The Impact of World Palm Oil Price Changes on Edible Oil Industry of Myanmar: Case Study on Groundnut Oil

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INTRODUCTION

A sharp increase in of palm oil imports from Malaysia over the past two years causes more Myanmar consumers to switch from relatively costly peanut oil to a cheaper one. Imported palm oil is nearly as good as peanut oil, has a clear color and the price is so cheaper that many people prefer it. The edible oil industry of Myanmar depends on the world palm oil price changes, especially on the price changes in the export countries of palm oil to Myanmar. In order to maintain domestic edible oil prices at a low level, Myanmar adopted open import policy of importing large quantities of cheap palm oil (Favre and Myint, 2009).

Edible oil, in accordance with its traditional uses, plays an important role in Myanmar and is considered as the second most important food item after rice. Edible oil is essential ingredient in Myanmar's daily meal, which accounts for 6% of average monthly expenditure on essential foods (CSO, 2006). For domestic consumption, the oil seed crops are generally grown in the different agro-ecological zones in Myanmar. Over 79% of the total oil seed crops production comes from Central Myanmar: Sagaing, Magway and Mandalay Region. Major oil seed crops are groundnut, sesame, sunflower, niger, mustard, coconut and oil palm. Among them, groundnut is the most important oil seed crop which has been grown both in rainfed and in irrigated areas and sesame occupied the largest sown area. In Myanmar, total population is about 52 million (2015) and per capita consumption of edible oil is about 9.3 kg annually (10 kg for urban and 8.6 kg for rural). So, the annual edible oil requirement is about 500,000 MT. Restaurants and industry use 250,000 MT, thus total utilization is 750,000 MT. However, 60% of the total oil seed crop production is used for edible oil production, which is about 330,000 MT. Therefore, the country's edible oil production is insufficient for domestic requirements. To bridge the gap between the demand and supply, cheaper palm oil is imported from neighbouring countries, mainly from Malaysia (Thaung, 2011). Myanmar's edible oil in 2015-2016 was found to be only a small fraction (8.6%) of refined oil, bleached and deodorized. The only two locally produced major edible oils directly marketed in large volume in Myanmar are groundnut and sesame oil. Niger and mustard can be found on the market in small volumes. Soybean, sunflower and rice bran oils are rarely found as pure oils in the market. Palm oil is the main edible oil consumed in Myanmar and accounts for an estimated 53% of the total consumption. Palm oil is sold either pure or mixed with groundnut and sesame oil in the market.

Background of the study

Myanmar is experiencing a deficit of edible oil and needs to import 30% of the local consumption each year in order to meet demand, according to sources from Myanmar Edible Oil Dealer's Association (Myanmar business today journal, October 24, 2013). Edible oil import is a major source of supply to meet local edible oil market requirement. Domestic edible oil prices seem to be significantly influenced by the palm oil import quantity and price. The most important thing is to adjust seasonal palm oil imports appropriately and to avoid negative impacts on the productivity of domestic oil and oilseed crops. The current status of inflow of palm oil into Myanmar's oilseed crops sector has several negative impacts for oilseed farmers, consumers and the national economy. These impacts slow down the productivity growth, destabilize market prices, lower rural household incomes and raise consumers' concerns over health due to lack of nutrition. The world palm oil price changes will affect the edible oil industry of Myanmar as Myanmar is increasingly dependent on palm oil imports. Therefore, it is necessary to analyze the impacts of world palm oil prices changes on Myanmar's edible oil industry.

In this study, the specific objectives are:

1. To analyze the influence of palm oil inflow and its price changes on domestic groundnut oil, sesame oil and palm oil market prices;
2. To identify and analyze the relationship between world palm oil prices and the domestic palm oil prices; and
3. To determine the inter-relationship between world palm oil price changes and the price of groundnut oil in Myanmar's edible oil market.

RESEARCH METHODOLOGY

The object of this study is to investigate the impacts of world palm oil prices on the edible oil industry in Myanmar; to examine whether world palm oil prices have a significant effect on the price changes of palm oil and groundnut oil in Myanmar and to analyze the influence of palm oil import and its price changes on domestic groundnut oil, sesame oil and palm oil market prices. The study used secondary data, and the monthly data were collected from different secondary sources from 2000 to 2013. The relevant secondary information was taken from published and official records of government, Market Information Services (MIS), Central Statistical Organization (CSO), online database websites from Food and Agricultural Organization (FAO), (FAOSTAT), World Bank Database, United Nations Conference on Trade and Development (UNCTAD), United States Department of Agriculture (USDA) and other relevant databases on the net. Quantitative approach was also used in this study to clarify the influence of palm oil inflow and its price changes on domestic groundnut oil, sesame oil and palm oil market prices. Granger causality test was conducted to examine the direction and relationship between the variables. The regression models were analyzed by Eviews version7.

Model specification

A model of the domestic palm oil price system of equation is as follows:

$PDP_t = f(PDP_{t-1}, PWP_t, PWP_{t-1})$

where:

PDP$_t$ = Domestic palm oil price in month t
PDP$_{t-1}$ =Domestic palm oil price in month t-1
PWP$_t$ =World palm oil price in month t
 PWP$_{t-1}$ =World palm oil price in month t-1

Granger causality test

The long-term relationship between variables can be tested by using time series analysis. The direction of causality was examined using the Granger causality test. The Granger causality test can be conducted not only for level stationary but also for differenced stationary series. If the Granger causality test holds, it suggests X Granger causes Y. We can then interpret that the past values of X have explanatory power for Y, or X might be causing Y.

RESULTS AND DISCUSSION

The influence of palm oil inflow and its price changes on domestic groundnut oil, sesame oil and palm oil market prices

The response of prices of domestic groundnut oil, sesame oil and palm oil to palm oil imports and world palm oil price changes are revealed in Table 1. The data for the amount of palm oil import were based on the legal import which was obtained from the online data source. The study was not able to include the amount of illegal palm oil imports. In the year 2001 and 2009, domestic groundnut oil, sesame oil and palm oil prices decreased with decreasing amount of palm oil import even though world palm oil price decreased. This may be the impact of illegal palm oil imports. In Myanmar, the edible oil demand kept increasing as the population is growing. Therefore, Myanmar seems not to follow the demand theory for palm oil imports. Despite the fact that the world palm oil price increases, Myanmar still imports more amount of palm oil to meet the increase demand of the edible oil in the country. So, the impact of world palm oil price on the amount of legal palm oil import was not able to be detected. However, the impact of world palm oil price changes on the domestically produced edible oil prices was clearly observed in the study. Myanmar's palm oil import policy is to maintain domestic edible oil prices at a low level. It can be seen that this objective has been achieved after 2011. Myanmar's edible oil policy has been relaxed during the time of democratic government. The government encouraged more legal imports of palm oil that is reflected in the achievement of the nation's edible oil price stability policy. As the policy becomes more transparent and more flexible, the legal trade of palm oil is encouraged and resulted in the decrease of domestic palm oil prices in the year 2011- 2013.

Table 1. Palm oil import, world palm oil prices and domestic groundnut oil, sesame oil and palm oil prices changes

Year	Amount of palm oil import (,000 MT)[1]	World palm oil prices (US$/MT)[2]	Domestic prices (US$/MT) (Yangon)[3]		
			Groundnut oil	Sesame oil	Palm oil
2000	220	310	763	680	584
2001	188	286	647	645	336
2002	192	390	930	850	323
2003	224	443	902	804	793
2004	278	471	913	831	782
2005	304	422	884	829	755
2006	330	478	822	729	647

2007	360	780	1337	1107	1020
2008	367	949	1811	1791	1454
2009	345	683	1218	1167	1033
2010	390	901	1655	1630	1267
2011	470	1125	2054	2231	1567
2012	583	999	1671	2051	1229
2013	600	857	1326	1907	982

Source: 1=United States Department of Agriculture (USDA),
       2=World Bank Database (WB),
       3=Market Information Services (MIS)

Fig. 1 showed the price movements of annual domestic groundnut oil price (Yangon), sesame oil price (Yangon), palm oil price (Yangon) and world palm oil price. In this figure, domestic groundnut oil price, sesame oil price and palm oil price had the same trend with world palm oil price movement. And, it was interesting to observe that the price of palm oil in Yangon market was lower than the world palm oil price in the year 2002 (MIS,2002). It may be caused by the illegal import of palm oil through border trade.
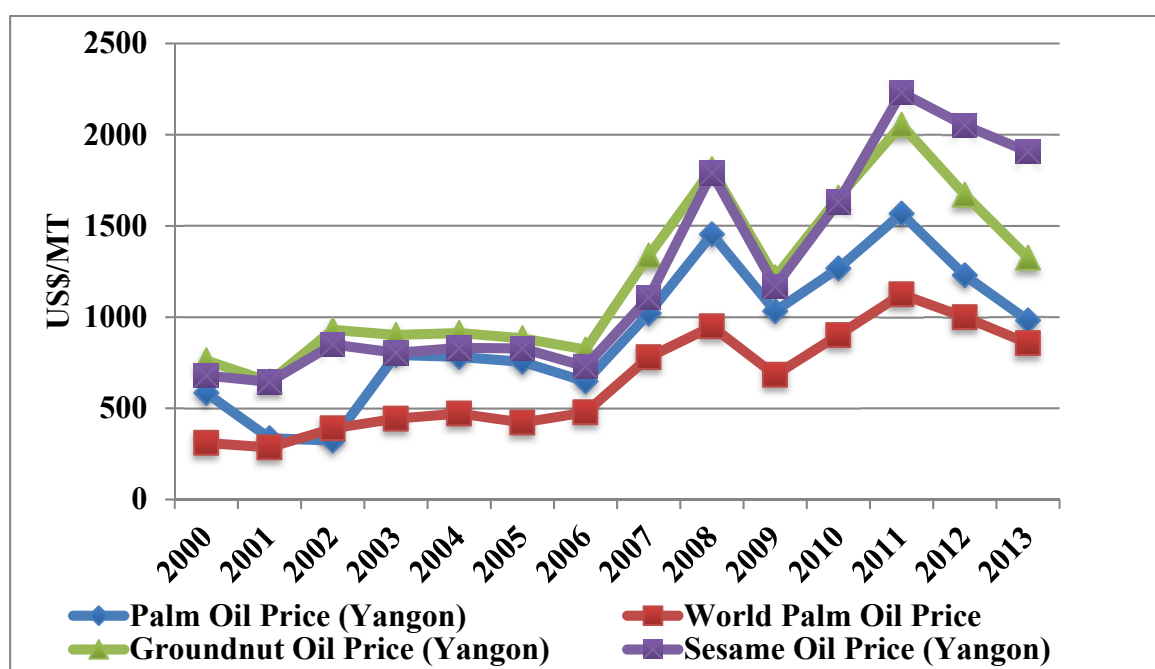

Fig. 1. Annual domestic groundnut oil price (Yangon), sesame oil price (Yangon), palm oil price (Yangon) and world palm oil price movements (2000-2013)

The relationship between world palm oil price and domestic palm oil price

The relationship between world palm oil price and domestic palm oil price was observed in Table 2. In this table, the dependent variable was the domestic palm oil price in the current month and independent variables were domestic palm oil price in the previous month, and world palm oil price in the current month and world palm oil price in the previous month. From this result, domestic palm oil price in the previous month and world palm oil price in the current month had positive relationship with domestic palm oil price in the current month at 1% significant level. Therefore, if 1 % increased in domestic palm oil price in the previous month and world palm oil price in the current month, domestic palm oil price in the

current month will increase by 0.9 and 0.4%, respectively. However, world palm oil price in the last month had negative relationship with domestic palm oil price in the current month at 5% significance level. Therefore, if the world palm oil price in the previous month is increased by 1%, domestic palm oil price in the current month will decrease by 0.2%.

This result showed that world palm oil price in the current month will increase the price of domestic palm oil in the current month. If world palm oil price in the previous month increased, domestic palm oil price in the current month will decrease.

Table 2. The relationship between world palm oil price and domestic palm oil price

| Independent Variables	Coefficient	Probability
Constant	-5.64^{ns}	0.64
Local palm oil price in month t-1	0.86***	0.00
World palm oil price in month t	0.41***	0.00
World palm oil price in month t-1	-0.22**	0.05
R-squared	0.89	
Adjusted R-squared	0.88	
Durbin-Watson	1.47	

Note: Dependent Variable: Local palm oil price in month t
   ***=significant at 1% level, **=significant at 5% level,
   *=significant at 10%level and ns=not significant

The inter-relationship between world palm oil price changes and the price of groundnut oil in Myanmar edible oil market

The causal relationship among the variables from the result of granger causality test was illustrated in Fig. 2. From this result, world palm oil price has unidirectional movement with the amount of palm oil import to Myanmar, real price of palm oil in Myanmar (Yangon) and real price of groundnut oil in Myanmar (Yangon). Therefore, world palm oil price might be a causal factor for the changes of the amount of palm oil import to Myanmar, real price of palm oil in Myanmar (Yangon) and real price of groundnut oil in Myanmar (Yangon). Moreover, real price of palm oil in Myanmar (Yangon) and real price of groundnut oil in Myanmar (Yangon) were connected with bi-directional way. That is why real price of palm oil in Myanmar (Yangon) and real price of groundnut oil in Myanmar (Yangon) had mutual causality for the price changes.
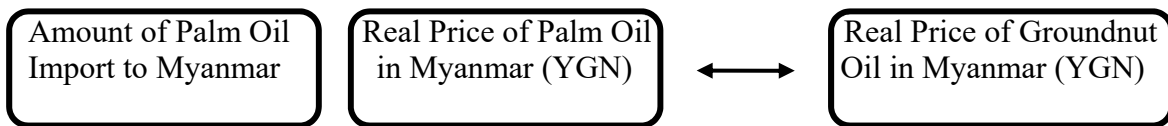
World Palm Oil Price

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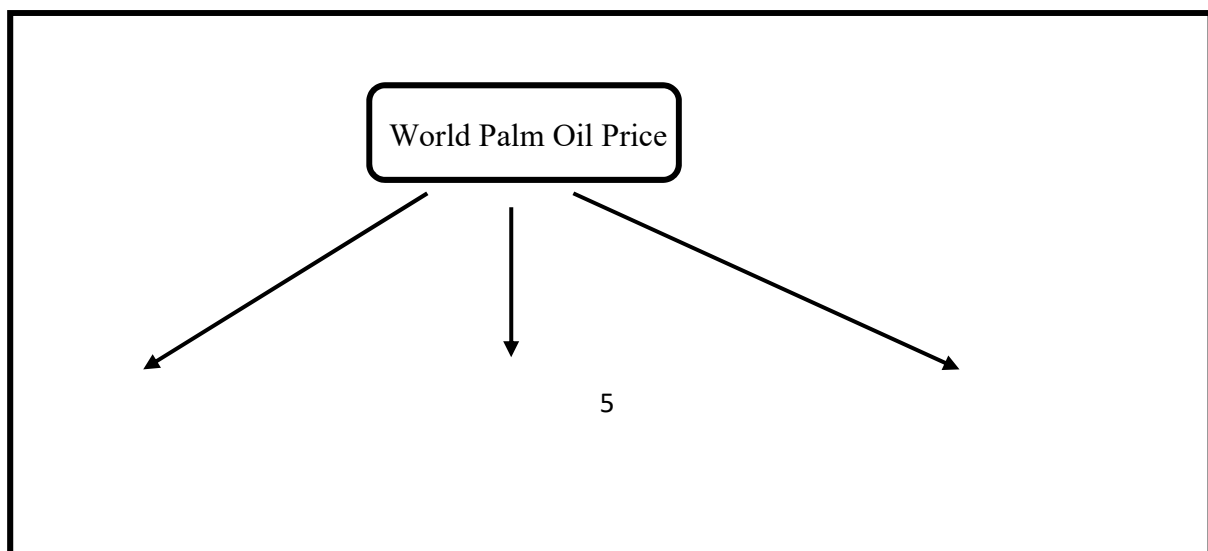
Fig. 2. Causal relationships among world palm oil price, amount of palm oil import to Myanmar and real price of palm oil and ground oil in Myanmar (YGN)

CONCLUSION

The amount of palm oil imports to Myanmar have been increasing steadily and begun to have some impacts on domestically produced oil prices. Prices of domestic groundnut oil, sesame oil and palm oil respond to the palm oil import and world palm oil price changes. Increasing trend of palm oil imports was observed and it is a signal for effective implementation of import-substitution- industrialization policy.

It is a common practice for edible oil traders to adulterate groundnut oils by mixing palm, sunflower, soybean, niger or rice bran oils to make more profit. To maintain the 'nutty' flavor of mixed oils and increase the dilution rate, artificial flavors are added into the oil mix. For these reasons, improvement of oil safety management system by strengthening the standardization of infrastructure is also needed.

The purpose of the government intervention in the edible oil market is to keep the edible oil price from rising to very high level. In this scenario, the low-income consumers are the winners while the oil seed value added producers and market participants in groundnut and sesame oil sub-sectors are the losers. There are strong negative effects on health by consuming poor quality edible oil. It is therefore urgently needed to rectify the oil import policy and to protect the consumers as well as the domestic edible oil industry. The palm oil import policy should be considered by taking into account the long term impact on health of palm oil consumers.

No seasonal data or discussion in this study. It does not make sense. It is found that the world palm oil prices have direct impact on domestic groundnut oil price changes based on world palm oil prices movement. In Myanmar only a small fraction, 8.6%, of edible oil is refined, bleached and deodorized as compared with the edible oil in the world market. Therefore, it is important for the government to support the producers or investors in agribusiness development as well as in modern oil refineries.

Basically, there are two major policy objectives in Myanmar for the oil crops subsector, such as to achieve self-sufficiency in edible oil and to stablize edible oil price. In order to promote the second objective of edible oil policy, it should be encouraged to engage in constructive dialogue among all the participants in the oilseed crops and edible oil sector, from farmers to consumers, to determine a fair price level in the domestic market.

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