

Impact of Tax Imposition on Cost Competitiveness of the Malaysian Palm Oil Industry

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ABSTRACT

The study aims at examining the impact of tax imposition on the cost competitiveness of the Malaysian palm oil industry, using gross profit margin analysis. Secondary data were used in this study and gross margin analysis was undertaken to identify the relationship between cost and revenue for each commodity, namely, oil palm, rubber and cocoa. Gross profit (GP) is the difference between total revenue (TR) and total operating cost (total cost of production). To calculate gross profit margin (GPM), GP is multiplied by 100 and divided by TR ($GP/TR \times 100$). GPM with and without tax were calculated and compared for each commodity. In the calculation of GPM, the average price in 2013 and the average price over seven years (2007-2013) for the three commodities were used. Based on the average price in 2013, it was found that GPM with tax for rubber was the highest at 48.93% compared with oil palm (45.91%) and cocoa (7.79%). For oil palm, if the crude palm oil (CPO) price were less than or equal to RM 2500/t, an increase in CPO price will increase GPM, and the difference between GPM with and without tax becomes lower. However, if CPO price were greater than RM 2500/t (when the windfall profit levy will be imposed on oil palm plantations), an increase in CPO price will increase GPM, but the difference between GPM with and without tax becomes higher. This means that the windfall profit levy gives a higher impact to the oil palm plantation than cess and sales tax.

Keywords: cost competitiveness, gross profit margin analysis, oil palm plantation, tax.

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INTRODUCTION

The palm oil industry has been historically a significant part of the Malaysian economy. The oil

palm, originally from West Africa, was first introduced into Malaya in the early 1870s as an ornamental plant. In their analyses of the palm oil industry in Malaysia,

Gray (1969) and Singh (1976) divided the development of the industry in Peninsular Malaysia into three distinct phases, starting with the experimental phase from the late 1800s to 1916, while the plantation development phase commenced in 1917 with the establishment of Tennamaram Estate continuing until about 1960. The expansion phase from the 1960s was in response to the government's diversification policy to reduce the dependence of the national economy on natural rubber, which had been facing declining prices and competition from synthetic rubber. Following the recommendation of the World Bank mission in 1955, the government decided to promote the planting of oil palm. A key driver for this effort was the Federal Land Development Authority (Felda) which was established in 1956 with the socio-economic responsibility of developing plantation land for the rural poor and the landless.

As was mentioned earlier, the industry had been largely dormant until the 1960s, when the Malaysian government launched an agricultural diversification

programme to reduce the country's economic dependence on rubber and tin. In the late 1960s, the government introduced several land settlement schemes for planting oil palm as a means of raising landless farmers and smallholders out of poverty. The government started refining crude palm oil (CPO) in the 1970s, marking the emergence of a wide range of processed palm oil products. The major players in the industry's supply chain can be grouped into clusters covering upstream producers, downstream producers, exporters and importers, customers, government agencies and other players. Of the 5.39 million hectares of oil palm planted in Malaysia in 2014, 61.5% were under private ownership (particularly by plantation companies), 23.5% were under government land schemes, while the remaining 15.0% were individual smallholdings (Table 1).

Since the introduction of the First Malaysian Plan in 1965, palm oil continues to be identified as a key driver for Malaysia's economic growth. As a strategic industry, palm oil contributed more than

RM 63.6 million in export earnings for the year 2014.

PROBLEM STATEMENT

The palm oil industry covers the whole value chain, starting from the plantations right up to processing. The development of this industry is mainly driven by the private sector, and remains heavily oriented towards the plantations. With a long list of taxes, such as cess, windfall profit levy and export duty, the plantation sector today can be considered as one of the most heavily-taxed industries in the country. The types of taxes that are currently being imposed on the plantations are shown in Table 2.

According to Adnan (2010), most sectors of the economy pay just 26% corporate tax whereas the total tax paid by the oil palm plantation sector is higher than 46%, which is 20% more than for the other sectors. The palm oil industry is also worried that the government may come up with yet another new tax on plantation profits, in an effort to subsidise other palm oil sub-sectors.

TABLE 1. DISTRIBUTION OF OIL PALM PLANTED AREA ACCORDING TO CATEGORY (2013-2014)

Category	2013		2014	
	ha	%	ha	%
Private estates	3 218 693	61.5	3 216 862	61.5
Government schemes:				
Felda	701 302	13.4	693 708	12.9
Felcra	171 405	3.3	169 489	3.1
RISDA	76 478	1.5	76 636	1.4
State schemes/government agencies	313 569	6.0	328 532	6.1
Independent smallholdings	748 292	14.3	807 008	15.0
Total	5 229 739	100.0	5 392 235	100.0

Note: Felda - Federal Land Development Authority. Felcra – Federal Land Consolidation and Rehabilitation Authority. RISDA - Rubber industry Smallholders Development Authority.

Source: MPOB (2014).

TABLE 2. TYPE OF TAXES IMPOSED ON PLANTATIONS

No.	Type	Peninsular Malaysia	Sabah	Sarawak
1	MPOB Cess Order 2000		RM 11/t CPO and CPKO	
2	MPOB Cess (Amendment) Order 2009		RM 2/t CPO and CPKO	
3	Sales Tax: CPO	Nil	Based on CPO sales and CPO price above RM 1000. 7.5% of sales volume x average price of CPO (Sabah)	Based on CPO and CPKO production: CPO: 5% x CPO price x CPO production
	CPKO		Nil	CPKO: 5% x CPKO price x CPKO production
4	Windfall Profit Levy (on FFB producers not excluding smallholders)	Difference of CPO price above threshold (RM 2500 x 3% x FFB produced)	Difference of CPO price above threshold (RM 3000 x 1.5% x FFB produced)	

Note: CPO – crude palm oil.
CPKO – crude palm kernel oil.
FFB – fresh fruit bunch.

These high taxes can hinder the achievement of the National Key Economic Areas (NKEA) projects, 95% of which rely on private sector investment.

OBJECTIVE

The objective of the study is to examine the impact of tax imposition on the cost competitiveness of the palm oil industry, particularly the oil palm plantation sector, against other major commodities in Malaysia.

METHODOLOGY

The study uses gross profit margin (GPM) analysis to examine the relationship between cost structure and revenue for three commodities, namely, oil palm, rubber and cocoa. Basically, gross profit (GP) for any agricultural crop is the difference between total revenue and total variable cost as shown below:

$$GP = TR - TOC$$

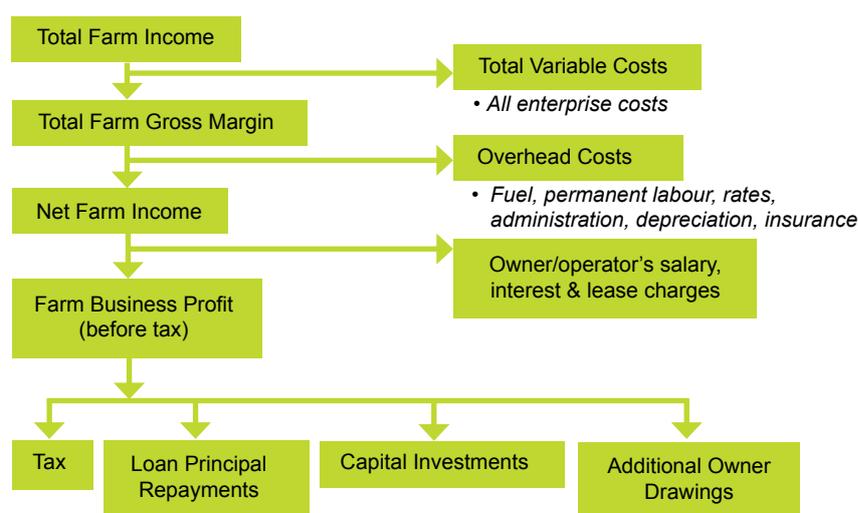
$$GPM (\%) = (GP/TR) \times 100$$

where:

- GP - gross profit.
- TR - total revenue (price x yield).
- TOC - total operating cost (total cost of production).
- GPM (%) - gross profit margin.

The GPM analysis for the palm oil industry adapted a framework provided by a document on

the Northern Victoria Irrigated Cropping Gross Margins (2009 – 2010), prepared by the Department of Sustainability and Environment, Department of Primary Industries, Victoria, Australia (Anon., 2010) (Figure 1). GPM for oil palm was then compared with GPM for the other commodities, rubber and cocoa.



Source: Adapted from Anon (2009). Northern Victoria Irrigated Cropping Gross Margins (2009-2010).

Figure 1. Methodology for gross margin analysis: how total farm gross margin relates to farm business profit.

GPM can be used to make comparisons of the relative profitability of alternative agriculture options that have similar land, machinery and equipment requirements. They indicate the costs of production of alternative agriculture options, which will help with estate management decisions. They can also be used to analyse the performance of plantation companies and may indicate areas where possible improvements can be made.

In this study, secondary data were incorporated into the calculation of GPM for oil palm, rubber and cocoa. The data used included price, yield, cost of production and type of taxes. There are several sources of secondary data, including books and periodicals, government publications of economic indicators, census data, annual reports of companies, and others. The advantage of using secondary data sources is the savings in time and costs of acquiring such information. However, secondary data sources as the sole source of information have the drawback of becoming obsolete and not meeting the specific needs of a particular situation or setting. Hence, it is important to refer to sources that offer current and up-to-date information.

RESULTS AND DISCUSSION

Results of the study are divided into two parts, namely, comparison of

GPM among the three commodities at different levels of commodity price, and sensitivity analysis of GPM for each commodity. Comparison of GPM among the commodities is based on different levels of price, *i.e.* the average price for the year 2013, the average price over seven years (2007-2013), the lowest average price for each commodity within the period 2007-2013, and the highest average price for each commodity within the same period.

Comparison of GPM among Commodities at Different Levels of Price

GPM based on average price for the year 2013. In 2013, the average prices for CPO, SMR (Standard Malaysian Rubber) 20 and SMC (Standard Malaysian Cocoa) 2 were RM 2376, RM 7750 and RM 6442 t, respectively. At those price levels, GP per hectare without tax for oil palm was RM 4376 and GPM was 46.19% (Table 3). However, with tax, GP and GPM for the commodity decreased to RM 4326 and 45.91%, respectively. The difference between GPM with and without tax is 0.28%. For rubber, GP without tax was RM 4519 and GPM was 50%. However, with tax, GP and GPM for the commodity decreased to RM 4330 and 48.93%, respectively. The difference between GPM with and without tax is 1.07%. For cocoa, unlike oil palm and rubber, there is no tax imposed on the plantations.

Among the three commodities, GPM with and without tax for rubber is the highest.

GPM based on average price over the period 2007-2013. Over the period of seven years (2007-2013), the average prices for CPO, SMR 20 and SMC 2 were RM 2661, RM 9050 and RM 7769/t, respectively. Based on these prices, it was found that, without tax, rubber recorded the highest GP at RM 6292/ha, followed by oil palm (RM 5672/ha) and cocoa (RM 1961/ha) (Table 4). With tax imposed, rubber still recorded the highest GP compared with oil palm and cocoa. In terms of GPM with and without tax, the highest was also recorded by rubber, while the difference between GPM with and without tax for rubber is lower than for oil palm. This means that the impact of tax imposed on rubber plantations is smaller compared with the impact on oil palm plantations.

GPM based on the lowest average price within the period 2007-2013. The lowest average prices for CPO, SMR 20 and SMC 2 within the period 2007-2013 were RM 2376/t, RM 6360/t and RM 6277/t, respectively. Based on these prices, oil palm recorded the highest GPM either with or without tax as compared with the other commodities. At that price, GP for oil palm without tax and with tax were RM 4376/t and RM 4326/ha, respectively, while for rubber, GP

TABLE 3. COMPARISON OF GROSS PROFIT MARGIN AMONG THREE COMMODITIES BASED ON AVERAGE PRICE FOR 2013

Item	Oil palm		Rubber		Cocoa
	Without tax (A)	With tax (B)	Without tax (A)	With tax (B)	Without tax
Average price (RM/t)	2 376		7 750		6 552
Gross profit (RM/ha)	4 376	4 326	4 519	4 330	632
Gross profit margin (%)	46.19	45.91	50.00	48.93	9.79
Difference in gross profit margins (%) with and without tax (B-A)	-0.28		-1.07		-

TABLE 4. COMPARISON OF GROSS PROFIT MARGIN (GPM) AMONG THREE COMMODITIES BASED ON AVERAGE PRICE OVER THE PERIOD 2007-2013

Item	Oil palm		Rubber		Cocoa
	Without tax (A)	With tax (B)	Without tax (A)	With tax (B)	Without tax
Average price (RM/t)	2 661		9 050		7 769
Gross profit (RM/ha)	5 672	5 529	6 292	6 103	1 961
Gross profit margin (%)	52.67	51.58	58.20	57.45	25.19
Difference between gross profit margin (%) with and without tax (B-A)	-1.09		-0.75		–

without tax and with tax were RM 2638 and RM 2449/ha, respectively (Table 5). The difference between GPM with and without tax for oil palm is 0.28% while for rubber the difference is 1.72%. This means that based on the lowest price received by the plantations according to commodity within the period 2007-2013, the impact of tax for rubber was higher than for oil palm even though rubber plantation owners had to pay only cess while oil palm plantation owners needed to pay cess as well as sales tax.

GPM based on the highest average price within the period 2007-2013. Within the period 2007-2013, the highest prices for CPO, SMR 20 and SMC 2 were RM 3218/t, RM 13 480/t and RM 9331/t, respectively. As shown in Table 6, the highest GPM without tax and with tax among the three commodities were recorded by rubber at 73.16% and 72.86%, respectively. In terms

of GPM without tax and with tax, the difference for oil palm is 2.96% while for rubber it is only 0.3%. This means that when the highest price of CPO and SMR 20 prevailed, the impact of tax for oil palm was higher than for rubber because oil palm plantations had to pay another tax, namely, the windfall profit levy.

Table 7 shows a summary of GPM without tax and with tax for oil palm and rubber at different price levels. It is evident that the prices used in the calculation influence GPM for oil palm and rubber (either with tax or without tax). Overall, GPM for rubber were higher than oil palm except when GPM was based on the lowest average price within the period 2007-2013. At that price, GPM for oil palm without tax was 46.19% compared with rubber at only 36.86%. With tax, GPM for oil palm decreased to 45.91%, while for rubber it decreased to 35.14%.

Sensitivity Analysis of GP and GPM

A sensitivity analysis was used to indicate whether GP (RM/ha) and GPM (%) varied if the prices used were different. In this analysis, several prices according to commodity were used. In order to identify the impact of taxes on GP and GPM, a comparison between GPM without tax and with tax was made. The impact of the tax imposed for each commodity can be determined by the differences between GPM.

Sensitivity analysis of GPM for oil palm. CPO prices, i.e. RM 2000/t, RM 2200/t, RM 2600/t, RM 3100/t and RM 3800/t, were used to calculate GP and GPM for oil palm. For more detailed information, GP and GPM for oil palm by region, namely, the Peninsula, Sabah and Sarawak, were computed. Tables 8a, 8b and 8c indicate GP and GPM by region at various prices of CPO,

TABLE 5. COMPARISON OF GROSS PROFIT MARGIN (GPM) AMONG THREE COMMODITIES BASED ON THE LOWEST AVERAGE PRICE WITHIN THE PERIOD 2007-2013

Item	Oil palm		Rubber		Cocoa
	Without tax (A)	With tax (B)	Without tax (A)	With tax (B)	Without tax
Lowest average price (RM/t)	2 376		6 360		6 277
Gross profit (RM/ha)	4 376	4 326	2 638	2 449	466
Gross profit margin (%)	46.19	45.91	36.86	35.14	7.41
Difference between gross profit margin (%) with and without tax (B-A)	-0.28		-1.72		–

while Figures 2, 3 (Peninsular), 4 (Sabah) and 5 (Sarawak) show the differences in GPM by region at various prices of CPO. When CPO price increased, GP and GPM also increased. For instance, at a CPO price of RM 2000/t, GP and GPM (without tax) were RM 2568 and 33.50%, respectively (Table 8a). If CPO price increased to RM 2200/t, GP and GPM went up to RM 3531 and 40.92%, respectively. However,

the imposition of tax reduced GP and GPM. At a CPO price of RM 2000/t, GP decreased to RM 2518 while GPM reduced to 40.58%. From the analysis, it is shown that there are two scenarios for oil palm according to region. In the peninsula, the first scenario is that if the CPO price increased (but remained below or equal to RM 2500/t), the difference between GPM with and without

tax will decrease (Figures 2 and 3). However, if CPO price increased above RM 2500/t, the difference between GPM with and without tax will increase. This is due to the impact of the windfall profit levy. If CPO price was lower than or equal to RM 2500/t, no windfall profit levy is imposed on the oil palm plantations, and vice versa. In Sabah and Sarawak, if the CPO price increased (but remained

TABLE 6. COMPARISON OF GROSS PROFIT MARGIN (GPM) AMONG THREE COMMODITIES BASED ON THE HIGHEST AVERAGE PRICE WITHIN THE PERIOD 2007-2013

Item	Oil palm		Rubber		Cocoa
	Without tax (A)	With tax (B)	Without tax (A)	With tax (B)	Without tax
Highest average price (RM/t)	3 218		13 480		9 331
Gross profit (RM/ha)	8 295	7 830	12 321	12 132	3 526
Gross profit margin (%)	61.94	58.98	73.16	72.86	37.72
Difference between gross profit margin (%) with and without tax (B-A)		-2.96		-0.31	-

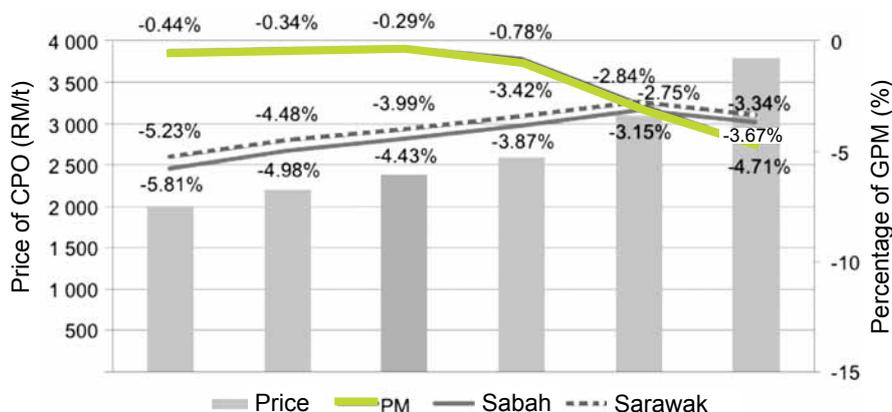


Figure 2. Impact of taxes on the differences gross profit margin (GPM) according to crude palm oil (CPO) prices by region.

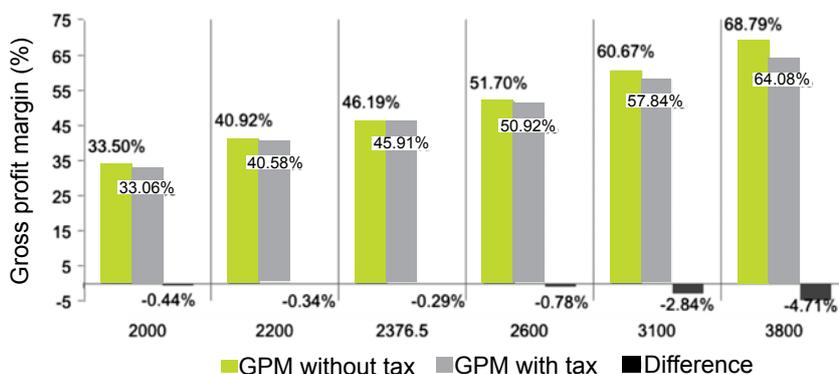


Figure 3. Impact of taxes on the differences between gross profit margin (GPM) according to crude palm oil (CPO) prices in the peninsula.

TABLE 7. SUMMARY OF GROSS PROFIT MARGIN (GPM) WITHOUT TAX AND WITH TAX FOR OIL PALM AND RUBBER AT DIFFERENT PRICE LEVELS

Criteria of price used in GPM calculation	Oil palm		Rubber	
	Without tax (%)	With tax (%)	Without tax (%)	With tax (%)
GPM based on average price for 2013	46.19	45.91	50.00	48.93
GPM based on average price over the period 2007-2013	52.67	51.58	58.20	57.45
GPM based on the lowest average price within the period 2007-2013	46.19	45.91	36.86	35.14
GPM based on the highest average price within the period 2007-2013	61.94	58.98	73.16	72.86

TABLE 8a. SENSITIVITY ANALYSIS OF GROSS PROFIT MARGIN (GPM) FOR OIL PALM IN THE PENINSULAR AT DIFFERENT PRICE LEVELS

	Without tax					With tax				
	2 000	2 200	2 600	3 100	3 800	2 000	2 200	2 600	3 100	3 800
CPO price (RM/t)	2 000	2 200	2 600	3 100	3 800	2 000	2 200	2 600	3 100	3 800
Price of FFB (RM/t)	398	448	548	673	848	395.40	445.40	533.84	670.40	845.40
Gross profit (RM/ha)	2 567.94	3 530.94	5 456.94	7 864.44	11 234.94	2 517.86	3 480.86	5 349.08	7 467.68	10 433.72
Gross profit margin (%)	33.50	40.92	51.70	60.67	68.79	33.06	40.58	50.92	57.84	64.08
Difference (%)	-	-	-	-	-	-0.44	-0.34	-0.78	-2.84	-4.71

TABLE 8b. SENSITIVITY ANALYSIS OF GROSS PROFIT MARGIN (GPM) FOR OIL PALM IN SABAH AT DIFFERENT PRICE LEVELS

	Without tax					With tax				
	2 000	2 200	2 600	3 100	3 800	2 000	2 200	2 600	3 100	3 800
CPO price (RM/t)	2 000	2 200	2 600	3 100	3 800	2 000	2 200	2 600	3 100	3 800
Price of FFB (RM/t)	415.64	468.64	574.64	707.14	892.64	380.44	430.14	529.54	653.79	827.74
Gross profit (RM/ha)	3 230.76	4 337.40	6 550.68	9 317.28	13 190.52	2 495.79	3 533.52	5 608.99	8 184.54	11 597.38
Gross profit margin (%)	37.23	44.33	54.60	63.10	70.77	31.42	39.34	50.73	59.96	67.10
Difference (%)	-	-	-	-	-	-5.81	-4.98	-3.87	-3.15	-3.67

Note: CPO – crude palm oil.

TABLE 8c. SENSITIVITY ANALYSIS OF GROSS PROFIT MARGIN (GPM) FOR OIL PALM IN SARAWAK AT DIFFERENT PRICE LEVELS

	Without tax					With tax				
	2 000	2 200	2 600	3 100	3 800	2 000	2 200	2 600	3 100	3 800
CPO price (RM/t)	2 000	2 200	2 600	3 100	3 800	2 000	2 200	2 600	3 100	3 800
Price of FFB (RM/t)	414.09	467.09	573.09	705.59	891.09	387.67	438.27	539.78	666.68	843.79
Gross profit (RM/ha)	1 560.33	2 420.54	4 140.92	6 291.40	9 302.06	1 131.55	1 952.86	3 600.24	5 646.47	8 350.63
Gross profit margin (%)	23.22	31.93	44.52	54.94	64.32	17.98	27.45	41.10	52.18	60.98
Difference (%)	-	-	-	-	-	-5.23	-4.48	-3.42	-2.75	-3.34

Note: CPO – crude palm oil.

below or equal to RM 3000/t), the difference between GPM with and without tax will decrease (Figures 2, 4 and 5). However, if CPO price increased above RM 3000/t, the difference will increase. This is also due to the impact of the windfall profit levy which in Sabah and Sarawak will be imposed if

the CPO price is higher than RM 3000/t.

Sensitivity analysis of GPM for rubber. In the analysis, prices of SMR 20, i.e. RM 7.50/kg, RM 8.50/kg and RM 9.50/kg, were used to calculate GP and GPM. Table 9 indicates GP and GPM for

rubber at various SMR 20 prices, while Figure 6 shows the differences between GPM with and without tax at various SMR 20 prices. If SMR 20 price increased, GP and the GPM also increased. For instance, at a SMR 20 price of RM 7.50/kg, GP and GPM (without tax) were RM 4184 and 48.07%, respectively

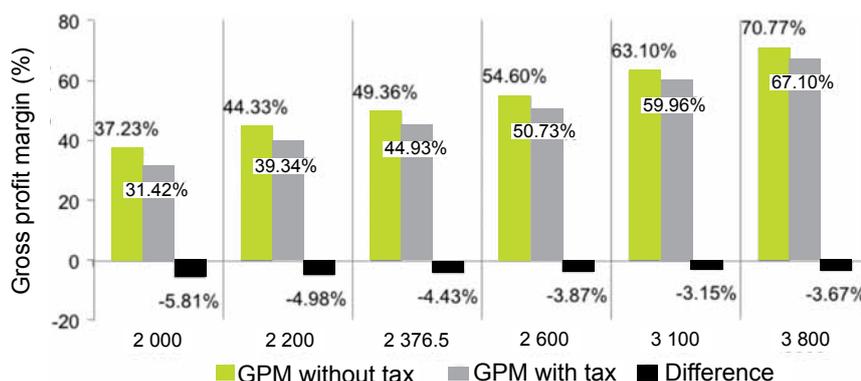


Figure 4. Impact of taxes on the differences between gross profit margin (GPM) according to crude palm oil (CPO) prices in Sabah.

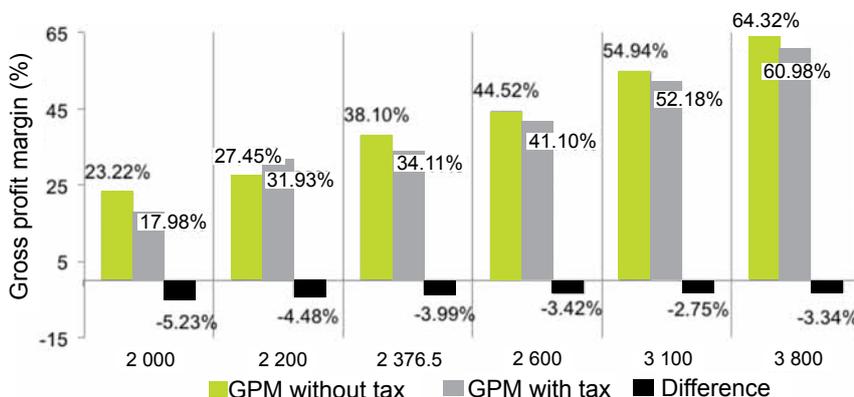


Figure 5. Impact of taxes on the differences between gross profit margin (GPM) according to crude palm oil (CPO) prices in Sarawak.

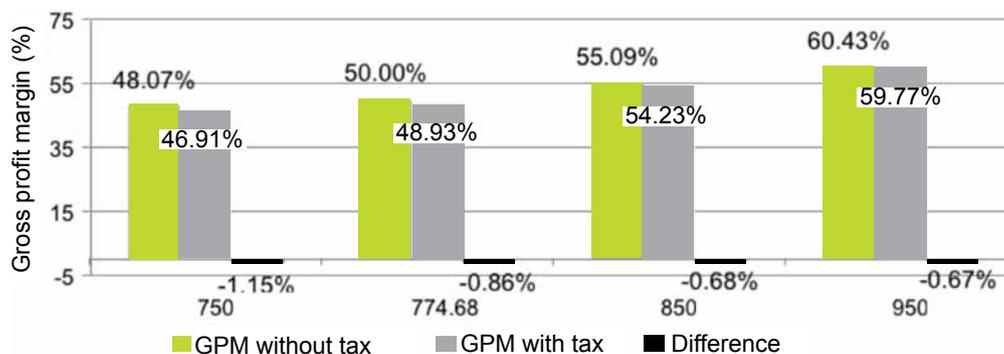


Figure 6. Rubber gross profit margin (RM/ha) without tax and with tax at different prices.

TABLE 9. SENSITIVITY ANALYSIS OF GROSS PROFIT MARGIN (GPM) FOR RUBBER AT DIFFERENT PRICE LEVELS

	Without tax			With tax		
	7.50	8.50	9.50	7.50	8.50	9.50
Price of SMR 20 (RM/kg)	7.50	8.50	9.50	7.50	8.50	9.50
Price of cuplump (RM/kg)	6.40	7.40	8.40	6.26	7.26	8.26
Gross profit (RM/ha)	4 183.63	5 543.63	6 903.63	3 994.32	5 354.32	6 714.32
Gross profit margin (%)	48.07	55.09	60.43	46.91	54.23	59.77
Difference between gross profit margins (%)	-	-	-	-1.15	-0.68	-0.67

(Table 9). When the SMR 20 price increased to RM 8.50/kg, GP and GPM went up to RM 5544 and 55.09%, respectively. However, the imposition of cess will reduce GP and GPM. At a SMR 20 price of RM 7.50/kg and with the imposition of cess, GP decreased to RM 3994 while GPM dropped to 46.91%. For rubber, if the SMR 20 price increased, the difference between GPM with and without tax will reduce (Figure 6).

Sensitivity analysis for cocoa. In the analysis, prices of SMC 2 at RM 6000/t, RM 6500/t and RM 7000/t were used to calculate GP and GPM. As there is no tax imposed on cocoa plantations, the sensitivity analysis for cocoa is only of GP and GPM without tax as indicated in Table 10 and Figure 7. Similar to rubber, any increase in SMC 2 price will increase GP and GPM for cocoa plantations. For instance, at a SMC 2 price of RM 6000/t, GP

and GPM were RM 188.75 and 3.14%, respectively. If the SMC 2 price increased to RM 6500/t, GP and GPM increased to RM 689.75 and 10.59%, respectively.

CONCLUSION

Oil palm and rubber are two important commodities in our country. Based on the four criteria of determining prices to be used in calculating GPM, only the one

TABLE 10. SENSITIVITY ANALYSIS OF GROSS MARGIN ANALYSIS FOR COCOA AT DIFFERENT PRICE LEVELS

	Without tax		
	6 000	6 500	7 000
Price of SMC 2 (RM/t)	6 000	6 500	7 000
Gross profit (RM/ha)	188.75	689.75	1 190.70
Gross profit margin (%)	3.14	10.59	16.98

Note: * Calculation based on data collected from the Malaysian Cocoa Board.

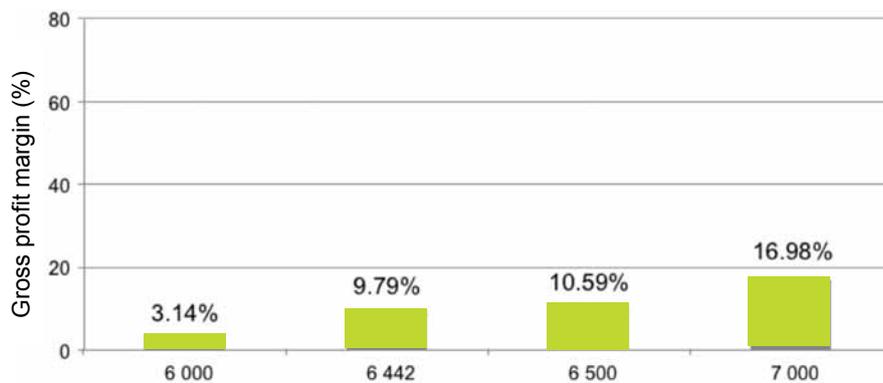


Figure 7. Cocoa gross profit (RM/ha) 'without tax' at different price levels.

based on the lowest average prices within the period 2007 – 2013 produced a higher GPM for oil palm than for rubber.

Investors prefer to invest in the oil palm sector rather than in rubber because the price of CPO is more stable in the long-term compared with the price of rubber. Thus, oil palm plantation owners are able to obtain a more sustainable and higher income, despite the fact that the industry is heavily taxed.

In order to make the oil palm industry more competitive, the windfall profit levy should be reviewed due to its direct impact on the plantations.

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