding about the economy in both countries. This data could be obtained from business associations or statistical bureau in both countries. Financial statements from related companies showed the position of particular producers in the value chain and to what extent value added had developed in the company. Which inputted into an analysis of the countries' positions in value chain and opportunities left to upgrade the palm oil sector.

b. Limitation

Researching upgrading processes in the palm oil value chain meant high complexity in collecting data, because palm oil sector owns a wide range of activities from plantation activities, refinery activities, and manufacture activities for end product. The problem is each activity is located in different locations, for example plantation and refinery companies locate their activities near resources location, whereas manufacturing activities are located closer to the market. This situation makes cost limitations become the biggest obstacle to collecting data and conducting interviews.

The recent condition of palm oil itself, namely pressure related to environmental sustainability, has created reluctance from palm oil companies to share information with the public. In public opinion, palm oil is viewed as the main source of land clearing and biodiversity extinction. This meant the researcher had to give intense follow-up to each company before they gave the desired information.

Because the changing in scope of research, not all the primary data that are used in this research. Initially, primary data are collected through interview and finding government policies. Though, the data that are relevant are put in appendices part.

CHAPTER 2

CONCEPTUAL FRAMEWORK

The notion of economic development is commonly interconnected with the idea of technology transformation in process of production (Bardhan and Urdy, 1999). However, developing countries have found it hard to follow the industrialisation process that was performed by developed countries. Thus, the technology transfer and adopting process performed by these countries have showed very diverse results. This situation shows that "tacitness" and "circumstantial sensitivity" are required to build such development (Evenson and Westphal, 1995). In this sense, the process of transformation technology also requires non-tradable input that is space and time-specific.

The transformation process of developing countries is inevitable since the notion of development is very closely related to Rostow idea that a movement to higher level of productivity requires the initiation of a modern sector that includes industry and modern sciences. The stand point that industrialisation is the only way to achieve better prosperity in developing countries has spread extensively since President Truman in his inauguration speech said that:

> "[W]e must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas…Greater production is the key to prosperity and peace. And the key to greater production is a wider and more vigorous application of modern scientific and technical knowledge" (Truman Library, 2015)

Therefore structural transformation has also happened in the palm oil sector, through which Indonesia and Malaysia try to generate higher value added in palm oil production (GAPKI 2014; Teoh, 2002). In fact, these two countries have moved from being exporters of crude palm oil (CPO) in the 1960s to becoming the exporters of processed palm oil products (Malaysia Palm Oil Statistic and Statistik Kelapa Sawit Indonesia). However, since the process and final outcome are different in both countries, this research will use a path dependence framework to assess historical events that were situated beyond the achievement of the palm oil industries in these countries.

2.1. Approaching Path Dependence

The notion of path dependence has been developed to overcome the deficiency of neoclassical concepts in answering microanalysis problems in economic growth. This concept of evolution economics leads us to understand the role of market environments that might be endogenous for the selection behaviour as a response to firms changing market conditions (Nelson and Winter, 1982). Many scholars have built their analysis related with the notion of path dependence including: Antonelli (1997, pp. 643) who developed path dependence from an industrial organisation point of view as "the sets of dynamic processes where small events have long-lasting consequences that economic action at each moment can modify yet only to a limited extent"; Boschma (2004, pp. 1008) who argue that regional development is path dependence because "a region moves along a specific development trajectory that affects the kind of competences that are most developed and reproduced" which later influence institutional set-up and production processes; and Martin and Sunley (2006, pp. 399) who bring this concept into regional economic evolution and

believe that path dependence is "one whose outcome evolves as a consequences of the process's or system's own history".

To address the themes of path dependence, it is first necessary to understand that economic development should be acknowledged as an evolutionary process (Lall, 2000). An evolutionary process cannot be understand only by using neoclassical theory where technical advance becomes the main indication of economic growth, because in reality firms and industries face different experiences and market environments. These differences in market condition has to be considered as the process of change in which actors "have the capability to do something new, to innovate, if they think they see an opportunity, or when what they have been doing becomes clearly inadequate in a changed context" (Nelson, 2008, pp. 10). In this sense, the notion of path dependence consists of historical events in particular geographical locations. This is used later in this paper to analyse how the role of place and space determine the evolution process in the palm oil sector.

The path dependence model is expected to give a better understanding about the sources of improvement in the palm oil sector, because as Antonelli (1997) stated, the process of change is generated by "the interaction of a plurality and variety of agents" in a particular region at a specific time. This idea shows that economic evolution consists of a wide range of major events that help development processes happen. Moreover, Martin and Sunley (2006) believe that major events play an important role in regional set up that determine various sources of regional path dependence. However, as the economy is considered as a dynamic process, economic activity gives infinite possibility of events that will elicit a different response among economic actors, dependent on the location of these actors and their circumstances. Therefore, the notion of path dependence helps this research to construct an analytical framework that shows the significance of difference evolutionary paths for a region's economic performance.

Also, it is important to bear in mind that historical events have to be treated as a stochastic process where random accumulation occurs (Witt, 1997). This process can generates market instability, as Arthur (1989) stated, as "multiple equilibria" in which different events along the evolution process create different final outcomes. In this sense, during the process to achieve equilibrium, Witt (1997) explained that each collective decision that is taken by economic agents drives the economy to move into pareto-inferior or pareto-superior circumstances. This condition shows that evolution does not always bring economy into better positions. A less efficient production process might be created despite a better alternative existing in the market.

2.1.1. Technological "Lock-In"

Path dependence can be acknowledged from its different characteristics. First, this paper tries to explain path dependence as a technological "lock-in", as Paul David stated. In his message about QWERTY typing style, he argues that the conversion away from QWERTY constitutes a higher opportunity cost and that there is a quasi-irreversible investment in order to improve the type system (David, 1985). As a consequence, the presence of technical advance within an economic system is interdependent with other factors com-

plementary to a firm's physical capital (Todaro, 2000). These associated factors in technical advance have shown the importance of externalities which consist of the role of economic agents, and the wider cultural and institutional factors that surrounding and supporting these agents as the factors behind the immediate sources of growth (Nelson, 1997).

Back to the QWERTY case, a firm's long-term growth will depend on the future path of average capital accumulation by all firms in the economy. Using this understanding, the presence of an imperfect future economy can drive industry onto the wrong path. Moreover, the escape path from this situation is only possible with the incidence of "strong technical interrelatedness, economies of scale, and irreversibility" along the learning process (David, 1985). Unfortunately, the process to find the new equilibrium point can be hampered by the presence of "coordination failure" within an economic system. Low equilibrium that prevailing in an economy may be embedded in the historical experience that means complementary action is absent during the evolution process. In this sense, collective action onto a positive path is important so an economy can achieve economies of scale and later increase market opportunities for new products, so an industrialisation strategy becomes more feasible (Murphy et. al., 1988).

The notion of technological "lock-in" is important to assess since the two countries in this research have achieved different results from their efforts to change their economic structure from exporters of primary commodities to exporters of processed palm oil products. Understanding the notion of technological "lock-in" condition in both countries can help to determine the source of inflexibility in the palm oil sector which later can undermine the value added in this sector (Rasiah, 2003).

2.1.2. Increasing Return

The second theme in path dependence is the notion of "increasing returns". Increasing returns refers to a condition where economic environment provides positive feedback that allows new products to increase the market share (Arthur, 1994), which later will improve the competitiveness of these products in the market. However, Arthur (1996) argued that the notion of diminishing return is more common in agribusiness sector, where an increase of production is followed by the expansion of production to the less fruitful land and causes plantation companies to face higher costs of production and lower profits. He also found that as the sector grows, the market is shared by a large number of plantations that later will drive the market price to be established at a perfect competition price. This means that in this type of commodity market, no actors can corner the market (Arthur, 1989).

Moreover, increasing returns are commonly associated with knowledge based industries because such industries have distinctive characteristics that help this behaviour to occur (Arthur, 1989). The first characteristic is the presence of "up-front cost". Knowledge-based industries are characterised by the presence of higher R&D costs than unit production cost. The second characteristic is the notion of "network effect" that is embedded in high-tech industries. In this network, the more one product gains recognition, the more likely it will be standardized in society. Thirdly, the availability of "customer groove-

in" is important in knowledge-based industries since the application of this product requires familiarity with users. For example, in the case of the QWERTY typing system, a user has already invested their time to learn typing skills, so once the QWERTY market is seized, it will become easier for this system to lead into future market. Additionally, Arthur (1989) explained that historical events become important because market development in a condition of increasing return is influenced by random insignificant circumstances.

However, in some conditions, technical advance is not the only factor that can create increasing returns. To some extent, increasing returns will happen to firms that enjoy a decentralised market (Romer, 1989). The presence of globalisation has brought positive externalities for local firms by increasing market opportunities in different locations. Nowadays, market and production activities have moved to less developeds region and lead to external increasing returns to be occurred even without the support of knowledge-based industries (ebit, 1989). Therefore, higher aggregate demand will reinforce position of firms because it give positive feedback for the choice that is more promising but inferior in the long run (Arthur, 1989).

2.1.3. Institutional Hysteresis

This version of a path dependence approach is popularised by Douglas North and Mark Setterfield. North has positioned institutions as the carriers of history that evolve slowly depending on the historical constraint that occur in market (Martin and Sunley, 2006). In this sense, the historical experience that is embedded within the economic system creates the ideal circumstances to bring organized collective action due to the presence of socially established convention (David, 1994). Convention is very important since it bring a way to direct individual expectations into mutually possible solutions. Thereby, the presence of an institutional framework within an economic system will ease coordination between actors. These are explained by Witt (1997) as "positive network externalities" that emphasize the role of agents in reducing adoption costs and increase correlation between individual decisions.

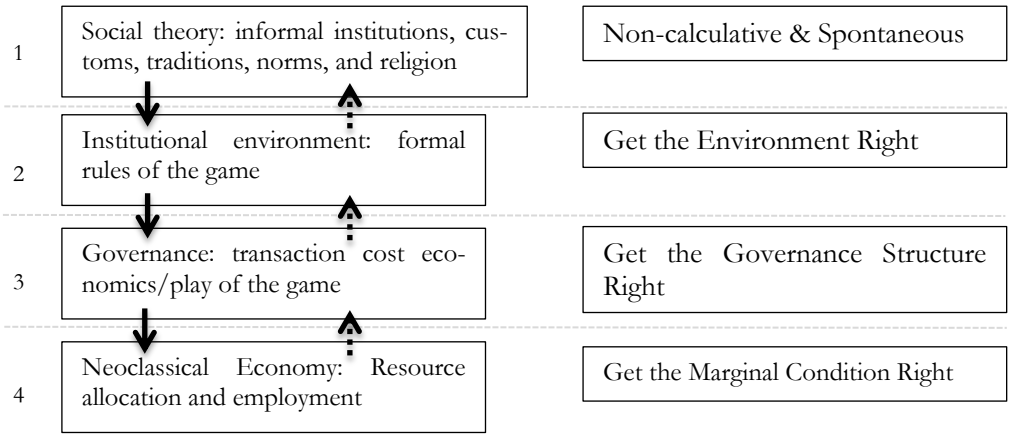
Historical experience also indicates that institution is sustained and reinforced by experience, and frequent and repeated interaction of its agents which makes this system transferable over time but not over space (Boschma, 2004). However, as an institution environment is created from its past legacies such as customs, traditions, and moral codes, its structure be might hard to replace. Furthermore, institutional change as stated by David (1994) is less plastic than technological change, because institutions are built from incorporated previous elements that were established during the evolution process. Influenced by preceding value, progressive change can be difficult due to the presence of political hazard from particular actors who manipulate political system for their own benefit (Henisz, 2000).

The process of the past can influence institutional structures can be shown using Williamson's "four level of social analysis" (Williamson, 2000, pp. 597). In his framework, Williamson emphasizes an evolutionary sequence where institutions at the beginning are formed as mechanisms of the mind take shape and is ended by the application of neoclassical economy and its production function approach. Moreover, this framework shows that a lower level of eco-

nomic institution influences the higher level of institution; for instance, custom, traditions, norms, and religion will influence the shape of institutional environments which consists of bureaucratic functions of government and legal systems within economic systems. Furthermore, institutional environments will influence governance processes since transaction costs rise due to the emerging role of various actors within economic systems. Finally, a governance framework will influence the next level whereas all institutional influence is employed and translated into production function at the firm level.

Figure 1.

Economics of Institutions



Source: Williamson (2000, pp. 597)

The New Institutional Economics will not operate at the first and fourth levels where informal institutional and neoclassical economy occurs. At the first level, informal institutions are considered as a given variable by new institutional economics (Williamson, 2000), since such institutions change very slowly and the change are considered to happen spontaneously rather than by purposeful calculation. At the fourth level, neoclassical economy that occurs in a firm's production function is less important to analyse the evolution process. This is caused by the nature of neoclassical provision, which emphasizes ex-ante incentives that change on continuous basis (ebit, 2000), so organisational development at the firm's level is merely influenced by the presence of future benefit.

In this sense, institutional analysis in the palm oil industry relies on the two remaining institutional views: institutional environment and governance. Institutional environment is important since it creates formal rules of the game for the system, thus giving the requirement state for further development in economic activity (Williamson, 2000). The presence of a legal framework is significant to create formal rules within an economic system. Formal rules give economic actors assurance that every economic action will be protected by legal basis in the country. Although these rules are hard to set up, once they are in place, significant windows of opportunity will appear (ebit, 2000). This is shown in palm oil industry where regulation change is very significant to change the collective action of actors in the industry in Indonesia (GAPKI, 2014) and Malaysia (Rasiah, 1999).

Finally, it is important to analyse governance framework since a legal framework is not enough to eliminate the transaction cost (Williamson, 2000).

In this sense, governance occurs as the effort of different economic actors to achieve better integration in the economic system and further allow them to achieve mutual benefit. Thus, this framework can be used to answer how different types of governance frameworks create different economic performances in the palm oil sector. Moreover, the role of governance and external factors is assessed more in this analysis since Boschma (2004) has said that different level of competitiveness in different economies will be influenced by both intra-organizational elements and extra-organizational properties. Finally, understanding governance frameworks at different point of time helps this research to understand Witt's (1997) point of view of how the "critical mass" that is formed by economics agents can affect economic outcomes in the palm oil sector.

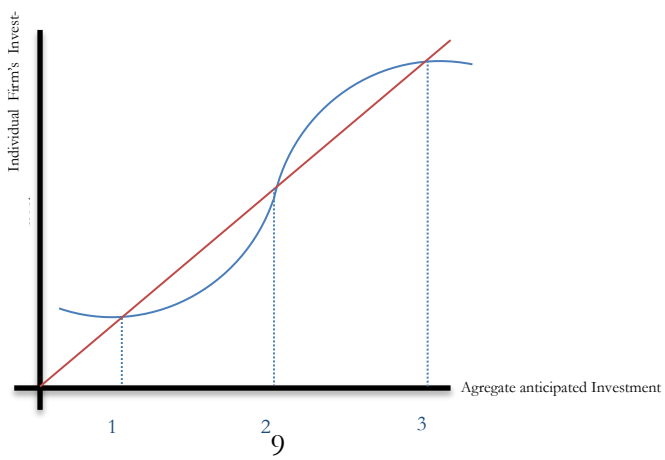
2.2. Path Dependence (not) as regional "lock-in"

It is important to distinguish between path dependence and regional "lock-in" even though they always come inseparable. Regional "lock-in" according to Martin and Sunley (2006) can be considered as a tendency for particular location "to exhibit historical quasi-fixity"; whereas David (2001) uses this term to describe the process of a system "into a trapping region – the basin of attraction that surrounds a locally (or globally) stable equilibrium". From technology development point of view, Arthur (1989) explains "lock-in" as the condition where inflexibility occurs, and where economic outcome is driven into a more dominant technology option.

It is clear that there is no eternal rigidness in economic structures. Path dependence consists of some equilibria that happen due to the never-ending process of decision making as a result of a coordination of economic agents (Antonelli, 1997). Even the constant use of QWERTY typing system is followed by the development of the typewriter computer (Kiser, 1996). This condition shows that path dependence constitutes an endogenous process of change where the "lock-in" situation can be considered as conditional equilibrium (Martin and Sunley, 2006). This notion of "lock-in" is supported by Arthur (1994) where he described it as the condition towards "fixity" or "rigidification". However, it is important to understand that the meaning of "fixity" or "rigidification" is far from a negative term. It is merely to describe the condition where path dependence reaches its stable condition.

Graph 1.

Multiple Equilibria



The notion of "multiple equilibriums" that is presented by Martin and Sunley can be described by the graph above. The stable condition that occurs in "s1", "s2", and "s3" may be dependent on the historical events during the evolution process. These sets of equilibrium happen because of the presence of "critical mass" that is developed through the influence of average accumulation of all actors in the economy (Witt, 1997). From all those equilibria, "s1" and s3 are considered as stable because, companies will adjust their expectation to these points. The "S-shaped line" shows the condition of "critical mass effect" where at beginning only some companies take action. Then, as more companies follow the same path, it has a "snow-ball effect" whereby all firms start to move in the same direction. However, increasing return will be followed by decreasing return in the end. After most of the potential companies are affected and most of economic benefit is achieved, the rate of growth decreases.

So, let's say that if initial condition is equilibrium in s2, the choice between two moving paths s1 as "pareto-inferior" or s3 as "pareto-superior" will be influenced by the action of all actors based on their historical experience. However, it is also important to understand how each actor reacts with each circumstance. According to Arthur (1989), a "different condition will drive economy circumstances to [a] different outcome". Therefore, this situation is analysed in this research where the development of the palm oil sector is situated as an evolutionary process.

Understanding the notion of "multiple equilibria" will help this research to show that path dependence is a never-ending process. There are always changes in market condition that affect the "behaviour of agents at any point of time" (Antonelli, 1997). Path dependence can be understood as "periodic" or "episodic" processes (Martin and Sunley 2006). It is implied that economic development can be divided into different periods where sequence between these changes are demonstrated by the presence of relatively stability or slow change. Later in their writing, Martin and Sunley emphasize the role of external influence in radical change into this stable condition. In short, path dependence can be considered as on-going process in which "conditional equilibrium" or "lock-in" is the part of evolution process into the present condition. This notion is supported by Garud and Karnoe (2001), who consider the presence of continuously interplay between "path dependence, path creation, and path destruction".

2.3. Sources of Regional Path Dependence

From the nature of path dependence, we have learnt that an evolution process is dependent on historical events in a particular region. In other words, evolution processes are place specific. The connection that emerges in this situation can happen because of the present condition of "economic landscape" which plays one of two roles – as an outcome of path dependence or a major determinant of that path (Martin and Sunley, 2006). In this sense, it is more useful if from now we treat region as a flexible element. This is because regions are understood to carry their past so bringing difference to the level of that region's competitiveness (Boschma, 2004).

Hence, during its evolution process there are many components that influence the degree of path dependence. In the previous section we saw that the

presence of path dependence can be assessed using notions of technological "lock-in", increasing return, and institutional hysteresis. In this sense, evolution is influenced by economic and also non-economic factors that can change over time (Boschma, 2004). Therefore, the structural dynamic of a particular region is important to address since regional path dependence will be affected by the "structure of the interaction" with other integral entities (Martin and Sunley, 2006). Thus, this research will use local external economies of industrial specialisation, regional technological "lock in", economies of agglomeration, and region-specific institutions (ebit, 2006) as the main properties of regional path dependence in the palm oil sector.

2.4 Conceptual Framework

Path dependence should be considered as the cause and consequence evolutionary process (Martin and Sunley, 2006). This paper will try to assess the presence of path dependence in the palm oil industry in Indonesia and Malaysia by looking at their economic evolution using technological "lock-in", increasing return, and institutional hysteresis approaches. These approaches are used to analyse how different locations can perform different path dependence conditions. From the initial finding there are differences in the performance of industries in different regions. In addition, this evolutionary economic geography approach is used to understand the action from economic actors in the palm oil industry and the evolution processes that are bounded in a context of time and space.

As the notion of regional "lock-in" is inseparable from path dependence creation, this concept is brought into the next analytical process. Regional "lock-in" is assessed by looking at the gradual process of "fixity" or "rigidification" in technological development of the palm oil industry in Indonesia and Malaysia. Using this focus, this research explains to what extent the success of the palm oil industry depends on region-specific intangible assets that are embodied in a nation's economic structure. Also, it will show how regions offer opportunities and have constraints that direct not only the upgrading process of local firms, but also the development of the palm oil industry in each country.

For the last step, this paper will use the sources of regional competitiveness from Boschma (2004). These sources are suitable here since Boschma tries to emphasize the ability of a region to generate new paths. This condition bring forward the concept that competitiveness of a region depends not only on economic factors but also the presence of intangible and non-tradable aspects based on competence that are embedded in particular institutional settings.

Table 1.

Sources of Region Competitiveness

Sources of new path	Characteristics
Competitiveness of Firms:	
Market competitiveness	Market competitiveness enables more efficient firms with "fitter" routines to expand their production capacity at the expense of less efficient firms with "unfit" routines
Competitiveness of Region:	
Knowledge creation	Organizations search for new knowledge in close proximity to their existing knowledge base, which provides opportunities but also sets constraint for further improvement. This implies that change is often cumulative and localized: innovations are often incremental, piecemeal improvements
Intra-organisation resources (institutional complementary)	The competitiveness of firms depends both on intra-organizational resources (embodied in routines and competences) and extra-organizational assets (such as complementary knowledge sources and relational capital).
Effective policy making	Path dependence and lock-in situations are reflected in region-specific assets that provide opportunities but also set constraints for effective policy-making. The potential impact might be more policy objectives being embedded in the surrounding environment.

Source: Boschma (2004)

Market competitiveness is analysed since the palm oil sector in different locations constitute a different level of competitiveness because of the presence of varying strategies from two countries. The difference in market situation for these countries has to be assessed to understand how market externalities can affect economic evolution in the palm oil sector (Romer, 1989; Witt, 1997; Nelson, 1997; and Martin and Sunley 2006).

A knowledge-based economy is subject to increasing returns (Arthur, 1996). Thus, as Arthur (1994) explained, increasing return help new products to have an expanded market share. Then it is important to analyse whether the development of the palm oil sector is influenced by the presence of high-technology activities that require higher levels of knowledge capacity to allow greater technology investment (R&D) (Romer, 1989), learning processes (Antonelli, 1997), and social networks (Boschma, 2004).

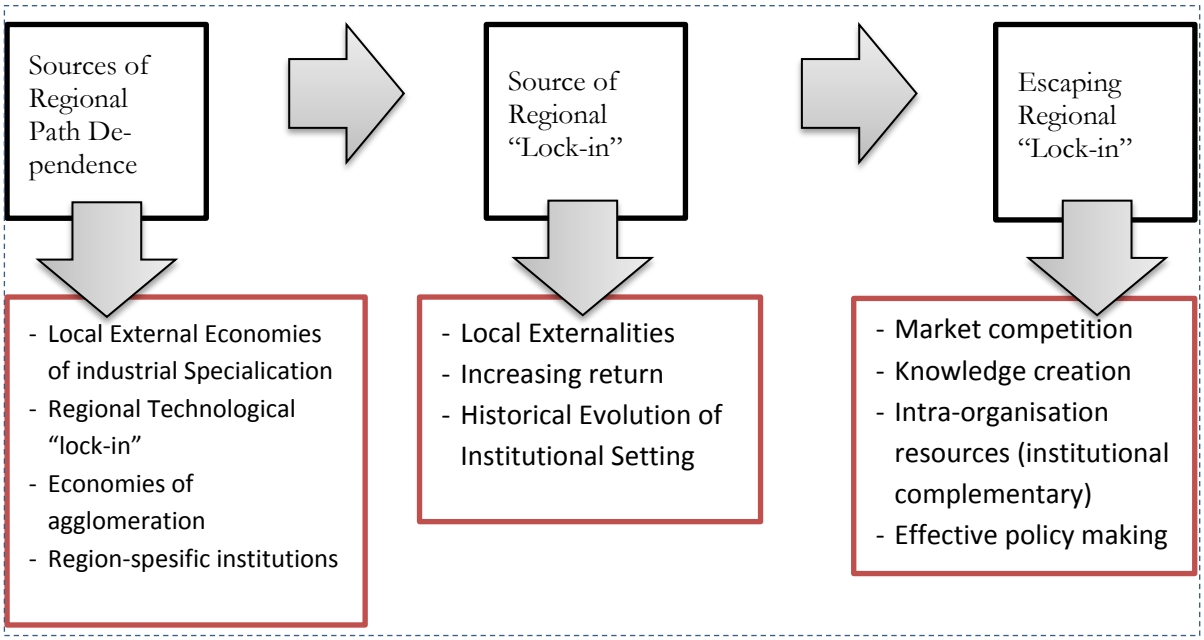
Moreover, intra-organisational resources are important since historical experience of economic agents are embedded in a country's specific institutions (Martin and Sunley, 2006). Based on this reason, further analysis about interaction between palm oil actors is done to understand the complementariness or interrelatedness between agents. This process is important since the palm oil

sector consists of a large number of companies within its value chain whose activities are supported by actors from outside the chain.

Finally, effective policy-making as a part of institutional analysis is important since a government's role is vital to provide public goods (Witt, 1997) to ensure that economic agents in the palm oil sector can overcome their limitations by escaping from the "lock-in" circumstances. Also, Witt argues that the presence of these public goods can allow economic agents to create organized collective action, which further drives economy to a new equilibrium.

Figure 2.

Conceptual Framework



Source: Author

CHAPTER 3

PATH DEPENDENCE IN PALM OIL SECTOR

The role of agent's behaviour and its surrounding environment provide specific circumstance for a path dependence in the palm oil sector. It is important to analyse the role of economic agents since their behaviour will affect decision processes in path creation (Arthur, 1989). The palm oil sector has private-sector agents who play a big role bringing industrialisation to the sector (Gopal, 1999 and GAPKI, 2014)[1]. Also, the role of the government as the provider of public goods is crucial (Witt, 1997) since government role as decision-maker can provide regulations and incentives that support collective action from economic agents.

Table 2.

Average Growth in Palm Oil Plantations

	Indonesia		Malaysia	
	Smallholder	Private	Smallholder	Private
1980-1997	46.85%	19.79%	2.07%	11.27%
1998-2007	8.9%	12.9%	6.8%	3.5%
2008-2014	7.5%	7.0%	5.8%	2.5%

Source: Statistik Kelapa Sawit Indonesia & Badan Pusat Statistik (BPS) and Malaysian Palm Oil Statistics & Malaysian Palm Oil Board

The table shows that private plantations have been important actors in the palm oil sector over the last decades. Nowadays, the private estates possess more than 50% of plantations in Indonesia (BPS, 2013)[2] and 76% in Malaysia (MPOB, 2014)[3]. The private sector is the main actor since upgrading processes are driven by efforts from palm oil companies to upgrade their activities from plantation to refinery and manufacturing (SIMP 2015, personal interview).[4] Thus, this chapter is developed to explore sources of path dependent that allows this situation to occur: why private sector is encouraged to take a lead? What are historical events that stimulate this outcome?

[1] GAPKI or Indonesian Palm Oil Association is a non-profit organisation that brings together palm oil companies in Indonesia.

[2] BPS or Statistics Indonesia is a government institution that is responsible for collecting and processing data in order to publish statistics for public use.

[3] MPOB is the premier government agency in Malaysia entrusted to serve the country's oil palm industry. Its main role is to promote and develop national objectives, policies and priorities for the wellbeing of the industry

[4] SIMP is Indonesian companies that is worked in palm oil refinery sector as a part of Indofood Groups.

3.1. Palm Oil Sector in Indonesia

3.1.1. Local External Economies of industrial Specialisation

The development of palm oil sector is supported by the presence of agriculture value in the economic system[5]. This shows the condition where historical experience enables economic actors to select one possible outcome (David, 1994). Therefore even tough development can be achieved in various ways, agricultural value has created institutional complementariness that reinforces this value to be embedded in Indonesia's economic system.

Local actors that builds this value are important actors, which means that the development of national economy has to be integrated with local objectives. For this reason, in its development policies, the government tries to integrate the financial power of big estates combined with large resources from smallholders. This specific environment, which shows that Indonesia possesses "local coordination effect" and "dedicated suppliers and intermediaries", has created untraded interdependencies as the source of path dependence (Martin and Sunley, 2006).

Palm oil sector has developed 'business practice convention' that increase local 'economy interrelatedness', which according to David (1989) as the function to create consistency and compatibility between complex elements of human organizations. This makes palm oil supply chain integrates different actors in local economy. In fact, palm oil estates depend on its local network to obtain supplies for their processing facilities[6]. For this reason, Indonesia's palm oil sector has created local external economies that creates mutual benefit for actors within the palm oil supply chain. Therefore, in order to maintain its benefits, palm oil companies provide small farmers with technology transfer and capital support so improve sustainability of the chain (SMART and SIMP 2015, personal interview).

3.1.2. Regional Technological "lock-in"

The cooking oil industry has provided the majority of output in the palm oil processing industries (Table 3.). However, in the palm oil sector, higher profit will be provided by refinery activities, which need a higher technology complexity (GAPKI 2015, personal interview). Government believes that strong intervention in the cooking oil industry will help palm oil sector to develop downstream activities. According to Witt (1997), such intervention can create positive network externalities that generate increasing returns in the cooking oil. For this reason, this industry is highly protected since the 1960s because of the nature of its product that is considered as staple food in Indonesia (GAPKI, 2014)[7].

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[5] In the 1960s, 80% of population still live in rural area. In which 50% from total population work as farmer.

[6] Palm oil companies depend on supply from plasma farmers in order to achieve economies of scale for its processing facilities. For instance 22% of total processed palm oil in SMART is provided by third parties (SMART 2015, personal interview).

[7] Government established various regulation such as: 1) maximum price regulation of CPO for cooking oil industry that was stated in joint regulation of Ministry of Agricul-

Though the oleochemical industry gave the highest amount of profit, it was only the 4th largest output in palm oil industry. To some extent, industry performs internal barrier to change because "it is not interest of any of the relevant actors to change it" (Kiser, 1996). In palm oil, though it has the capability to perform higher value activities, the national industry still possess limited capacity in oleochemicals. It is because such activity provides smaller margin than lower level activities such as plantation (GAPKI 2015, personal interview). The same argument comes from the producers who explain that profit from oleochemical activity is hardly compensated by the higher risk it encompasses (SMART 2015, personal interview).

Other products such as soap/detergent and shortening have developed later because of the huge demands for these products. However, the high value activities for these product still dominates by MNCs that own the brand, which means that national industries still perform in low-technology activities. This shows that in evolution processes some aspects become less path-dependent (Kiser, 1996), despite Indonesia develops its palm oil industry in low-value activities.[8]

Table 3.

Indonesian Palm Oil Industry Capacity

	Cooking Oil	Shortening	Oleochemical	Soap/ Detergent	Biodiesel
Production Capacity	15,259,884	871,502	1,617,700	3,622,394	3,069,440
Number of Companies	-	46	9	44	20

Source: Indonesian Palm Oil Association (GAPKI)

3.1.3. Economies of agglomeration

The opportunity to producing processed palm oil product is supported by the presence of large demand not only domestically but also in the global market. According to Witt (1997) economies of scale provides economic surplus that can compensate "substantial additional cost" that is needed in order to undertake technical improvements. For this reason, Indonesia's palm oil export is dominated by processed product which constitute 62% of total volume.

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ture, Ministry of Industry, Ministry of Trade; 2) industrial regulation to oblige producers to supply their CPO for cooking oil industry

[8] The Indonesian palm oil sector is highly dependent on buyer condition. So the increasing production of this commodity is affected by an increase of the population's purchasing power. Moreover, soap and detergent are also considered as important products since Indonesia has high levels of humidity that lead to higher consumption of soap and detergent (GAPKI, 2014).

Table 4.

Palm oil Export Destination of Indonesia

Tonnes	CPO	Other Palm Oil	CPKO	Other Palm Kernel Oil
Asia	3,929,335	9,016,378	295,342	675,201
Europe	2,455,270	1,948,341	146,750	256,010
America	0	724,886	0	222,523
Africa	198,849	2,290,651	8,462	39,042
Oceania	1,278	12,988	1,200	2

Source: Statistik Kelapa Sawit Indonesia & BPS 2013

The presence of new market in developing countries has an external benefit since it provides new markets for processed palm oil product. Indonesia exports palm oil products to various countries despite its export destinations are focused at Asian market. This result is influenced by the presence of India and China as biggest importer of CPO and CPKO. Unlike other developing countries, they possess relatively advanced refinery facilities, because industry in these countries are supported by the presence of relatively big population (GAPKI, 2014).

Table 5.

Export Major Destination of Indonesia

CPO		Other Palm Oil		CPKO		Other Palm Kernel Oil	
India	3.099.284	China	2.304.271	India	179 349	China	280 280
Netherlands	1.094.673	India	2.534.843	Netherlands	116 831	India	118 226
Italy	683.552	Pakistan	1.028.847	China	58 504	Netherlands	185 434
China	544.925	Malaysia	332.144	Malaysia	35 338	Brazil	149 660
Spain	421.572	Bangladesh	649.944	Italy	13 918	Malaysia	89 681
Germany	227.740	Egypt	732.541	Spain	13 701	U.S.A.	67 011
Malaysia	182.198	U.S.A.	395.941	Syria	12 000	Turkey	40 155
Tanzania	75.699	Ukraine	578.950	Singapore	8 354	South Africa	25 843
Sudan	67.249	Russia	393.718	Germany	2 000	Sri Lanka	25 299
India	51.490	Italy	339.222	Egypt	2 000	Ukraine	20 184

Source: Statistik Kelapa Sawit Indonesia & BPS 2013

The window of opportunity to increase the value added in palm oil product has come since most developed countries have outsourced refinery activity from their countries. (GAPKI, 2014). Refinery activities which produce oleochemical products are considered as inefficient since the profitability of this activity has decreased significantly (ebit, 2014). Also, as palm oil is considered as market driven (SMART 2015, personal interview),[9] the development of the palm oil market in Asian countries has develop Indonesia to expand its market coverage.

3.1.4. Region-specific institutions

Since path dependence is locally endogenised, local institutions in one region can shape the evolution process (Martin and Sunley, 2006). In Indonesia, the institutional environment has influenced the palm oil supply chain, as the government has developed an economic framework by integrating plasma plantation with palm oil estates in order to strengthen the capacity of palm oil supply chain (GAPKI, 2014)[10]. This regulation has developed a vertically integrated value chain in which palm oil companies and smallholders receive mutual benefit from their supply chain framework (SIMP 2015, personal interview). With this strong cooperation between actors, the Indonesian palm oil sector is more integrated and flexible than its counterparts in Malaysia (Ming and Chandramohan, 2002).

In general, the Indonesian government has positioned itself as a regulator of the national industry. The coordination happens in planning process where the Indonesian Palm Oil Association (GAPKI) is working together with the government to discuss the main issues related to the palm oil sector (GAPKI 2015, personal interview). This shows that, during the policy-making process, there is intense coordination between the private sector and government. This is illustrated by the example of the development of palm oil based Special Economic Zone in Indonesia beings mainly supported by private sector (PTPN III, 2015)[11]. During the implementation, government support for this industry remained low except for the development of biodiesel – a product absorbed by the government (GAPKI, 2014).

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[9] Interview with Head of Logistic Division of Sinarmas Agro Resources and Technology (SMART) Tbk. This is one of Indonesian's leading companies in producing palm oil-based product.

[10] The government established the Perkebunan Inti Rakyat (PIR) or Nucleus estate and smallholders regulation in order to strengthen cooperation between big palm oil estates and smallholders. This scheme was established in order to increase the capacity of palm oil estates to support the development of smallholder plantations and increase the productivity of these smallholders.

[11] PTPN III is a state owned plantation companies that is considered as one of biggest palm oil producer in Indonesia.

3.2. Palm Oil Sector in Malaysia

3.2.1. Local External Economies of Industrial Specialisation

In general, the share of the primary sector in Malaysia has decreased since the 1970s (Rasiah, 2003). It means that Malaysian economic structure is dominated by the manufacture sector, which provides higher value added for the national economy. Moreover, it gives direction for Malaysian path dependence since knowledge in a particular region influences competitiveness level (Boschma, 2004). A high knowledge base in Malaysia provides a national industry with relatively high quality human resources (Wahyuni, 2013). However, in spite of having superior labour skills to other developing countries, its quality still not enough to develop a knowledge-based economy (Rasiah, 2003).

Since better knowledge resources create higher productivity (Boschma, 2004), the palm oil sector has today developed a wide variety of products. Though food consumption is still served palm oil's biggest market, the development of export-oriented industry increases diversification of palm oil use in the national industry such as pharmaceutical, biomass, polyurethane (plastic materials), and bio diesel (Ming and Chandramohan, 2002).

3.2.2. Regional Technological "lock-in"

Malaysia's palm oil industry developed earlier than many of its competitors from developing countries (Gopal, 1999). With this advance development, Malaysia possesses the largest refinery capacity in the world, producing 34.21%[12] of the world's total fatty acid and 25%[13] of the world's total fatty alcohol (GAPKI, 2014). However, refinery activities which have developed since the 1970s are considered as mature industry, which produces on its technology frontier (Rasiah, 2003).

Table 6.

Malaysian Palm Oil Industry Capacity

	Crude Palm Stearin	Crude Palm Olein	RBD Palm Oil	RBD Palm Olein	RBD Palm Stearin	Palm Fatty Acid Dist.
2013	86,733	274,469	14,817,770	10,577,107	2,830,126	734,269
2014	102,600	386,454	14,197,155	9,930,323	2,721,517	669,619

Source: Malaysian Palm Oil Statistics & Malaysian Palm Oil Board 2014

Path dependence in the Malaysian palm oil industry has happened since its institutional environment provide it with a "self-reinforcing mechanism that maintain[s] path dependence" (Kiser, 1996). Performing as the market leader in

[12] Malaysia is the biggest producer of fatty acid with 1.9 million tonnes (34.21%) which followed by China with 1.8 million tonnes (32.11%) and Indonesia with 300,000 tonnes (5.26%) (GAPKI, 2014).

[13] China is the biggest producer of fatty alcohol with 30% market shares, followed by Malaysia with 25% market share, and India with 18% market shares (GAPKI, 2014).

for decades, Malaysian palm oil industries enjoyed increasing returns in this period. This is because, increasing returns reinforce a leading position (Arthur, 1996), and Malaysia found itself in this position from 1970s. Moreover, this situation has brought palm oil industry to perform path dependence as the exporter of processed palm oil products, though later as mature industry, its role to the economy becomes stagnant (Ming and Chandramohan, 2002).

3.2.3. Economies of agglomeration

Malaysia is the second-biggest producer of palm oil in the world[14]. This situation happened because the palm oil industry has competed in the international market since the 1970s (Gopal, 1999). Dealing with the risk of this market, the government allocated its export surplus to improve infrastructure and economic institution to maintain competitiveness (Rasiah, 2003; Wahyuni, 2012). This was followed by building knowledge institutions in order to generate downstream activities (Rasiah, 2003). The result of this strategy is shown by the high level of diversification in Malaysian export.

Table 7.

Palm Oil Production and Export of Malaysia

Million	Production		Export						
Tonnes	CPO	CPKO	CPO	Processed CPO	Palm Oil	CPKO	Processed PKO	Palm Kernel Oil	Palm Kernel Cake
2007	15.823	4.096	1.935	11.810	13.746	185	874	1.060	2.093
2008	17.734	4.577	2.336	13.075	15.412	148	898	1.047	2.261
2009	17.564	4.500	2.537	13.343	15.880	184	933	1.117	2.381
2010	16.993	4.292	2.739	13.924	16.664	180	982	1.163	2.443
2011	18.991	4.706	3.477	14.515	17.993	205	970	1.176	2.227
2012	18.785	4.705	4.642	12.933	17.575	220	864	1.084	2.473
2013	19.216	4.859	3.985	14.160	18.146	245	925	1.170	2.668
2014	19.667	4.888	4.700	12.605	17.306	328	788	1.116	2.574

Source: Malaysian Palm Oil Statistics & Malaysian Palm Oil Board 2013

The table shows that Malaysia has a significant export value from processed palm oil products, constituting more than 80% of its palm oil export (compared to Indonesia which has less than 70% processed palm oil exports). Furthermore, it is seen that the Malaysian palm oil exports consist of divergent commodities, which means that industrial activities are quite developed in this country. One thing that is interesting is the fact that volumes of processed palm oil products exceed the production of palm oil production itself. It means

[14] Malaysia was the biggest palm oil producers in the world for decades until surpassed by Indonesia in 2006 (USDA, 2015).

that the expansion of export-based industries also increases Malaysia's import dependence (Rasiah, 2003).

The development of the palm oil industry was highly influenced by the changing market conditions (Gopal, 1999). Originally, Malaysia exported their palm oil its CPO form to European countries, which were the traditional trading partner since colonial times. However, since the market for palm oil products have moved into developing countries in Asia, it increases opportunity to export processed palm oil product into these countries. As the processed palm oil shipment are less acceptable due to the quality degradation during logistic processes, the presence of this market give opportunity to develop a processed palm oil industry in Asia (Gopal, 1999).

Table 8.

Palm Oil Export Destination of Malaysia

Million Tonnes	Palm Oil	Palm Kernel Oil	Palm Kernel Cake	Oleochemical	Biodiesel	Finished Product
Asia	11,708,947	554,655	313,703	1,441,014	141,532	212,767
Europe	2,725,011	246,595	837,565	641,537	141,532	36,196
America	102,608	262,166	18,889	355,953	-	20,603
Africa	2,398,277	84,889	241	149,194	-	63,596
Oceania	124,132	12,317	806,086	25,842	334	22,599

Source: Malaysian Palm Oil Statistics & Malaysian Palm Oil Board 2013

The table above shows that Malaysia has a major market in Asia, which is the emerging market for palm oil products. However, it does not mean that market in developed countries has decreased. Despite the market growth in developed countries is relatively stagnant it still constitutes as important trading partners for Malaysia, because Malaysia's export value into European countries still exceed the export value of Indonesia to those countries.

Looking at the following table, it can be seen that the Malaysian palm oil market is dominated by a significant number of developed countries. This signifies that palm oil products from Malaysia can accommodate the high standard of production required by developed countries. Producing to higher standards needs high technology advancement because this developed countries at least requires producers to fulfil RSPO standard for all palm oil product that is imported to developed countries (RSPO, 2015).

Table 9.

Major Export Destination from Malaysia

Palm Oil		Palm Kernel Oil		Oleo-chemical		Finished Product	
China P.R	3,699,638	China P.R.	271,139	E.U.	625,914	China P.R.	24569
E.U	2,336,759	U.S.A.	218,116	China P.R.	407,152	Iraq	24067
India	2,325,386	E.U.	207,526	U.S.A.	264,753	E.U.	20848
Pakistan	1,435,217	Japan	78,792	Japan	209,709	Australia	17075
U.S.A.	1,026,989	India	51,372	India	145,200	Pakistan	16789
Iran	635,258	Egypt	46,960	South Kore	102,024	Singapore	16363
Japan	501,452	Brazil	29,808	Singapore	92,529	Algeria	14843
Vietnam	499,918	Ukraine	26,372	Taiwan	67,568	Saudi Arabia	14567
Singapore	492,138	Sri Lanka	22,241	Philippines	66,499	Iran	12299
Benin	473,145	South Africa	18,940	U.A.E.	64,761	Syria	11851

Source: Malaysian Palm Oil Statistics & Malaysian Palm Oil Board 2013

3.2.4. Region-specific institutions

The role of the government is very important during the development of the palm oil industry in Malaysia. First, the government has strong influence in creating an institutional framework through the establishment of the Malaysian Industrial Development Authority (MIDA) (Rasiah, 2003). In education, government has issued several strategies in order to raise supply of skilled workers especially engineering using the integration of university, training facilities, and private sectors (ebit, 2003).

Second, in promoting national products, the government also makes extra effort to increase the export value of its product. Local companies have special support from the government, which allows them to obtain various tenders and contracts abroad (Alavi, 1999). This condition has been shown by the presence of counter-trade agreement between countries; for example providing palm oil in order to get technology from other countries (Ming and Chandramohan, 2002). It has also created the Malaysian Palm Oil Promotion Council (MPOPC) to support promotional campaigns for world-wide consumer (Gopal, 1999).

Third, the government has an important role to establish intra-industry integration by developing Industrial Master Plan (IMP) (Rasiah, 2003). The first IMP was developed to support sector based policy where the second IMP was developed to support cluster-based development. This supporting policy was established to increase production network, which is reflected in the success of the national industry to perform diversification in export-oriented industries (Rasiah, 2003). It is shown by the effort from palm oil sector to create mechanisation and new product development in order to sustain its competitiveness in the global market (Chandramohan, 2002).

3.3. Conclusion

In order to understand the source of path dependence, it is important in this research to start with analysis related with wider local context in both regions. Because, evolutionary process depends on non-economic factor that influences by the action of economic action in a particular region (Boschma, 2004). However, to understand actors' behaviour it is important to look into historical experiences which accumulated into different institutional environments by different regions.

The increasing in global palm oil demand is the main factor that create path dependence in Indonesia and Malaysia palm oil sector. It gives positive externalities since it give chance for national industry to perform increasing returns. Increasing returns first happened because the presence of decentralized markets (Arthur, 1989) that is occurred in developing countries. Also, as the two biggest producers in palm oil, both can perform economies of scale, which according to Witt (1997) allows the national economy to provide enough benefit to compensate additional costs of adopting new technology.

However, path dependence my affect economy to face "inflexibility" and "rigidification". This situation is happened in palm oil sector, where local external economies, regional technological "lock-in", and specific institution become the main sources why Indonesia and Malaysia specialise in the palm oil sector. For Indonesia, local capability in national economy and regional technological "lock-in" become main cause to direct palm oil industry into low-technology activities.

Conversely, Malaysia's palm oil sector that located in manufacture-based economy is provided by a high knowledge base. This situation has led Malaysia's palm oil industry to develop refinery activities faster, which gives higher value added for national economy. However, performing as market leader for decades has brought palm oil industry in Malaysia to become stagnant. Because, R&D activities are not enough to create upgrading process, when at the same time palm oil industry has entered its maturity phase.

CHAPTER 4

SOURCES OF REGIONAL "LOCK-IN" IN THE PALM OIL SECTOR

Regional "lock-in" is should not understood as a negative condition, even though at the some point industries always run into limitation because the increasing of costs or decreasing in profits (Arthur, 1996). For this reason, the source of the regional "lock-in" is important to analyse since "rigidification" and "inflexibility" create negative externalities and hamper innovation (Martin and Sunley, 2006). Therefore, this chapter is built to understand the presence of regional "lock-in" that is influenced by historical events. These events is the reason why the economy may lock itself into an outcome that is inferior in the long run (Arthur, 1989).

4.1. Local Externalities

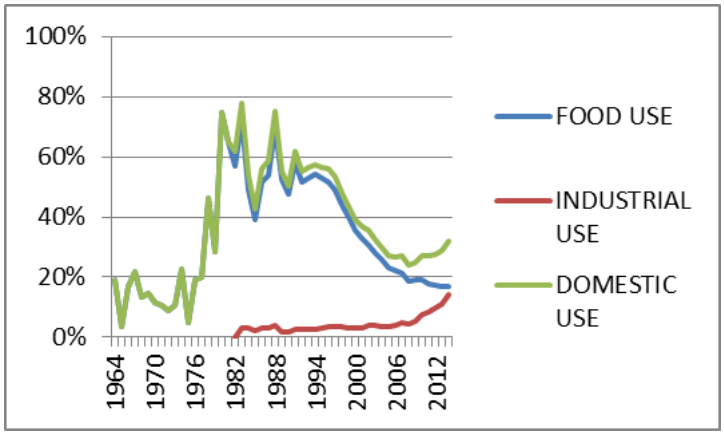
Externalities are important to bring technological "lock-in". Based on Romer (1989), Witt (1997), Nelson (1997), and Martin and Sunley (2006), they can randomly affect evolution processes. Externalities have crucial importance in analysis because they can affect competitiveness spread within a particular place (Boschma, 2004). However, externalities only become significant when its effects become endogenous during the learning process. It means that any change is followed by the learning process of agents, which can create new production functions and utility functions dependents on the market conditions where these agents are located (Anotelli, 1999).

4.1.1. Indonesian Local Externalities

Looking at the existing condition, palm oil companies have managed to develop downstream activities. The graph below shows that the share of CPO that is used for industrial use has increased for the last three decades. However, market conditions in the last four decades have performed dynamic changes; at the beginning the palm oil industry was more likely to serve as an import substitution commodity, but later it became an export-oriented product. Thus from this evolutionary process, it is important to see how the changing market condition has created a "lock-in" situation in Indonesia's palm oil industry.

Graph 2.

Indonesian Palm Oil Consumption (1970-2015)

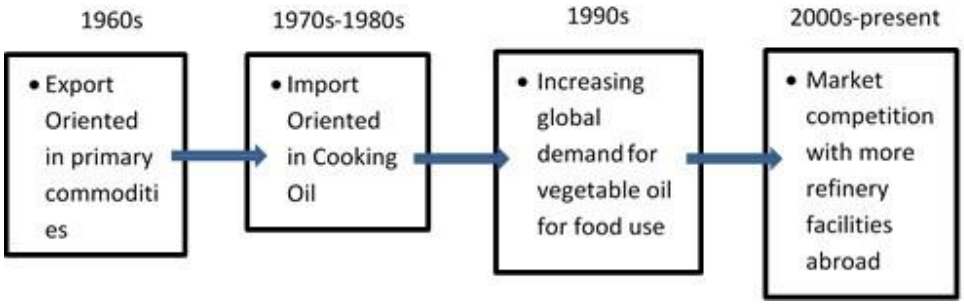


Source: Analysis from United States Department of Agriculture 2015

World demand for palm oil has increased for several decades, which has helped palm oil industry to grow. However, market forces are not the only factor that influences the palm oil market. Different economic policies in different periods have caused palm oil actors to react differently. In order to understand the historical events behind market changes, we can divide the economic evolution process into four periods, in which each period represents a specific event that influences economic path. From this evolution process, it is important to see how the changing market conditions have influenced the collective learning and integration in local institutions

Figure 3.

Market Development in Indonesian Palm Oil



Source: Author

In the 1960s, palm oil is was not considered as a main commodity in the agribusiness sector. When the government provided a financial incentive for plantation companies in 1969, it was not addressed specifically for the palm oil sector (GAPKI, 2014). This is because palm oil had no significant demand in world market at that time (Oil World, 2013). Moreover, the limitation in palm oil demand also happened in the domestic market. National industries still did not use palm oil as their production input due to other readily available oil such as coconut oil (GAPKI, 2014). With the limitation of national demand, 80% of total production was exported as raw material (USDA, 2015).

From the 1970s, domestic demand for palm oil started to flourish. The crisis faced by the cooking oil industry in 1973 due to the scarcity of coconut oil forced the government to take quick action. In order to stabilise cooking oil prices in domestic market, the government established a maximum price for CPO (GAPKI, 2014). However, much CPO was still exported along with the increasing of palm oil production (USDA, 2015). Only after the government required palm oil companies to supply to cooking oil industry in 1978 did the market for palm oil become domestic-oriented (ebit, 2014).

However, establishing a maximum price decreased the economic profit for plantation products. Still, this step was not significant to stabilise market prices for cooking oil products. The price of cooking oil was still higher than the same product if it has been imported. In the end this policy failed to benefit the industry because: 1) the presence of disparity between CPO in domestic price and border price increased propensity to export; and 2) the development of the cooking oil industry had to be compensated by the loss of benefit for palm oil producers and cooking oil consumers (GAPKI, 2014).

The market was getting better in the period of the 1990s when the world economy had a significant increase in demand for palm oil (Oil World, 2013). With the increasing world population, palm oil became an important commodity used for food production, biofuel production, and chemical production. However, since national policy did not support industrialisation, the increasing of palm oil export was dominated by unprocessed products which give lower value added for the economy. This is shown by the tax policy established in 1994 where export tax for processed palm oil was increased in order to provide domestic consumers with an adequate number of palm oil product (GAPKI, 2014). Unprocessed palm oil products later dominates exports, accounting 60% of total exports (USDA, 2015).

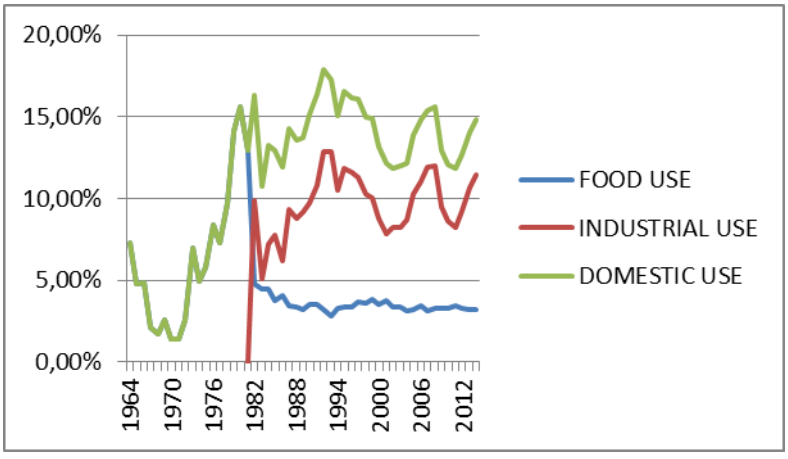
In the 2000s, palm oil production from Indonesia has overtook that of Malaysia thanks to new markets, especially developing countries (BPS, 2013). This situation has created economies of scale that helped create new technology substitutes (Witt, 1997). It helped the capacity of processing industry to increase, which was followed by an increase in value added of export activity (GAPKI, 2014). However, in this period, Indonesia had to compete with other developing countries that has no palm oil resources such as China and India which have overtaken Indonesia in processing capacity (Brunskill, 2011).

4.1.2. Malaysian Local Externalities

Malaysia's market share as an exporter of palm oil has decreased in the last decade. However, the table below shows that Malaysia has a constant trend in market condition in which most of the CPO product is exported. It also shows that industry in Malaysia absorbs palm oil supply by constituting 70% of total domestic consumption. However, no matter how high the portion of industrial use, it constitutes less than 15% of total palm oil production. Thus, this graph shows the market in Malaysia is too small for industry to expand even further.

Graph 3.

Malaysian Palm Oil Consumption (1970-2015)

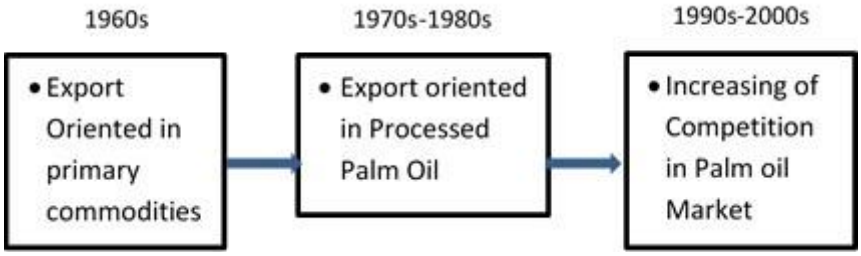


Source: Analysis from United States Department of Agriculture 2015

To understand the historical events behind these numbers, we can, like with Indonesia, divide the economic evolution process into periods, in which each period represent a specific events that influence economic path.

Figure 4.

Market Development in Malaysian Palm Oil



Source: Author

In the early development of the palm oil sector, Malaysia had a market inherited from colonial times (Gopal, 1999)[15]. At that time, most palm oil plantations were foreign-owned companies with refinery facilities in their home countries. Therefore, demand was dominated from developed countries. These companies had no interest to move their processing facilities into Malaysia since processed palm oil would decrease in quality over the long transportation distances (ebit, 1999).

In the 1970s-1980s, foreign companies became the main actor in Malaysian industrialisation (Rasiah, 2003)[16]. Moreover, because of the importance of foreign-owned companies, government pursued a laissez-faire approach to industrialisation (ebit, 2003). In general, started from this period, economic structure in Malaysia has supported only one path, which has led the palm oil sector to become an export-oriented industry.

Future development in the palm oil sector is inevitable since it is considered by the government as part of the agricultural diversification program (Teoh, 2002). This program has been supported by the establishment of a tax exemption for processed palm oil products while less-processed palm oil has been given a higher tax (Ming and Chandramohan, 2002).

After tax exemption was implemented, the major export destination shifted from developed countries to developing countries. However, penetrating into new markets does not mean that Malaysia has lost its traditional market in developed countries. In this sense, the Malaysian palm oil market has developed into two different streams. CPO is mainly exported into European countries, and processed palm oil is mainly exported into developing countries

[15] Palm oil was first brought to Malaysia from Africa in 1870 by the British which is considered as the beginning of palm oil expansion in Malaysia. 1917 saw the first commercial palm oil planting at Selangor (Teoh, 2002).

[16] Sime Darby, Guthrie, and Harrison & Crossfield are the main palm oil companies owned by European companies that dominate Malaysian palm oil sector. Only since the 1980s with the presence of nationalisation, has the palm oil sector no longer been dominate by foreign companies (Teoh, 2002).

(MPOB, 2014). Unfortunately, this market expansion has not created significant technical change for the palm oil industry since Malaysia cannot export higher value product in developed countries and developing countries cannot adapt to highly standardized product (Rasiah, 2003).

Since the 1990s, the market for processed palm oil has been penetrated by new producers from developing countries. This has happened since they can perform industrial activities with lower costs than in Malaysia (Rasiah, 2003). Also, the presence of large markets in some countries allows those countries to develop refinery activities. In this sense, the market for processed palm oil is now contested between Indonesia, Malaysia, China, and India, with Malaysia having the lowest rate of growth in processing capacity (Brunskill 2015).

Nevertheless, the palm oil industry is considered as a mature industry (Ming and Chandramohan, 2002), and the significance of this activity in national economy is quite large. This is shown by the domination of palm oil plantations, which constitutes 77% of the total agriculture area (Sime Darbi, 2014). Having a large amount of palm oil production while at the same time facing limited markets for processed palm oil has driven the palm oil industry into stagnation. Recently, the national industry has only been able to absorb 14% of total CPO production which means the remaining 86% is exported (USDA, 2015).

4.2. Increasing Returns

Increasing returns can have different effects in the evolution process. Martin and Sunley (2006) believed that increasing returns can involve transitioning positive "lock-in" or negative "lock-in" into industrial dynamism. Furthermore, Martin and Sunley (2006) argued that in both condition, increasing return creates "rigidity" or "inflexibility". However, increasing returns are identical to instability conditions within economic structure. It gives advantage for a particular product to go on to "lock-in" into the market (Arthur, 1996). Consequently, increasing returns do not always happen in the palm oil industry. This is shown by the period when stability occurs and the market has already matured, and there is no company to benefit over its competitors.

4.2.1. Increasing Returns in the Indonesian Palm Oil Sector

Using the concepts explained earlier, the palm oil industry first enjoyed increasing return affected by a positive "lock-in" and followed by a negative "lock-in". A positive "lock-in" occurred when the palm oil sector benefited from the surplus of developing cooking oil industry in the beginning of its evolution process. As market was protected, it created inflexibility of path development. Thus, palm oil exhibited what Arthur (1989) termed as "the adoption process [in] developing a technology that has inferior long run potential". Cooking oil is considered as inferior in the long run because it is seen as low-technology industry (OECD, 2011) that provides low value added for an economy.

Palm oil industry in Indonesia has performed increasing returns not because the presence of knowledge-based activities (Arthur, 1996), but because of decentralized markets (Romer, 1989). This is occurred since government provisions has allowed palm oil companies to develop market domination. The

condition of increasing return still happened recently since the refinery activities are still considered as sunrise industry (GAPKI, 2014).

Moreover, the effort of the Indonesian government to develop cooking oil markets gave the transformation signal for palm oil companies to move onto one development path. This "lock-in" situation clearly portrayed the situation where "future adopter will stick to a variant that has won out in the competitive diffusion" (Witt, 1997). This is shown by the unbalanced number of industrial component, as the number of cooking oil companies is very high compared with other activities such as shortening, oleochemicals, soap/detergent, and biodiesel (GAPKI, 2014).

As the economy will receive more value added from the palm oil industry if it develops refinery activities such as oleochemical products, the development of cooking oil industry is not enough in the long run. This shows that increasing returns makes markets become "lock-in" to inferior choice (Arthur, 1989). It is the result of historical events and government action that undermined the palm oil capacity to perform upgrading process.

4.2.2. Increasing Return in Malaysian Palm Oil Sector

Increasing returns in the Malaysian palm oil industry happened from the period 1970s to the 1990s when the palm oil sector benefited from the presence of technology expansion in refinery activities. This was supported by the presence of developing countries as a new market opportunity. With this situation, it is clear that Malaysian palm oil sector has performed increasing return because of the presence of knowledge-based (Arthur, 1996) and decentralized markets (Romer, 1989).

In this period, refinery activities were considered as advance activities since previously only developed countries could perform such activities (Gopal, 1999). Also, market decentralisation was shown by the shifting of palm oil export from Europe to Asian countries. However, Malaysia has too heavily focused its activity on manufacturing, and has made limited effort to R&D activities. This demonstrates how increasing returns create inflexibility within the economic choice (Arthur, 1989). Also, as technology become easier to adopt, it creates a lower barrier to entry, allowing other countries to catch up (Kaplinsky, 2000).

However, after the 1990s the Malaysian palm oil industry has faced competition from lower-cost countries like China and Indonesia (Rasiah, 2003). Moreover, as more competitors have entered the industry, refinery industry now approximately constitute perfect competition, which means that any product can substitute one another (Arthur, 1996). So, no producer can determine price and demand. For instance where the increasing of Malaysian export to India in 2014 was followed by the decreasing of export of Indonesia to India (MPOB, 2014).

4.3. Historical Evolution of Institutional Settings

4.3.1. Interrelatedness and Embeddedness

Interrelatedness is an important element creating "lock-in" in the palm oil industry. It is considered as the "interconnection amongst the components of

its production processes" (Martin and Sunley 2006), which means that the nature of economic structure in both Indonesia and Malaysia that is inherited from the past will determine the evolution process in palm oil sector. Moreover, this notion of a "lock-in" can be moved into negative path creation when necessary structural change is inhibited by the presence of negative feedback from general expectation among economic agents (Setterfield, 2001).

This feedback that occurs among economic agents is created because of the presence of embeddedness. Embeddedness can bring negative externalities because of the existence of initial institutional environment that prevent changes from happening (Williamson, 2000). Different social and economic conditions have Indonesia and Malaysia to adapt with different institutional settings for their economic development. Based on this idea, the institutional environment that is embedded within the national economy will be difficult to change unless a window of opportunity emerges to break down the traditional structure.

4.3.2. Institutional Setting in Indonesian Palm Oil Sector

Indonesia's economic structure is highly influenced by the agriculture system that is embedded in its social-economic structure. This condition means that agriculture becomes one of the most important means for job creation and local economy since from national statistics it has until recently constituted a high portion of total employment (40% of total national employment) (BPS, 2015). This has led the government to rely on the agribusiness sector as a means of development in rural areas.

So, the government has used the agriculture sector to create local development since it is provided a better approach to alleviate poverty of people in rural areas, who constitute approximately 50% of the total Indonesian population (GAPKI, 2014). Self-assured about this long-term task, the government has supported 7 big palm oil companies to become the core engine for palm oil sector development. Because, these companies have provided smallholders plantation with supply chains to help them to become integrated into the broader market.

However, receiving benefit from low-value added activities creates interrelatedness that brings a negative "lock-in". This is because the presence of a protected economic system creates firms, knowledge, networks, labour skill, and institutional forms that are specialised in low-level industrial activities. This occurs since national economy had faced little of market competition. Which according to Boschma (2004), competition must exists to increase the efficiency of companies and create innovative behaviour. Also, according to Boschma, this competitiveness depends on extra-organisational assets that can develop better knowledge resources. This condition seems absent in the palm oil industry since there is no policy related to the development of specific institutional environments to encourage innovation or higher productivity.

Unfortunately, government protection in the cooking oil industry has not changed into a more effective policy to support technical change[17]. In order to create national competitiveness, the government should not set a policy that creates local "top sector" (Brakman & Marrewijk, 2013). Instead, it should create policy instruments that enhance a region's competitiveness such as "improving land-use planning, urban transport, and provision of local public goods" (Duranton, 2011). In all respect, the inability of the government to deliver a more effective policy shows how a previous source of economic advantage has now become the source of weakness (Martin and Sunley, 2006.). Thus, this creates what Marin and Sunley describe as negative "lock-in" because of the presence of "the weakness of strong ties" in the palm oil sector.

4.3.3. Institutional Setting in Malaysian Palm Oil Sector

In order to increase effectiveness of technology adoption in manufacture activity, the government tried to attract FDI into national economy (Rasiah, 2003). It is shown by the condition where Malaysia's government used a laissez-faire approach in developing its economy. Included in this strategies are providing adequate human resources for manufacture activity, infrastructure that support export oriented activity, and investment incentive for MNCs (Wahyuni, 2013).

This strategy effectively supported the palm oil sector from early 1970s to the mid-1990s (Gopal, 1999). After this period, market competition became tense because of the presence of industries with lower cost advantage (Rasiah, 2003). This is because the palm oil industry in Malaysia had already suffered from lower margin condition due to its highest cost of production (Gopal, 1999)[18]. Moreover, since Malaysian economic depends on FDI, moving into a higher function within a value chain is blocked because the "authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain" lie with lead firms (Gereffi, 1994). Thus, moving into a higher level of activity seems difficult since the Malaysian economy is dominated by a low level of manufacturing activities (Rasiah, 2003). This condition occurs since Malaysian industrialisation process is mainly influenced by FDI (ebit, 2003).

4.4. Conclusion

The locational choice of the palm oil sector is little influenced by rational choice, because firms rarely possess perfect market information (Boscma and Lambooy, 1999). Palm oil companies are located in random locations. Where

[17] Though the cooking oil market only constitute 4% of total national consumption, government intervention in cooking oil industry is continued until recently. Following this obstacle, export tax that was established in the period 1990s gives higher tax for export of processed products than in unprocessed product (GAPKI, 2014).

[18] Malaysia has faced a relatively small margin because the price of palm oil in the domestic market is high due to the higher capacity of its processing industry compared to the supply of CPO (Gopal, 1999). This condition is worsened by the fact that labour costs in Malaysia are relatively high, which has forced palm oil companies to find labour from neighbouring countries (Ming and Chandramohan, 2002).

higher efficiency companies were developed in export oriented industry in Malaysia and local economies of scale were developed in import oriented industry in Indonesia. This situation shows that path dependence in different countries are linked with the regional issues. In fact, since path dependence is locally contingent and locally emergent, it is "place dependent" (Martin and Sunley, 2006).

In this sense, negative "lock-in" in the palm oil sector is first affected by the presence of *local externalities* that emphasise the role of historical accidents or random events. In Indonesia, the historical path that was taken as import oriented industry has slowed down industrial upgrading processes. In other words, it has obstructed technical advances in the palm oil industry. In contrast, Malaysia with its export-oriented industry has developed a laissez-faire approach because foreign-owned companies dominate economic activity in this region. Being dependent on FDI has limited Malaysia to perform industrial upgrading since MNCs only carry out technological transfer on low value-added activities (Rasiah, 2003). Therefore, from this experience, we can agree with Boschma and Lambooy (1999) that "industrial legacy" from the past has weakened the ability of Indonesia and Malaysia to adjust onto new technological paths.

Also, increasing returns in the palm oil sector happened either because "political decisions" or "early developer benefits" (Arthur, 1989) gave sufficient conditions for multiple outcomes to occur. In Indonesia, political decision that supported the development of the cooking oil industry increased the protection of the palm oil sector which allowed some companies to perform increasing return. In this sense, palm oil exhibits what Arthur (1989) said as "the adoption process into developing a technology that has inferior long run potential", because the economy developed the cooking oil industry which constitutes a lower level of technological complexity. In contrast, Malaysia developed its refinery activity earlier and so enjoyed increasing return due to early market penetration. However, the presence of increasing returns created inflexibility in the Malaysian palm oil industry, which is considered as a mature industry. Therefore, as increasing return is not generated from knowledge-based activity, the expansion of the same industries in other countries has seriously undermined the value added in Malaysia's palm oil (Rasiah, 2003)

Finally, institutional setting is addressed in the palm oil sector since interrelatedness and embeddedness are important element in technological "lock-in" (Martin and Sunley 2006). Institutions as the carrier of histories have performed differently in different regions. In Indonesia, the agriculture sector is an important means to enhance the local economy. Therefore, the palm oil sector has been used in poverty alleviation strategies in rural areas (GAPKI, 2014). Moreover, the presence of market protection in the cooking oil industry stems from the same concept, where the government wants to provide its people with a staple food that can be obtained at an affordable price. On the other hand, Malaysia has developed an industrial structure that supports export-oriented activities. This has led Malaysia to adopt a laissez-faire policy that later created a higher dependency on FDI (Rasiah, 2003). This condition meant the Malaysian economy suffered from technological "lock-in" since its technical advance were dependent on technological transfer from MNCs.

CHAPTER 5

REGIONAL PATH CREATION IN PALM OIL SECTOR

Changes in local and international economy have gradually shifted regional competitiveness in both countries. Competitiveness in the palm oil sector is stimulated by localised capabilities to deal with market condition where demand in palm oil has increased significantly. Demand conditions that functioned as a qualitative factor can secure long-term competitiveness when not hindered by internal barriers to change (Maskel and Malmberg, 1999). In this sense, a region's endowment factor that arises through its institutional setting becomes a decisive component in the creation of competitive advantage for the palm oil sector in both countries.

5.1. Indonesian Path Creation

5.1.1. Competitiveness of Firms

Market competition in Indonesia is less intense than in Malaysia due to the presence of protective action from the government (GAPKI, 2014). This, protection makes the palm oil industry become less efficient (Gopal, 1999). Luckily, Indonesia possesses large population, which makes it is in 15th in terms of global market competitiveness (World Economic Forum, 2014). It creates enough positive network externalities to allow the national economy to achieve economies of scale, which is where according to Witt (1997), economic activities provide enough benefit to compensate additional costs of adopting new technology.

In this state, competitiveness can influence a firm's capacity to adapt to changing circumstances. However, Indonesian palm oil industry developed a relatively high-technology industry only in the 1990s while Malaysia developed it in the 1970s (Gopal, 1999). Therefore, Indonesia is considered as a new player in refinery industry (GAPKI, 2014). The emergence of industrialisation in this period was supported by macroeconomic conditions that helped the industry to develop. This is because, the growth rate is considered as sum of performance for all firms within economic system (Boschma, 2004).

We can see from the table below that Indonesia performs well in its economy, as shown by the high level of growth. Since 2000, Indonesia has had an average growth of 5.37% per year which it makes it one of the fastest-growing countries. The growth of palm oil export is higher, with an average growth of 25%. This is looked more remarkable given the growth of oleochemical production, which constitutes a higher level of growth than other competitors in the refinery sector (Brunskill, 2015)[19]. With an outstanding condition in its environment, the palm oil sector is benefited by network economies that provide positive network externalities to perform industrial change (Witt, 1997).

[19] In last 5 years, Indonesian fatty acid production has grown 400% whereas fatty alcohol has grown 290%. This rate of growth has surpassed Malaysia with 110% growth in fatty acid and 125% growth in fatty alcohol, and China with 120% rate of growth in fatty acid and 236% rate of growth in fatty alcohol (Brunskill, 2015).

Table 10.

Indonesian Rate of Growth 2001-2014

Year	Economic Growth	Palm Oil Export Growth
2001	3.64	-0.59%
2002	4.50	93.58%
2003	4.78	17.31%
2004	5.03	40.22%
2005	5.69	9.14%
2006	5.50	28.26%
2007	6.35	63.32%
2008	6.01	57.28%
2009	4.63	-16.23%
2010	6.22	29.91%
2011	6.17	28.16%
2012	6.03	1.98%
2013	5.58	-10.02%
2014	5.02	10.27%
Average	5.37	25.18%

Source: BPS and World Bank, 2015

With the presence of a large market, palm oil companies in Indonesia have enjoyed increasing returns. Increasing returns are important for a market to drive new path creation (Arthur, 1996). The role of increasing returns can be seen by the fact that palm oil industry has developed higher processing activities despite the absence of market competition. In other words, the condition of increasing returns, which can help a technology to be absorbed into market (Arthur, 1989), have been present in the palm oil sector.

Increasing returns can only happen inside palm oil companies through technological improvement. In Indonesia however, increasing returns happened thanks to external increasing returns which developed because of the presence of higher profit from market (Romer, 1989). This means that profit is high enough to compensate the initial fixed cost from adoption of new technology (ebit, 1989). In other words, this sector is in situation where technical change is influenced by "economies of growth in firms" that according to Antonelli (1999) can help new technologies to be endogenized.

5.1.2. Competitiveness of Region

The institutional environment provides the palm oil sector with a window of opportunity for successful policy making. We know that evolution in the palm oil sector is influenced by the presence of related policy regimes in the past. Such policies will succeed if they are supported by historical events that

accumulate in the region (Boschma, 2004). Unfortunately, Indonesia's palm oil sector is not well supported by an adequate knowledge base. Share of R&D expenditure at only 0.08% of GDP is far below other developing countries such as Malaysia (1.6%), China (2%), and India (0.8%) (World Bank, 2015).

Furthermore, the mechanism of coordination in knowledge creation is considered inadequate in Indonesia since palm oil organisation has a role only as a coordinator between the palm oil business and government (GAPKI 2015, personal interview). In contrast, knowledge creation has occurred within the palm oil supply chain which is developed by lead firms. Performing in vertically integrated supply chains, knowledge transfer happens between lead firms and smallholder plantations. This knowledge transfer happen by lead firms conducting training and technology transfer from lead firms to smallholder plantations to increase productivity and quality of palm oil output (SIMP 2015, personal interview). For this reason, research activities are limited as they are usually embedded as a division of palm oil companies.

In this sense, a dense social network is achieved within palm oil supply chain because of vertical integration between lead firms and palm oil companies in the same chain (SIMP 2015, personal interview). This condition is supported by the presence of clustered activities developed by the lead firms, evidenced by the propensity for lead firms to build refinery activities in strategic locations (SMART and SIMP 2015, personal interview). With the presence of clusters, knowledge bases become complementary, so avoiding the problem of "lock-in" (Boschma, 2004). Furthermore, industrial clusters can provide palm oil companies with economies of scale due to closer access to input resources and prospective markets (SMART 2015, personal interview).

Despite having limitations in size, the palm oil supply chain in Indonesia has created high endogenous capability and low dependence on external knowledge. Indonesia's institutional set up is also effective to create interregional integration because palm oil refinery activity is affiliated with suppliers and companies spread across the nation (SMART and SIMP 2015, personal interview). This creates a relatively high level of forward-backward linkage, which help palm oil industry to be supported with strong spatial integration. This intra-organisational resource is important as a source of region-specific environment that is dynamic through time but not transferable over space (Boschma, 2004). To some extent, a relatively small institution size is effective for policy implementation. This condition is supported by Boschma (2004) as a "specialised region with few strong players" that will give an ideal environment for effective policy-making. As a result, the Indonesian palm oil sector is more integrated than the Malaysian counterpart as each actor pursues the same agenda and more flexibility (Ming and Chandramohan, 2003).

Fortunately, in the last two decades the Indonesian palm oil sector has become more integrated with the global market as its export value has exceed domestic consumption since the mid-1990s (USDA, 2015). Consequently, the institutional framework has become more flexible with integration of foreign companies in Indonesia's oleochemical industry. This happened because of the characteristic of this industry that is considered as a sunset industry in developed countries, which meant industries in developed countries were forced to outsource (GAPKI, 2014). This lead to increasing returns, thanks to the presence of decentralized market (Romer, 1989).

5.2. Malaysia Path Creation

5.2.1. Competitiveness of Firms

The market for Malaysia's palm oil industry is more competitive than the Indonesian market at it is relatively small market (Rasiah, 2003). Malaysia's palm oil sector adapted to this circumstance by introducing export-oriented strategies in palm oil sector in 1974 (Gopal, 1999). Therefore, the sector has had to compete with industries from foreign markets. By 1976, Malaysia was considered as the country with the biggest palm oil refining industry (ebit, 1999). Things became harder in the mid-1980s when the USA, as the main producer of soya oil created anti-palm oil campaign (ebit, 1999). The export of palm oil product to China has declined since this country has imported more soybeans in 2013 (MPOB, 2014). This shows that China that produces 13% of the world's total vegetable oil (GAPKI, 2014) has decreased its dependency on palm oil resources for it industries.

Market conditions make more efficient firms develop their competitiveness at the expense of less efficient firms (Boschma, 2004). This is shown by the stagnation of production capacity in developed countries (Oil World, 2014), followed by the decision of these countries to outsource their refinery activity abroad (GAPKI, 2014). However, as the presence of cheaper sites are increasing, this MNC-based structural change has moved into low cost countries such as China, Philippines, and Indonesia (Rasiah, 2003).

In addition, Malaysia has a high level of competitiveness because of the presence of low economic margin in its national economy. With the massive growth in palm oil refinery capacity, the Malaysian industry suffered from a scarcity of CPO for national industry. This scarcity increased input price and decreased production yield in refinery industry. Competition forces market to become more efficient as a reaction to "changing technologies" and "market circumstances (Boschma, 2004). This ability to reduce economic margin affects the ability of the refining industry to develop global competitiveness because further decreases in production yield were solved by technical, organization, and structural changes (Gopal, 1999).

From the table below, we can see that Malaysia has good economic performance, which is shown by the level of economic growth. However, its average growth rate is still below Indonesia. Comparing with the previous section, we can see that in last 5 years the Malaysian economy has developed at a slower rate than Indonesia's. The lower rate of growth can be seen also in palm oil sector, which had only 2% growth in the last 5 years. This seems to fit the finding from Rasiah (2003) that the palm oil sector, despite its importance, is considered as a mature industry producing in its production frontier, and this cannot develop more in the future.

Table 11.

Malaysian Rate of Growth 2009-2014

Year	Economic Growth	Palm Oil Export Growth
2009	-1.51	-24%
2010	7.43	20%
2011	5.19	35%
2012	5.64	-11%
2013	4.73	-14%
2014	6.03	4%
Average	4.59	2%

Source: MOPB and World Bank, 2015

5.2.2. Competitiveness of Region

An institutional environment provides the palm oil sector with window of opportunities for successful policy-making. This economic policy will succeed if it is supported by historical events accumulated in a particular region (Boschma, 2004). The Malaysian economy has performed industrialisation because of the presence of FDI that has helped the national industry to receive technology transfer from international companies (Rasiah, 2003). The government has tried to optimise the benefit of MNCs by creating Technology Transfer Agreements (TTAs), which require these companies to build local innovative capabilities (ebit, 2003). Moreover, the government has supported technological advance by creating tax exemption for downstream and R&D activities (Gopal, 1999).

Exclusively for the palm oil sector, the government has established the Palm Oil Research Institute (PORIM) to assist this industry in R&D activities (Gopal, 1999). In short, the institutional environment has created an adequate mechanism to coordinate knowledge transfer between varieties of actors that are important for knowledge creation and learning process (Boschma, 2004). Moreover, since palm oil products from Malaysia had to counter the US soybean campaign, the government created Malaysian Palm Oil Promotion Council (MPOPC) in the mid-1980s (Gopal, 1999). This shows the flexibility of national institutions to support industrialisation which is considered as the main aspect to maintain competitiveness of industry in the long term (Boschma, 2004).

The Malaysian palm oil sector is supported by the presence of a relatively high knowledge base. The presence of FDI has increased the importance of the manufacturing activity in the national economy which constitutes more than 70% of total exports (Rasiah, 2003). This has created an outstanding economic base to create industrialisation in the palm oil industry since localized knowledge has a significant influence on firm's performance (Boschma, 2004).

Positive changes in an evolution process occur if supported by positive network externalities (Witt, 1997). In this sense, Witt (1997) believes that "organized collective action" can be achieved by providing economy with public

goods. For the reason, the government of Malaysia has tried to create collective action by establish an Industrial Masterplan (IMP) to help the Malaysian palm oil industry to improve (Teoh, 2002). In detail, this program is divided into three phases: 1) the first IMP (1986-1995) focused on increasing efficiency and competitiveness of refining and fractionation activities; 2) the second IMP (1996-2005) encouraged palm oil companies to develop more value added in downstream products; and 3) the third IMP (2006-2020) is focused in oleochemicals, biodiesel, biomass and biogas activities (ebit, 2014).

The capability for a region to change should be supported by the presence of a non-evolutionary mechanism that helps the self-reinforcing process (Bochma, 2004). This was the case since the government allocated its export surplus to create infrastructure and institutional frameworks to maintain its export competitiveness (Wahyuni, 2012; Rasiah, 2003). It is further shown by the effort of the government to build transportation, handling, and shipping facilities for the export of palm oil products (Gopal, 1999).

5.3. Conclusion

There is no best-applied model of institutions in the palm oil industry. Different economic structures and institutional contexts create multiple spatial outcomes (Boschma, 2004). Region competitiveness in Indonesia and Malaysia has emerged from different resources. Indonesian palm oil companies gain competitiveness because of the opportunity to achieve economies of scale, influenced by the large domestic markets. In this sense, Indonesian palm oil reached competitiveness because of the presence "economies of growth of firms" which help firms to reduce the costs of adopting better technology and organisational structure (Antonelli, 1999).

On the other side, Malaysian palm oil companies gain competitiveness because of the presence of market competition which helps Malaysian companies to develop efficiency. Efficiency is achieved because the industry has to bear lower margins, forcing palm oil companies performing optimisation and technical change in order to survive. In this sense, Malaysian palm oil reached its competitiveness by developing innovative behaviour that helps companies to create further improvement (Boschma, 2004).

Moreover, technology improvement can be achieved by the presence of adequate knowledge institutions in a particular region. Knowledge creation is important as a source of a better equilibrium condition – where new conditions are sufficiently superior from previous ones (Witt, 1997). However, the Indonesian and Malaysian palm oil sector have developed different institutional environments for knowledge creation. Knowledge creation in Indonesia is developed by means of vertical integration between lead firms and smallholders, allows knowledge and technology transfer to become more efficient. In contrast, the Malaysian palm oil sector depends on government-led institution in order to create its basic knowledge. Malaysia has developed PORIM as the organisation that specialises in palm oil research activities. Moreover, the role of Malaysian government institutions as the means of coordination became more effective since Malaysian industry is supported by a relatively high knowledge base. Malaysian industry is dominated by manufacturing activities, which show that basic knowledge for technical change has been fulfilled.

Inter-organisational relations at a national level are stronger in Malaysia where the presence of good support from the government helps national economy to create collective action. This condition is demonstrated by the effort of the government to provide public goods to strengthen this inter-organisation coordination. It established Industrial Masterplan (IMP) that helps different actors in the palm oil sector to pursuit long term goals. In contrast, inter-organisational relations in the Indonesian palm oil sector are only strong within its supply chain actors, but less strong with actors outside the chain.

Finally, different condition in institutional environment has brought policy effectiveness in different ways. The palm oil sector in Indonesia is dominated by some big palm oil companies that enjoy positions as market leader in national market. This condition shows that the a few strong player will give ideal environment (Boschma, 2004), which make Indonesian palm oil to pursue the same agendas and is more flexible than Malaysia. This condition is also supported by the relatively strong integration within the palm oil supply chain that has been developed over the decades. A dense social network, which occurs in the Indonesian palm oil sector, is considered as an effective means of competitiveness (ebit, 2004). In contrast, sector-based policy is not common in Malaysia, where the government has used regional policy approach that helps the endowment factors such as infrastructure, knowledge, economic institutions, and business environment to improve. This condition gives palm oil actors in Malaysia more dynamics to deal with externalities in global market, even though the palm oil sector is received no special exemption. For example, Malaysia has achieved a high place in global competitiveness because of its outstanding infrastructure and business environment (Wahyuni, 2013).

CHAPTER 6

CONCLUSION

Both Indonesia and Malaysia started their economic activity from the producer of primary commodities to become the biggest exporter of palm oil products in the world. This research has shown that historical events that happened in the two regions had different effects on the development of the palm oil sector. Institutions become important for economic development since they represent historical experience that is embedded through time (Antonelli, 1997). For this reason, an analysis about institutional differentiation in the palm oil sector has been conducted. Moreover, this research borrowed notions from Boschma and Maskel & Malmberg that knowledge creation is highly stimulated by the evolution process in economic development.

This research is intended to show that historical events that are happened in two regions give different effect for development of palm oil sector. While history becomes matter, institutions become concern in economic development since it represents historical experience (Antonelli, 1997). The change in institutional structure is influenced by its effort to overcome historical constrain. For this reason, analysis about institutional differentiation in palm oil sector gives clear analysis how difference in economic circumstances create the different level of competitiveness between palm oil sector in Indonesia and Malaysia. Moreover, this research will borrow Bochma and Maskel & Malmberg idea about knowledge creation that is highly stimulated by characteristic of evolution process in economic development. This concept will help the writer to focus on the process of improvement in palm oil industry from both countries which started their economic activity as the producer of primary commodities to become the biggest exporter of palm oil products in the world.

This research has also used a conceptual framework that shows how the evolution path in palm oil sector emerges, performs "lock-in", and escapes from "lock-in" situation (Martin and Sunley, 2006). As evolution processes consist of different elements that are "place specific", this framework analysed the role of the wider local context embedded in local environment. As the outcome of this evolution process depends on a region's long term competitiveness (Boschma, 2004), each stage of this research emphasized the factors that influenced each region's ability to upgrade its economy into higher activity in palm oil value chain.

As competition in palm oil is more influenced by dynamic improvement, there is no perfect model in path dependence that can be applied for all situations. The difference of historical events followed by different learning processes in both regions created unique experiences for each palm oil agent, which led to different incremental improvement in their development processes. Indonesia's palm oil sector began its success story when government applied a protection policy. It could do so because Indonesia has a large number of population, so the palm oil sector has a large domestic market. Yet, its domestic customers are mostly low-income buyers which undermines the value of palm oil products.

Conversely, the Malaysian market is smaller so government has applied an export-oriented policy, that give benefit the palm oil industry to achieve higher competitiveness and diversification, to penetrate the more advanced markets with more sophisticated demand condition. Consequently, the Malaysian palm

oil sector has learned from experience that technical advance should be achieved. As a result, its palm oil industry has dominated the global market since the 1970s.

Although the palm oil sector in Indonesia and Malaysia have achieved outstanding development due to positive externalities, both countries still face internal barriers to change during evolution processes. The analysis shows that the region's weak localised capabilities to adapt to recent conditions are the main factor creating "lock-in" situations. Both governments and palm oil companies have difficulty unlearning their successful path. This is shown by the effort of both countries to protect their vested interests which undermines the effort to develop higher economic activity. In Indonesia, this happened when the government applied protection policies for the cooking oil industry in the early 1970s. This policy has implemented for the last four decades even though this protection has failed to stabilise the price of cooking oil and has not succeeded to develop downstream activities in the palm oil sector.

On the other hand, the success of the export oriented strategy in Malaysia has developed an economic structure that is highly dependent on FDI. Though it can develop manufacture activities faster than Indonesia, learning is limited because technical advances are highly dependent on knowledge transfer from MNCs. In this condition, even though it is performing in higher value activities, the Malaysian economy is still restricted to low-value manufacture production. Moreover, changing to a more advance activities is hard to achieve quickly since economic institution capacity in Malaysia is not enough to accumulate a knowledge base as high as in developed countries.

Moreover, we can say that the two countries have achieved different situations of path creation in their respective palm oil industries, because of differences in firms' competitiveness, institution environments, and policy-making situation. Indonesia can perform industrial upgrading in the palm oil industry because of huge demand in the domestic market, which create what Antonelli (1999) described as "economies of growth in firms", that helps a new technology to be endogenized. Institutional environments also had significant influence. Indonesia possesses an effective policy-making situation because of what Boschma (2004) described as a "specialised region with few strong players" which makes Indonesian palm oil sector possess more integrated agenda and more flexible.

In contrast, Malaysian palm oil companies have achieved a higher level of technical advance because of the presence of higher-level efficiency that helps to adapt to market circumstances. Also, the Malaysian economy was built with strong manufacturing fundamentals which provide higher labour skill and a greater knowledge base. As knowledge creation needs a mechanism for actors to coordinate and exchange knowledge (Boschma, 2004), the government has provided an institution framework by creating an Industrial Masterplan (IMP). This framework builds to enhance interrelatedness among actors in national economy that helps national economy to perform organized-collective action.

In short, different economic conditions show that evolution processes are emerged from change events and increasing return that happens randomly. This is reflected by institution settings that evolve continuously to adapt to specific conditions in the palm oil market at different time. It simply explains that historical events are important. In other words, learning processes from

economic agents in palm oil sector have created path dependence because of the effort of agents in overcoming historical constraints. For this reason, effective policy making still has room to happen if palm oil development strategies derived from regional context in a particular country.

Moreover, path dependence in the palm oil sector is 'place dependent'. Both regions have different economic components that are locally contingent and locally emergent, influencing their respective industries' level of competitiveness. In all respects, these differences show that there is no ideal model of evolution of economic development. The difference in region's institutional endowments imply that specific economic properties can create a particular window of opportunity that helps the palm oil sector in both countries to perform an upgrading process.

Also, it is often difficult to shape coordination where a region consists of many economic agents with different interests. In this sense, it is important for governments to create public goods that provide networks externalities. Positive network externalities are formed once institutions can create local positive feedback that helps society to create critical mass towards better economic circumstances. From the lessons from this research, public goods are not simply considered as infrastructure or economic factors. Rather, they are a wide range of factors that are place-specific and cannot be copied easily by other regions, such as institutional endowment and tacit knowledge embedded in a particular region.

This research has shown that the localised capability of a region to upgrade is highly related to the involvement of economic and non-economic actors. Judging from the achievement in Indonesia and Malaysia, it would be beneficial to have an institutional framework that deals with this specific issue. Both vertical integration and horizontal coordination in Indonesia and Malaysia's palm oil industries have shown both their benefits and costs for the development process. For this reason, the government should be cautious before adopting a successful institutional framework from abroad.

Finally, this research analyses source of competitiveness from producers' side by emphasizes on internal capabilities of economic institutions in both countries. It uses macroeconomic analysis in both countries to find the sources of regional competitiveness of palm oil industry. For this reason, further research needs to clarify sources of path dependence from microeconomic analysis where a firm as the main economic agent becomes the main object. This research has shown that a region can develop new collective values, knowledge creation, and institutional environment that are emerged from historical processes. However, organisational practices such as network approaches, management decisions, and scientific research that are developed at firm's level are not follow an orderly path (Powel et. al., 1996), so analysis about source of path dependence will be completed if it also covered microanalysis in firm level.

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APPENDICES

Interview Result

Business of Development Division Salim Ivomas Pratama (SIMP)

Business Activity in Palm Oil Sector
SIMP has focused its business activity in palm oil processing industries. It it located in the middle of supply chain which is maintain by lead company in Singapore. Within the same group, SIMP has worked together with plantation companies and brand companies in the same group. SIMP scope of activities has started from processing CPO and PKO to produce edible oils and fats. SIMP has no processing facilities for palm oil outside Indonesia. However, it develops some sugar plantation and industry abroad. Palm oil can be considered as important export product since it is traded in commodity market through auction companies. However, Indonesia constitutes a complex market condition. Despite palm oil is considered as commodity product, the trading process is not so easy since Indonesia consist of various palm oil markets. For example, SIMP has traded its palm oil into different market with state plantation does. It is different with condition in Malaysia where market there more transparent. With this condition it is easier to access commodities in Malaysian Market than in Indonesian.
Actors involved in palm oil value chain and the interaction between those actors
In order to get its CPO and PKO product, SIMP relies on plantation companies within the same group. Within the same group there is obligatory of each company to supply its product to firms within the same group. SIMP group's plantations are located in Sumatera, Kalimantan, and Sulawesi, and equipped by palm oil mills which consist of 20 mills in total. This condition happens for plantation companies under the same group which prioritise to supply SIMP during the production process. However, not all the plantation companies are owned by the same group because from all plantation area that is working together it is only 60% of it that possess direct relationship with SIMP. The rest 40% is considered as plasma which is manage and guided by our plantation companies by given facilities and training but they have to supply their product into our companies. However, palm oil producer supply not only to their affiliated group. Most of palm oil product or 10 million tonnes (71%) has been delivered into external party. It left only 4 million tonnes or 29% of its production into its own Indofood group members. This condition show that despite at first SIMP's supplier produce palm oil only to fulfil SIMP group production need, now it can expands its markets globally. The improvement occurs because SIMP as the lead firm helps its supplier within supply chain to improve their productivity by means of capital and technological transfer. As a part of larger group in palm oil industry, SIMP has performed vertically integrated value chain. All CPO products go into 4 refinery facilities in Jakarta, Surabaya, Medan, and Bitung. This processing facility

then becomes the main supplier of SIMP brand in cooking oil, margarine, and food industries. SIMP also covering business activities to support its palm industry such as logistics, packaging, and marketing. However, still 70 % of total SIMP's product derivate from palm oil based product. Moreover, despite all companies gathered under the same group, they have independent management. For example, each of company has grown and create its own market for its product. From this business development, nowadays, most of our product is sold to external party. Cooperation within SIMP palm oil supply chain is very important. SIMP processing facilities are dependent with its supplier and buyer in order to develop. To maintain production process within its factories, SIMP need vertically integrated supply chain so it can maintain level of quantity and quality that is required by its factories. Because SIMP needs a sustainable level of supply, SIMP as the lead firm helps its supplier within supply chain to improve their productivity by means of capital and technological transfer. Joint action is concentrated in its 4 refinery facilities since most of activities gathered in this location. It is shown by the presence of 20 mills facilities along with investment in logistic, packaging, etc. that is connected directly with these facilities creating an effective production process. This processing facilities and investment has benefited 31 of plantation companies that are worked under SIMP group and many plasma farmers who work under the supervision of these plantation companies. It is also become the easiest access to its costumer since it is located near sea port to ease the logistic process in both national and global market.
Potential value that can be generated because of the development of palm oil industries
SIMP has already developed palm oil cluster in its 4 refinery facilities. Based on this condition SIMP still considers to joint its chain with SEZ will not significant to improve its business. It is because, in order to develop its value chain, government better improve logistic system throughout country to ease transportation between regions. Indonesia is considered has high logistic cost. That is SIMP builds its facilities near the port and economic centre to provide it with good transportation system. Also one of important aspect for develop processing facilities is the supportive regulation. SIMP still believes that regulation in Indonesia can easily change that create higher risk for business to be started. In this sense, developing new facilities in SEZ still consider as contain high risk due to the inadequate regulation to support such policy.

Head of Logistic Division of Sinarmas Agro Resources and Tech-nology (SMART) Tbk. SMART

Business Activity in Palm Oil Sector
SMART has focused on producing palm based product. It is part of Sinarmas Group that is considered as on of the biggest palm oil producer in Indonesia. During the development of its business, Sinarmas has develop various activity within palm oil value chain. It is first develop in late 60s as plantation company with various kind of crops. And it was expanded to various processing facilities which now the famous brand for cooking oil and margarine. SMART only has palm oil processing facilities in Indonesia. Indonesia as the biggest producers of palm oil has provided enough supply for its facilities. Also the capacity of local industry to absorb palm oil product is good enough to accommodate the increasing of demand in global market. Even with the existed of tariff regulation, about fee addition for each un-processed palm oil product, SMART can accommodate the increasing of palm oil supply domestically.
Actors involved in palm oil value chain and the interaction between those actors
SMART is developed its supply chain based on vertical integration under the same ownership. However, each of company has independent management system which allows them to set their own strategy. One of the benefits for having affiliated companies within the same group is the sustainability of supply for its factory. With situation, SMART obtains its input from its 34 plantation companies. However, SMART as big company need a big amount of supply for its processing facilities. Only 40% of its supply is obtained from its own group where the rest or 60% is delivered from third party or 82 companies. As a company that is closer to consumer, SMART decides the standard that is required from its supplier. For example, as part of larger group of Sinarmas, it encourages the sustainable practices throughout value chain. Sustainability is not only related with environment but also social responsibility that should be followed by all actors within value chain. Related with environmental sustainability, Sinarmas group has avoided any plantation activities that harm rainforest. Related with social sustainability, Sinarmas group has encouraged education and job opportunity for citizens who live inside plantation area. With this activity, there are a huge chance that SMART's product value in elevated due to the consumer trust from such sustainability activities.
As a part of the larger group, SMART has to cooperate with the company in the same groups. It give benefit due to the sustainability of its supply from plantation company from the same group. SMART also provide regular supply for its brand such as Filma and Kunci Mas. There is institutionalised system that companies should prioritise companies from its own groups. With this system, Sinarmas Group has develop wide range of activities that can help its core business in palm oil processing. It has also logistics, storage, and marketing division that helps the main business in Sinarmas.

However, most of product that is produced within this group is sold to external party. It is means that Sinarmas has a larger market that allow them to expand beyond its group need. However, this circumstance occurs since SMART can manage to accommodate the increasing of demand in palm oil product throughout the world. Since the consumption of world's palm oil has increased, there are new companies who expand its companies in Indonesia, especially in plantation sector. It means that these companies will need processing facilities that is provided by SMART in various places. Also, the development of these processing facilities helps global MNCs to obtain supply for its product easier. For instance, Unilever as a global brand has processing facilities for the end product in cosmetics and soap, but they manage no production facilities for palm oil product that is actually the main ingredient for its consumer product.

Join action among companies is very important within SMART supply chain. It is because palm oil product is kind commodity product which means that its demand purely driven by market. Both producer and supplier have no influence to determine level of quantity and price. With the vertically integrated system within supply chain it becomes easier for SMART to meet its standard. When costumer has demand for more sustainable product to be consumed, SMART through its affiliated companies can adapt easily to this practice due the level of strong integration under the same group.

Also it is important for SMART to perform efficiency during its production process. Back to the characteristics of palm oil that is commodity product, there is no chance to differentiate its product from other palm oil companies. All the quality and the standard have already set by the market. So, SMART try to create an effective logistic system among its partner because cost efficiency is the only thing that SMART can improve during its production.

Potential value that can be generated because of the development of palm oil industries

Developing SEZ has to consider the purpose of such area. For SMART, development of SEZ should near by the port and market not the resources. However, the newly develop SEZ by PTPN III in Sei Mangkei has not meet it requirement. Sei Mangkei closer to palm oil plantation which not necessary to the development of palm oil industry that is buyer-driven. For example, most of SMART facilities are located in the economic centre which allows these facilities to access market and infrastructure in those regions. For SMART activities which focus on downstream industry, locating its facilities near its plantation area will increase its cost. Palm oil supply is not located near refinery facilities, because industrial supply can be derived from many places and many industries. Despite palm oil based industry dominate by palm oil based supply, still they need other ingredient that has to be provided from other region.

For upgrading palm oil industry the most important thing to develop is the establishment of superb logistic system in certain area. The development of industrial district without those facilities will just decrease interest of businessman come to that region. For instance, SMART think that developing industry to newly develop area will contain higher cost

since they already develop some refinery facilities. Also, their facilities have supplied many global brands such as Unilever. Only 50% of its product is delivered into its own group companies. While there is increasing in global demand, SMART just increase its productivity in one of its facilities without establishing new factory. Or in other condition like today where global demand is decreasing, developing new processing facilities will give higher difficulty to find new market.

SEZ National Board

How is the recent condition of Sei Mangkei SEZ in North Sumatra?
Sei Mangkei has develop limited number of palm oil industry. Since 2012 there is one company that establish its industry here which is Unilever. This condition keep stagnant eventough there already supporting regulation to support its activity. However, some of infrastructure still in developing process such as road, seaport, railways, and utilities. Facilities are considered as the main incentive that can attract investors into this region. recently, Sei Mangkei has just authorised by Indonesian President, or 4 years after its first groudbreaking. This is quite strange as SEZ is the product of previous cabinet that means that there is no clear support from previous government about the establishment of this area.
Who is the target company of SEZ?
Sei Mangkei SEZ has targeted global MNC to establish its industry here since SEZ has export oriented policy which requires 90% of its production to be exported. This strategy makes a limited access for local companies to develop its facilities here. It is known by the absence of local actors during the implementation of this SEZ since 2011. Also based on meetings from different private actors, there is no invitation from SEZ to establish their industry into Sei Mangkei.
How can industries inside Sei Mangkei obtain its supply?
All of officers who established Sei Mangkei think that the establishment of SEZ in the middle of palm oil plantation can give a sustainability supply for industry within its boundary. However, the fact that palm oil is commodity products which traded in auction market has change this thinking. Despite it is located near palm oil plantation, palm oil product has to be bought from auction which has no relevance from its location. Palm oil has traded by one auction board that is collect palm oil from various region from all over the country. This condition means that supply of palm oil for particular region has not determined by its location. From this condition, there is difficulty for Unilever which has not finish its factory here to obtain its palm oil supply. It has to buy its supply from such auction that basically not from PTPN III who has the nearest plantation from Sei Mangkei. From last update, there still no improvement to help how Unilever will gain its supply for its factory in Sei Mangkei. It shows that palm oil market in Indonesia still complicated to help such specialised location to gain any benefit from its location.
How can you describe joint action activities that you have performed with other actors in this industry?

There are many join action during the establishment of SEZ. Many governmental actors have developed its project in order to help the development of this SEZ. However, there still dispute about who has the main responsibility to develop this area. For example, Ministry of Industry has budget to develop infrastructure such as road, where it is also the responsibility of Ministry of Public Works and Local Government. But it seems that there still no resources that is allocated for the development of good institution to coordinate actors within this area. Some essential issue in trading activities still becomes major concern that should be achieve since most of infrastructure project need time to established.

Associate Professor in Nottingham University, Kuala Lumpur and Senior Lecturer in the Faculty of Economics University of Indonesia

Activities of SEZ in Malaysia
SEZ in Penang can help one country to face upgrading process since it helps to attract Big companies. In Penang there are eight companies called The Eight Samurai which represent the lead frim who lead upgrading process and give local companies to benefit by the development of activities because the presence of these companies. The presence of big companies is a great breakthrough for the development of any industrial cluster since it give a new opportunity for local industry to develop its global competitiveness, Malaysian Government will give permission for investment only if it is provide transfer of knowledge program for local entities that is located in the SEZ boundary. Also, in order to help this program to be succeed, government with ministry of Higher Education accommodate implementation mechanism that help to enhance strategic cooperation between actors.
Role of Actors in developing Industrial Cluster
However, during the interview, one aspect that distinguishes condition of Penang with other SEZ is the role of Federal Government to control all investment that come into Malaysia. Malaysia has established Malaysian Investment Development Authority (MIDA) as the one stop centre to provide all access and information about investment opportunity in this country. This board which is consist of officer from central government work very efficient to assist companies to invest in any SEZ in Malaysia. The distinguish service that is provided by this board has built trust among investors to expand their industries in Malaysia. Active role of federal government shows that the development of local economy cannot be separated from supporting element in national level. They believe that developing economic zones has to be supported by regulations and business environment than can embrace the development of SEZ in particular region. Moreover the effort of federal government has shown by its top rank in term of global competitiveness which is represented by the high level of easiness in business starting procedure and macroeconomic development that give sustainable condition for any foreign investors to develop their business in Malaysia. Although MIDA is represented federal government, they have advance capability to help the development of SEZ in local level. MIDA

will help every investor to develop their business by provide consultation channel and effective feedback for every problem that each investor encounter. Moreover, MIDA can cover various type of business communication since its organisation consisted of various government and business representative that give the best service for investors. With This system, Malaysia is considered more transparent and professional country for investor than many other developing countries in Asia.
Source of Regional Competitiveness
First, investors are offered by powerful production platform that is not available somewhere else. Second, Penang allows manufacture to develop a world class manufacturing capabilities for cost efficiency, quality, and lead time. Third, many American MNCs tend to follow the silicon valley business model which stresses horizontal integration, collective learning, and community identity. Fourth, the range of companies, services, and division of labor in penang constitute an "open system" industrial district which required all activity to rapidly set-up and ramp up high volume production. Fifth, Penang Development Board, is an exemplary intermediate organisation in identifying and acting on collective needs and facilitating local enterprises to seize development opportunities created by the presence of MNCs. Sixth, Penang SEZ despite has set primarily from MNCs production forces can increase local participation and creating new opportunities for advancing local capabilities. Seventh, the "Invisible college" of company skill formation which provide an adequate number of human resources for the need of MNCs. Eighth, the development of rapid horizontal integration is not easily imitated, and is problematic in high wage region. It offers a competitive advantage platform upon which Penang can advance to higher technology management capabilities.
Malaysia' Position in Global Economy
Malaysia's Economy rank higher in global competitiveness compare with other developing country. For this reason, it attracts more FDI in its economic activity than countries such as Indonesia, Thailand, and China. Malaysia is an export oriented country which most of government policies are dedicated to attract MNCs to invest in its region. Supporting this mission, government tries to create suitable business environment that is provided by outstanding infrastructure and government service that makes investing easier. The government efforts are accompanied with the high quality economic structure that has dependent from manufacture activities. Malaysia's economy has developed activities and skills that help MNCs to find suitable local supplier that meet global standard.

Eksekutive Director of Indonesian Palm Oil Assosiation (GAPKI)

Actors involved in palm oil value chain and the interaction between those actors
Palm oil value chain in Indonesia is highly integrated by the presence of strong coordination between private sector and local actors. Small farmer

in local region is dependent with private companies as the owner of processing facilities. Only private companies own palm oil mills which located in their plantation area. For this reason, integration for small farmer is inevitable since they cannot access into commodity market to sell their product. However, private companies also dependent with these small farmer, because they need sustainability of input for their palm oil mills.
The degree of integration of palm oil industries with the global value chain in each region
Palm oil export value always increasing until recently. However, before the 2011, most of palm oil was exported as raw material or CPO. Only after 2011 processed palm oil has dominated palm oil export. This condition is happened because of the change in global regulation related with export tariff that is determined based on global price of palm oil. It means that for each increases in palm oil price, it is followed by the increases of export tariff. It means that in order to develop national industry, the government still using trade policy. It creates no industrial incentives for national palm oil industry to develop that hampers sustainability of this industrialisation process. This condition was happened lately when price of palm oil in global market has decreased. With a lower price, there is no tariff in export product, because the tariff for palm oil export will be lower if the price of palm oil is lower.
Palm oil is processed is exported raw and processed palm oil, since 2011 because the government policy to give incentive for processing. Before 2011 70% CPO export, after 2011, 70% processed palm oil. However, processed palm oil decreased because price decreased so there is no exit fee. Because there is no intensive to process.
Production capacity of palm oil industries from different activities in each region
Indonesia palm oil industry has adequate capability to produce processed palm oil. Palm oil companies have developed technology that can processed national palm oil resources. However, the capacity of this facilities are not optimum since the price of palm oil has decreased because the decreasing in global demand. Also, selling palm oil in domestic market have another difficulty. For palm oil producers that integrates in no market commodity, that is manage by palm oil companies, it will be difficult to find market. Palm oil in Indonesia is traded in market commodities that consists some number of companies as members, which only the member can trade in this market. However, commodity market in Indonesia is not efficient because there are many markets that is not integrated. For this reason, government need to establish regulation that can integrated palm oil actors and market in Indonesia so the production and trading process can happen effectively.