

THE DETERMINANTS OF MALAYSIA'S PALM OIL IMPORT DEMAND

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ABSTRACT

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By

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The purpose of this study is to investigate the determinants that lead a high world import demand on Malaysian palm oil. Annual data from 1975 until 2008 were used in this study. The data were analyzed using the Augmented Dickey-Fuller (ADF), Phillips-Perron (PP), Kwiatkowski-Phillips-Schmidt-Shin (KPSS), Johansen Multivariate Cointegration Test, and Granger Causality Test. Result from the ADF, PP, and KPSS stationary tests indicates that the data for all variables are stationary in first difference. Result from Johansen Multivariate Cointegration Test show that one long run relationship exists among the variable which is the export volume (LEXDD) as the dependent variable and the world price of palm oil (LWPO), the Malaysian price of palm oil (LMPO), price of soybean oil (LSBP) and exchange rate (LEXR) as the independent variables. Meanwhile, the results from Granger Causality test in VECM shows that there is long run and short run relationship between the variables. In the short run, LEXDD granger causes LMPO, LWPO granger causes LMPO and LWPO granger causes LSBP. While the result from ECT, indicates an existence of long run relationship between the dependent and independent variables.

ABSTRAK

FAKTOR-FAKTOR YANG MENENTUKAN PERMINTAAN IMPORT MINYAK SAWIT MALAYSIA

Oleh

Olga Goniur

Kajian ini ini bertujuan untuk mengkaji faktor penentu keatas permintaan import yang tinggi terhadap minyak sawit Malaysia. Data tahunan dari tahun 1975 hingga 2008 telah digunakan dalam kajian ini. Data dianalisis dengan menggunakan ujian kepegunan Augmented Dickey-Fuller (ADF), Phillip-Perron (PP), Kwiatkowski-Phillips-Schmidt-Shin (KPSS), Ujian Kopengamiran Johansen berbilang pembolehubah dan Ujian Penyebab Granger. Keputusan daripada ujian kepegunan ADF, PP dan KPSS menunjukkan bahawa data bagi kesemua pembolehubah adalah pegun dalam perbezaan pertama. Selain itu, keputusan daripada Ujian Kopengamiran Johansen berbilang pembolehubah menunjukkan bahawa wujud satu hubungan jangka panjang diantara pembolehubah bersandar dan tidak bersandar. Manakala, keputusan daripada Ujian Penyebab Granger yang diuji dalam Ujian Pembetulan Ralat Vektor (VECM) menunjukkan terdapat hubungan jangka panjang dan jangka pendek di antara pembolehubah.

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CHAPTER 1: INTRODUCTION

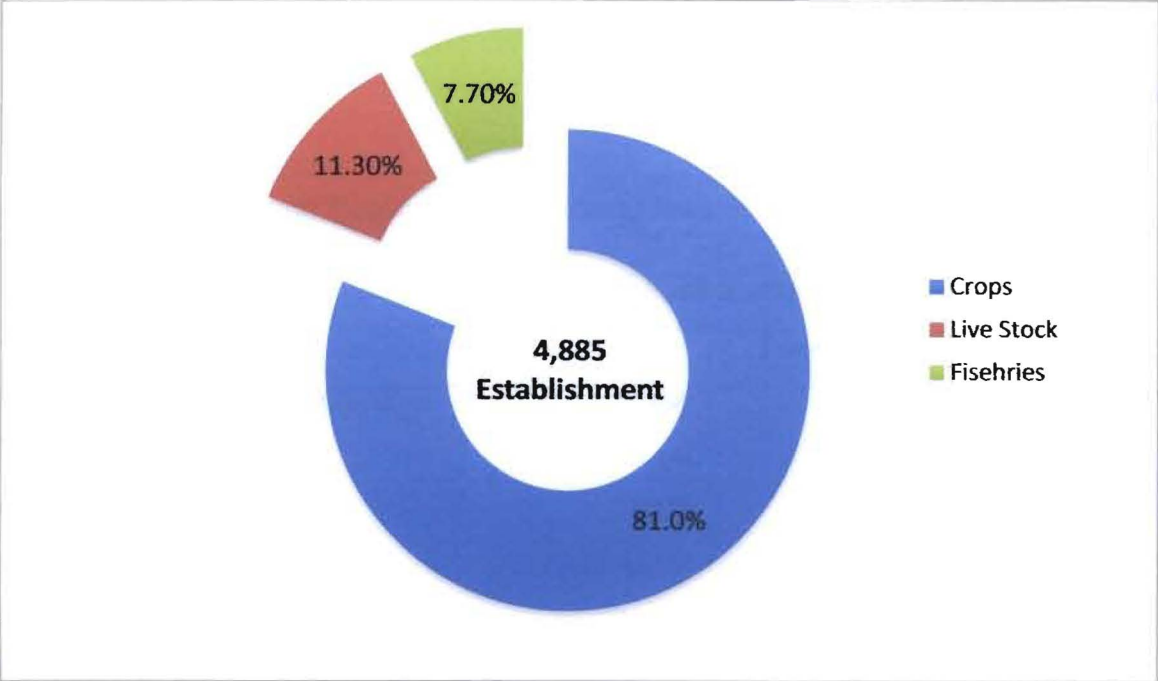
1.1 Introduction

Although Malaysia is rapidly shifting its economics from agricultural-based economic activities to capital intensive industrial activities, the contribution of agricultural sector to its income is still very important. Since Malaysia gained independence, this sector has contributed a lot in shaping the Malaysian economy. One of the most lucrative agricultural sectors in Malaysia is oil palm plantation and palm oil related industries. In Malaysia, this sector has been contributed a lot in terms of the country's income and also in providing a job opportunity.

When the economy performance of Malaysia was badly hit by the Asian financial crisis in 1997/1998, the agriculture sector has played a major role in slowing down the recession. The former Prime Minister of Malaysia, Tun Abdullah Ahmad Badawi states that this sector can generate wealth and reduce poverty particularly among those from rural areas. Based on statistics, agriculture industry generates approximately 12 percent to the national gross domestic product (GDP) and also reduce unemployment rate in Malaysia. The history of agriculture can be traced back to during British administration in Malaya. Several new commercial crops such as palm oil, cocoa and rubber were introduced. Since then, these crops became the main agricultural exports to global market (Malaysian Business, 2010).

According to the Annual Census of Agricultural Establishment in 2009, the crops sub-sector were recorded as the highest number of establishment which is about 81.0 percent and dominate the agriculture sector activity. The crops sub sector also is the main contributor to value of gross output in 2008 which is 85.1 percent.

Figure 1-1: Percentage Distribution of Establishments by Sub-sector 2008



Source: www.statistics.gov.my (Obtained in October 2010)

The total number of paid employees engaged in agriculture sector in 2008 is 330,058 peoples in various categories of such as managerial, professional and executive, technicians, clerical, elementary occupations, agricultural labor workers and part-time workers. Table 1-1 shows that, the agricultural is accounted for the highest number workers with 227,642 persons or 84.1 percent of total paid employees. This portrayed that the agricultural sector is contributing to a big portions of employment opportunity in Malaysia.

Table 1-1: Number of Paid Employees and Salaries by Sex and Category of Workers in the Agriculture Sector, 2008

Category	Number of Paid Employees		
	Male	Female	Total
<i>Managerial, Professional and Executives</i>	7,699	1,017	8,716
Technicians	13,214	1,014	14,228
Clerical	3,316	6,700	10,016
Elementary Occupations	14,161	947	15,108
Agriculture Labor Workers	218,199	59,443	277,642
Part-Time Workers	3,530	818	4,348
Total	260,116	69939	330,058

Source: www.statistics.gov.my (Obtained in October 2010)

By industry, palm oil dominated the crops subsector with a share of 96.14 percent in 2008. This indicated that palm oil still prevailed as the main commodity in Malaysia.

Table 1-2: Value of Gross Output by Selected Industries, 2008

Industry	Value of Gross Output	
	(RM Million)	% Contribution
Oil Palm	31,425.50	96.14
Rubber	671.9	2.05
Growing of flower plants	172.4	0.53
Growing of vegetables	111.4	0.34
Growing of fruits	95.4	0.29
Growing of sugar cane	21.9	0.07
Growing of cocoa	11.6	0.04
Growing of paddy	10.5	0.03
Other crops	43.2	0.19
Mixed farming	9.5	0.03
Agricultural services	95.1	0.29
Total	32,668.40	100

Source: www.statistics.gov.my (Obtained in October 2010)

Palm oil sector is one of the important parts in agriculture sector where it has been contributed in the growth of export activity and in the GDP performance. In 2009, this sector accounted for RM17 billion or 3.3 percent of GDP and exports valued at

RM49.6 billion, which is stated by the Economic Planning Unit, 10th Malaysia Plan Report of Prime Minister (2011-2015).

Today, about 4.49 million hectares of land in Malaysia is planted with palm oil and producing about 17.73 million tonnes of palm oil and 2.13 million tonnes of palm kernel oil. Now Malaysia is one of the world and gains the positions as the World's leading Palm Oil Producer where Malaysia currently accounts for 39 percent of the world palm oil production and 44 percent of world exports and if taken into account, Malaysia accounts for 12 percent and 27 percent of the world's total production and exports of oil and fats. Being an important exporter of palm oil products, Malaysia has an important role to play in fulfilling the growing global demand for oil and fats sustainably (Palm Oil Industry Overview, MPOC, 2010).

Table 1-3: World Major Exporters of Palm Oil, 1999-2008 ('000 Tonnes)

Country	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Malaysia	8,912	9,081	10,625	10,886	12,266	12,575	3,445	14,423	13,747	15,413
Indonesia	3,319	4,139	4,940	6,490	7,370	8,996	0,436	12,540	12,650	14,470
Papua New Guinea	25	363	327	324	327	339	295	362	368	395
Colombia	90	97	90	85	115	214	224	214	316	328
Singapore*	292	240	224	220	250	237	205	207	186	205
Cote d'Ivoire	101	72	74	65	78	109	122	109	106	116
Hong Kong*	94	158	192	318	185	127	39	20	20	28
Others	788	896	1,099	1,027	1,320	1,647	1,736	2,121	1,474	1,665
Total	13,850	15,019	17,571	19,415	21,911	24,244	6,502	29,996	29,867	33,620

Note: *- Includes Re-Exporting Countries

Sources: 1. Oil World Annual (1999-2008) & Oil World Weekly (12 December, 2008)

2. MPOB-For data on Malaysia (*Obtained in September 2010*)

Table 1-3 shows the world major exporters of palm oil from year 1999 to 2008. Based on the table, it shows that Malaysia is the largest producer on palm oil in the world after Indonesia which is consist of 8,912 million of tonnes in 1999, 9,081 million of tonnes in 2000, 10,625 million of tonnes in 2001, 10,886 million of tonnes in 2002, 12,266 million of tonnes on 2003, 12,575 million of tonnes in 2004, 13,445 million of tonnes in 2005, 14,423 million of tonnes in 2006, 13,747 million of tonnes in 2007, and 15,413 million of tonnes in 2008 production. Over the rank of year 1999 until 2008 Malaysia has been lead the palm oil production in the world.

1.2 Problem statement

As highlighted in the first section of this chapter, since Malaysia start the oil palm plantation the world demand for Malaysian oil palm and oil palm product increase consistently since 1970s as a response to the governments call for increased industrialization. Malaysia has become the number one producer of palm oil in the world. The continuous increase in demand from the world market for palm oil has been actively carried by the related agencies in Malaysia. This includes the expansion of plantation and research and development (R&D). Recently, one of the major areas for palm oil plantation is Sabah and Sarawak. Between 2008 and 2009, Sarawak is experiencing the largest growth of in term of planted area with 12.8 percent, followed by Peninsular Malaysia 3.3 percent and Sabah 2.1 percent. However, in term of total plantation area, Sabah remains the largest which account for 1.36 million hectares or 29% of the total planted area in the country (Overview of the Malaysian Oil Palm Industry 2009, MPOB 2010).

An increase oil palm planted area also affects the employment in Malaysia where production growth provides more job opportunity. This is proven when in 2008 the total number of person engaged in the crops subsector was 307,893 persons and the highest employment in the crops subsector was in the agricultural labor workers category which is consists of 259,696 persons or 84.3 percent. Again Sabah recorded as the highest number of employees with 127,292 persons or 41.3 percent when compared to the other

state as Sabah is the largest palm oil planted area in Malaysia (Summary Findings of Annual Census of Agricultural Establishments 2009, Department of Statistic Malaysia).

Although Malaysia is one of the major producers of palm oil, the activities is still limited to upstream related industries, which are very low in term of value-added. Considering the amount of palm oil being produced, Malaysia should have greater comparative advantage as a producer to the other palm oil related products. The ability to transform the palm oil industrial from low value-added to high value-added products can help Malaysia to reduce its overdependence on crude palm oil export. With the continuous increase of production cost in Malaysia combined with the several other factors such as the substitutes product and another palm oil producing countries such as Indonesian, Papua New Guinea, Colombia and other countries, it is expected that Malaysia's role as crude palm oil exporter will decrease in the future. Currently, this issue has not been clearly investigated by the pass studies. The understanding on the determinant international demand for crude palm oil can helps the government and its related agencies to reshapes its strategies and policy to make Malaysia as one of the world major producer not only the crude palm oil but also including the oil palm oil related products.

1.3 Objective of the Study

1.3.1 General Objectives

The general objective of this study is to find out why the world demand on Malaysian low value added of palm oil product is relatively high compared to other producer country such as Indonesia and also to find out why Malaysia still exporting the low value added palm oil product instead of high value added palm oil product.

1.3.2 Specific Objectives

This study seek to identify what cause the export demand on Malaysia palm oil is the highest in the world. The specific objectives of this study are as follow:

- (i) To identify the determinants that lead a high world export demand on Malaysian palm oil.
- (ii) To examine the long run and short run relationship between the world demand on Malaysia's palm oil and its determinants.

1.4 Significant of the Study

The aims of this study which is to identify the determinant of the world palm oil export demand in Malaysia and to analyze the impact of the exporting palm oil activity towards Malaysian economy. Through this study, the determinant that has been identify can help and provide the agency that involve in this oil palm industry such as Malaysian Palm Oil Board (MPOB), Federal Land Development Authority (FELDA), Federal Land Consolidation and Rehabilitation Authority (FELCRA), Palm Oil Research Institute of Malaysia (PORIM) and other agency that involve directly and indirectly in oil palm industry to perform a better performance in terms of production and export activity in global besides to maintain the Malaysian rank as the World's leading Palm oil producer.

Besides that, this study can guide the government and the agencies involve developing the oil palm industry in Malaysia, where the result will help them to expand and to increase the palm oil production due to the high world demand on palm oil. Besides that it will increase the Malaysia economy as this industry is one of the components on the GDP and also provide job opportunity to the people.

1.5 Scope of the Study

Scope of the study will be use the data covering on Malaysia only as this study is to identify the determinant of import demand on Malaysian palm oil. The independent variable will be the world price of palm oil, Malaysian palm oil price, price of soybean (substitutes) and the exchange rate, while the dependent variable will be the volume of export, while the dependent variable will be the export volume of Malaysia's palm oil.

1.6 Summary

In summary, the Malaysian palm oil export performance shows an increase by time until today. This study is about to examine the determinants of the Malaysian palm oil import demand in response to the issue that educate in the problem statement part. The significant of this study is to help the government and other related agencies to improve the palm oil performance in the future beside maintain the Malaysian rank as the number one palm oil producer in the world. The scope of this study is covering on Malaysian palm oil production only.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the findings of the past studies on the agricultural sector and the export growth performance regarding its determinants. This chapter also discusses the previous study on the determinants and the performance of palm oil products which is mostly studied in Malaysian and Indonesian palm oil industry.

In this chapter, the chosen literature review is more focus on the determinants of the agriculture export especially for the palm oil such as the price, the substitute's price and the exchange rate. The researcher gives a different view and conclusion about the determinants of the palm oil export demand and performance. From the literature review, all the researcher suggestion and method will be applied in this study.

2.2 The Review of Palm Oil

Ernawati, Fatimah, Arshad, Shamsudin, and Mohamed (2006) examined the AFTA and its implications to the export demand of Indonesian palm oil. Annual data were used for the period 1964 until 2004 which employed the method of Unit Root Test for Non-Stationary, Cointegration Test and Error Correction Model (ECM). The finding indicates that trade liberalization due to increase domestic price and reduce in world

price. Due to the reduction in export duty, the quantity exported to China, Europe and Rest of the World (ROW) increased by 0.38, 3.77, 0.67 and 4.63 percent respectively. They also found that, the reduction on import tariff on the exported quantity to India, china, Europe and ROW increased by 0.25, 2.67, 0.49 and 2.96 percent respectively. While the import duty and import tariff reduction by 10 percent increased export to India, china, Europe and ROW by 0.64, 6.23, 1.12 and 7.35 percent respectively.

Shariff, Rahman, and Amiruddin (2006) used the Error Correction Model (ECM), Unit Root Test (ADF and PP) and Panel Data Analysis to estimate the elasticity of foreign demand for Malaysian palm oil by using the annual data from period 1980 to 2003. The researcher found that the price of palm oil plays a very significant role in its export, thus the price needs to be stable and competitive with those of its substitutes especially soybean oil. From the panel data research, they found that the effect of a unit change in the soybean oil prices is greater on the exports of crude palm oil than the effect of the same change in the palm oil price. This shows that both oils are highly substitutable.

Jia (2009) used the least square dummy variable to derive demand model in doing an investigation into the derived demand for land in palm oil production in six major producers in the world which is, Colombia, Côte d'Ivoire, Indonesia, Malaysia, and Thailand. Jia (2009) found that own price and price of other vegetable oils do not significantly affect demand for oil palm area harvested, whereas economic growth, export market and crude oil price have significant impact on the derived demand for oil

palm area harvested. On top of that, Jia (2009) found that the pattern of oil palm area harvested differs between countries from South East Asia and the other remaining countries and the governmental intervention and political stability have a role behind the distinction feature of palm oil across the six countries.

Talib and Darawi (2002) carried out a study on an economic analysis of the Malaysian palm oil market. They used the data on total oil palm area, oil palm yield, domestic consumption, exports and imports over the period between 1970 and 1999 which employed the method of Ordinary Least Square (OLS) and Two-stage Least Square (2SLS). The results show that the Malaysian economic activity, the exchange rate and world population are importance in affecting the palm oil industry. They also found other factors which is the palm oil stock level, price of palm oil, technological advancement in production and the price of soybean oil that affecting the palm oil industry.

Alias and Tuck (2005) examined the supply response of Malaysian palm oil producers, impact of interest rate variations. The annual data from 1967 to 2002 were used with the Johansen multivariate cointegration analysis and an error correction model (ECM) is proposed to investigate the short run response of supply to its determinants. The result of the cointegration analysis shows that, the palm oil producers are found to be responsive to interest rate variations and government expenditure, an increase in the interest rate affects negatively on working capital financing, and hence discourage planting. While the coefficient on the relative price variable is found to be insignificant.

To a greater extent, the estimated structural ECM, which captures the short run response of palm oil supply to its determinants indicates that, in the short run, palm oil supply is found to be responsive to the interest rate, government support and relative prices.

2.3 The Review of the Determinants of Agricultural Exports

Gbetnkom and Khan (2002) investigate the determinants of agricultural exports in case of Cameroon between the period of 1971/1972 and 1995/1996 by using the method of Ordinary Least Square (OLS) estimation and structural adjustment dummies. The export supply functions is specified and estimated for the three export crops chosen which is cocoa, coffee and banana. The findings show that, the marginal sensitivity of crops to the relative price changes means that the price incentives are not sufficient to generate desired export supply of agricultural commodities in Cameroon. They also found that, the significant sensitivity of crops under considerations to the availability of credit to exporters, the improved road networks and the specific policy changes implemented in the framework of the SAP implies that attempts to increase the exports increase the export supply of agricultural crops in Cameroon should focus on these variables.

Abolagba, Onyekwere, Agbonkpolor and Umar conducted a study on determinants of agriculture export in Nigeria. They examined the factors that influence the agriculture exports with the specific reference to Cocoa and Rubber. The secondary data were used which is allocated between 1970 and 2005 with the Ordinary Least Square Regression (OLS). The study show that the output, domestic consumption,