

NEW AGRI-FOOD MARKETING SYSTEM FOR FRESH FRUITS AND VEGETABLES IN MALAYSIA: SOME STRUCTURAL PERSPECTIVES

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ABSTRACT

This paper examines the development of the new supply chain in Malaysia and its structural implications to the local fresh produce (fruits and vegetables) industry, particularly the small producers. It traces the growth of the new retail formats such as hypermarkets, departmental stores and supermarkets. The growth of these new retailers intensified in the late 1990s, as globalisation brought in capital-rich multi-national retailers into the local marketing scene. The structural differences between the new supply chain and conventional marketing are compared. Within less than a decade, the new superretailers were able to capture a significant market share of the local fruits and vegetables at the expense of the small time local retailers. Their procurement system which emphasises on consistent supply and rigid quality standards indirectly cuts off the small farmers from the supply chain. New type of intermediaries, packing houses have emerged replacing the traditional middlemen role usually performed by small time wholesalers or traders at the farm level. To integrate the small farmers into the new supply chain entails are formation programme that enhances productivity, product quality and institutional restructuring towards cooperative movement.

Keywords: Agri-food marketing, fresh fruit and vegetables, structural perspective

INTRODUCTION

Agricultural produce and food marketing in Malaysia is moving in tandem, albeit at a slower rate, with the structural changes that have taken place in the retail sector. Since the 1980s, food retailing in the developed world has been characterised by the rapid development of large retail chains that integrate the wholesale function into their own company to become self-distributing chains. Operating on a big scale, these retail chains have been able to introduce cost-saving innovations such as centralisation of procurement, use of preferred supplier registries, formal contracts with suppliers and the promulgation of private quality standards. The saturation of consumer markets in the EU and the growth of consumers' disposable income in the developing economies have driven some of these retail chains to those areas including Malaysia. By mid and late 1990s, accelerated by globalisation and enabled by information technology, a number of multi-national retail chains have opened up hypermarkets in Malaysia.

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The rise of highly consolidated and concentrated retail chains in some parts of the world has been shown to change the market structure, competition, buyer-supplier relationship, price levels to consumers and producers, marketing efficiency, product growth and innovations. Some of the observed impact of the rise of consolidated retail chains in developing economies include: marginalisation of small market intermediaries and farmers, lower prices both to farmers and producers and the introduction of market innovations such as new services, products and retailing technology (Reardon et al., 2003; FAO, 2004). Despite their late entry into the retail sector, the new store-based retailers accounted for as much as 60 percent of fruit sales and 35 percent of vegetable sales in Malaysia in 2002 (FAO, 2005).

There are evidences to show that small farmers are not able to meet the strict quality requirement of these retail chains. For instance, Giant in Malaysia had 200 vegetable suppliers in 2001, but by 2003 the number was reduced to 30 (Shepherd, 2004). In Thailand, the number of vegetable suppliers to Tops Supermarket (Ahold Chain) fell from 250 to 60. In view of this development, this paper examines the impact of the new supply chain on the marketing system of fresh fruits and vegetables (FFV) in Malaysia, particularly on the small farmers.

The paper is organised as follows. The following section explains the major differences of the new agri-food supply chain in comparison to the traditional marketing system. This is followed by a discussion on the growth of hypermarkets in Malaysia and its structural implications to the fresh fruits and vegetables (FFV) industry in Malaysia, in particular the small farmers. The last section concludes the paper with some policy implications.

MAJOR CHARACTERISTICS OF THE NEW AGRIFOOD MARKETING SYSTEM

Conventional Marketing System

The shift of agri-food marketing system from the conventional to the modern supply chain is briefly summarised in Figure 1. Generally, the marketing system of a produce is determined by factors such as scale of market participants, product characteristics, grade and standardisation and market information. In Malaysia, the sector is characterised by a large number of small and uncommercialised farms. For instance, there were 270,000 growers working on 257,000 hectares of land planted with fruits in 1998 (Fatimah et al., 2005). Out of this total hectareage, only 86,000 ha or 33.4 percent are considered commercial farms and the average farm size is 0.67 ha. Agricultural produce is generally unstable in production and inconsistent in quality and quantity. With the exception of a small percentage of commercialised farms, the majority of small farmers are dependant on the wholesalers for financial loans and agricultural inputs to sustain their livelihood which leads to a strong unidirectional symbiotic relationship between the producers and their buyers.

The marketing environment is not conducive to efficient distribution due to a number of infrastructural constraints such as poor logistics which include storage, cold rooms, transportation and warehousing (Abbot, 1987; Kaynak, 1986). The market signals are hampered with inaccurate and untimely information to market participants, particularly to the isolated producers. Price discovery mechanism is flawed with inefficiencies where prices are negotiated based on market power of certain groups of traders rather than driven by market fundamentals. In the case of fish, prices at the landing centres are discovered through “whispering system” between the fishermen and traders and there is no free flow of information among the market participants (Mohd. Ariff et al., 1986; Ishak, 1994). In the case of fruits and vegetables, the consignment system is widely practised by the producers to market their produce. Under such a system, price discovery is in the hands of wholesalers who pay the producers about two to three weeks after the produce has been sold to the next buyers (retailers or other wholesalers). Many literature and previous studies indicate that the focal point of the traditional market system is the wholesale sector as this is where the price discovery function is performed (Boehlje, 1999). This sector is characterised by a relatively small number of wholesalers who account for a large percentage of market share. Their oligopolistic power and extensive network both with the suppliers and consumers enable them to perform this function. With the prevalence of structural defects in the system, the efficiency of the price discovery made by the wholesalers is highly questionable. Evidences of temporal and spatial price inefficiencies are profound in the literature to support this allegation.

Under such a marketing landscape, there are minimal incentives for the industry to grade, standardise or even to innovate to create value added. Products are sold in bulk and undifferentiated which make market prices meaningless at times as they do not reflect the quality and specifications. Post harvest losses are in the range of 10 percent to 40 percent due to poor handling and most importantly little incentives or no premium are provided by the market for high quality produce. With minimal marketing strategies employed (particularly product development and promotion), the focus of the traditional system is on the distributive function across the chains. Besides, the conventional chains are loose, fragmented, and unstable over time. The distributive patterns are many, but unstable and duplicative in functions. For instance, there are farmers who are able to sell direct to consumers through the “moving markets or night markets” either provided by the local councils or FAMA. The number of farmers who sell direct to the consumers is relatively low. Estimates made by FAMA indicated that less than one-third of farmers were able to do so (Fatimah, 1999). Most of the supplies in these movable markets are marketed through middlemen; either wholesalers or retailers. Most of the agricultural produce go through a multi-layered middlemen before it reaches the consumers. For instance, in the case of vegetables, the produce has to go through assemblers or transporters who normally work for wholesalers in the local market. The wholesalers in the local market in turn transport the produce to wholesalers in the terminal market. At the terminal market, produce is sold to either retailers or small time wholesalers. In other words, the produce is handled by four or more middlemen before it reaches the consumers. The marketing cost of such a system has been shown to be high, in terms of high incidence of post harvest losses and the cost of which is being borne by the consumers.

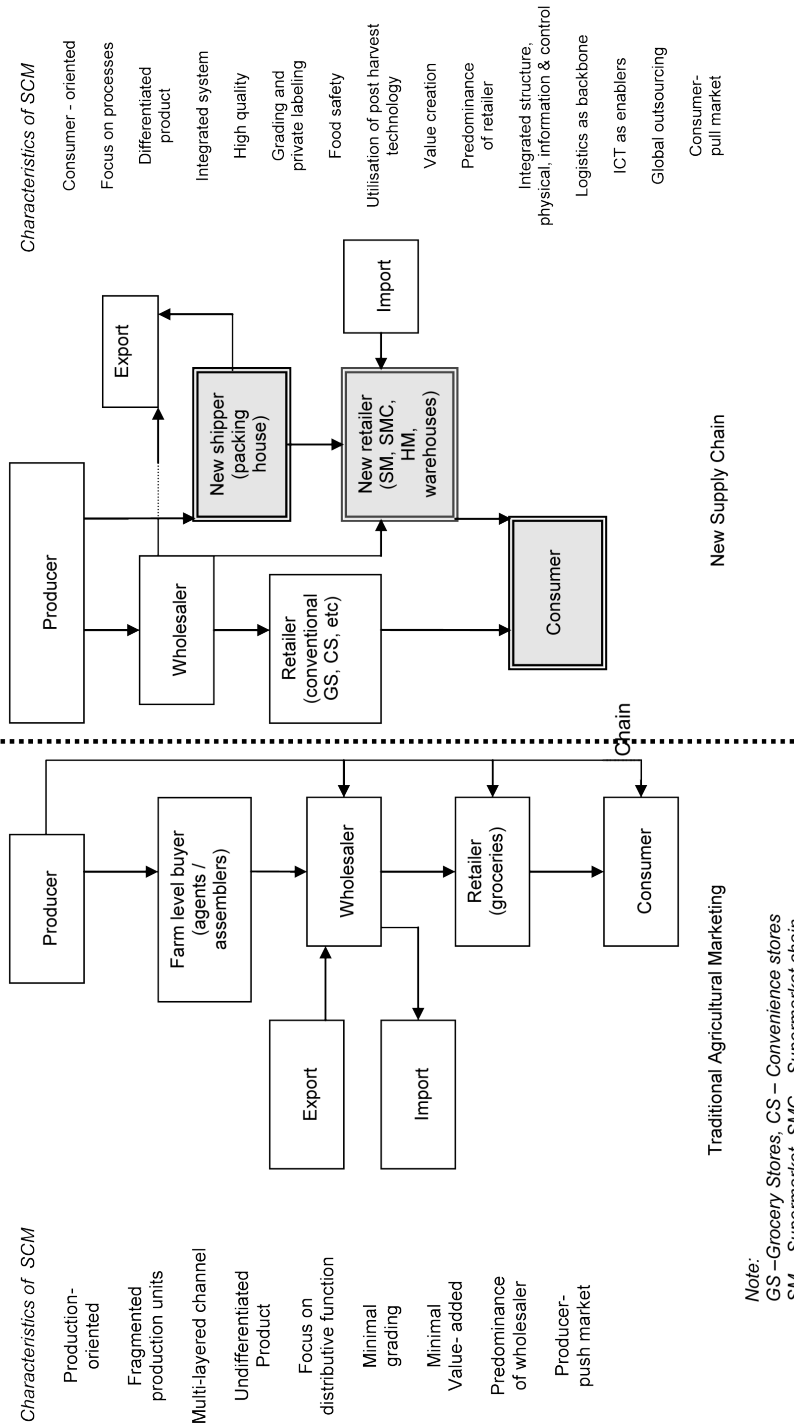


Figure 1: Comparison of Traditional Agricultural Marketing and the New Supply Chain

The New Agri-food Supply Chain

Development of the New Supply Chain

The conventional agri-food marketing system is undergoing a transformation towards the “new supply chain” pushed by external and domestic “drivers”. The external driver is basically the rapid development of large retail chains originating from the developed economies which are encroaching into the developing economies for market expansion made possible by globalisation and free flow of capital across borders. The domestic drivers are consumers’ income and changing consumption patterns and lifestyles. Malaysia is classified as an upper-middle income country, and considered as one of the most developed of the developing countries. A little less than two-thirds of Malaysia’s populations live in the urban areas. The industrial-urban expansion has created new consumers who, relatively, have more purchasing power and health consciousness, hence began to dictate their strong influences on the agri-food system. Those consumers demand high quality produce which are based on international standards. They prefer processed, easily prepared home-meal replacements on the one hand, and healthy, safe and fresh agri-food on the other. Besides, they demand year-round supply of the same quality agri-food regardless of the seasonal and location-specific nature of the agricultural production.

The proportion of middle income households, defined as those earning between MYR1,200 and MYR3,499 per month, has increased from 47.7 percent in 1999 to 47.9 percent in 2002 (Pricewaterhouse, 2003). Mean monthly gross income per household increased from MYR2,472 in 1999 to MYR3,011 in 2002, denoting average growth of 6.8 percent per annum. On average, households living in urban areas spent 1.5 times more than households living in rural areas. Average consumer spending stands at MYR1,943 per month in the urban areas and MYR1,270 per month in the rural areas. Malaysian households spend an average 24 percent of their household income on retail purchase of foods. The eating-away from home accounted for 10.5 percent of food expenditure in 2005 (Malaysia, 2006). Purchase of foods from the retail outlets is estimated at \$10.2 billion in 2005. USDA (2006) estimated that traditional markets account for 54.0 percent of the total retail food sales, followed by the supermarkets and hypermarkets (33.9 percent) and convenience stores¹ (2.4 percent).

The rapid change in the retail sector is reflected in the growth of its economic importance. The value of retail trade in the country has increased in terms of value from RM26.8b to RM33.1b between 2000 and 2005. Its share to the country’s GDP has maintained around 12percent in the said period (Malaysia, 2006). This industry provided employment to almost 1.3 million workers in 2000 and it has increased to 1.3 million by 2005, which represent about 11.8 percent and 11.9 percent respectively of the total workforce in the

¹The new large chain retailers (or store based retailers) can be categorised as (i) Supercentres/hypermarkets/warehouse stores/wholesale clubs; (ii) Cash and carry warehouse; (iii) Department stores/supermarkets/groceries; (iv) Convenience stores/Gas marts/kiosks (Manalili et al., 2005).

country during the said period. Retail sales value increased from RM64 billion in 1999 to RM90 billion in 2009 indicating an increase of 40.6 percent with annual growth of 6.7 percent (Euromonitor, 2010).

The Characteristics of the New Supply Chain

The major differences between the traditional agricultural marketing system and the new supply chain are summarised in Table 1 and discussed in the following paragraphs².

- (i) **The new supply chain focuses on processes rather than the economic agents as in the traditional marketing paradigm.** The marketing orientation of the traditional marketing system is “production-oriented” that is to produce and to dispose the marketable surplus quickly. Hence the market agents and distributive functions are the focal points of the system. Market agents are passive in the sense that they perceive that their major role is “distributive” in nature. The focal point of the supply chain is on the processes or functions to ensure smooth and efficient flow of goods from the farms to consumers.
- (ii) **The focal intermediaries are the retailers as compared to the wholesalers in the conventional marketing system.** Under the new supply chain, the large retail chains are the central point of the supply chain where major decision as to what, how and when to produce are made. This is because these retailers have a close relationship with their consumers. The consumers’ needs and requirement are quickly transmitted to the producers through direct dealing or contract marketing. In the traditional marketing system, the wholesalers play an active role in price discovery function.
- (iii) **The production-marketing network is closely knit and based on value-chains.** The traditional marketing system comprises fragmented and isolated production units which are not integrated with the marketing functions or areas. On the other hand, the new supply chain is built upon an integrated production-marketing system through advanced post-harvest technology to invent value added and customer driven strategies.
- (iv) **The marketing channels are short with well defined functions.** As has been discussed earlier, the traditional marketing network is highly complex where market agents at times are duplicating each other’s functions. The long and multi-tiered distribution system increases marketing charges and costs. In the new supply system, a shorter yet integrated system is built to ensure minimum duplication of functions as well as efficient and fast delivery of goods and service in “just in time” proposition.

² This section draws mainly from Fatimah et al., (2006).

Table 1: Characteristics of Traditional Agricultural Marketing and the New Supply Chain in Malaysia

Sector	Characteristics	Agricultural Marketing	New Supply Chain
Marketing Function	Interpretation of marketing	<ul style="list-style-type: none"> - produce and sell marketable surplus - Distribute commodity as fast as possible - Passive agents 	<ul style="list-style-type: none"> - Manufacture – planned products and sell - Strategic marketing – targeting and positioning - Emergence of new retailers
	Focus of marketing function	<ul style="list-style-type: none"> - Distributive function 	<ul style="list-style-type: none"> - Process/functions such as assembling, processing, packing, packaging, branding, grading, labeling to create value added
	Central market agents	<ul style="list-style-type: none"> - Wholesaler 	<ul style="list-style-type: none"> - Retailer
Production-marketing network		<ul style="list-style-type: none"> - Complete isolation of marketing from production 	<ul style="list-style-type: none"> - Networking of value chains - Rise of “new agriculture” / agri-food economy integrating production with post harvest management - Production guided by marketing strategy
Marketing channel, intermediaries and distribution		<ul style="list-style-type: none"> - various types of middlemen, assembler, commission agents, brokers, transporters, wholesalers, retailers - multi-tiered/layered channels - loose and unstable arrangement - mainly small-scale market intermediaries 	<ul style="list-style-type: none"> - Short marketing channel, supplier-packer/ wholesaler-retailer - Large scale intermediaries

Table 1 (Continued)

Sector	Characteristics	Agricultural Marketing	New Supply Chain
Production orientation		- Producer / farmer oriented	Consumer / customer oriented
Production characteristics		<ul style="list-style-type: none"> - Independent smallholders - Fragmented farms - Uneconomical scale - Low technology - Low productivity - Inconsistent quality and quantity 	<ul style="list-style-type: none"> - Producers are selected by retailers as specific suppliers - May practise contract farming - Production is determined by the retailers - Receive inputs and technical advice from the retailers - Production is customised according to customers' needs
Production practices		-Traditional methods	<ul style="list-style-type: none"> - Subject to international standard - Subjected to "good practices" as dictated by the retailers such as the need to comply EUROGAP, HACCP
Production technology		- Rudimentary	- Biotechnology is used to customised produce according to customer needs
Grading, labeling and branding	Grading	- Non-existence or minimal	- Extensive grading and specification
	Labeling or branding	- Non-existence or minimal	- Private labeling and branding
Logistics	Logistics (storage, transportation, warehousing)	- Non-existence or minimal -Functions are transferred to middlemen such as wholesaler	<ul style="list-style-type: none"> - Logistics are central to supply chain management - Efficient, modern and technologically driven logistics - Logistics to facilitate "just in time" delivery - Large scale logistics that reduce handling cost and post harvest losses

Table 1 (Continued)

Sector	Characteristics	Agricultural Marketing	New Supply Chain
Processing		<ul style="list-style-type: none"> - Non-existence or minimal - Rudimentary 	<ul style="list-style-type: none"> - Central process to create value added - Processes include packaging, branding, grading, labeling - May apply biotechnology and processing technology to create value added
Procurement		<ul style="list-style-type: none"> - Consignment system between producer and wholesaler - Wholesaler bears the transportation and other marketing costs 	<ul style="list-style-type: none"> - Obtain supplies from “designated suppliers” only - procurement through contract marketing or from wholesaler / packing houses - outsourcing from imports
Product development	Product characteristics	<ul style="list-style-type: none"> - Bulk products - Undifferentiated products - Slow, few innovation or value added 	<ul style="list-style-type: none"> - Product development is the thrust of marketing strategies - Highly differentiated products - Customised products - Frequent reinventing new product definition - Technologically driven products
	Product safety Product traceability	<ul style="list-style-type: none"> - High risk of product contamination - No product traceability 	<ul style="list-style-type: none"> - Rigid control on food quality for safety - Toward product traceability

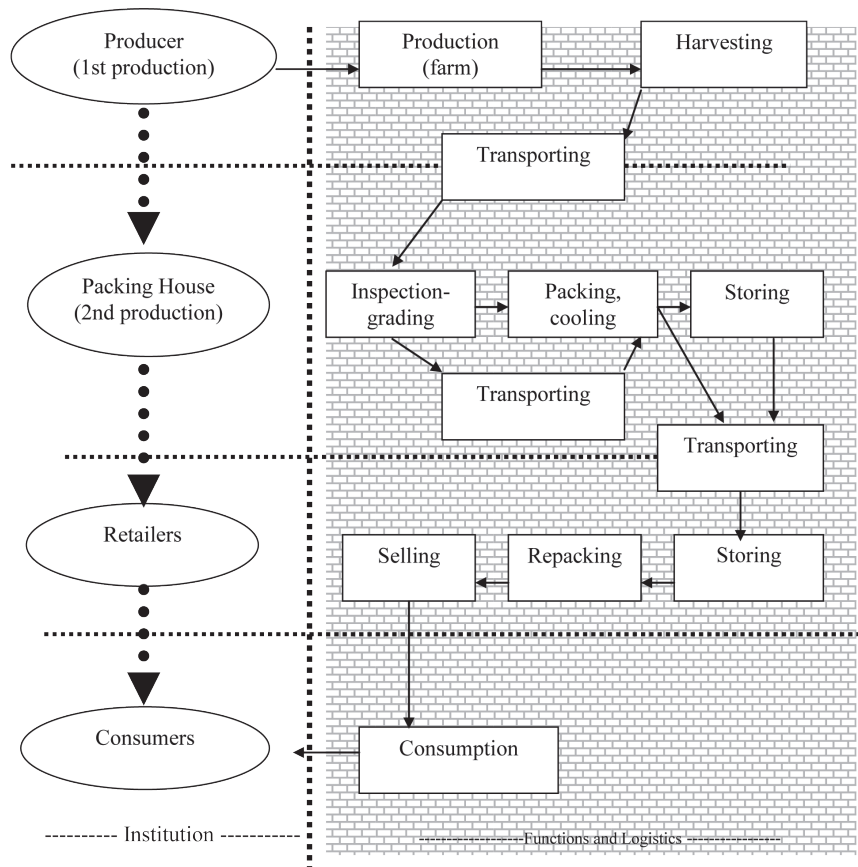
Table 1 (Continued)

Sector	Characteristics	Agricultural Marketing	New Supply Chain
Pricing	Price discovery mechanism	<ul style="list-style-type: none"> - Whispering system - consignment system (prices are made known after products are sold to the next buyers) - Prices are discovered in isolation from other markets - Predominance of wholesale as the centre for price discovery 	<ul style="list-style-type: none"> - Dictated by the retailers - Competitive pricing - Free flow of information
Market information		<ul style="list-style-type: none"> - Isolated markets - Inefficient flow and inaccurate market information 	<ul style="list-style-type: none"> - Efficient flow of information - ICT-enabled market information
ICT application		<ul style="list-style-type: none"> -Non-existence or minimal 	<ul style="list-style-type: none"> - ICT is the enabler for majority of the processes - ordering, inventory management, customer - relationship-management (CRM), EDI and so on.

Source: Fatimah et al., (2006)

- (v) **Production and processes are driven by technology to customise products.** Advances in biotechnology and ICT enable large retail chains in the developed economy to satisfy the specific needs of consumers for high quality and safe products. Although the level of technology application in Malaysia is not at par with the developed world, it is slowly moving towards that. Better input and production technology are being used to ensure high productivity and consistent production. Post harvest technology is extensively used to create value added and at the same time to reduce physical loss in handling (Figure 2).

- (vi) **Private labeling for food safety.** In a highly health-conscious society, food safety is a major concern among consumers. The use of private labeling by the retail chains has been used to ensure food safety for consumers. To achieve this, a rigid control over product quality at the farm level is implemented to ensure good production practices in accordance to international standards such as EUREP GAP standard for farm and post-harvest level food safety and phytosanitary practices.
- (vii) **Logistics are the backbone of the new supply chain.** The traditional marketing system is constrained by inadequate infrastructural facilities such as storage, transportation and warehousing. There are inadequate incentives to the market participants to invest in these facilities as there are no premiums for high quality produce. Under the new supply chain, efficient logistics are crucial and pivotal in meeting the consumers' demand in the right form of product at the right time, place, ownership and price (Figure 2). Again, technology plays a significant role in ensuring efficient use of logistics in distribution to make sure that products are available at various stages of the process without accumulating excessive inventories, enhancement and maintenance of various quality attributes, and the utilisation of plant and equipment in all stages of the value chain to reduce downtime and bottlenecks.
- (viii) **Processing is the basis of value-added creation.** Processing of agri-food products is crucial to create value added while meeting the various forms of demand from the consumers. In the developed world, application of biotechnology and other food production technology are made to reinvent new products according to customers' preferences.
- (ix) **Procurement could be both from local or outsourcing from the global market wherever cheaper and better quality.** The new supply chain is customer oriented and hence sourcing of supplies that are cheap and yet high quality, safe and in time is the order of the day. With the current shipping and transportation mode, global outsourcing is cheap, fast and reliable. Wherever the products in question could be outsourced cheaply, the new retail chain would go for it regardless of the geographical location or boundaries. Outsourcing of raw materials or products can be made 24/7 enabled by ICT and internet. Local sourcing is either through contract farming with selected producers or direct sourcing from "specialized or preferred suppliers" where a strict quality control regime is enforced.



Adapted from: Hong (2005)

Figure 2 : The New Supply Chain and the Role of Technology in Business Processes

- (x) **The products under the new supply chain are highly differentiated tailored towards the customers' needs and preferences.** Unlike under the conventional marketing system where products are sold in bulk and undifferentiated, the new supply chain system emphasizes products that are highly differentiated to meet a wide range of consumers' taste and preferences. By doing so, premiums are earned on highly differentiated products and services.
- (xi) **Market information is transparent and dissemination is efficient.** The traditional marketing network suffers poor market signal because prices are not transparent and they do not reflect the market fundamentals and product quality. Unreliable market signals do not foster responsive and dynamic market development. In the context of the new supply chain, prices are transparent and dissemination to market participants is efficient. Under such a situation, production and marketing decision can be made with minimal risk and errors.

- (xii) **ICT is the enabler of business processes of the new supply chain.** ICT and internet are the major drivers for the large retail chains to accomplish all their business processes with precision, on time, wide coverage and reliability. Some of the major processes include matching of supply and demand, inventory management, global outsourcing and procurement, EDI, customer relationship management, managing finance and funds transfers, billing, e-commerce and so on.
- (xiii) **The competition is between chains.** Since there are a small number of large retail chains competing for consumers, the competition occurs not in the form of individual firms (as in the traditional system) competing with one another for market share within a stage, but in the form of supply chains competing for their share of consumers' food expenditure. Price competition is very intense to the benefit of the consumers but at times, at the expense of producers.

The above discussion indicates the distinct features of the new structure of supply chain for agri-food in comparison to the conventional system. Clearly, there are distinct differences in terms of production orientation, buying and selling practices, product development, pricing, processing, logistics, ICT application and market information.

THE STRUCTURAL PERSPECTIVES

The Rapid Growth of Store-based Retailers, Particularly the Hypermarkets

The predominance of the large retail chains in the last few years is depicted in Table 2. As shown in the table, the number of grocery stores or provision shops has reduced by 19.5 percent from 55,869 in 1993 to 44,990 in 2001. The large retail chains are growing in strength, indicating a change of 69.5 percent between the stated periods from 2,123 to 4,946. Almost all the new types of retail chains (supermarkets, department stores and convenience stores) are experiencing significant growth.

The provision or grocery shops accounted for 55.7 percent of the total stores in the country. However, in terms of revenue, they only accounted for 28.7 percent compared to the large retail chains which accounted for almost two-thirds of the revenue. Among the retail chains, the supermarkets (including hypermarkets) which accounted for less than one percent of the retail stores, accounted for almost one-quarter of the revenue.

Table 2: Distribution of Retail Stores by Types and Revenues, 2001

Type	1993	2001	Change 1993- 2001	Share as at 2001	Revenue as at 2001	
	No.	No.	(%)	(%)	(RM mn)	%
Provision/grocery stores	55,869	44,990	-19.5	55.7	6,926	28.7
Large retail chains	2,123	4,946	133.0	6.1	13,283	55.0
<i>Supermarket</i>	349	588	68.5	0.7	3,297	13.7
<i>Mini-market</i>	1,535	3,632	136.6	4.5	1,816	7.5
<i>Convenience stores</i>	116	219	88.8	0.3	201	0.8
<i>Department stores</i>	43	302	602.3	0.4	1,778	7.4
<i>Supermarket and hypermarket</i>	80	205	156.3	0.3	6,190	25.6
Specialised Food Stores	0	30,845	..	38.2	3,931	16.3
Total	57,992	80,781	39.3	100.0	24,140	100.0

Source: Department of Statistics, Malaysia (2003).

Tables 3 and 4 provide the trends of sales (in RM and percentage) of store-based retailing between 2004 and 2009. The data shows that in terms of sales, the share of grocery retailers increased by 2 percent from 28 percent in 2004 to 30 percent in 2009. The share of non-grocery retailers declined from 72 percent to 70 percent during the said period. In other words, the market share of both types of store-based retailers has not changed very much in the last six years.

Table 3: Sales in Store-based Retailing Sector by Sector, 2004-2009 (RM mn)

Category	2004	2005	2006	2007	2008	2009
Grocery Retailers	15,918	17,501	18,856	19,992	22,074	23,793
<i>Hypermarkets</i>	3,374	1,784	5,932	6,881	8,567	10,066
<i>Supermarkets</i>	1,748	4,791	2,016	2,096	2,369	2,475
<i>Small Grocery Retailers</i>	9,041	9,202	9,210	9,310	9,438	9,522
<i>Food/Drink/Tobacco Specialists</i>	1,211	1,235	1,257	1,320	1,360	1,421
<i>Other Grocery Retailers</i>	543	489	441	385	341	308
Non-Grocery Retailers	41,737	45,243	48,839	52,411	55,157	55,891
Total of Store-based Retailing	57,655	62,745	67,695	72,402	77,231	79,684

Source: Euromonitor (2010).

Table 4: Market Share (of Sales) of Store-based Retailers, 2004-2009 (percent)

Category	2004	2005	2006	2007	2008	2009
Grocery Retailers	28	28	28	28	29	30
<i>Hypermarkets</i>	6	3	9	10	11	13
<i>Supermarkets</i>	3	8	3	3	3	3
<i>Small Grocery Retailers</i>	16	15	14	13	12	12
<i>Food/Drink/Tobacco Specialists</i>	2	2	2	2	2	2
<i>Other Grocery Retailers</i>	1	1	1	1	0	0
Non-Grocery Retailers	72	72	72	72	71	70
Store-based Retailing	100	100	100	100	100	100

Source: Euromonitor (2010).

However, within the grocery retailers' category, the share of hypermarkets has increased significantly from one-fifth in 2004 to 42.3 percent in 2009 whereas the share of other types of store-based groceries (supermarkets, small grocery retailers and others) has in general declined (Table 5).

Table 5: Market Share of Sales of Grocery Retailers by Type, 2004-2009 (percent)

Category	2004	2005	2006	2007	2008	2009
Hypermarkets	21.2	10.2	31.5	34.4	38.8	42.3
Supermarkets	11.0	27.4	10.7	10.5	10.7	10.4
Small Grocery Retailers	56.8	52.6	48.8	46.6	42.8	40.0
Food/Drink/Tobacco Specialists	7.6	7.1	6.7	6.6	6.2	6.0
Other Grocery Retailers	3.4	2.8	2.3	1.9	1.5	1.3
Total Grocery Retailers	100	100	100	100	100	100

Source: Euromonitor (2010).

The above data shows the growing importance of store-based retailers particularly the hypermarkets and supermarkets. In fact, the advent of multinational companies into the local retail scene is indeed a major event that has changed the retail landscape in Malaysia. The first supermarket and shopping complex were opened in 1964 and 1973 respectively in Kuala Lumpur (Sahbani, 2004). However, the advent of multinational companies in the local retail sector started in 1989 when Jaya Jusco supermarket was opened in Kuala Lumpur. Jaya Jusco is owned by a Japanese company named AEON Co. Ltd. This move was made as part of the "Look East" policy in the 1980s aimed at encouraging investors from the Far East into Malaysia. The growth of foreign owned supermarket/hypermarket in the 1980s has been slow until it picked up again in the mid-1990s (Table 5). As at 2007, the major foreign owned retail chain companies in Malaysia were Tesco (owned by a British company), Carrefour (French), Giant (Hong Kong) and Jaya Jusco (Japanese). As

shown in Table 6, data provided by the KPDNHEP³ shows that as of 2007, there were 144 foreign-owned retail stores operating in the country. Carrefour intended to open six more branches in 2008-9, while Jusco would open two more branches. The average annual rate of growth of these retail chains, between 1992 and 2007, was estimated at 23.6 percent. However, by the early 21st century, the figure was much higher, that is, about 65.3 percent per year. This was largely due to the taking over of Giant and Cold Storage by the Dairy Farms Co. in 2002. By 2003, the cumulative total of foreign-owned retail stores reached almost half of the expected total in 2009. The local supermarkets include The Store, Xtra Supercentre, Billion, Parkson, Eonsave and Mydin.

Table 6: Development of Foreign Retail Chains in Malaysia, 1980-2009^a

Year	Tesco		Carrefour		Jusco		Giant		All		
	No.	Cum. Total	No.	Cum. Total	No.	Cum. Total	No.	Cum. Total	No.	Cum. Total	Cum. percent
1980	1	1	2	2	0.7
1981	0	1	0	2	0.7
1982	0	1	0	2	0.7
1983	0	1	0	2	0.7
1984	0	1	0	2	0.7
1985	1	2	1	3	1.3
1986	0	2	0	3	1.3
1987	1	3	1	4	2.0
1988	0	3	0	4	2.0
1989	1	1	0	3	1	5	2.7
1990	0	1	0	3	0	5	2.7
1991	1	2	0	3	1	6	3.3
1992	1	3	1	4	2	8	4.7
1993	0	3	0	4	0	8	4.7
1994	1	1	0	3	0	4	1	9	5.3
1995	0	1	2	5	1	5	3	12	7.3
1996	1	2	0	5	0	5	1	13	8.0
1997	1	3	1	6	0	5	2	15	9.3
1998	2	5	0	6	2	7	4	19	12.0
1999	1	6	1	7	0	7	2	21	13.3
2000	0	6	1	8	4	11	5	26	16.7
2001	0	6	0	8	6	17	6	32	20.7
2002	3	3	0	6	1	9	3	20	7	39	25.3
2003	2	5	1	7	1	10	32	52	36	75	49.3

³ KPDNHEP is *Kementerian Perdagangan Dalam Negeri dan Hal Ehwal Pengguna* or Ministry of Domestic Trade and Consumer Affairs.

Table 6 (Continued)

Year	Tesco		Carrefour		Jusco		Giant		All		
	No.	Cum. Total	No.	Cum. Total	No.	Cum. Total	No.	Cum. Total	No.	Cum. Total	Cum. percent
2004	1	6	1	8	1	11	7	59	10	85	56.0
2005	4	10	1	9	3	14	12	71	20	105	69.3
2006	1	11	2	11	5	19	16	87	24	129	85.3
2007	4	15	3	14	1	21	6	93	15	144	94.7
2008	..	..	5	19	2	23	..	..	7	149	99.3
2009	..	..	1	20	..	..	..	..	1	150	100.0
Total	15		20		22		93		150 ^b		

Notes:

a: Data as at February 2008.

b: Total number of foreign-owned retail chains reported by KPDNHEP was 154.

However, four Jaya Jusco retail stores do not provide date of operation.

Source: Ministry of Domestic Trade and Consumer Affairs (KPDNHEP), (2008)

In terms of capital ownership, Giant's retail chains are 100 percent owned by a Hong Kong based company (Companies Commission of Malaysia, 2007). Local participation is the highest in the Jaya Jusco retail chains, where the local equity share was reported to be at 48.3 percent, TESCO (30 percent) and Carrefour (22.9 percent) (Table 7).

Table 7: Multi-national Retail Chains in Malaysia, 2008

Firm	Year Established	Capital Ownership		Nationality	Capital paid (RM million)
		Foreign	Local		
Jaya Jusco	2004	51.7	48.3	Japan	175.5
Giant	1994	100.0	0.0	Hong Kong	491.3
TESCO	2000	70.0	30.0	UK	56
Carrefour	1992	77.1	22.9	France	505.7

Source: Companies Commission of Malaysia (2007).

In 2007, about 39 percent or 59 of the large scale retailers were multi-national companies. The growth of these companies in terms of number was rapid after 2002 (Figure 3). This was largely due to favourable policies on the government's part in promoting distributive trade in the country.

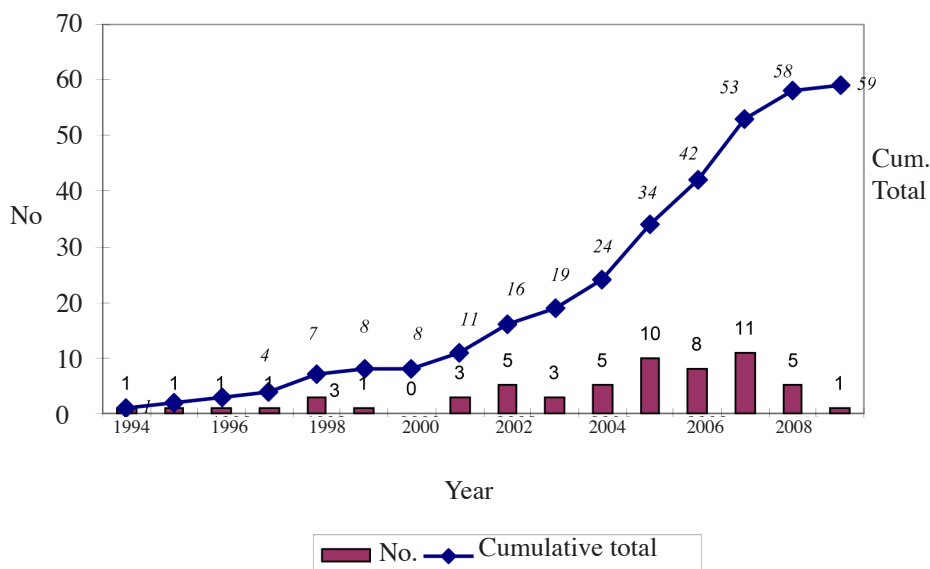


Figure 3: Number and Cumulative Total of Hypermarkets in Malaysia, 1994-2009

The total area of floor space of these multi-national retail stores is estimated at 956,851 m²(Table 8). In terms of units, there are 93 Giant stores in Malaysia which accounted for 60.8 percent of the total compared to 16.3 percent, 13.1 percent and 9.8 percent for Jaya Jusco, Carrefour and Tesco. However, in terms of space, Jaya Jusco accounted for the highest, i.e., a little more than one-third of the total. Among the four retailers, the average floor areas for Jaya Jusco is the highest at 13, 136 m² (Table 8 and Figure 4).

Table 8: Malaysia: Multi-national Retail Stores by Unit and Floor Areas, 2008

Retail Store	No.	%	Floor Areas		Average (m ²)
			(m ²)	%	
Tesco	15	9.8	133,000	13.9	8,867
Carrefour	20	13.1	182,600	19.1	9,130
Jusco	25	16.3	329,076	34.4	13,163
Giant	93	60.8	312,175	32.6	3,357
Total	153	100.0	956,851	100.0	6,254

Source: KPDNHEP (2008).



Figure 4: Foreign Retail Stores by Number and Floor Space, 2006

The distribution of store-based retailers is concentrated in the highly urbanised areas and states such as Kuala Lumpur and Selangor respectively, and other states such as Johor and Pulau Pinang (Table 9).

Table 9: Number of Retailers and Floor Areas (m²) by States, 2006

State	No. Retailers	%	Floor Areas (m ²)	%
Selangor	57	37.3	379,965.5	39.7
Melaka	5	3.3	44,190.4	4.6
Kedah	4	2.6	18,638.0	1.9
Pulau Pinang	11	7.2	88,050.5	9.2
Perak	6	3.9	64,688.6	6.8
Kuala Lumpur	24	15.7	142,280.0	14.9
Johor	19	12.4	113,285.5	11.8
N.Sembilan	9	5.9	51,971.0	5.4
Putrajaya	1	0.7	8,100.0	0.8
Sabah	12	7.8	36,424.0	3.8
Labuan	1	0.7	897.0	0.1
Pahang	1	0.7	5,328.0	0.6
Sarawak	3	2.0	3,032.0	0.3
Total	153	100	956,850.5	100

Note: Include hypermarkets to be opened after 2007

Source: Ministry of Domestic Trade and Consumer Affairs (2008).

A total of 57 stores or 37.3 percent of the multi-national retail chains as at February 2008 was hypermarkets (Table 10). About 35.3 percent were supermarkets and 17 percent were departmental stores. Carrefour specializes in hypermarkets, whereas Tesco has 13 hypermarkets and one superstore and one departmental store. Giant appears to be diversified in its retail activities. A total of 58 percent of its stores is supermarkets; one-quarter hypermarkets and the rest are superstores and departmental stores.

Table 10: Malaysia: Number of Multi-national Retail Chains, as at February 2008

Type	All		Tesco		Carrefour		Giant		Jusco	
	No	%	No	%	No	%	No	%	No	%
Hypermarket	57	37.3	13	86.7	20	100	24	25.8	-	-
Supermarket	54	35.3	-	-	-	-	54	58.1	-	-
Superstore	15	9.8	1	6.7	-	-	14	15.1	-	-
Fresh Food Distribution Centre	1	0.7	-	0.0	-	-	-	-	-	-
Departmental Store	26	17.0	1	6.7	-	-	1	1.1	26	100
Total	153	100	15	100	20	100	93	100	26	100

Growing Concentration of the Store-based Retailers

Even at the global level, there exists some degree of market concentration in the agri-food supply and retail chains. According to DFID (2004), Wal Mart was the world's largest grocer and the top 30 companies account for around one third of global grocery sales in 2003 (DFID, 2004 and PECC, 2006). Table 11 provides evidence of market concentration measured as the share of the top five retailers in the country's food market (or CR5). It is evident that the share of top five retailers in some of the developed economies is more than 40percent. It is reported that in Germany, the UK, and France, the supermarket shares of food retail are at 70-80percent.

Table 11: Concentration of the Food Market in Selected Economies, 2003

Country	Share of Top 5 Retailers (%)
Australia	38.5
Canada	69.9
China	4.2
Hong Kong	50.5
Japan	17.8
Korea	13.5
New Zealand	61.3
Singapore	73.1
Taiwan	23.6

Table 11 (Continued)

Country	Share of Top 5 Retailers (%)
Indonesia	3.8
Chile	33.7
Columbia	13
Malaysia	25
Mexico	43.3
Philippines	3.6
Thailand	47.5
Vietnam	1.6

Source: PECC (2005)

Note: Data for Australia (top 4) and Vietnam (top 3)

In the developing economies, the same trend is observed; where rapid growth economies such as Thailand, the concentration ratio is relatively higher than other countries such as Indonesia and Vietnam. There are a number of estimates for concentration of food market in Malaysia. For instance, PECC (2005) and Hu (2005) estimated that the top 5 retailers accounted for 25 percent of the food market in Malaysia (Table 11). Azizi (2005) estimated that the share of supermarkets and hypermarkets in the national food retail has increased from 27 percent in 1999 to 31 percent in 2001. The two major global retail chains, namely Tesco and Carrefour accounted for 46 percent of the hypermarket retail market (Euromonitor, 2006). The hypermarkets have also been able to secure consumers' demand with 31 percent of urban Malaysian shoppers perceiving these two outlets as their main shopping destination.

The two popular indices used to measure market concentration are Concentration Ratio (CR) and the Herfindahl-Hirschman Index⁴. As explained earlier, CRs measure the percentage of market share owned by the n largest firms in the industry. The Herfindahl-Hirschman Index (or HHI) is a commonly accepted measure of market concentration. The HHI takes into account the relative size and distribution of the firms in a market and approaches zero when a market consists of a large number of firms of relatively equal size. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases.

⁴ Market Concentration Ratios (CR) measure the percentage of market share owned by the n largest firms in the industry (Bain, 1968). The concentration ratio (CR) can be expressed as:

$$CR_n = X_1 + X_2 + \dots + X_n$$

where X_i is the market share of the i^{th} firm.

The Herfindahl-Hirschman Index (HHI) developed by Herfindahl and and Hirshman (1950) is defined as the sum of squares of the market shares of each individual firm which is expressed as:

$$HHI = \sum_i^n X_i^2$$

where X_i is the market share of the i^{th} firm and n is the number of firms in the industry.

Tables 12 and 13 suggest a number of observations. Firstly, three of the top four grocery retail companies are multinationals (Dairy Farm International Holdings), Carrefour Magnificent Diagraph Sdn Bhd and Tesco Stores (Malaysia) Sdn Bhd. The local grocery retail company that occupies the second place is The Store Corp. Bhd. Secondly, these top four companies are experiencing an increase in their share of sales between 2006 and 2009. For instance, the share of Dairy Farm International Holdings increased from 10.6percent to 13.6 percent between the said period.

Table 12: Malaysia: Share of Grocery Retail Store in Retail Value¹, Concentration Ratios and Herfindahl-Hirschman Index, 2004-5 (%)

Grocery Retail Store	2005	2006	2007	2008	2009
GCH Retail (M) Sdn Bhd	17.2	18.9	18.1	19.1	19.6
Tesco Stores (Malaysia) Sdn Bhd	5.9	8.5	12.1	14.4	15.4
Carefour Mafnificent Diagraph Sdn Bhd	6.1	6.1	6.1	7.2	9
Econsave Cash & Cary Sdn Bhd	3.1	3.4	3.9	4.5	4.5
7-Eleven Malaysia Sdn Bhd	0	0	3	3.7	3.6
Petronas Dagangan Bhd	1.5	1.4	1.7	1.8	1.8
Esso Malaysia Bhd	1.1	1.1	1.1	1	1
Store Corp Bhd	0.8	0.8	0.8	0.7	0.8
Chevron Malaysia Ltd	0.5	0.6	0.6	0.6	0.6
Shell Malaysia Ltd	0.5	0.4	0.5	0.5	0.5
Suiwah Corp Bhd	0.6	0.6	0.5	0.5	0.5
Boustead Petroleum Marketing Sdn Bhd	0.3	0.3	0.3	0.4	0.3
99 Speedmart Sdn Bhd	0.1	0.1	0.2	0.3	0.3
Ayamas Food Corp Sdn Bhd	0.5	0.2	0.3	0.3	0.3
Billion Shopping Centre Sdn Bhd	0.2	0.2	0.3	0.3	0.3
AEON Co (M) Bhd	0	0	0.2	0.3	0.3
King's Confectionary Sdn Bhd	0.2	0.2	0.2	0.2	0.2
Bread Story Sdn Bhd	0.1	0.1	0.1	0.1	0.1
Foong and Foong Emporium Sdn Bhd	0.2	0.1	0.1	0	
Convenience Shopping Sdn Bhd	3.4	3.5	0	0	
Others	57.7	53.3	49.5	44.2	40.9
Total	100	99.8	99.6	100	100
Top 4	32.3	36.9	40.2	45.2	48.5
Top 8	35.7	40.2	46.8	52.4	55.7
HHI	3,724	3,336	2,992	2,618	2,415

Note: ¹Retail value rsp excl sales tax

Source: Euromonitor (2010)

Table 13: Malaysia: Grocery Retailer Company Shares, 2006-09 (%)

Retailer	Company	2006	2007	2008	2009
Giant	GCH Retail (M) Sdn Bhd	10.6	11.8	12.9	13.6
Tesco	Tesco Stores (Malaysia) Sdn Bhd	8.3	9.5	11.6	12.7
Carrefour	Carrefour Mafnificent Diagraph Sdn Bhd	6.1	6.1	7.2	9
Econsave	Econsave Cash & Cary Sdn Bhd	3.4	3.9	4.5	4.5
7-Eleven	7-Eleven Malaysia Sdn Bhd	..	3.6	3.7	3.6
Giant Superstore	GCH Retail (M) Sdn Bhd	3.2	3.1	3.1	3
Tesco Exxtra	Tesco Stores (Malaysia) Sdn Bhd	..	2.6	2.8	2.8
Giant Supermarket	GCH Retail (M) Sdn Bhd	2.7	2.3	2.2	2.1
Kedai Mesra	Petronas Dagangan Bhd	1.4	1.7	1.8	1.8
Cold Storage	GCH Retail (M) Sdn Bhd	0.6	0.8	0.9	0.8
Pacific	Store Corp Bhd	0.8	0.8	0.7	0.8
Tiger Mart	Esso Malaysia Bhd	0.3	0.3	0.3	0.7
Star Mart	Chevron Malaysia Ltd	0.6	0.6	0.6	0.6
Shell Select	Shell Malaysia Ltd	0.4	0.5	0.5	0.5
Suiwah	Suiwah Corp Bhd	0.6	0.5	0.5	0.5
BHP	Boustead Petroleum Marketing Sdn Bhd	0.3	0.3	0.4	0.3
On The Run	Esso Malaysia Bhd	0.2	0.2	0.2	0.3
99 Speedmart	99 Speedmard Sdn Bhd	0.1	0.2	0.3	0.3
Ayamas	Ayamas Food Corp Sdn Bhd	0.2	0.3	0.3	0.3
Billion	Billion Shopping Centre Sdn Bhd	0.2	0.3	0.3	0.3
Mobil	Esso Malaysia Bhd	0.5	0.5	0.5	..
7-Eleven	Convenience Shopping Sdn Bhd	3.5	..	..	..
Xtra Supercentre	GCH Retail (M) Sdn Bhd	1.9	..	..	..
Others	Others	53.9	50	44.8	41.4
Total		99.8	99.9	100	99.9
Top 4		28.4	31.3	36.2	39.8
Top 8		34.3	42.9	48	51.3
HHI		3,173	2,822	2,422	2,202

Note: percent retail value rsp excl sales tax

Source: Euromonitor (2010)

The estimated CR4 and CR8 values for the grocery retail companies were 28.4 percent and 34.3 percent respectively in 2006. These data suggest that the top four grocery retail companies accounted for about 30 percent of the sales value and the top 8 (34.3 percent) in 2006. Within four years, these ratios have increased to 39.8 percent (CR4) and 51.3 percent (CR8) indicating a growing degree of concentration in the grocery retail sector in the country. The HHI value for 2006 was estimated at 3,173 and at 2,202 (2009) which suggests a similar trend.

Barriers to Entry are High, Small Time Retailers are Slowly Displaced

Barriers to entry is generally defined as the obstacles in the path of a firm which wants to enter a given market (Bain, 1968) or all the factors that deter or hinder new competitors to enter a specific market. Based on the above discussion, it is clear that the market for groceries is moving towards greater concentration which is made possible by the “high barriers to entry” to both the present and potential small scale retailers (such as independent groceries). As indicated in Table 7, the capital requirement of large scale retailers is very high beyond the capacity of small time retailers. The paid up capital for Carrefour is RM505b, Giant (RM491b), Jaya Jusco (RM175b). The largest local grocery store, i.e., The Store has a paid-up capital of RM30m. A large amount of capital is required to run a large scale business to achieve some economies of scale in their operations. Clearly, capital is the major deterrent to new entrants of this industry.

Besides the high requirement of capital, the other forms of barriers to entry are management expertise, efficient logistics and state-of-the-art technology used in every level of supply chain practices. The new supply chain is considered as a new “retailing revolution” where new management and marketing concepts and ideas are translated to create an efficient delivery system that satisfy the stakeholders (producers, intermediaries and consumers). This is achieved through an efficient procurement system supported by modern logistics and technologies such as ICT and biotechnology. ICT is being used for communication as well as inventory management and Customer Relationship Management. Biotechnology is being applied to ensure quality product and produce for the consumers.

The marketing strategies of the new retail chains practices are barriers to entry to potential entrants. The new retailers operate on large scale which gives them the advantage of economies of scale. Equipped with modern technology (such as ICT and biotechnology), their logistical arrangement is advanced and efficient. Besides these advantages, they practise consumer-centric policies and strategies. Besides competitive prices, they compete on non-pricing strategies such as favourable shopping environment, high quality produce, a large variety of vegetables and fruits, labeling and branding, facilities to consumers and efficient transaction and a comprehensive package of customer relationship management (CRM). With large capital and global network, these retailers are able to outsource supplies from cheaper sources in the international market. The organizational characteristics of these chains as well as their consumer-driven strategies create high barriers to entry to new entrants into the industry. As proven in other developing economies, the growing strength of these retail chains has not only marginalised small time retailers, but also deters new entrants into the industry.

Growth of New Intermediaries: The Packers and Multi-Functional Wholesalers

The grocery retail sector is growing actively at the expense of small scale retailers. Besides, the procurement system of these large retail chains tends to marginalise small and inefficient small producers who are not able to meet the quantity and strict quality demand. A new type of intermediary which is becoming important in the new supply

chain is the “packers’ who are basically performing a similar role like that of wholesalers with a special focus on packaging. Some large retailers are in the process of building up distribution centres, closer to the farms, to collect, re-pack the produce before they are displayed in the stores. Many chains are shifting from traditional wholesale markets to “dedicated wholesalers”, who are regarded as more responsive to quality, safety, and consistency requirements than traditional wholesalers, who aggregate produce from many producers and may also be unable to supply the quantities required. The wholesalers seem to benefit from the new supply chain as they are in a better position to meet the supply requirements of the large retailers. Operating in a relatively large scale of business, the wholesalers are able to mobilize their transportation facilities and their packaging or packing centres to collect and re-pack the produce in accordance to the specifications made by the retailers.

A study carried out by Norsida et al. (2008) indicates that a little less than two-thirds of the sampled wholesalers have more than one business functions. The respondents reported to perform a number of combinations of functions such as transportation, packaging, cold storage besides their main core business of wholesaling, importing and exporting. As shown in Table 14, a total of 22 wholesalers (18.8 percent) stated involvement in transportation activity, packaging (14.5 percent) and providing cold storage (13.7). These data suggest their multi-tasking marketing activities and the nature of involvement in the supply chain. The study estimated that about a quarter of the fresh produce supply of the hypermarkets came from the wholesalers. Hence, it is of no surprise that the wholesalers are involved in supply chain activities such as transportation, packing and storing.

Table 14: Multi-functional Roles of Fruits and Vegetables Wholesalers

Roles	No.	%
Wholesaling	42	35.9
Wholesaling and transportation	33	28.2
Wholesaling and others	5	4.3
Wholesaling, transportation, import and export	1	0.9
Wholesaling, transportation and packaging	3	2.6
Wholesaling, cold storage services, packaging and export	1	0.9
Wholesaling, transportation, cold storage services, packaging and export	1	0.9
Wholesaling, transportation, cold storage services, packaging, import and export	2	1.7
Wholesaling, transportation, cold storage services, packaging, import, export and others	2	1.7
Wholesaling, transportation and import	1	0.9
Wholesaling, transportation and cold storage services	5	4.3
Wholesaling and packaging	2	1.7

Table 14 (Continued)

Roles	No.	%
Wholesaling, transportation, packaging and export	2	1.7
Wholesaling and import	2	1.7
Wholesaling, packaging and export	3	2.6
Wholesaling, transportation and export	1	0.9
Wholesaling, import and others	4	3.4
Wholesaling, cold storage services, packaging and import	1	0.9
Wholesaling, cold storage services, import and export	1	0.9
Wholesaling and export	1	0.9
Wholesaling, , transportation, cold storage services, and import	2	1.7
Wholesaling, transportation, cold storage services, import and export	2	1.7
Total	117	100

The Growth of Contractual Farming, But the “Unequal Partnership” Remains

Supermarket practises private standards that are similar to export requirements for size, colour, safety, consistency, volume, packaging, labels, etc., which imply the need for production level investments in drip irrigation, greenhouses, advanced storage, hygienic services, and logistics (Daniele & Purcell, 2008). In Thailand, this demand can only be met by professional operators—usually organised groups or larger farmers who could deal directly with the buyers. Contract farming or marketing is a viable option to achieve this.

The Malaysian government through the Federal Agricultural Marketing Authority (FAMA) has encouraged and supported contract farming activities among food producers by providing extension services, implementing accreditation schemes and functioning as the middlemen between the producers and buyers (including large scale and other types of buyers).

As at 2009, a total of 3,476 farmers were involved in contract farming. Being organised and supported by FAMA, it has carried a value of more than RM660 million. It operates contract marketing arrangements with fruit and vegetable, livestock, fresh-water fish, coconut and other producers. The main fruits considered suitable for such arrangements are watermelons, melons, mangoes and pineapples, while the main vegetables are chillies, pumpkin, ginger and lady’s finger (okra) (FAMA, 2010). To ensure that the farmers are in tune with the quality and safety demand of the chains, FAMA has implemented accreditation and extension programmes. FAMA operates 41 collection centres, which funnel produce into seven distribution centres for delivery to the stores. About 63.2 percent of the produce was marketed by FAMA, while less than 2percent received help from FAMA in terms of distribution arrangement and only less than 1percent was able

to market their products independently. Since this project was launched recently (under the Ninth Malaysia Plan's initiative, 2006-2010 Malaysia, 2006), the producers rely on FAMA for channelling their produce until they are able to stand on their own which is the ultimate aim of this project. Clearly, the project involves some elements of subsidy in that infrastructure costs and some staff costs are borne by FAMA and not charged to the farmers.

Norsida et al., (2008) indicates that out of 41 contract farmers interviewed, a total of 34 farmers or 82.9 percent were involved in contract marketing and 31 of the contracts were done informally or verbally. A total of 56.1 percent have contract with FAMA while the rest with wholesalers, collectors and hypermarkets. This study indicates that the contract farmers are largely young farmers, educated and aware of the advantages of contract farming. On the other hand, the farmers that were not involved in contract farming perceived that the contract incurred additional burden to them particularly, the paper work (56 percent of the respondents studied mentioned this). Almost half of the respondents mentioned lack of opportunities to be involved in this project. However, most of the contract farmers (76.3 percent) mentioned the problem of delayed payments by the retail stores as their major problem (despite a Government recommendation that payments be made within seven days). The difficulties farmers experience in supplying supermarkets in Asia are reflected in the fairly sharp decline in the numbers involved, as companies de-list suppliers who do not come up to the expectations in terms of volume, quality and delivery.

Absence of Major Structural Shift at the Farm Level

Despite the retail revolution, there is no major structural shift at the farm level marketing. It is of no surprise that only a small percentage of farmers were able to supply to the new retail format. Norsida et al., (2008) indicated that the majority of the farmers studied sold their produce to wholesalers (64 percent), collectors/transporters (26 percent) and only 1 percent reported to sell to hypermarkets. While the retailing of vegetables and fruits has modernised, the farm level marketing has not shown a parallel progress. The slow structural shift can be inferred from the marketing margin trend.

In the developed economies, an improvement in the marketing system is reflected in the increase in the price spread or marketing margin as more value-added activities are created through branding, packaging and processing. As a result, the share of the producers from the consumer price is relatively small as processing and value added activities involve additional costs. However, in the case of Malaysian vegetables and fruits, the share of producers of the consumer ringgit is high (more than 40 percent compared to less than 20 percent in the developed countries) and it has not changed much in the last 15 years (Appendices I - VIII). This is a typical figure for a marketing system where there are limited value added activities such as branding, packaging and processing. Although the marketing margin for these selected produce has increased, it is not large enough and at times unstable.

In the case of seasonal fruits such as *durian*, *duku langsung* and *rambutan*, the prices and margin continue to be unstable due to the inability of the system to absorb excesses of supply. All these symptoms show that there is no major structural shift in the agricultural marketing system at the farm level. In other words, the conventional method of selling through the multi-layered intermediaries is still prevalent. With it, the old problems of inefficient price discovery and limited incentives for better handling of produce still prevail. It is of no surprise that the marketing margin of these commodities appears rigid with little improvement in terms of the farm share of the consumer price as well value added activities.

The correlation and causality analyses between fruit and vegetable prices by Fatimah and Khalid (2008) suggest that there exists some integration between selected vegetables and market centres. Generally, market for vegetables that are high in value and grown in commercialised farms tend to be correlated and integrated compared to vegetables that are relatively low in value and grown in low quantity in sparsely distributed areas. A high degree of market integration indicates efficient information flow between levels and centres or locations. The evidence of high correlations and integration between selected high value and commercialised vegetables suggest a strong network and relationships between the markets and their participants. On the other hand, the low correlation and integration of low value and low quantity vegetables imply that the markets are not communicating and prices are localised. Hence, prices of these commodities are not a good indicator of their market situation. In short, market improvements do occur but limited to commercialised fruits and vegetables.

POLICY IMPLICATIONS

Malaysia has chosen to integrate with the world economy through trade. In fact, the GDP to trade ratio is 231 in 2005 compared to 431 for Singapore. Through trade, the services sector particularly retail industry has shown a remarkable growth in the last decade. One of the major players of this sector is the large grocery retail chains both from local as well as multi-national companies from countries such as United Kingdom, Japan, Hong Kong and France. The advent of the new supply chain in the food marketing has been unprecedented as shown by the higher rates of growth in sales of food products and produce.

Despite the rapid growth of food retailing in the country, the farm level marketing in general does not seem to move in tandem, in fact the small farmers are in danger of being marginalised. The reasons for this is rather obvious, that is, the vegetable and fruit industries in Malaysia are not progressing on all fronts such as productivity and value added creation due to many institutional and structural constraints. The level of commercialisation is still very low and hence, only a small percentage of farmers are able to participate in the new supply chain.

The new super retailers in the fresh fruits and vegetables supply chain will continue to be an important institution affecting various aspects of marketing including pricing, distributing

and all aspects of merchandising particularly branding, labeling, packaging and quality monitoring. To integrate the small farmers into the new supply chain requires a major revamp of the production and marketing system. It is clear that the current production system and technology is not able to produce fruits and vegetables according to what is required by the new retailers. Production improvement is not a short term affair as it involves a total package of product development including R&D, extension services, institutional restructuring and most importantly adequate incentives to producers and traders. Attention also needs to be paid to legal and regulatory frameworks governing the fruits and vegetables sector.

The government can provide advice on contractual arrangements, set up arbitration schemes, develop quality certification, and establish laboratories and sampling procedures to meet safety concerns. The farm sector needs to be reorganised so that they are able to negotiate with the buyers on a level playing field. This involves the setting up of group farming as well as producer cooperatives. These are not new ideas, however, the full potential of these institutions is yet to be realised as structural and management problems pose as the major hindrances. As proven in the developed world as well as in countries like Taiwan, Thailand and Korea, producer cooperatives are the best vehicle for farmers to negotiate on equal terms with large buyers such as hypermarkets. There is a dire need to revive these institutions to help farmers to reorganise their production and marketing system (in particular contract farming or marketing) to face the rapid change in the retail landscape. Towards this end, the government has supported the establishment of contract farming among fruit and vegetable producers. However, the “unequal partnership” symptoms require government’s support to facilitate exchanges at all levels of marketing by reducing the transaction costs through better information, certification, grading, adequate infrastructures and encouraging cheaper funding arrangements between banks, supermarkets, suppliers and input companies. Despite the rapid expansion of large retail chains, the small retailers do have strategic roles in areas where they are needed to bridge farmers and buyers either geographically or in terms of services. This means that there is a need for supports and incentives to help the small scale traders (such as mobile market and small retailers) to compete in the market. Besides, the potential growth of “community supported farms” in the urban areas in Malaysia cannot be understated as consumers become more health conscious and concerned about their environment. Hence, the future growth of fruits and vegetables industries do not necessarily lie at the hypermarket stores only, but may also shift closer to the consumers’ vicinity as has happened in the developed world.

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Appendix I

Marketing Margin of Selected Vegetables, 1990-2007 (RM/kg)

Year	Cabbage	Pak Choy	Water-cress	Spinach	Lettuce	Tomato	Brinjal	Cucumber	Chili
1992	0.96	1.1	0.91	1.15	1.6	1.14	1.07	0.75	1.99
1993	1.15	1.17	1.09	1.32	1.85	1.23	1.05	0.74	1.95
1994	1.27	1.23	1.83	1.15	2	1.32	1.36	0.7	2.27
1995	1.28	1.44	1.52	0.94	2	1.53	1.42	0.78	2.28
1996	1.17	1.53	1.9	1	2.34	1.34	1.48	0.97	2.51
1997	1.2	1.62	1.92	1.27	2.38	1.9	1.72	0.89	2.74
1998	1.37	1.62	1.73	1.51	2.85	2.02	1.71	0.93	3.05
1999	1.44	1.81	2.71	1.58	2.75	1.46	1.91	1.01	2.61
2000	0.96	1.73	4.95	1.57	2.73	1.61	1.81	0.98	2.79
2001	1.04	1.9	3.47	1.47	2.23	1.45	1.78	0.95	2.55
2002	1.79	1.83	3.72	1.61	1.91	1.08	1.78	1.05	2.88
2003	1.08	1.8	3.61	1.63	2.19	1.11	1.81	1.01	2.69
2004	1.31	1.92	3.01	2.24	2.19	1.42	2.02	1.37	3.96
2005	1.33	1.68	2.77	1.48	2.64	1.83	1.92	1.11	3.09
2006	0.94	1.78	3.07	1.65	2.69	1.67	2.06	1.15	3.25
2007	1.33	2.06	3.18	1.68	2.74	1.76	1.98	1.09	2.84
RoG (percent)	0.47	3.4	7.88	3.48	2.13	1.23	3.91	3.33	3.03

Note: RoG – Rate of Growth

Source: Fatimah Mohamed Arshad and Khalid Abdul Rahim (2008).

Appendix II

Producers' Share of the Retail Price of Selected Vegetables, 1992-2007(percent)

Year	Cabbage	Pak Choy	Water -cress	Spinach	Lettuce	Tomato	Brinjal	Cucumber	Chili
1992	44.5	42.9	58.5	43.8	51.5	45.5	50.5	35.9	53.3
1993	44.4	42.3	54.1	41.8	47.4	45.8	50	37.8	53.9
1994	41.2	43.1	37.7	49	45.9	45.9	41.4	41.2	52.3
1995	46	41.8	51.5	60.5	52	41.4	46	39.5	60.2
1996	52	38.8	45	57.1	48.9	48.5	47.5	36.6	54.9
1997	49.4	41.7	43.5	53.8	47	35.8	46.9	39	52.2
1998	51.8	41.9	51.7	48.6	42.3	41.8	44.7	40	58.6
1999	42.2	33	27.9	46.2	41.1	45.1	45.1	38	56.6
2000	55.3	36.3	19	44.8	43	49.2	45.8	38.4	55.7
2001	47.2	32.5	24.1	48.8	48.9	51.8	42	37.1	52.1
2002	34.4	34.1	21.2	44.2	58.1	66	39	35.6	54.5
2003	52.2	37.1	21.5	43.1	51.4	61.6	40.3	37.3	55.2
2004	43.3	41.7	30.6	38	52.1	53.3	39.5	30.5	45.1
2005	46.2	43.1	30.6	49	44.9	40.4	41.8	38	54.6
2006	61.8	40.4	29.1	47.7	44.8	43.2	44.5	37.5	52.6
2007	44.1	39.5	27.1	47.8	48.2	46	51.1	38.1	64.1
RoG (percent)	0.45	-0.56	-5.59	-0.61	-0.02	0.85	-0.71	-0.44	0.03

Note: RoG – Rate of Growth

Source: Fatimah Mohamed Arshad and Khalid Abdul Rahim (2008).

Appendix III

Wholesalers' Margin as Percentage of Retail Price, 1992-2007 (percent)

Year	Cabbage	Pak Choy	Water -cress	Spinach	Lettuce	Tomato	Brinjal	Cucumber	Chili
1992	19.1	24.8	9.5	26.4	20.9	41.6	20.8	25.6	18.5
1993	26.6	24.1	18.2	23.8	25.3	24.2	22.9	23.5	22
1994	28.7	25.9	33.6	20.5	26.8	24.6	28.9	21.8	22.1
1995	26.6	29.1	28.4	9.2	23	35.6	27	25.6	19.4
1996	15.6	30.9	31.2	21.1	18.3	25	27	22.9	21.2
1997	18.1	22.3	32.4	13	23.6	34.5	24.7	24.7	17.1
1998	16.2	26.1	18.9	20.3	25.7	27.4	24.9	23.2	18.2
1999	20.5	33.7	43.7	22.6	27.2	35.7	25.3	24.5	18.1
2000	12.6	30	21	20.3	27.6	16.1	16.5	25.8	17.5
2001	15.2	34.2	37.9	17.6	22	15.6	26.4	25.8	22
2002	17.6	35.7	50.5	25.1	16.9	9.4	28.8	27	24.5
2003	14.6	28.8	43.6	24.9	21.7	13.1	30.7	26.7	20.8
2004	20.8	18.3	38.9	16.8	18.8	18.1	27.2	20.3	25.8
2005	23.5	25.1	44.6	21.8	26.3	32.2	30.6	25.1	23.3
2006	6.1	27.6	47.8	22.2	27.7	28.6	29.4	27.2	25.7
2007	16.8	20.9	50.7	20.2	27	29.4	24.9	23.9	18
RoG (percent)	-3.93	-0.41	7.28	0.74	0.31	-2.89	1.19	0.32	1.02

Note: RoG – Rate of Growth

Source: Fatimah Mohamed Arshad and Khalid Abdul Rahim (2008).

Appendix IV

Retailers' Margin as Percentage of Retail Price, 1992-2007 (percent)

Year	Cabbage	Pak Choy	Water-cress	Spinach	Lettuce	Tomato	Brinjal	Cucumber	Chili
1992	36.4	32.3	32	29.7	27.6	12.9	28.7	38.5	28.2
1993	29	33.5	27.7	34.4	27.3	30	27.1	38.7	24.1
1994	30.1	31	28.7	30.5	27.3	29.5	29.7	37	25.6
1995	27.4	29.2	20.1	30.3	24.9	23	27	34.9	20.4
1996	32.4	30.3	23.7	21.8	32.8	26.5	25.5	40.5	23.9
1997	32.5	36	24.1	33.3	29.4	29.7	28.4	36.3	30.7
1998	32	32	29.4	31.1	32	30.8	30.4	36.8	23.2
1999	37.3	33.3	28.4	31.1	31.7	19.2	29.6	37.4	25.2
2000	32.1	33.7	60	34.9	29.4	34.7	37.7	35.8	26.8
2001	37.6	33.3	38	33.6	29.1	32.6	31.6	37.1	25.9
2002	48	30.1	28.3	30.7	25	24.5	32.2	37.4	21
2003	33.2	34.1	34.9	32	26.8	25.3	29	36	24
2004	35.9	40.1	30.5	45.3	29.1	28.6	33.2	49.2	29.1
2005	30.4	31.8	24.8	29.2	28.8	27.4	27.6	36.9	22
2006	32.1	32	23.1	30.1	27.5	28.2	26.1	35.3	21.8
2007	39.1	39.6	22.3	32	24.8	24.5	24	38.1	18
RoG (percent)	1.08	0.83	-0.09	0.76	-0.31	1.39	-0.04	0.16	-1.18

Note: RoG – Rate of Growth

Source: Fatimah and Khalid (2008).

Appendix V

Marketing Margin of Selected Fruits, 1992-2007 (RM/kg)

Year	Seasonal					Non-seasonal				
	Durian	Duku Langsat	Jackfruit	Rambutan	Water Melon	Papaya	Guava	Pineapple	Banana	Mango
1992	2.04	1.14	1.24	1.42	0.5	0.54	0.79	0.31	0.72	
1993	2.04	0.57	0.9	1.47	0.55	0.58	0.84	0.28	0.71	2.34
1994	2.18	2.36	1.36	1.49	0.57	0.64	0.74	0.28	0.63	0.91
1995	2.44	1.74	1.57	1.54	0.63	1.08	0.76	0.39	0.64	2.2
1996	1.8	0.58	1.49	1.69	0.86	0.95	0.76	0.46	0.9	4.59
1997	2.88	1.48	1.3	1.54	1.05	0.77	0.87	0.55	0.96	4.08
1998	1.87	1.51	1.18	2.17	0.86	0.75	0.87	0.53	0.87	2.66
1999	1.83	2.25	1.26	1.85	0.76	0.86	1	0.74	0.97	1.83
2000	2.14	2.66	1.5	2.7	0.95	0.69	0.95	0.63	0.85	2.47
2001	2.04	2.34	1.87	2.38	0.87	0.75	1.04	0.5	0.81	2.51
2002	1.54	2.26	1.43	1.73	0.93	0.74	0.97	0.86	0.83	2.64
2003	2.01	2.08	1.83	2.42	0.93	0.75	1.08	0.73	0.83	2.07
2004	1.37	3.13	2.1	3.22	1.31	0.76	1.2	0.72	1.1	2.26
2005	1.96	2.23	1.97	2.17	1.24	0.83	1.32	0.5	0.8	2.04
2006	1.48	2.63	1.92	2.1	0.76	0.77	1.06	0.6	0.81	2.26
2007	2.43	2.3	2.01	1.69	1.12	0.91	1.17	0.74	0.74	2.59
RoG (percent)	-1.45	6.99	4.03	3.2	4.65	1.34	3.36	5.88	1.17	0.44

Note: RoG – Rate of Growth

Source: Fatimah and Khalid (2008).

Appendix VI

Producers' Share of the Retail Price for Selected Fruits, 1992-2007 (percent)

Year	Seasonal					Non-seasonal				
	Durian	Duku Langsat	Jackfruit	Rambutan	Water Melon	Papaya	Guava	Pineapple	Banana	Mango
1992	48.7	68.7	29.3	43.7	36.7	37.9	46.3	53.7	29.4	
1993	37.8	86.4	37.5	42	32.9	36.3	44.7	58.8	32.4	36.8
1994	33.1	49.6	22.3	37.3	37.4	31.2	48.3	61.6	30	73.1
1995	29.1	62.2	12.7	37.3	40	20.6	48.6	52.4	30.4	40.8
1996	50.1	85.9	31	36.2	33.3	27.5	49	48.9	26.2	26.7
1997	33.3	71.5	37.4	39.4	11.8	31.9	45.6	40.9	26.2	24.8
1998	50.8	63.8	44.2	30	29.5	37	50.8	51.4	36	50.8
1999	55.7	58.9	43.5	48.4	30.9	31.7	43.2	35.7	32.6	62.5
2000	42.6	51.3	35.1	16.2	39.1	42	50	40.6	42.6	42.4
2001	34.2	50	24.7	18.9	40.8	39	49.5	58.3	45.3	34.3
2002	46.9	32.7	38.6	23.5	39.2	38.8	50	41.1	43.9	28
2003	44.6	50.4	34.9	11.7	36.7	39	46.5	52.6	43.9	46.9
2004	51.4	28.6	30.5	9.9	31.1	41.1	44.4	52.9	37.5	42.9
2005	32.6	35.9	39.1	14.9	31.1	41.5	41.9	64.3	47.7	50.6
2006	60.1	31.9	35.6	30.1	53.7	44.6	49.5	59.5	47.1	47.2
2007	35.9	48	37.2	42	32.9	40.9	46.8	51.6	51.6	52.4
RoG (percent)	0.86	-5.5	2.35	-5.87	1.23	2.51	-0.1	0.17	4.03	1.04

Note: RoG – Rate of Growth

Source: Fatimah and Khalid (2008).

Appendix VII

Wholesalers' Margin from the Retail Price for Selected Fruits 1990-2007 (percent)

Year	Seasonal					Non-seasonal				
	Durian	Duku Langsat	Jackfruit	Rambutan	Water Melon	Papaya	Guava	Pineapple	Banana	Mango
1992	18.6	10.9	30.5	27.1	26.6	21.8	19	14.9	24.5	
1993	22	3.9	31	25.3	31.7	24.2	25.7	11.8	28.6	22.8
1994	21.2	34.3	38.2	38.4	27.5	31.2	21.7	6.8	20	2.2
1995	14	25.4	66.1	26.5	23.8	28.7	20.9	18.3	27.2	28.2
1996	11.4	0.9	31.9	34.8	25.6	27.5	20.1	16.7	21.3	39.7
1997	21.5	2	27.2	22.5	53.8	31.9	22.5	30.1	37.7	43.4
1998	16.8	12.1	20.7	44.7	33.6	29.4	15.8	17.4	29.4	22
1999	10.7	16	21.1	23.7	41.8	31	23.9	30.4	25.7	10
2000	30	19.4	29.4	48	26.3	22.7	19.5	25.5	25	30
2001	34.5	22.6	36.7	40.8	29.9	26	20.4	8.3	27.7	41.7
2002	26.2	34.4	25.2	41.5	30.7	28.9	18.6	28.8	30.4	47
2003	23.7	19.8	29.3	51.9	27.2	26	23.3	17.5	32.4	25.3
2004	17.7	20.8	27.4	36.8	19.5	23.3	19	17	28.4	32.4
2005	30.6	26.8	17.4	50.6	31.1	21.1	22	8.6	28.8	16.6
2006	11.9	44.6	22	37.9	16.5	22.3	22.4	10.8	34.6	21.4
2007	31.7	8.9	22.1	18.6	40.1	27.9	25	16.3	36.6	9.1
RoG (percent)	2.28	9.19	-3.66	1.74	-0.88	-0.75	0.32	-0.03	2.14	1.84

Note: RoG – Rate of Growth

Source: Fatimah and Khalid (2008).

Appendix VIII

Retailers' Margin from the Retail Price for Selected Fruits, 1990-2007(percent)

Year	Seasonal					Non-seasonal				
	Durian	Duku Langsat	Jackfruit	Rambutan	Water Melon	Papaya	Guava	Pineapple	Banana	Mango
1992	32.7	20.5	40.2	29.2	36.7	40.2	34.7	31.3	46.1	
1993	40.2	16.5	31.6	32.7	35.4	39.6	29.6	29.4	39	40.4
1994	45.7	16.1	39.4	24.3	35.2	37.6	30.1	31.5	50	24.7
1995	57	12.4	21.2	36.2	36.2	50.7	30.4	29.3	42.4	31
1996	38.5	28.2	37.1	29	41.1	45	30.9	34.4	52.5	33.6
1997	45.1	29.1	35.3	38.1	34.5	36.3	31.9	29	36.2	31.8
1998	32.4	24.1	35.1	25.4	36.9	33.6	33.3	31.2	34.6	27.2
1999	33.7	25.1	35.4	27.8	27.3	37.3	33	33.9	41.7	27.5
2000	27.3	29.3	35.6	35.8	34.6	35.3	30.5	34	32.4	27.6
2001	31.3	27.4	38.6	40.2	29.3	35	30.1	33.3	27	23.9
2002	26.9	32.8	36.2	35	30.1	32.2	31.4	30.1	25.7	25
2003	31.7	29.8	35.8	36.4	36.1	35	30.2	29.9	23.6	27.8
2004	30.9	50.7	42.1	53.3	49.5	35.7	36.6	30.1	34.1	24.7
2005	36.8	37.3	43.5	34.5	37.8	37.3	36.1	27.1	23.5	32.9
2006	28	23.5	42.4	32.1	29.9	33.1	28.1	29.7	18.3	31.5
2007	32.5	43.1	40.8	39.5	26.9	31.2	28.2	32	11.8	38.5
RoG (percent)	-2.5	5.76	1.69	2.12	-0.78	-1.72	-0.11	-0.23	-7.19	-0.19

Note: RoG - Rate of Growth
Source: Fatimah and Khalid (2008).