

**IMPACT OF FINANCING SOURCES ON PALM
OIL INDUSTRY IN MALAYSIA**



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UNIVERSITI MALAYSIA SABAH

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**IMPACT OF FINANCING SOURCES ON PALM
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ABSTRACT

IMPACT OF FINANCING SOURCES ON PALM OIL INDUSTRY IN MALAYSIA

Cobb-Douglas production function has been widely used in various sectors and countries. This study applies the production function to examine the influence of financing sources to the production of palm oil in Malaysia. The financing sources are categorized into two types of credit. The first is private credit which consists of commercial banks credit, merchant banks credit and finance companies credit. The second is public capital credit of which Agro Bank credit is included as a proxy. Public capital credit and export of palm oil are included in the study as additional explanatory variables in the augmented production function. Statistical analyses employed in this study are Ordinary Least Squares (OLS) for multiple regressions, Autoregressive Distributed Lag (ARDL) bound testing approach for co-integration test and Granger causality test with the application of two methods namely Error Correction Model (ECM) based ARDL to test for short run causality and Toda Yamamoto approach to test for long run causality. Time series data used in the study range from the year 1997 to year 2005. The results show that the palm oil industry in Malaysia is experiencing decreasing return to scale and all financing sources except for credit from commercial banks have influence on the production of palm oil in Malaysia.



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ABSTRAK

Fungsi pengeluaran Cobb-Douglas telah digunakan secara meluas dalam membuat analisis pengeluaran di pelbagai sektor dan negara. Kajian ini menggunakan fungsi pengeluaran untuk mengenal pasti pengaruh sumber-sumber kewangan terhadap pengeluaran minyak kelapa sawit di Malaysia. Sumber-sumber kewangan dikategorikan kepada dua jenis kredit iaitu kredit swasta yang terdiri daripada kredit bank komersil, kredit bank peniaga dan kredit syarikat kewangan, manakala kredit Agro Bank termasuk sebagai proksi kepada kredit modal awam. Kredit modal awam dan ekport minyak kelapa sawit merupakan pembolehubah tambahan dalam kajian ini di dalam fungsi pengeluaran. Metodologi yang digunakan adalah Kaedah Kuasa Dua Terkecil (OLS) untuk regresi berganda, Pendekatan Ujian Persempadanan Autoregresif Lat Tertabur (ARDL), pendekatan ujian terikat untuk ujian kointegrasi dan ujian penyebab Granger dilaksanakan dengan menggunakan dua kaedah iaitu Modal Pembetulan Ralat (ECM) berdasarkan ARDL untuk ujian penyebab jangka pendek dan pendekatan Toda Yamamoto untuk ujian penyebab jangka panjang. Data siri yang digunakan dalam kajian ini meliputi dari tahun 1997 sehingga tahun 2005. Hasil ujian menunjukkan bahawa industri minyak kelapa sawit di Malaysia secara statistiknya mengalami kadar hasil pulangan berkurangan dan semua modal kecuali kredit daripada bank komersil mempengaruhi pengeluaran minyak kelapa sawit di Malaysia.



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LIST OF ABBREVIATION

9MP	Ninth Malaysia Plan
ADF	Augmented Dickey-Fuller
ARDL	Autoregressive Distributed Lag
BLUE	Best Linear Unbiased Estimators
BNM	Central Bank of Malaysia
BPM	Bank Pertanian Malaysia
CBM	Centre Bank of Malaysia
CPO	Crude Palm Oil
DFI	Development Financial Institution
ECM	Error Correction Model
FAO	Food and Agriculture Organization
FELDA	Federal Land Development Authority
GDP	Gross Domestic Product
GLC	Government Linked-Company
IRPA	Intensification of Research in Priority Areas
LM	Lagrange Multiplier
LR	Likelihood Ratio
MPOB	Malaysian Palm Oil Board
NBFI	Non-banking Financial Intermediaries
NIE	New Industrialized Economies
OECD	Organisation of Economic Cooperation and Development
OER	Oil Extraction Rate
OLS	Ordinary Least Square

POCPA	Palm Oil Credit and Payment Arrangement
PORIM	Palm Oil Research Institute of Malaysia
PORLA	Palm Oil Registration and Licencing Authority
US	United States
USD	United States Dollar



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CHAPTER 1

INTRODUCTION

1.1 The Background of Malaysia's Palm Oil Production

In 1957, agriculture was the major contributor to the economy of the country. However, starting from 1980's, manufacturing replaced the role of agriculture. That was the beginning when agriculture began to change its role from "engine of growth to sunset status" (Siamwalla, 1996). However with the Ninth Malaysia Plan (9MP), agriculture has been acknowledged again as one of the three engines of growth in the Malaysia Economy. The 9MP emphasizes on agriculture development. It focused on a big scale and high quality commercial agriculture that is processed through high technologies and created high added values. This research will relate the role of financing sources in the growth of palm oil industry in Malaysia.

Based on the Malaysia 2007 Economic Report, three of the five Malaysia's major commodities export comes from agricultural sector, there are palm oil, saw logs and sawn timber, rubber and the crude petroleum. This showed that Palm oil industry has made such a big impact in the trade balance of the country, and it is important to economic growth. As the world's biggest palm oil exporter, accounting for about 43.0% of world output, most of the palm oil was imported by Pakistan, China, Singapore, Egypt, Japan, India, Republic of Korea and Netherlands.

The palm oil industry in Malaysia has been placed under Malaysia's Palm Oil Board (MPOB) that serves as the premier government agency. Its main role is to promote and develop the national objectives, policies and priorities for the well-being of the Malaysian palm oil industry. MPOB was incorporated by an Act of Parliament (Act 582) and was established on 1st May 2000. It was a merger between the functions of Palm Oil Research Institute of Malaysia (PORIM) and the Palm Oil Registration and Licensing Authority (PORLA). All the funding of MPOB was used for research in order to develop the quality as well as the quantity palm oil and palm kernel oil produced.

Government has also allocated budget to MPOB to fund development projects and for approved research project under the Intensification of Research in Priority Areas (IRPA) programme. Aside from MPOB, companies such as IOI Corp Berhad, Sime Darby Berhad, Golden Hope Plantation Berhad, Kumpulan Guthrie Berhad, KULIM (M) Berhad and United Plantation Berhad have also been investor top choices to invest in Malaysia palm oil industry.

1.2 Overview of the Financial Institutions Impact on Malaysia's Palm Oil Industry

Soon after Malaysia's Independence Day, the new government has started to diversify the agriculture sector so that the government would not be fully dependant on the rubber sector only. The first step towards the diversification is the introduction of new commercial plantation such as palm oil, cocoa, tobacco, flowers, pepper and food commodities (Pazim and Azhar, 2007). Currently the production of palm oil is the main contributor in Malaysia's primary commodities. This is shown in the Table 1.1 below.

Table 1.1 : Production of Primary Commodities in Malaysia

Primary Coomodities	1990	1995	2000	2002	2003	2004	2005
Natural Rubber*	1,291	1,089	928	890	986	1,169	1,145
Palm Oil*	6,095	7,811	10,842	11,909	13,364	13,976	14,643
Pepper*	31	13	24	24	21	20	19
Cocoa*	247	131	70	48	36	33	28
Tobacco (cured leaves)**	10,154	10,318	7,172	11,304	11,691	12,858	9,444

(Source : Statistics on Commodities 2006, Ministry of Plantation Industries and commodities)

* '000 tonne

** '000 kg

From 1990 to 2005, production of the palm oil in Malaysia has steadily increased, compared to natural rubber production. The decrease in natural rubber production was caused by the instability of the rubber price which has directly affected Malaysia's export income. This is one of the reasons why diversification of agriculture sector is being carried out. For the other primary commodities such as

pepper and cocoa, also faced a similar fate as rubber whereby there was also a steady decrease from 1990 to 2005.

Nonetheless, according to the government, even though there is a certain amount of reserve for loans to allocate for agriculture sector by private financial institution, it is however still not enough to finance the agriculture projects. Beside, in developing countries such as Malaysia, demands for credits are generally more than the supply especially when bank is a net lender (Ong *et al.*, 2003). Lack of access to credit will impair the production of agriculture sector. According to Zhengfei and Lansink (2006), limited access to credit or debt has a negative impact on agriculture performance, hence the lack of financing instrument especially credits in Malaysia's palm oil industry will impair Malaysia vision to be the number one in the production of quality crude palm oil.

The type of facilities of financing agriculture in Malaysia are classified into two categories, special funds by Agrobank Malaysia formerly known as Bank Pertanian Malaysia (BPM) and commercial funds by private financial institution. Agrobank is a government linked-company (GLC) which is under the Minister of Finance. Loans that are provided by Agrobank are mostly funded by the government. They are given through special schemes such as Fund for Food (3F), Fund for Small and Medium Scale Industries, Commercial Fund and Fund for Rehabilitation of Small and Medium Industries that were introduced in 1998 to help small companies to survive during the recession time. The purpose of this credit scheme is to promote growth in agricultural sector and to increase participation of the Bumiputera community in agro based industries.

The commercial fund differs from special credit scheme which was mostly funded by the government. They come from commercial financial institution which solely depends on market and are profit driven. Thus, the terms and condition from these loans are based on commercial consideration. However, because of the small return and high risk in agricultural sector, the commercial banks were not willing to approve loans that were made by the farmers. In order to overcome this problem, the Third National Agricultural Policy (1998-2010) has been introduced.

The Ministry of Agriculture Malaysia has announced that total private sector investment must be in the region of RM 21.393 billion compared to the government sector investment of RM 11.039 billion. It means that funds for lending to agricultural project will have to come from commercial financial institution, proportionally higher than fund given from the government. This regulation is meant to ensure the success of the Third National Agricultural Policy (Paper Works of Agricultural Cooperation Seminar, 2000).

Nowadays, capital market has increased the roles of providing funds to the industries in Malaysia, especially in financing agricultural large-scale projects such as oil palm and fruit plantation. This has increased the competition not only among banks, but also with the capital market. This research focuses on credits that are provided by banks and the special credit scheme known as public capital that provided by the government for palm oil industry.

1.3 The Reform of Financial Sector and Its Impact on Agricultural Finance in Malaysia

The 1997 financial crisis, has given a big impact on Malaysia financial and economic sector. The obvious impact is the merging of 58 multicultural financial institutions into 10 anchor groups. Malaysia Central Bank ordered the completion of the merger by 31st December 2000, but the banks were given time until 2001 to ensure it is fully in operation during that year. According to Hewitt Associates¹ case study, Malaysia is the first country that announced the merger in banking industry and made it to be operated in such a short time.

Each anchor banks has at least a commercial bank, a finance company and a merchant bank in its group, and each banking group attained a minimum shareholders' fund of RM2 billion and an asset base of at least RM25 billion (Shanmugan and Nair, 2003). The 10 anchor banks are Malayan Banking Berhad,

¹ <http://www.hewittassociates.com/Intl/AP/en-P/AboutHewitt/OurClients/malaysia-case-01mar.aspx>

Bumiputra-Commerce Bank Berhad, RHB Bank Berhad, Public Bank Berhad, Arab Malaysian Bank Berhad, Hong Leong Bank Berhad, Perwira Affin Bank Bhd, Multi-Purpose Bank Bhd, Southern Bank Bhd and Eon Bank Bhd.

In Malaysia, there are a few institutions providing agricultural credits, namely commercial banks, finance companies, merchant banks, Federal land Development Authority (FELDA is not a banking institution), Sabah Development Bank, Agro Bank Malaysia, Bank Rakyat and farmer's organization and cooperatives. Larger projects and industrial crops such as palm oil and rubber became the focus of commercial banks, finance companies and merchant banks for loans. While for smaller projects and food production, it is handled by Agro Bank Malaysia.

At some stage in the crisis, agricultural production at current price increased by 5.6% in 1997 and in 1998 increased by 20.6% compared to production in 1996. However, the financial sector had adjusted their prudential regulation that included the reclassification of loans as non-performing from six month arrears to three months, and the increase in rate for general provisioning. Loan selection has also become more stringent in order to improve loan quality. These had happened despite an increase in agricultural production.

The increase in agricultural production is due to the high palm oil prices and the increase in export earnings caused by the depreciation in Ringgit Malaysia. By the end of August 1998, Ringgit depreciated by 40% compared to Ringgit value at the end of June 1997. While most of Malaysian agricultural commodities exports are denominated in US Dollar, this means the increase in agricultural production was caused by the decrease in Ringgit Malaysia and not by the fall in the production quantity.

1.4 Problem Statement

Malaysia was previously known as the number one palm oil producer. However since 2004 Malaysia had fallen to second place after Indonesia. Nevertheless Malaysia is still the number one in term of quality palm oil exporter², yet Indonesia may easily catch up and take over Malaysia's role as the largest quality palm oil exporter. Beginning 1999, palm oil production is Malaysia's leading commodity exports. The total exports of palm oil RM137 billion had been surpassed by the petroleum exports (Arif and Tengku Mohd Ariff, 2001). In 2008, according to Malaysia Palm Oil Board (MPOB) Director General 75 percent of the total Malaysia palm oil production was exported.

This has shown that palm oil industry in Malaysia has brought a major impact on the economic basic in creating the current wealth of the nation (Arif and Tengku Mohd Ariff, 2001). Palm oil industry also has been recognized as tools in New Economic Policy to reduce poverty in Malaysia through the government agencies such as FELDA which was created in 1956. This study emphasizes on the explanatory variables such as credits and public capital effect on palm oil production that are included all together in the augmented Cobb-Douglas production function.

According to the Food and Agriculture Organization of the United Nation (FAO) in several developing countries such as Brazil, India, Indonesia, Mexico and Sri Lanka, the supply-led and directed credit programmes that are mostly managed by the government are the dominant tool used to spur agricultural development during the three decades prior to 1990's (Coffey, 1998). This includes Malaysia as the developing countries. Even the Central and Eastern European agriculture sector had to face with the agricultural credit problems that occurred during the changes of their policies and market economy such as low agriculture enterprise profitability, accumulated debts, high inflation, risk and uncertainty, collateral problems,

² Director general of the Malaysian Palm Oil Board (MPOB) Datuk Dr Mohd Basri Wahid during a speech on a Safety in Transportation of Palm Oil Products Seminar on Sandakan by BERNAMA 12 May, 2009. <http://www.bernama.com/bernama/v5/newsbusiness.php?id=410480>

institutional restructuring and the role of credit during the transition of economy (Swinnen and Gow, 1999).

Now, the question is why does this happen? It all depends on the availability of credit from banks. Ahrendsens *et al.* (1994) mentioned that agricultural sector usually lack access to the equity market because the commercial bankers were too conservative to lend to farmers. Most of the farmers face liquidity constraints and have limited their ability to invest in farm equipment and materials such as machines, seed and pesticide. While for the informal financial markets, it is dominated by monopolist money lenders who charged high interest rates.

The lack of access to the commercial banking facilities has caused governments and donors to develop and fund numerous directed credit programmes for agriculture sector. The government made a lot of arrangements with the central bank to open government funds for providing rural financial markets. The interest rates on those funds were typically lower than the usual rate lenders (Coffey, 1998) and this is the part when many countries formed or expanded agricultural development banks and for Malaysia, it is the Agro Bank Malaysia that was formerly known as Bank Pertanian Malaysia.

Most of the Agro Bank Malaysia credit funds for palm oil financing are fully funded by the government especially for the small planters. Private commercial banks were not willing to fund the agricultural sector because of the small return. The lack of access to credit supply by private banking institutions might caused negative impact towards the production of palm oil in Malaysia. Feder *et al.* (1990) mentioned that credit is important in agriculture production especially to the small scale farmers as the credit does meets farmers need to hold cash while waiting for the agricultural production cycles to complete. In the palm oil sector, in order to complete the production cycles, farmers have to wait around four to five years for the production cycle to complete. The important of credit and the lack of access to credit markets had motivated this study to look further on this issue. Thus the

impact of credit constraints on production has become one issue that received much attention (Blancard *et al.*, 2006).

1.5 Objective of Study

The main objective of this research paper is to explore the impact of the financing sources to the palm oil industry in Malaysia, in particular the role of credit and government subsidy to growth of palm oil production using the Cobb-Douglas basic production function.

The objectives of this study are:

- 1.5.1 To investigate if financial institutions through private credit and public capital significantly influence the palm oil production in Malaysia.
- 1.5.2 To examine the causality among independent variables with the dependent variable.

1.6 Limitation of Study

The actual plan for this study is to use quarterly data from 1995 until 2007, which indicated 52 observations. However, the limitation of data for credit from finance companies which is only available from 1997 to 2005 has reduced the observation from 52 to 36 observations.

The data for labour in palm oil industry that were obtained from Ministry of Plantation Industries and Commodities in Statistics on Commodities 2006 were only available in annual format. In order to transform the data to quarterly, it has been converted from lower frequency to higher frequency using interpolation technique.