UNIVERSITI PUTRA MALAYSIA

PRODUCTIVITY AND PERFORMANCE OF MALAYSIAN FOOD MANUFACTURING INDUSTRY

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PRODUCTIVITY AND PERFORMANCE OF MALAYSIAN FOOD MANUFACTURING INDUSTRY

BY

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To: my father, my mother, my brothers, my sisters, Sudanese, Malaysian people and all those helped me to complete this study.

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TABLE OF CONTENTS

Page

LIST OF TABLES

Page

Table

LIST OF FIGURES

Page

Figure

LIST OF CHARTS

Page

Chart

Abstract of thesis submitted to the Senate of Universiti Putra Malaysia in partial fulfilment requirements for the degree of Master of Science

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Faculty: Economics and Management

Although the productivity growth and performance of the food manufacturing industry has improved in the recent years, the industry is still behind the other manufacturing industries, specifically the non-resource based industry such as the electronics and electrical industries after the structural transformation took place in Malaysian economy in 1987. The manufacturing industry sector becomes as an engine of growth instead of the agricultural sector. There is imbalance growth between the food manufacturing industry and the other manufacturing industries, in terms of its contribution to the output growth, value added, employment generation, exports, imports and the investment opportunities. The analysis of the food manufacturing sector showed a characteristic low productivity and inefficiency problem through analysis of the food manufacturing sector.

In this study autoregression estimator was employed to estimate the sources of productivity growth in 28 food manufacturing industries in Malaysia for the time series

data from 1970-1993 obtained from the department of statistics. Two models were generated from the production function. The first model is the decomposition of the output growth into the contribution of capital, increased usage of labour, material and total factor productivity growth. On the other hand, the second model is the decomposition of the labour productivity growth (output per worker) into the capital deepening (capital per worker), increasing usage of the material-labour ratio (material per worker) and total factor productivity growth.

The study found that the output growth is contributing more than the labour productivity growth to the food manufacturing industry productivity in terms of the annual average growth rate of the food manufacturing industries. The contribution of the two indictors to the food manufacturing industry growth as the output of the two models during the study period were 11 % and 1.8 % respectively.

The highest contribution in terms of annual average growth rate, of the output growth to the food manufacturing industry productivity growth was the contribution of total factor productivity growth (17%). For labour productivity growth, the highest contribution was the contribution of capital deepening (9.6%). The major sources of productivity growth of two indicators of the individual industries, are the spices and curry powder contributed 53 % to labour productivity growth of overall food industries. The major source of productivity growth of output growth was the contribution of pineapple canning (23%).

Abstrak tesis yang dikemukakan kepada Senat Univesiti Putra Malaysia bagi memenuhi sebahagian keperluan untuk Ijazah Master Sains

PENGELUARAN DAN PRESTASI INDUSTRI PERKILANGAN MAKANAN MALAYSIA

OLEH

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Walaupun pertumbuhan pengeluaran dan prestasi industri perkilangan makanan telah maju sejak beberapa tahun kebelakangan, tetapi industri perkilangan makanan masih ketinggalan jika dibandingkan dengan industri perkilangan lain terutama industri yang tidak berasaskan sumber seperti industri elektronik dan elektrik selepas peraubahan struktur berlaku dalam ekonomi Malaysia pada tahun 1987. Walau bagaimanapun, sektor industri perkilangan menjadi jentera kepada pertumbuhan sedangkan sebelum 1987, ianya dimiliki oleh sektor pertanian. Oleh itu, terdapat ketidakseimbangan pertumbuhan antara industri perkilangan makanan dan industri perkilangan lain, dari segi sumbangannya kepada pertumbuhan keluaran, tambah nilai, peiyanaon pekerjaan, eksport, import dan peluang pelaburan lain. Lebih-lebih lagi, sektor perkilangan telah dicirikan dengan pengeluaran yang rendah dan masaalah ketidakcekapan melalui analisis kita terhadap sektor industri perkilangan makanan.

Dalam kajian ini, perkiraan autoregresi digunakan untuk menaksirkan sumber pertumbuhan pengeluaran dalam 28 industri perkilangan makanan di Malaysia untuk data siri masa dari 1970-1993 yang telah diperolehi dari Jabatan Statistik. Dua model dihasilkan dari fungsi pengeluaran. Model pertama adalah penghuraian dari pertumbuhan keluaran ke dalam modal penyumbang, pertambahan penggunaan tenaga buruh, bahan dan jumlah faktor pertumbuhan pengeluaran. Manakala, model kedua adalah penghuraian dari pertumbuhan pengeluaran buruh (keluaran per pekerja) terhadap dalaman modal (modal per pekerja), penambahan penggunaan nisbah bahan-buruh (bahan per pekerja) dan jumlah faktor pertumbuhan pengeluaran.

Kajian mendapati pertumbuhan keluaran telah menyumbang lebih jika dibandingkan dengan pertumbuhan keluaran buruh terhadap pertumbuhan industri perkilangan makanan dari segi kadar purata pertumbuhan tahunan bagi seluruh indsutri perkilangan makanan. Sumbangan dua penunjuk terhadap pertumbuhan industri perkilangan makanan sebagai hasil dari dua model ialah 11 peratus dan 1.8 peratus dalam tempoh kajian dari 1970 - 1993.

Sumbangan yang tertinggi dari segi kadar purata pertumbuhan tahunan, bagi pertumbuhan keluaran terhadap pertumbuhan pengeluaran industri perkilangan makanan adalah sumbangan dari jumlah faktor pertumbuhan pengeluaran sebanyak 17 peratus. Untuk pertumbuhan pengeluaran buruh, sumbangan yang tertinggi adalah sumbangan modal dalaman sebanyak 9.6 peratus.

Lebih-lebih lagi, sumber utama pertumbuhan pengeluaran dua penunjuk tiap industri, iaitu rempah ratus dan serbuk kari telah menyumbangkan sebanyak 53 peratus terhadap pertumbuhan pengeluaran keseluruhan industri makanan. Manakala, sumber utama pertumbuhan pengeluaran bagi pertumbuhan keluaran adalah sumbangan pengetinan nenas iaitu sebanyak 23 peratus.

CHAPTER I

INTRODUCTION

Malaysia has been successful in its industrialisation drive. The economy, which was once highly dependent on the agricultural sector, has now undergone substantial transformations whereby the manufacturing sector has provided the chief stimulus to the growth of the Malaysian economy. During the early 50's, prior to independence, Malaya, as the country was then called, shared many of the characteristics associated with primary commodity exports economies. The country was largely an exporter of primary goods. During this period, there was little manufacturing, and the contribution of this sector to the country's Gross Domestic Product (GDP) was only 8%. The manufacturing sector was characterised by small establishments, a relatively unskilled labour force, and low capitalisation. Foreign direct investment (FDI) during this period was concentrated more in the agriculture, trading, tin-mining and services sectors of the economy rather than in the manufacturing (MIDA, 1993).

The period soon after independence, in 1957, saw rapid economic growth in Malaysia, based upon a purposeful industrialisation strategy introduced by the government. It was quickly realised at this time that the agriculture sector alone would not be able to absorb the increase in the labour force, as a result of a relatively high population growth rate of more than 3% per annum at that time.

Furthermore, it was also felt that the economy needed to be diversified in order to minimise the painful effects of fluctuating commodity prices, and eliminate its almost total dependence upon rubber and tin. During the 60's, policy measures were taken to encourage the development of import-substitution industries, and the introduction of the Investment Act, 1968 was meant to broaden the scope of the incentives for industrial development. This period saw a rapid growth of food, beverages and tobacco, construction materials, chemicals and plastic industries, (MIDA, 1993).

The period 1970s saw the birth of Malaysia's era of export oriented economy. The policy focus shifted from import substitution to labour-intensive and export-oriented industries with electronics and textiles as main areas of emphasis and growth.

In addition, food manufacturing, rubber and palm oil processing as well as wood-based industries, flourished in the 70's. The discovery of new oil fields off Sabah and Terengganu in the mid 1970s also introduced a new industry in petrochemicals. The decade of the 1980s saw further diversification of the economy into more advanced industries. The Heavy Industries Corporation of Malaysia (HICOM) was conceived in 1980. A number of projects were initiated by HICOM, namely iron and steel, cement and the national car (production of Proton Saga in 1985). As a result of these policies, the range of economic activities and sources of growth had become more diversified over the 1970s and 1980s. This period witnessed the structural transformation in the Malaysian economy as reflected in the changing composition of the country's GDP.

In fact, the changing composition of the GDP throughout the period 1970-1985 appeared in the share of manufacturing sector in GDP which rose from 12.3% in 1970 to 19.9% in 1985. By 1987, its share rose further to 22%, thereby overtaking the contribution of agriculture.

In absolute terms, over the period 1970-1985, manufacturing output tripled from M$ 1.3 billion to M$ 6.8 billion, at 1970 prices (giving it an annual growth rate of 11.7%); by 1985, manufacturing output had expanded further to M$ 11.3 billion at 1978 prices.

The momentum of growth achieved by the manufacturing sector during the early years of the fourth plan period (1981-1985) however was not sustainable as export such as textiles, machinery, and rubber product had begun to decline in 1985. The growth of the sector had accelerated from 4.6% in 1981

sector had declined by 3%. In general, the sector contributed 16.5% to the growth of GDP during the fourth plan period. The share of the sector, in GDP, however, decreased marginally from 20% in 1980 to 19.1% in 1985 (Fong, 1989,p.205-207).

During the fifth plan (1985-1990), manufacturing output expanded significantly. Value added in the sector, registered a remarkable rate of growth of 13.9% per annum, more than doubles of the plan target of 6.4% per annum. With this rapid expansion, the sector contributed nearly half of the increase in the nation's GDP during the plan period. Correspondingly, its share in GDP rose from 19.7% in 1985 to 27% in 1990, surpassing that of the agriculture sector since 1987. This development marked another milestone in the nation's transition towards an industrialised economy. Subsectors of electrical and electronics, textile, and apparel, continue to accounted significantly for the increase of

manufacturing production. The industries grew by 26.8% and 11.5% per annum during the plan period, and constituted one quarter of the sector's output. In addition to this, the period also witnessed the emergence of other growth sources, which provided additional thrust to the sector's growth. Among the rapidly growing industries were rubber products, transport equipment, oils and fats, wood and cork products, non-metallic mineral products, industrial and other chemical products, iron and steel (Fifth Malaysia Plan, 1985-1990).

During the Sixth Malaysia Plan period, the manufacturing sector grew by 11.5 % per annum, contributing 45.8% to the increase in Gross Domestic Product (GDP). Its share of the GDP increased from 28% in 1990 and 1991 to 29% in 1992, 30.1%, 31.6% in 1993, 1994 and 33.1% in 1995, (Economic Report, Various Issues).

Food Manufacturing Industry

The food manufacturing industry in Malaysia plays a significant role in the economy of the country. It serves not only as a source of employment but also a market outlet and added value for primary agricultural products.

Under the Industrial Master Plan (IMP) 1986-1995, the food processing industry has been identified as one of the priorities among the twelve manufacturing sectors for industrial development. Such priority was determined on the basis of its potential contribution to manufacturing development, particularly with respect to employment generation, foreign exchange saving and value added creation. In addition, the rationale for the development of this sector lies with the fact that the industry has a strong linkage with other sectors of the Malaysian economy.

Food, being a basic necessity, has always provided ample opportunities for investment consideration. These opportunities have been given a boost when the government, as mentioned above, acknowledged that the food-processing sector as one of the priority sectors in the context of the industrial development of the country. The Government's intentions were to see further growth of the local food-processing sector, especially through the utilisation of the local raw materials. Relevant government policies such as the National Agricultural Policy (NAP) and the IMP were established to clearly promote and provide directions for the development of the sector. There is however a dichotomy in the structure of the Malaysian food processing sector. On the one hand, Malaysia has large food industries, which are well-organised and using

modern and up-to-date machinery and technologies. With ample capitalisation, they are in a position to keep abreast with the dynamic changes taking place in the sector; a large proportion of their raw material inputs is however imported. On the other hand, the country has medium and small industries (SMIs), which use low level technologies, and are often relatively more labour intensive in operation. By definition, SMIs comprise of industries with paid-up capital of RM. 2.5 million or less. These SMIs are usually characterised by low capitalisation, inefficient management, and, more often than not, they are plagued with problems in finance, marketing, supply of raw materials and labour. According to a survey by the Ministry of International Trade and Industry (MITI) in 1990, the food SMIs constitute the largest group, that is 32 percent of the total number of SMIs establishments in the country (MIDA, 1994, p. 1-3). The food-processing sector covers a wide range of food products, from simple processing to complicated ones. Each of these products has a uniqueness of its own and its own particular opportunities and problems. Below are subsectors of the food processing industry that are covered under the Malaysian industrial classification: -

(a) Meat processing

(b) Dairy products

(c) Fish products

(d) Edible oils and fats

(e) Cereal based products

(f) Fruit and vegetable processing

(g) Sugar and sugar confectionery

(h) Coffee, cocoa, tea and spices manufacture

(i) Prepared animal feed

(j) Beverages

(k) Miscellaneous products.

Performance of the Food processing sector

The performance of the Malaysian food processing industry sector can be gauged by assessing the trends of its economic parameters such as output, value added, employment, exports and imports, and technology.

Output

Since the implementation of the Industrial master Plan (IMP) in 1986, the output of the food-processing sector has more than doubled in 1994. The value of the output in 1994, which totalled to RM. 9.9 billion, represented an increase of 125 percent from the 1986 value of RM. 4.4 billion. However, the share of output of the sector in the manufacturing sector as a whole has undergone a considerable decline, from 10.4 percent in 1986 to 6.0 percent in 1994. This implies that other industries in the manufacturing sector have been growing at faster rates during the rapid phase of the country's industrialisation in recent years (MIDA, 1994, p. 1-3). Table 2 shows the values of the subsectors in the food-processing sector from, 1992 to 1994. As it can be seen from the table, the highest value of output consistently came from the processed cereal preparation subsector. The other subsectors with significant output included

animal feeds, dairy products, sugar and sugar confectionery and beverages. In 1994, the total output of the above mentioned subsectors constituted 82 percent of the total output of the sector.

Table 1
Gross Output of the Subsectors of the Food Processing Sector 1992-1994(Percentage)

Subsector	1992	1993	1994
Meat processing	3.12	3.1	2.874
Dairy products	14.2	12.7	13.153
Fish products	2.54	7.774	7.25
Processed cereals & cereal preparation	26.02	20.193	29.3
Fruit & vegetable processing	3.313	3.93	3.977
Sugar & sugar confectionery	19.11	11.03	10.99
Coffee, cocoa, tea & spice manufacture	11.82	9.2	8.75
Prepared animal feeds	4.94	16.12	15.5
Beverages	10.771	11.98	13.163
Miscellaneous food products	4.1482	4.011	3.911
Total	100	100	100

Source: Ministry of International Trade Industry Report 1995

Value added

Value added of the food processing industry sector has been on an increasing trend, from RM. 1.0 billion in 1981, to nearly RM. 2.0 billion in 1988, and by 1993, it

had reached RM2.5 billion (refer Table 2). However, its contribution to the manufacturing value added has sharply declined, from 10.7 percent to 8.9 percent and finally to 6.1 percent respectively.

Employment

The number of persons employed by the food processing industry sector has also shown an increasing trend, from 49,118 in 1981 to 54,800 in 1988 and 68,298 in 1993. As a percentage of the national employment, there was a drop from 0.9 percent in 1981 to 0.8 percent in 1993. Likewise, its contribution to the manufacturing has declined from 8.3 percent in 1981 to 8.2 percent in 1988, and to 5.7 percent in 1993 (Table2).

Table2
Value Added and Employment Contribution of Food Processing Sector (% Real)

Economic parameter	1981	1988	1993
Value added			
Amount (RM. million)	1,001.1	1,998.5	2,512.9
Manufacturing percentage	10.75	8.9%	6.1%
Employment			
No. of workers	49,118	54,800	68,298
Percentage of national employment	0.9%	0.8%	7.8%
Percentage of manufacturing employment	8.35	8.2%	5.7%

Source: MIDA and Malaysia: International Trade and Industry Report 1994

Trade Performance

Malaysia's export of the food and agriculture industries group was valued at US$1,3944 million in 1990, and US$1,966 million in 1995, thereby recording a growth rate of 2.6%, during the period 1990-95. Malaysia's imports of agriculture industries group on the other hand, was valued at US$ 1,937.6 million in 1990, and US$3,378.8 million in 1995, thereby recording a growth rate of 4.3% during the period of 1990-1995, (Economic Report, 1996/1997. Malaysia's trade performance in the food processing world market was extensive in edible oils, owing to palm oil (>20% of world market), and cocoa and confectionery (>3.7%). In the other food processing industries, Malaysia's share is relatively small in starch and flour (0.7%, of world market), beverages (0.7%) and fruit and vegetables (0.2%).

The degree of importance of Malaysia's intra trade with ASEAN member countries can be gauged from Malaysia's share of their import values of the various food processing industries In meat & seafood industry, Malaysia's share is highest in Brunei (22.2%), Singapore (2.6%) and Indonesia (1.8%). In cocoa & confectionery, Malaysia's share is highest in Singapore (46.9%), Brunei (46.8%) and Thailand (14.4%). In edible oils & fats, Malaysia's share is highest in Singapore (93.8%), Brunei (92.0%), Indonesia (58.7%) and the Philippines (29.8%). In starch & flour products, Malaysia has higher shares in Singapore (34.6%), Brunei (33.4%), and Thailand (12.5%). Malaysia's shares of tobacco imports in ASIAN countries are quite low,

highest being from the Philippines, with a share of 18.7% and Brunei (7.9%). Lastly, in fruit & vegetable products, Malaysia's share is highest in Singapore (14.2%), Brunei (11.8) and Thailand (7.6%).

The export of food processing products to the overseas markets are often hindered by health regulations and other trade barriers, such as the US FDA's strict regulations concerning the import of processed food containing meat and egg ingredients, (Economic Report, Various Issues).

In terms of trade, Malaysia is a net importer of food, and food-processing industry has been primarily catering for the domestic market (exclude oils and fats). Exports of processed foods were generally less than 15% of the industry's output. Although the export performance of this sector had improved from $812 million in 1986 to $2,026 in 1993, imports, on the other hand, were $1,129 million in 1986 and $2,263 million in 1993, see (Table 3). Presently, an estimated 70 percent of the raw materials consumed by the industry are imported (e.g. wheat for flour mills, raw sugar for the sugar refineries, milk powder for the manufacturing of milk products, and maize for animals).