The market share equation economics essay

Economics

CHAPTER 1

The growing demand for palm oil around the world has position palm oil as one of the fastest growing sector in the global vegetable oil market. Malaysia and Indonesia are the global leaders in palm oil production and export. The increasing global demand for palm oil is as a result of palm oil being relatively cheaper than other vegetable oils as well as its versatile advantage in application as both edible and non-edible products. This has lead to the increasing dominance of palm oil in the global fats and oil market. In Malaysia, the oil palm industry has developed exceptionally well from it rudimentary beginning in the colonial era to its current complex network of organizations and interests. The oil palm has its origin from West Africa, where its traditional application was for oil and vitamins. In recent times, oil palm estates can be seen around most of the tropical countries around the world and its first introduction in Malaysia is believed to be in 1987. Its commercialization in the Malaya peninsular was first done in Tennamaran Estate, Selangor in 1917 by Henri Fauconnier (Teoh, 2002, Sime Darby, 2009)Notwithstanding the threats of the 1960 Emergency in Malaysia, oil palm industry flourished rapidly as its potential has been rightly recognized by the Government of Malaysia as a complementary crop to the then dominant rubber industry in their poverty eradication strategy programme. The government in conjunction with private estates initiated a robust and systematic Tenara-breeding effort, in which high-yielding parents oil palms where selected and bred that leads to the generation of very productive planting materials. As a result of the successes registered in this programme, the breeds not only produce more fruits but also produced fruits

that are ideally suitable for the predominantly screw press machine use in oil palm extraction in the mid-1960s (Anwar, 1981). This leads to Malaysia's dominance in the productions and export of palm oil for the past few decades until recently being overtaken in production by Indonesia due to the latter's vast land bank.

Current Scenario

The oil palm industry is an integral part of the Malaysian economy evidence by the role it plays in the national development blueprint of Malaysia. It is the fourth largest contributor to the national economy and currently accounts for RM1, 889 (8 percent) of the national GNI per capita. The palm oil industry in Malaysia is organized around four segments. The plantations segment includes seed nursery, planting, harvesting, collecting and milling. The second segment includes refining, bulking and trading activities. The remaining two downstream segments are non-food downstream as well as food and health-based downstream. Malaysia has enjoyed a competitive edge over many other countries operating in the palm oil industry. The commercialization of the palm oil industry in the 1960s allowed Malaysia to gain a ' first-mover' advantage in terms of expertise and technological advancements over other nations who only started commercialized planting much later. Malaysia is also one of the few geographic regions where the conditions are ideal for oil palm trees to prosper. Perhaps most importantly, Malaysia's relatively stable political climate and policy push propelled the palm oil industry to grow uninterrupted into one of the nation's largest economic pillars. Source: MPOC Publications, The Oil Palm 4th Edition by R. H. V Corley, P. B. Tinker

Malaysia is one of the few prime areas in the world for palm oil planting

In 2009, Malaysia produced 17. 7 million tonnes of palm oil. Palm oil involves 4. 69 million hectares in Malaysia in 2009 and contributes 3. 2% of real GDP in 2008, increasing from 2. 9% in 2000. Exports of palm oil grew by 13. 8% a year since 2005 to RM38. 5billion in 2009, accounting for 7% of total exports, compared to 4. 3% in 2005. Similarly, in 2008 there were 416 mills, 43 crushers, 51 refineries, 18 oleochemical plants and 25 biodiesel plants. The industry is dominated by large plantation companies (private- and government-linked companies) which hold 60 percent of total plantation land, with a growing level of integration along the value chain. However, there is a significant share of palm oil plantation area under the ownership of organised smallholders and independent smallholders, which still account for 28 percent and 12 percent of the total area respectively. However, Malaysia is currently in danger of being marginalised as our natural competitive advantages diminish. Malaysia’s market share of global palm oil supply has been steadily declining over the years as arable land in Malaysia becomes increasingly scarce, limiting expansion. Nations such as Indonesia with the resources, capabilities and ambition to grow their domestic palm oil industry are beginning to catch up and threaten our position as a palm oil market leader. Out of some five million hectares of palm oil plantations in Malaysia, over 40% is owned by private smallholders while another 20-25% is owned by smallholders supervised by government agencies. While FELDA and MPOB have managed to raise smallholder yields from 16 to 18 tonnes per hectare (from 2007 to 2008), a majority of smallholder’s productivity is still well below commercial plantation average yield levels of nearly 25 tonnes per

hectare. These issues stem from a lack of management expertise, technological know-how as well as financial constraints that limit their growth. This has been exarcebated by the reluctance of smallholders to seek aid from the private sector and the lack of collaborative efforts between GLCs, the private sector and smallholders to raise productivity. Productivity gains in the palm oil industry have a significant impact on GNI growth. The growth potential in both FFB yield and OER is significant due to the high level of variation in performance between large, medium, small plantations and smallholders as well as mills across Malaysia. Evidence collected from high performing plantation companies suggest that best practices are in place and can be shared to bridge the gaps resulting in higher yields and OER across the nation. With 4. 7 million hectares already in use for oil palm cultivation in Malaysia, the potential for further national expansion is limited. The expansion potential is estimated at a maximum of 1. 3 million additional hectares of which 75 percent or 1 million hectares is located in Sarawak. Given this situation, large Malaysian companies are redirecting their efforts and resources towards international expansion. As of 2009, Malaysian companies own about 25 percent of total palm oil plantations in Indonesia. Although Indonesia remains the natural choice for the expansion of Malaysian plantations, some companies have recently shown interest in other parts of Asia as well as Africa and South America. At the moment, Malaysia has yet to capture the full potential of existing downstream opportunities. As an illustration of this untapped downstream potential, for exports as of 2009, only 18. 5 percent of Malaysia’s palm oil output is exported as downstream products as opposed to 81. 5 percent exported as upstream products either in crude form (e. g. palm oil, palm kernel oil and

palm kernel cake) or processed form (e. g. crude palm olein, Refined Bleached Deodorised-RBD palm oil, RBD palm olein, RBD palm stearin and palm fatty acid distillate). The clear identification of high potential downstream applications and commitment of companies in the industry to further integrate and invest resources in downstream segments or in research and development (R&D) is important to ensure the sustainability of the industry going forward. Oil palm is one of the main drivers of Malaysia's agriculture sector, accounting for 71 percent of its national agricultural land bank. The industry's history spans across more than 100 years during which it has achieved tremendous success. Building on a series of core advantages, the industry will remain a major contributor to the Malaysian economy over the next 10 years. But the industry is faced with a host of challenges, both internally and externally, that should attract immediate attention. These include the continuing affray with the environmentalist, competition from emerging oil palm producing nations like Indonesia, and more importantly the challenge posted by the ageing and less productive oil palms. In fact, the increased replanting of these ageing and less productive oil palms have been recognized under the Key National Economic Area (NKEA) as a path to attaining improved competitiveness in the Malaysian oil palm value chain. This will in turn contribute to the realization of the higher income status that Malaysia tasked herself in the Vision 2020 target. These challenges need to be understood by all the players and concerted efforts are needed to get a fruitful result. One such key sector is the oil palm planting material production sector. Smallholders are reluctant to replant after the 25-year maturity period to avoid short-term losses of income, as it takes three years for palms to mature before the first harvest. The situation worsens when CPO

prices are high as even plantation companies are then inclined to delay replanting to take advantage of the short-term revenue potential. As a result, Malaysia holds a backlog of 365, 414 hectares of palm oil trees aged above 25 years, which normally have a lower yield. If replanting is not accelerated, it will take 14 years to clear the backlog. It is critical to clear the backlog now as each year an average of 125, 610 hectares of trees become due for replanting. Government therefore put forward a replanting initiative in which this critical challenge can be addressed under the NKEA for oil palm. The main objective of this initiative is to replant 100 percent of the 365, 414-hectare backlog of low-yielding palm oil trees older than 25 years within three years to help increase the average yield to 26 tonnes per hectare per year by 2020. To clear the backlog, MPOB will carry out the following actions: It will implement a binding replanting policy for smallholders and plantations. Secondly, it will provide financial support targetted at independent smallholders. Thirdly, it will make available quality planting materials (seeds, clonal material, seedlings, ramets) for replanting activity, and finally MPOB will set up an implementation task force to manage all replanting activities. Smallholders account for 230, 211 hectares or 63 percent of the total backlog in Malaysia, while plantations hold the remaining 135, 203 hectares. To ensure replanting is accelerated, MPOB will impose the following criteria for the binding replanting policy: Independent smallholders will not be allowed to keep palms older than 25 years that yielded less than10 tonnes per hectare per year for the past three years; Organised smallholders will not be allowed to keep palms older than 25 years old that yielded less than13 tonnes per hectare per year for the past three years; andPlantation owners will not be allowed to exceed 5 percent of their total Malaysian oil palm land

area for palms older than 25 years old that yielded less than 16 tonnes per hectare per year for the past three years. To further support independent smallholders in replanting activities, we will continue the one-off replanting payment of RM6, 000 per hectare and monthly payments of RM500 per household for two years to independent smallholders holding 2. 5 hectares or less. The replanting activities of organised smallholders will be managed by their respective government agencies (FELDA, FELCRA, RISDA, SALCRA, etc.) under existing schemes. The current capacity of 87 million seeds per year exceeds the national requirement of 52 million seeds yearly. MPOB's focus will be to monitor the quality of planting materials, particularly for smallholders through the licensing of all nursery operators (about 20 percent are currently unlicensed). MPOB will establish a replanting implementation task force focusing on independent smallholders, organised smallholders and plantation companies. The members of the taskforce will comprise MPOB, the National Association of Smallholders (NASH), all relevant government agencies (FELDA, FELCRA, RISDA, SALCRA, etc.), Malaysian Palm Oil Association (MPOA), Malaysian Estate Owners Association (MEOA), East Malaysia Planters Association (EMPA), Sarawak Oil Palm Plantation Owners Association (SOPPOA) and other associations representing plantation companies. This taskforce will meet on a quarterly basis to review the progress of replanting activities and formulate measures to solve issues encountered. Upon clearing this backlog, MPOB will continue to monitor closely the national oil palm age profile. This initiative requires RM1. 0 billion in public funding in the form of direct incentives to independent smallholders to compensate for the loss of revenue and extra expenses incurred due to the mandated replanting activities. In addition, this replanting initiative will

require RM3. 4 billion in private and GLC investment from plantation companies and their contractors in the form of felling and chipping equipment, terracing and drainage equipment, field-planting equipment, roads and bridges maintenance equipment. Both public and private funding will take place during the backlog clearing period from the first quarter of 2011 to the last quarter of 2013. This EPP will generate an additional GNI contribution of RM4. 6 billion in 2020. With the current demand climate, it is to the advantage of the oil palm seed producers to engage in activities that will ensure the long term profitability of the oil palm replanting activities. Given the current and prospective demand climate, it is to the advantage of the oil palm seed producers to engage in activities that will ensure the long term profitability of the oil palm replanting activities. With over 85 million sales of seeds and ramets a year, the oil palm planting material industry is a buoyant and growing industry. The market enjoyed good growth over the past decade with majority of the growth emanating from the call for increased replanting of ageing oil palms. This condition of growth has particularly favoured the planting material companies who have streamlined their growth strategy with industry trends. What more, the planting material companies were able to register success in translating the traits and qualities valued by estates in planting materials into realities. This is so because many of the improved varieties of planting materials available in the market are galvanized with traits like superior oily fruits, dwarf structured oil palm trees, with precocious and legitimate pedigree. Similarly the government of Malaysia has placed huge premium on the increase replanting of ageing oil palm trees with improved varies, albeit boosting demand for oil planting materials in years to come. In total, there are 21

licensed producers of oil palm planting materials in Malaysia at the dawn 2011. This is composed of 15 producers located in peninsular Malaysia, five in Sabah and one in Sarawak. The combined output for year 2010 of germinated seeds produced by the 21 licensed oil palm seed producers amounted to 109. 5 million but this is in excess of the nearly 80 million seeds demanded (MPOB, 2010). The national total production of oil palm ramets stood at over 5 million plantlets at the end of year 2010 (Kushairi et al., 2010). This demand is triggered majorly by the existing climate of replanting in the whole of Malaysia and some newly established estates in Sabah and Sarawak. The government of Malaysia has place an important token on replanting ageing and less productive oil palm to new and improved high yielding breeds that are available in the market. The Oil Palm Replanting Initiative Scheme (SITS) propounded by the Malaysian government in December 2008 is aimed at reducing the high palm oil stock and stabilizing the palm oil price through replanting. Allocated with a tune of RM200 million, the scheme is operated by giving RM1000 per hectare for felling of the 200, 000 hectares of old oil palm trees aged 25 year and over. In March 2009, the Second Economic Stimulus Package (PRE2) was launched that shows the allocation of additional RM100 Million to help independent oil palm smallholders for the land preparation, purchase of seedlings and fertilizers. Despite these schemes in place, the age profile of Malaysian oil palm remains a cause for concern. Oil palm trees at age of 25 years and above are considered ageing and old. In year 2006 the percentage of ageing and old oil palm in Malaysia stood at 17%, but this has increased to 21% in 2008. Worryingly, in 2010 a total of 29% of Malaysian oil palm trees are considered either ageing (13%) or old (16%). This has left a significant strain on the

Malaysia’s oil palm productivity, thus addressing this issue has earned renewed prominence. The current replanting rate of ageing and old palms is 50, 000 ha per annum (Azman et al., 2011). But this is not adequate to reverse the trend of ageing profile of Malaysian oil palms. In fact if it should continue at this rate, there will be approximately 400, 000 ha of oil palm age 25 and above by the end of 2011. This is expected to increase to 740, 000 ha in year 2016 and almost 1. 2 million ha in 2020. Even this rate is doubled to 100, 000 ha per annum, yet there will be a considerably large number of old palm that are old and thus less productive. The old palm tree will only be reduce to nearly 300, 000 ha, 400, 000 ha and little above 900, 000 ha in 2011, 2016 and 2020 respectively. The only instance the ageing oil palm profile of Malaysian oil palm industry can be defeated is by increasing the current replanting rate threefold to 155, 000 ha per annum, by then there will only a little over 200, 000 ha of old palm at the end of year 2011, almost none in 2016 which increase to just 64, 000 ha in 2020. Since the demand for planting materials is less dependent on opening of new estates and export in Malaysia, replanting rate becomes that all important marketing factor that drive growth and sustainability in the planting material industry. Efforts should be undertaken to encourage planters to have timely replanting schemes to ensure overall productivity in the oil palm industry.

3. 1. 2 Customer analysis

The demands for germinated seeds are majorly from nursery dealers and other local buyers (91. 4%), followed by those used by seed producers (6. 8%) and 1. 8% exported to mainly plantation of Malaysian interest. The profile of customers in the oil palm planting material industry can be broadly

categorized under three sectors: (i) Oil Palm Plantation Estates (ii) Oil Palm Nursery Operators and (iii) Smallholders and Government Schemes. Oil Palm Plantation Estates are the largest customer base in the industry and account for most of the sales in the seed and ramet market. They account for over 65% of the total planted area of Malaysian Oil Palm industry (2. 93million Ha). Some of these estates have their own planting material production programmes or one conducted by their subsidiaries. However a greater percentage relies on the available planting materials in the market for their planting/replanting activities. This gives the opportunity for more specialised planting material producers to make their sales to these estates. Some of the most prominent estates that deal with a wide range of planting material companies are Kuala Lumpur Kepong Bhd., Boustead Bhd., Danum Sinar, Bintulu Lumber Development, RISDA, FELCRA, Tan Ann Holdings, Rimbunan Hijau Group, Genting Plantations, Lembaga Tabung Haji's TH Plantations, PPB Oil Palms Bhd, BLD Plantation Bhd etc. The Oil Palm Nursery Operators are specialized, licensed producers of nursery for planters in the industry. They offer a rich mosaic of planting in the market thus making them a significant link between producers and planters. Their influence is well recognized in recommending the best performing planting materials in the nursery to potential buyers hence collaborating with them becomes that all important. They are essentially only intermediaries and do not represent an end market itself unless they are otherwise affiliated with a plantation estate. But since smallholders are not recommended to undertake nursery operation by themselves, they provide an important gateway to that niche. Example of Oil Palm Nursery Operators that offer AAR's planting materials includes Liman Plantation Snd. Bhd., Nafas TFI Snd. Bhd., Tapak Semaian Hong Seng Snd.

Bhd. etc. However the total number of licensed nursery operators/dealers is a staggering 669, a significantly competitive market. Smallholders and Government Schemes, a combination of independent pirate small holders, Federal Land Schemes (FELDA, FELCRA, RISDA) and state government agencies, are also a significant part of the overall demand of the oil palm planting materials. They provide a combined overall demand of 39. 5% of oil palm planting materials (close to 40 million seeds) in year 2010 and this is set to increase. So far, among the planting material producing companies in Malaysia, Felda Agricultural and Consultancy Service Sdn. Bhd. is significantly taping into this markets and making huge sales. This is probably due to their special advantage in connecting to some this small holders and federal land schemes through their established associations. Significant to notes here is the possibility of Malaysian planting materials being available to the overseas market in the short-run. Currently there is government ban on the export of Malaysian oil palm planting materials but great strive is underway in the industry to get this decision reconsidered. Felda and Sime Darby are leading the front in this exercise marked by wide media campaign and coordination of influential resources. These developments should be watched closely as any favourable decision on export ban can change the entire complexion of the oil palm planting material industry. The Malaysian planting materials are having a huge demand from overseas and companies that are prepared for such a market will tend to benefit more in case of any lifting of the ban in the near future. Market driversThere are lots of factors (drivers) that can be considered as having an influence on the oil palm planting material industry. Some of the most apparent factors are discussed as follows: Replanting rate: the replanting rate as defined by the replanting

policies of the planters is arguably the most significant demand driver in the oil palm planting material market. Since the expansion of plantation is severely limited by the exhausting land bank in Malaysia, the only window of opportunity that can be hugely relied on is the replanting of ageing and less productive palms with improved breeds. Accordingly, a significant marketing effort will be how to clearly express the importance of timely replanting to broad range of planter to ensure timely demand and improve productivity. Price of CPO: the CPO price is found to influence replanting decision which in turn influence demand for planting materials. This is because as CPO price increase beyond projection, planters, particularly smallholders, find it less an incentive to forgo this high CPO price and replant the ageing palm that are still producing a considerable volume of oil. As it is proven though in the long-run that the cost of not replanting is more than the cost of forgoing the high CPO price, planters will then " rush" to replanting when CPO price eventually falls. Although the industry may be able to meet the current replanting and planting demand, a sudden surge in demand will result in a chaotic situation. As it take 12 months production lead time to fulfill demand for oil palm planting materials. A possible increase in demand from 151. 65 million in 2015, excess of 130million current capacity of Malaysian oil palm planting material companies may prove too much to satisfy in a year. Government Support for Replanting: the current schemes and campaign by the Malaysian government is significantly inducing demand for planting materials. Those that are traditionally hesitant to under replanting are supported to replant in the Oil Palm Replanting Initiative Scheme (SITS) propounded in December 2008. This scheme, mainly support the smallholder with income and cost of replanting, is aimed at making Malaysia a highly

productive oil palm producing country as enshrine in NKEA and Vision 2020 blueprints.

Problem Statement

Despite the high prospect in the oil palm planting material industry, it will not be thoughtful to let one to be wind-in into prosperity by just projected industry growth. It is true that the industry is projected to grow and any company has to streamline your growth strategy with relevant industry trends. And the trend now is that more planters needs to be aware of the superior edge that a particularly company is offering and this can be achieved through a lot of ways but primarily through advertising. But what are the assurance that increased expenditure in advertising will lead to a commensurate growth in sales and market share? The problem statement is thus how to justify that an increase in Research and Development (R&D) and Marketing activities result in the twin effect of increase in market share and profitability in the industry and helps in addressing the Malaysia’s ageing oil palm profile.

Research Objectives

General ObjectiveTo assess the performance of the Malaysian oil palm industry over the years by looking at industry composition and concentration (structure) and how that affects the behavior of the firms in the industry (conduct)Specific ObjectivesWhat impact does an increase in marketing expenditure (conduct) to create awareness on the need to increase replanting of ageing oil palm has on the market share and composition (structure) and the bottom line (performance) of the industryWhat has R&D played in creating better supply of planting material (seeds &ramets) to

stimulate demand in the industry thereby increase performanceHow both Marketing and R&D has help in shaping the structure, conduct and performance in the oil palm planting material industry and its effect in replanting more productive oil palms in Malaysia

Significance of the Research

To assist industry players to understand the appropriate mix of management decisions regarding advertising and R&D in enhancing their market share and profitabilityTo help understand the overall productivity of the industry and new growth areasTo assist policy makers in deciding which incentive can be allocated to the industry to increase production of high-end planting materialsTo assist policy makers in legislating appropriate policy frameworks to ensure fair competition is initiated in the industry

Key Assumptions of this Paper

The following are key assumptions in this paper and underpinned the usage of the research methodology. Overall marketing activities including efficiency in handling orders, delivery, publicity, marketing communication and after sales services are summaries to be referred to as Advertising. The barriers to entry are significantly high in term of capital requirement, technical know-how, and licensing and certification that an increase in market size of planting materials will not attract an influx of competitors into the industryMarket share is a measure of sales of firm i over entire industry salesThe industry is oligopoly since the top five companies have a cumulative market share of over 70%.

CHAPTER 2

REVIEW OF LITERATURE

According to the Oil Palm Statistic report of MPOB, there are 21 licensed producers of oil planting materials in Malaysia, majorly in peninsular Malaysia and a handful in Sabah and Sarawak. Most of the planting material companies produce both hybrid seeds and clones. A growing trend in the sector involves the use of improve plant breeding and biotechnological techniques including bi-clonal and semi-clonal seed production techniques. In the earlier years (1980s and 1990s), there were about only 10 licensed oil palm planting materials companies producing little above 30 million seeds. This rose to the all time high of nearly 90 million seeds and ramets in 2011. This has lead to significant changes in the market shares and structures in the Malaysian oil palm planting materials industry. The growth in market share and size is due to many factors and this includes R&D breakthroughs in improved planting materials, ageing oil palm profile of Malaysia and, to a lesser degree, new plantation development in Sarawak. Understanding the underlying dynamics and market mechanism, including shifting structural and competitive landscape will offer a yardstick to measure firm’s competitive position and give a hint on best possible competitive strategy that can be adopted. This understanding will be fascinated by an econometric concept called market Structure, Conduct and Performance (SCP). The Structure-Conduct-Performance (SCP) can be defined as the relationship between market structure, firm conduct and firm performance. It postulates that the existence of entry barriers is the major determinant of firm profits. So that, the greater cost of entry makes it easier for existing

firms to maintain monopoly profits. New entrants will diminish the level of those profits. Therefore, market concentration decreases the cost of collusion between firms and results in abnormal, i. e. higher than normal, profits for existing firms in the market. The SCP has been one of the most tested hypotheses in the industrial organizations literature. Almost, most of SCP empirical studies have supported the validity of SCP paradigm, by providing evidence on the positive relationship between market structure and firm performance indicators (Weiss, 1974).

Structure

Market structure definition has attracted lots of opinion but interestingly most of these opinions revolve around one grand idea: the interaction between players. As understood by Scherer and Ross (1990), market structure is the characteristics of market organization, such as, the numbers of consumers and the degree of market power. Economic theory prescribes that increasing firm size allows for incremental advantages because the size of the firm enables it to raise the barriers of entry to potential entrants as well as gain leverage on the economies of scale to attain higher profitability. For example, in the case of palm oil plantations, a new entrant has little choice but to incur substantial fixed costs in gaining entry to the industry, in the form of acquiring and working the plantation estates, acquiring and maintaining equipment, machineries and acquiring or constructing palm oil refineries in addition to advertising extensively to let customers know that it is in the market. The higher the barrier to entry, the lower will be the threat of potential competition, and the higher the profits that existing firms can earn without inducing entry (Chrystal & Lipsey, 1997). These qualifications

are explained in Reinhard's (1983) oligopoly model which suggests that size is positively related to a firm's ability to produce technologically complicated products which in turn leads to concentration. Such markets are supplied by few competitors and are therefore, more profitable. Thus, larger firms have access to the most profitable market segments. The empirical relationship between a firm's size, structure, and profitability has found that size is positively correlated with profitability, with the profit rate of the market positively correlated with the concentration ratio and negatively correlated with the marginal concentration ratio (Collins & Preston, 1969). Prescott and Vischer (1980) show that the positive association between firm size and profitability stems from implementing greater differentiation and specialization strategies, and should therefore lead to higher efficiency. Further studies also suggest that larger firms are able to leverage on economies of scale (Montgomery, 1979; Sidhu & Bhatia, 1993). Structure is the supply and demand behaviour of products and services which are influenced by: the type of item being produced, producer's quantity and size, customer's quantity and size, product differentiation, and easiness to enter the industry. If barrier to entry to the industry is getting bigger, the market structure concentration level is also getting bigger. Davies (1999) has confirmed the positive significant relationship between the market share as an index of the market structure and performance. Therefore, this paper is to take the market share data for calculating the market structure.

Conduct

Behaviour/conduct is how a company struggles to attain market share. In reverse words, behaviour is a reaction pattern and adjustments by

companies in an industry to achieve their goals and survive in the competition. In Malaysian oil palm planting material industry, each company has different characteristics that shape their behaviour in the competitive market. In this context, behaviour can be perceived from several aspects: price behaviour, product strategy, research and development, and advertising. Scherer and Rose (1990) suggested that the conduct in the SCP model was related with the firms' product strategies, innovation and advertising. Since the primary aim of this paper is to point to the importance of marketing in surviving competition, analysis will be confined to the impact of advertising on market structure. A large number of studies have tried to find an explanation for market structure and advertising. Vlachvei and Oustapassidis (1998) for example tried to indicate that advertising is an increasing function of sales return. Similar finding were concluded in studies conducted by Willis and Rogers (1998). While Israeli et al. (2000) went further to identify the significant effects of advertising on the competition and financial performance. In short a bulk of empirical evidence indicated the broad impact of advertising on the market share and performance.

Performance

The study of how and why firms attain profitability levels has been the main pre-occupation of industrial organisation economists for the last three decades. In determining factors influencing performance diversity, literature dealing with such work suggests that industrial performance and performance differences among firms can be explained as arising from various characteristics: those which are firm-specific and those which are industry specific (Capon, Farley & Hoenig, 1990). Industrial organisation

economists point to industry effects (i. e. concentration levels, industry growth) using the structure-conduct-performance model (SCP) as the main factor determining firm profitability (Scherer, 1980; Porter, 1981). On the other hand, the resource-based view (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993) suggests that the explanation for the existence of more or less profitable firms within the same industry must be found in the internal factors of each company (for example, market share, firm size, skill level, etc.). These firm-effect factors favour the achievement and maintenance of competitive advantages of each firm, which eventually lead to different profitability levels among firms belonging to the same industry (Amato & Wilder, 1990)Performance is the result of work which is influenced by the industry's structure and behaviour and it is usually indicated by how big is the market share or how big the profit gained by a company in an industry. In SCP model, it has been recognized that the performance of a firm is associated with market structure and strategies (behaviour) of a firm (Scherer and Rose, 1990). Generally many studies have associated performance to the output variable (Hwang and Chang, 2003; Wang et al., 2006). And output is represented by number of planting material sales in the industry in this paper. Theoretical FrameworkSource: Waldam et al. (2001)

CHAPTER 3

METHODOLOGY

The interlock between cause and effect in the oil palm planting material market setup, which is the central idea of this paper, is presented in this section. The relationship between Market Structure and Performance can be underpinned in an explicit theoretical equation (Cowling and Waterson,

1976). The SCP model in this paper can be structured in a form of simultaneous equations comprising four equations of Market Structure, Conduct and Performance. This will utilized the following four endogenous industry variables, market share, advertising, and profitability jointly determined (Delorme et al. 2002). MS= f (AD, PF, RD, X1)AD= f (MS, PF, RD, X2)RD= f (MS, PF, AD, X3)PF= f (MS, RD, AD, X4)Where MS denotes market share, AD denotes firm advertising, RD denotes firm Research and Development expenditure, and PF denotes firm profitability. X1, X2, X3 and X4 are vectors of exogenous variables. The four empirical equations are further defined as follows.

The Market Share Equation (MS)

When a market is developing (maturing), advertising plays a significant role in maintaining and consolidating market shares (Nguyen, 2006). Thus the reach and frequency of advertising becomes that all important business undertaken. The higher the rate of advertising, the more likely that customers are going to be educated about what is offered by a product (a1> 0). Similarly, a profitable company is likely to have much room for organic growth and expansion. Hence, profitability or performance (PF) (a2> 0) has significant positive relationship with market share (Matovic, 2002). The yardstick that will be applied in this paper is to use market share data of respective industry players to calculate the market structure index. The industrial sales growth rate (IG) and sales growth rate (SG), as proposed by Oustapassidis et al. (2000), who suggested that, an increase of a firm’s sales growth is expected to positively affect the market share(a3> 0), whereas due to increased entry opportunities of growing industries, market shares

are expected to be lower(a4> 0). Capacity Utilization (CU) (Wu et al, 2008), Revenue (REV) and connections with Research and Development (RD) (O'Neill and Mattila, 2006) are essential to the sales of planting Materials (a5> 0, a6> 0, a7> 0). The market share equation is thus depicted below.

MS = a0+ a1AD + a2PF+ a3SG+ a4IG+ a5CU+ a6REV+ a7RD----- (1)

Where:(a1> 0), (a2> 0) (a3> 0) (a3> 0) (a5> 0, a6> 0, a7> 0, a8 > 0)MS= Market Share of firm iAD= Advertising expenditurePF= Profitability of firm ISG= Sales Growth of firm iIG= Industry growth of industry iCU= capacity utilisation of firm iREV= Revenue of firm iRD= R&D expenditure of firm i

Advertising Equation (AD)

A sizeable number of theories examined the relationship between market structure and advertising. In his work, Oustapassidis et al. (2000) put forward an assumption that if the market share influence advertising intensity, the relationship was expected positively (b1> 0). Israeli et al. (2000) went a step further by identifying significant effects from advertising on both competition and financial performance (PF) (b 2 > 0). Strickland and Weiss (1976) designate that advertising intensity is one of the determinations of concentration, and their results suggested an inverted-U form relationship exists between concentration and advertising intensity. Advertising is initially expected to increase with low concentration and to decrease with high concentration (Greer, 1971). This paper considers concentration (CR) and squared concentration (CR) which are motivated by a possible inverted-U relationship, as suggested by Strickland and Weiss (1976) and Greer (1971) (b3> 0, b4 <0). If the planting material sales grow up, the relationship

between the advertising and the sales growth rate could be positive with a high growth rate leading to higher advertising intensity (b5 > 0). When a market (industry) is growing, gains in sales from advertising may be delayed, or show a loss in sales, due to other firm’s advertising (IS) (Oustapassidis et al., 2000) (b6 > 0). Most Planting Material offerings undergo continuous development (RD). This paper analysis a class dummy variable; established brands assumes a value of 1, and 0 otherwise. The advertising equation takes the form of:

AD = b0+ b1MS + b2PF+ b3SG+ b4IG+ b5CU+ a6REV+ b7RD ---(2)

Where:(b1> 0), (b2> 0) (b3> 0) (b4> 0) (b5> 0, b6> 0, b7> 0, b8 > 0)MS= Market Share of firm iAD= Advertising expenditurePF= Profitability of firm ISG= Sales Growth of firm iIG= Industry growth of industry iCU= capacity utilisation of firm iREV= Revenue of firm iRD= R&D expenditure of firm i i

Research and Development Equation (RD)

The similarity between the effects of advertising and R&D on profitability as well as market shares has often been recognized in the literature of industrial organization. For example, by providing a rigorous model of a profit-maximizing firm Nakao (1983) has shown that R&D is as important as advertising in determining firm's profitability and industry concentration. Thus, any simultaneous equation model that does not include R&D as well as advertising as endogenous variables might involve the problems such as biased estimates caused by omission of relevant explanatory variables. Connolly and Hirschey (1984), for eample, adopted a simultaneous equation system which included both advertising and R&D as endogenous variables,

but their model is not derived from a formal analysis of dynamic firm behavior. In this paper, we construct a dynamic model of firm in which the time paths of R&D and advertising are simultaneously determined so as to maximize the present value of expected profits. From this theoretical model, we derive a simultaneous equation system to estimate the overall relationships among the elements of market structure, firm behavior, and economic performance. Porter (1979), Demsetz (1973), and Mancke (1974) have criticized past empirical studies of performance-structure relationships for neglecting the effects of differences in efficiency as well as competitive strategy among firms within an industry.

RD = c0+ c1MS + c2PF+ c3SG+ c4IG+ c5CU+ c7REV+ c8AD ---- (3)

Where:(c1> 0), (c2> 0) (c3> 0) (c4> 0) (c5> 0, c6> 0, c7> 0, c8 > 0)MS= Market Share of firm iAD= Advertising expenditurePF= Profitability of firm ISG= Sales Growth of firm iIG= Industry growth of industry iCU= capacity utilisation of firm iREV= Revenue of firm iRD= R&D expenditure of firm i

Profitability Equation (PF)

The SCP model recognizes that a firm’s performance is associated with market structure and the firms’ strategies (Scherer and Rose, 1990). A stream of research confirmed a positive relationship between a firms profit and advertising intensity (AD) (Greenberg, 1986) (c1> 0) , market share (MS) (Miller, 1990) (c2 > 0) , industrial growth rate (ISGR) (Nkomo, 1987) (c3> 0), firm’s sales growth (SG) (c5 > 0) and The concentration ratio (CR4) is included to test whether the concentration of the oil palm planting material

market is a positive determinant of profitability, as based on previous works by Pan (2005) (c4> 0).

PF = d0+ d1MS + d2AD+ d3SG+ d4IG+ d5CU+ d6REV+ d7BR --- (4)

Where:(d1> 0), (d2> 0) (d3> 0) (d4> 0) (d5> 0, d6> 0, d7> 0, cd > 0)MS= Market Share of firm iAD= Advertising expenditurePF= Profitability of firm ISG= Sales Growth of firm iIG= Industry growth of industry iCU= capacity utilisation of firm iREV= Revenue of firm iRD= R&D expenditure of firm iTo achieve the objectives stated above, we will use the following regression equations will be solved simultaneously with: H0= The exogenous independent variables have correlation with the dependent variableHa= The exogenous independent variables have no correlation with the dependent variable

MS = a0+ a1AD + a2PF+ a3SG+ a4IG+ a5CU+ a6REV+ a7RD----- (1)

AD = b0+ b1MS + b2PF+ b3SG+ b4IG+ b5CU+ a6REV+ b7RD ---(2)

RD = c0+ c1MS + c2PF+ c3SG+ c4IG+ c5CU+ c7REV+ c8AD ---- (3)

PF = d0+ d1MS + d2AD+ d3SG+ d4IG+ d5CU+ d6REV+ d7BR --- (4)

Data Source

This paper made use of both primary and secondary data to compute the result of the variable. Primary data were sourced from the respective

planting material companies on my visit to their research and production facilities and secondary data was sourced from MPOB.