

**ANALYSIS OF CONSTANT MARKET SHARE OF INDONESIA'S
EXPORT OF NATURAL-RESOURCES-INTENSIVE MANUFACTURED
PRODUCTS TO SINGAPORE AND SOUTH KOREA
(1979 – 1996)**

A THESIS

Presented as Partial Fulfillment of the Requirements to Obtain the Bachelor
Degree in Economics Department



By:

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**DEPARTMENT OF ECONOMICS
INTERNATIONAL PROGRAM
FACULTY OF ECONOMICS
ISLAMIC UNIVERSITY OF INDONESIA
YOGYAKARTA**

2004

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Defended before the Board of Examiners

On August 5th, 2004

And Declared Acceptable

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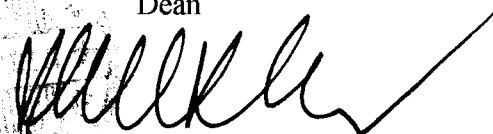
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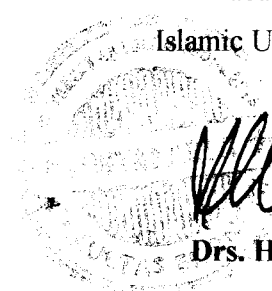
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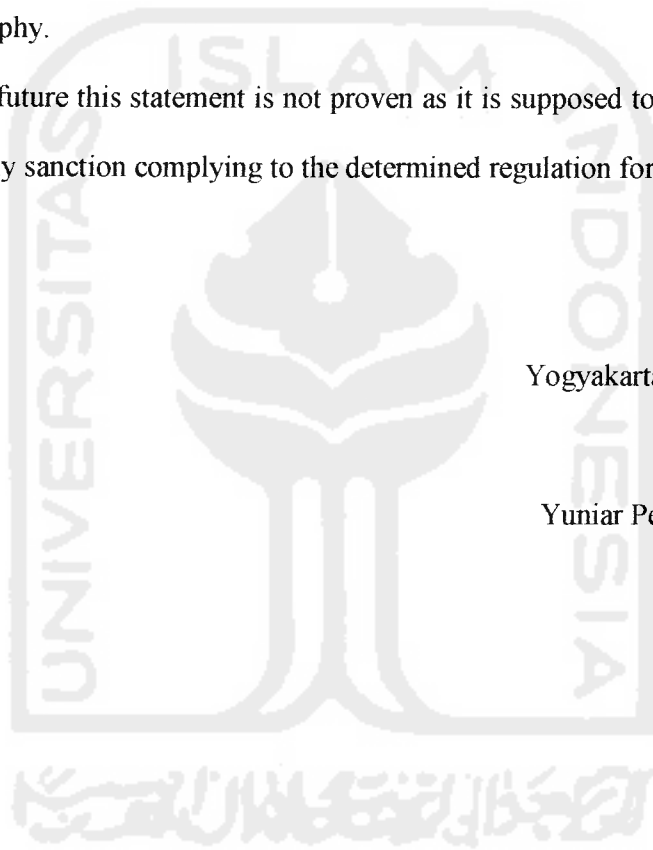
STATEMENT OF FREE PLAGIARISM

Herein I declare the originality of this thesis; there is no other work which has ever presented to obtain any university degree, and in my concern there is neither one else's opinion nor published written work, except acknowledged quotations relevant to the topic of this thesis which have been stated or listed on the thesis bibliography.

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Yuniar Permayasari



MOTTO

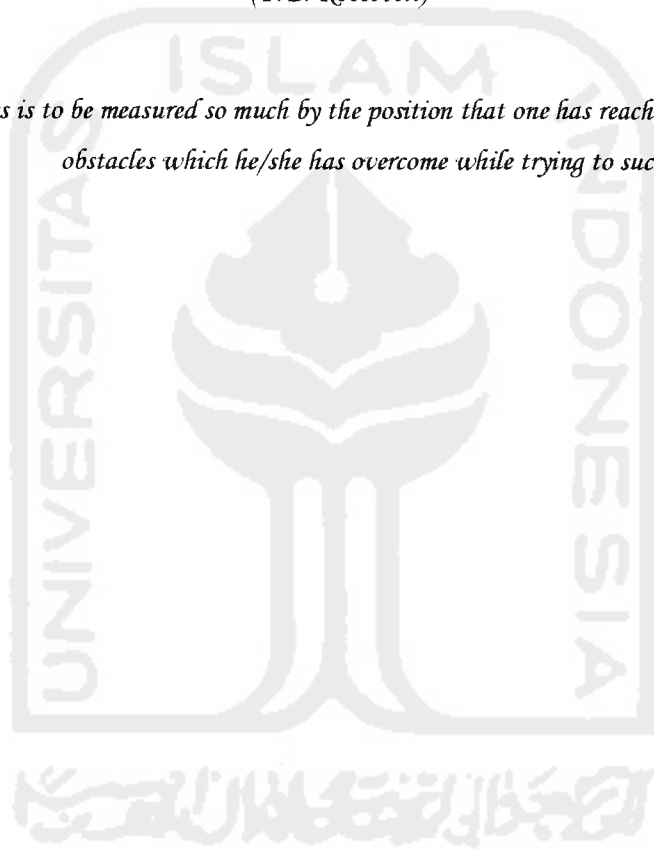
"Allah tidak akan membebani seseorang kecuali sepadan dengan kemampuannya"

(QS. Al-Baqarah: 286)

"Future belongs to who believe in the beauty of her/his dreams"

(F.D. Roosevelt)

"Success is to be measured so much by the position that one has reached in life as by the obstacles which he/she has overcome while trying to succeed"



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YOGYAKARTA**

2004



I dedicate this thesis to:

My parents who give lots of love and sacrifice in educating me

My sweets sisters who always support me in all my ways

My big family who never stops praying for my life

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PREFACE

First of all, I would thanks to Almighty Allah SWT who has blessed me so that I can finish my thesis entitled: **ANALYSIS OF CONSTANT MARKET SHARE OF INDONESIA'S EXPORT OF NATURAL-RESOURCES-INTENSIVE MANUFACTURED PRODUCTS TO SINGAPORE AND SOUTH KOREA (1979 – 1996)**. This thesis is a partial fulfillment of the requirements to obtain the Bachelor Degree in Economics Department, International Program, Faculty of Economics, Islamic University of Indonesia.

Secondly, I personally have to say thank you so much to my content advisor Mr. Munrokhim Misanam MA.Ec, Ph.D. and my language advisor Miss. Any Puji Astuti, S.Pd who give me a guidance to this entire thesis. I am also indebted to my lectures such as Mrs. Endang Sih Prapti Dra, MA., Mr. Agus Widarjono SE, MA., Mr. Eko Atmadji SE, MA. and Mr. Sahabuddin Sidiq who gave me a lot of valuable knowledge. I also say thank you so much to the Dean of Faculty of Economics of Islamic University of Indonesia and staffs, the Director of International Program and staffs, library officers, the officers of the United Nations Information Centre in Jakarta, the officers of the Central Bureau of Statistics both in Jakarta and Yogyakarta, and the officers of the branch of Bank of Indonesia in Yogyakarta. My friends in Economics Department of '99, I feel lucky to have you all as friends. I do not forget to say thanks a lot to all participants who have helped me in finishing this thesis.

Finally, I believe that my thesis has weaknesses. I am waiting for your comment and suggestion with pleasure. Hopefully, my thesis can give benefit for us.

Yogyakarta, July, 2004

YUNIAR PERMAYASARI



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ABSTRACT

Permayasari, Yuniar. (2004). **Analysis of Constant Market Share of Indonesia's Export of Natural-Resources-Intensive Manufactured Products to Singapore and South Korea (1979-1996)**. Yogyakarta: Department of Economics, Faculty of Economic, Islamic University of Indonesia

This research is intended to analyze the Indonesia's export of natural-resources-intensive manufactured products to Singapore and South Korea period 1979 until 1996 by using Constant Market Share (CMS) method. CMS method uses four effects, namely the Growth of World Export Effect (GWE), the Commodity Composition Effect (CCE) and the Competitiveness Effect (CE).

The data employed in the study are secondary data picked from several reputable publications. The research is divided by 4 periods for export destination of Singapore namely 1979-1982, 1982-1986, 1986-1991 and 1991-1996. While for export destination of South Korea is 3 periods namely 1987-1989, 1989-1991 and 1991-1994.

The result of CMS analysis give information that the growth of world export has positive effect on the growth of Indonesia's export of natural-resources-intensive manufactured products in most of research periods in both of export destination countries. The commodity composition has negative effect on the growth of Indonesia's export of natural-resources-intensive manufactured products in most of research periods in both of export destination countries. The competitiveness has positive effect on the growth of Indonesia's export of natural-resources-intensive manufactured products in most of research periods in both of export destination countries.

ABSTRAKSI

Permayasari, Yuniar. (2004). **Analysis of Constant Market Share of Indonesia's Export of Natural-Resources-Intensive Manufactured Products to Singapore and South Korea (1979-1996)**. Yogyakarta: Ekonomi Pembangunan, Fakultas Ekonomi, Universitas Islam Indonesia

Riset ini bertujuan untuk menganalisis ekspor barang manufaktur padat sumber daya alam Indonesia ke negara Singapura dan Korea Selatan periode tahun 1979 sampai dengan tahun 1996 dengan menggunakan metode Constant Market Share (CMS). Metode CMS menggunakan empat efek yaitu efek pertumbuhan ekspor dunia (GWE), efek komposisi komoditi (CCE) dan efek daya saing (CE).

Data yang dipakai dalam riset ini adalah data sekunder yang diambil dari beberapa sumber yang meyakinkan. Dalam penelitian ini, perhitungan dibagi menjadi 4 periode untuk negara tujuan ekspor Singapura yaitu periode 1979-1982, 1982-1986, 1986-1991 dan 1991-1996. Sedangkan untuk Negara tujuan ekspor Korea Selatan dibagi menjadi 3 periode yaitu 1987-1989, 1989-1991 and 1991-1994.

Hasil analisis CMS menunjukkan bahwa efek pertumbuhan ekspor dunia bertanda positive pada pertumbuhan ekspor barang manufaktur padat sumber daya alam pada sebagian besar periode penelitian baik di negara tujuan ekspor Singapura dan Korea Selatan. efek komposisi komoditi bertanda negative pada pertumbuhan ekspor barang manufaktur padat sumber daya alam pada sebagian besar periode penelitian baik di negara tujuan ekspor Singapura dan Korea Selatan. efek pertumbuhan ekspor dunia bertanda positive pada pertumbuhan ekspor barang manufaktur padat sumber daya alam pada sebagian besar periode penelitian baik di negara tujuan ekspor Singapura dan Korea Selatan.

CHAPTER I

INTRODUCTION

1.1. Study Background

The main characteristic of the 21st century's economy is the global competition. The global competition had caused the economic condition of a country to become more open to the rest of the world. This condition of economy has made a country's economy to be closely related with international trade which has been globalized so that the world become board less state or the trade barriers elimination. As a part of world economy system, Indonesia automatically has been connected with international trade.

In the international trade, export has an important role in the economic development. Export can be called as an engine of national economic development. There is a close relationship between export and the economic growth of a country. A country, which has high export growth tends to enjoy the economic growth more than the country which has low export growth. Therefore, Indonesia decides some policies focused on export led economy.

The Indonesia's exports are classified into oil and natural gas export and non-oil and natural gas export. The oil and natural gas export has become the pillar of Indonesia's export. However, Indonesia cannot count on the oil and natural gas forever due to the uncertainty of oil price in international market. Besides, oil and natural gas are unrenewable resources.

Then, Indonesia's export is directed to the increase the non-oil and natural gas export.

One example of non-oil and natural gas export is export of manufactured products. According to Hal Hill, manufactured products are classified into three classifications, namely natural-resource intensive manufactured product, labor-intensive manufactured product and capital-intensive manufactured product.

Indonesia is one of the countries in the world, which is rich of natural- resources. Therefore, Indonesia relies on export of natural-resource-intensive manufactured products. But, Indonesia's natural-resource-intensive manufactured products have not had any strong power of competitiveness in the international market.

1.2. Problem Formulation

The problem examined in this research is whether the change on Indonesia's export of natural-resources-intensive manufactured products are contributed by all effects of the Constant Market Share analysis, which means Growth of World Export Effect, Commodity Composition Effect and Competitiveness Effect contribute to the change on Indonesia's export of natural-resources-intensive manufactured products.

1.3. Research Limitation

The limitation of this research is by using the period of 1979–1996. The reason of choosing this period is because since 1979 - 1988, the natural resource-intensive manufactured products has contributed the biggest proportion to the Indonesia's export of manufactured products compared to labor-intensive manufactured products and capital-intensive manufactured products. But, in 1989 - 1996, the contribution of natural resource-intensive manufactured products decreased to the Indonesia's export of manufactured product.

The writer chooses Singapore and South Korea because both of them are included as *Asian New Industrializing Countries* (NICs). In the latest, Asian NICs markets become important as the destination of export on manufactured products.

1.4. Research Objectives

The objectives of this research are:

1. To analyze the change of Indonesia's export of natural resource-intensive manufactured products by Constant Market Share Analysis during period 1979 – 1996
2. To apply the theory which obtained by the writer
3. To improve our knowledge in international trade especially in export

4. As the partial fulfillment of the requirement to obtain the Bachelor Degree in Economic Development of International Program, Islamic University of Indonesia

1.5. Research Benefits

The final result of this research can be used:

1. As the reference of knowledge in economic development especially in international trade aspect.
2. To give positive contribution to other parties who have interest to conduct some further researches about analysis of constant market share of Indonesia's export of natural resource-intensive manufactured products.

1.6. Definition of Terms

1. *Constant Market Share*

Constant Market Share is a method, which can look the export growth of a country to other competitor countries. This method is used in order to know whether a country can maintain their export market from other competitor countries or not. This method assumes that four effects influence the export growth of a country, namely the growth of world export effect, the commodity composition effect, the market distribution effect and the competitive effect.

2. *Natural-resources-intensive manufactured products*

Natural-resources-intensive manufactured products are manufactured products contain natural resources in majority in cost of production.

Natural-resources-intensive manufactured products require significant inputs of natural resources regardless of the possible concomitant requirement for other resources such as physical capital and unskilled labor. (Ken I. Kim, 1986)

Standard International Trade Classification (SITC) is commodity classification standard in international trade. The commodity classification of export and import based on SITC codes are classified into 1 digit until 8 digits. The more digits of SITC codes mean the more detail of kinds of commodity. The less digits of SITC code mean the less detail of kinds of commodity. The SITC codes consist of 1 digit are:

- 0 Food and live animal
- 1 Beverage and tobacco
- 2 Crude materials, inedible
- 3 Mineral fuels, lubricants etc
- 4 Animal and vegetables oils or fat
- 5 Chemical
- 6 Manufactured goods
- 7 Machinery and transport
- 8 Miscellaneous manufactured articles

9 Commodities and transaction necessities

The group of products based on *Standard International Trade Classification* (SITC). Based on SITC, there are three classifications of kinds of product. SITC code 0, 1, 2 (exclude 27 and 28) and 4 are included as agriculture, SITC 27, 28, 3 and 68 are included as oil, mineral and metal, SITC 5, 6 (exclude 68), 7, 8 are included as industrial manufactured products (Hal Hill, 1996).

Natural-resource-intensive manufactured products consist of SITC 63 (wood and cork manufactures), 66 (non metallic mineral manufactures), 671 (pig iron, Spiegeleisen, sponge iron, Ferro-alloys). SITC 63 consists of 633 (cork manufactures), 634 (veneers, plywood, improved or reconstituted wood), 635 (wood manufactures). SITC 66 consists of 661 (lime, cement, and fabricated construction materials), 662 (clay construction materials and refractory construction materials), 663 (mineral manufactures), 666 (pottery), 667 (pearl, precious and semi precious stones).

3. *Commodity Composition*

Commodity composition is the share of commodity in the total export. The measurement of commodity composition:

$$\frac{X_i}{X_t} = Y$$

X_i = Natural-resources-intensive commodity export

X_t = Total export

4. *Market Distribution*

Market distribution is the distribution of export's commodity to the market of export's destination. The measurement of market distribution is related to the export destination. The market distribution is calculated when export destination is the geographic area such as ASEAN, European Market. The measurement of market distribution:

$$\frac{\sum Y_i}{Y_t} = X$$

Y_i = Natural-resources-intensive manufactured products export to the major destination countries

i = Major destination countries

Y_t = Total export

5. *Competitiveness*

Competitiveness is the sustain ability to profitably gain and maintain market share in the export market. There are two factors which are caused a country have competitiveness in the international trade, namely factor of price and factor non-price. The factor of price is such as the government policy in exchange rate policy, while factor of non-price is such as efficiency and scale of production. The competitiveness happens because there are differences among the competitors. The differences among the competitors are quality improvement, new product growth, efficiency change, marketing or financial improvement, and the fast ability in fulfilling the export demand.

In this research, the measurement of competitiveness uses the price competitiveness measurement. The price competitiveness uses price ratio between prices in one country to other country. It needs to look for the competitor of Indonesia in the natural-resources-intensive manufactured products. In the research, China is taken as the competitor of Indonesia in export of natural-resources-intensive manufactured products. China has natural resources such as forestry, fishing and mining. Therefore China is comparable with Indonesia in export of natural-resources-intensive manufactured products. The price of natural-resources-intensive manufactured products represented by Gross Domestic Products.

The measurement of price competitiveness:

$$\frac{P_c}{P_I} = X$$

P_c = Price of China's natural-resources-intensive manufactured products.

P_I = Price of Indonesia's natural-resources-intensive manufactured products.

1.7. Research Organization

This research is arranged based on a certain organization. The organization of this research is as follow:

Chapter I INTRODUCTION

This chapter explains the study background, problem formulation, research limitation, objectives and benefits, definition of terms, and research organization.

Chapter II LITERATURE REVIEW

This chapter describes some empirical findings about Constant Market Share.

Chapter III THEORITICAL BACKGROUND

This chapter explains the international trade theory, the Constant Market Share Analysis, and the hypotheses formulation.

Chapter IV RESEARCH METHODOLOGY

This chapter deals with technical method of how this research was designed.

Chapter V DATA ANALYSIS

This chapter concern with data description, research findings and analysis.

Chapter VI CONCLUSIONS AND IMPLICATION

This chapter withdraws some conclusion from hypotheses. The implication will be also shown in this chapter.

CHAPTER II

LITERATURE REVIEW

2.1. Dicjk and Verbruggen (1981)

Dicjk and Verbruggen analyzed the Constant Market Share of ASEAN country's export of manufactured products to the European Economy Community (EEC) market. They analyzed the growth of export of manufactured products of ASEAN countries to EEC market were influenced by four effects namely the growth of world export effect, the commodity composition effect, the market distribution effect and the competitive effect.

The two experts above held a research researched from 1970 until 1977 in which the era was divided into two periods, 1970–1973 and 1973-1977. The reason why they divided the research into two periods was because they avoided mistake of the prior conclusion of export structure changes of ASEAN countries to the EEC market.

They used SITC 63, 65, 541, 551, 667, 724, 729 and 741. The SITC 63 is wood and cork manufactures. The SITC 65 is textile yarns, fabrics & products. The SITC 541 & 551 is medicinal and pharmaceutical products & essential oils, perfume and flavor materials. The SITC 667 is pearl, precious and semi precious stones. The SITC 724 is telecommunication equipment. The SITC 729 is electronics machines and its equipments. The SITC 741 is heating and cooling equipment and parts.

The exports of ASEAN countries for wood products were not only SITC 63 but also SITC 82 (furniture). The furniture was the most important export of ASEAN countries. In 1977, Indonesia had the lowest percentage of total export of manufacture products compared to other four ASEAN countries (Malaysia, Singapore, Philippines and Thailand). Plywood was the main product, which was exported to European countries. It was because the plywood price in the international market had a high fluctuation when the research was held.

The result of their research showed that the commodity composition effect and the market distribution effect explained were not really important from export of ASEAN countries to European countries. The commodity composition effect of products, which were researched in the second period was lower than the first period. The export of ASEAN countries to the Europe countries experienced negative market distribution effect in the second period.

Although the growth of world export was decreased in the end of 1973 and international trade of manufactured had less enthusiasm, the ASEAN countries tried to get the high rate of export growth and increased competitiveness in international trade.

2.2. Karseno (1984)

Karseno used the constant market analysis in order to examine the growth export of Indonesia to Japan as the export destination country. He

focused on the six principal of Indonesia's export commodities to Japan. The data was obtained from the annual trade data. The data was utilized to get the average annual growth rates during the research period.

The research period were divided into two periods, 1969-1974 and 1975-1980. The periods were the first Five Year Development Plan period and the second Five Year Development Plan period. The growth rates of Indonesia's export in the first period and the second period were distinguished by the expansion effect, share effect and interaction effect for each commodity.

The six principal of Indonesia's export commodities were fish (SITC 031), rubber (SITC 231), rough wood (SITC 242), shaped wood (SITC 243), petroleum (SITC 331) and petroleum products (SITC 332). The growth of six principal of Indonesia's export commodities in the first period (1969-1974) was bigger than that in the second period (1975-1980), it means that there was diminishing export growth rate.

The changing of endogenous forces such as domestic demand, export incentives and pricing caused export growth of fish (SITC 031) for the first period. The export growth in the second period was caused by exogenous such as changes in Japan's market size.

The rubber and rough wood (SITC 231 & 242) export growth rates were similar with the fish export. These two commodities showed the dominant share effect in the first period. In the second period, the expansion

effect emerged while the share effect decreased sharply. There was an exogenous force such as the growth of Japan's market size.

The share effect consistently influenced the shaped wood (SITC 243) export growth rate for both periods. It showed the strong competitiveness of the commodity in Japan's market. It means the growth rate of the commodity share exceeded that of Japan's market size.

The petroleum and the petroleum products (SITC 331 & 332) export growth exhibited the expansion effect in both periods. The growth of Japan's market size as exogenous forces had a very significant impact on the Indonesia's export growth of petroleum and petroleum products to Japan.

Generally, the growth of Japan's market affected the overall export rate of growth in five of six commodities evaluated.

2.3. Laursen (1998)

The research was conducted using a Constant Market Share (CMS) analysis, and afterward include the obtained effects in regression model, using panel data techniques in explaining aggregate economic growth. This research was aimed to investigate empirically, whether or not Ricardian trade specialization matters for economic growth (measured as growth of the gross national product) at the level of the country (18 OECD countries), that was, whether or not initial specialization in, or a movement into fast-growing sectors, matters for economic growth.

The data used in this research was divided into the dependent variable and the independent variables. The dependent variable was annual data on economic growth while the independent variables were the four CMS effects; as well as the initial level of income relative to the US; growth in terms of technology, based on number of US patents held by the firms of the country; and growth in term of the capital stock. The period of time of this research was 1972 until 1990.

The results displayed that the fixed effect model was the most appropriate technique, and that using this tool, the initial level of income was significant and had a negative sign as expected. The investment (growth of the capital stock) variable was also significant, while the technology variable was significant only through its interaction with the growth of the capital stock variable. The growth adaptation effect was the only significant variable (positive sign) of the CMS effects. Hence, it was concluded that a certain dynamism in terms of structural change was required by countries in order to achieve high levels of economic growth at the macro level. Based on a comparison between the OECD growth vector from the CMS analysis and R&D intensities in the 22 sectors (for the 1970s and for the 1980s), it was concluded that the fast-growing sectors were in general also high-tech sectors.

This research probably underestimates the effects of technology as a determinant of economic growth, as technological spillovers from other sectors were not included in the model. This research also had limitation such

as the exclusion of specialization in services. As the services sector makes up a large part of the economies advanced countries, specialization in certain types of services could be an explanatory factor in accounting for economic growth, especially in advanced countries.

This research's prime aim was to identify some of the sources of economic growth, among countries. It was important to stress a distinction between analytical results and policy implications, as analytical results might not easily be translated into straight forward policy conclusions. The countries which adapt their specialization pattern in direction of fast-growing sectors, grew faster than average of countries, seems to suggest that there was some room for active technology and industrial policies, attempting to influence specialization patterns of countries, even though it was a 'stylized fact' that specialization pattern both in trade and technology were known to be very stable over time. However, as it was a 'stylized fact' that technological innovation involves fundamental uncertainty. It might be difficult (if not impossible) to predict precisely which sectors were going to grow fastest.

2.4. Mohd. Noh and Mohd. Arshad (1998)

The Constant Market Share (CMS) analysis was used in explaining the export growth of selected agricultural export of Malaysia taking into account suggestions and improvements provided by various researchers on the technique. They research the CMS calculations and apply the sensitivity

analysis and adopt the new method of analysis provided by Fagerberg and Sollie. They suggest that the sensitivity analysis yields different results with respect to the sign (positive/negative), magnitude and distribution of the decomposed effects. The Fagerberg and Sollie method provides similar findings: the sign, magnitude and distribution of the decomposed effects differ from those calculated using Richardson method.

2.5. Ganesh-Kumar and Vaidya (1999)

The Constant Market Share (CMS) analysis was used in order to look for the India's export performance in commodities that are subject to various barriers in different market. The CMS analysis allows the decomposition of the observed increase in India's exports of a commodity in terms of a Growth Effect, a Market Effect and a Residual Effect. The Growth Effect shows the extent to which India has benefited from the growth in world trade of that commodity. The Market Effect reflects the extent to which India has been able to focus on the fastest growing markets for that commodity. The observed market effect would depend on the ability of Indian exporters to trade in different markets and the extent of tariff and non-tariff barriers. The residual effect is usually taken to reflect competitiveness.

The CMS methodology decomposes the annual export growth rate. The proportionate increase in exports of a commodity over time comprises a number of effects: Standard Growth Effect, Market Distribution Effect and Residual Effect (competitiveness). It means that the export growth can be

explained in terms of three factors: the general growth of world exports to the focus destinations, the extent to which the particular market represents growing centers of demand and a residual term captures the net gain or loss in the market shares due to changes in the relative price and /or quality of the product.

In this research, they selected a set of 40 countries which are India's major trading partners and which together account for 86% of India's manufacturing exports in 1996. They used Richardson method in decompose the annual change in India's exports for 64 commodities over the period 1980 – 1996. The relative contribution of the three effects are represented as S (small) 0-30%, M (moderate) 30%-60% and D (dominant) >60%. The +/- sign represent the direction of contribution. The growth effect has generally been small and positive for the commodities implying India has not benefited in a big way from the growth in world trade in the commodities. The market effect has quite often had a small and negative impact indicating a lack of appropriate market focus on the part of Indian exporters. The competitiveness effect seems to be the driving force. It has dominant and positive sign.

This research has two important conclusions. First, the growth in world trade has not been exploited by India. The reason is the analysis at the detailed commodity level is the weak market focus of Indian export. Second, the existence of problem markets even for commodities in which India's

competitiveness is on the rise. This indicates presence barriers to trade in these problem markets.

2.6. Chen and Duan (1999)

This research attempts to identify Canada's competitiveness in agri-food exports to Asia, relative to Canada's main competitors. Asia is the second largest market for the Canadian agri-food exports after the United States market. The competition in Asia has become more intensive in recent years as the agri-food sector in developed nations such as Australia, Canada, Europe, and the United States has increasingly relied on exports for growth because of their own slow-growing domestic food consumption.

The analysis is based on the 1980 – 1997 trade data from the World Trade Analyzer (WTA), produced by the International Trade Division of Statistics Canada. According to their average market shares during 1980 – 1997 period, Canada's main competitors in Asia are the United States, Europe, Australia, China, Thailand, Malaysia, Taiwan, Indonesia and New Zealand. This research applies the Constant Market Share (CMS) model in order to assess each country's competitiveness. The change in each country's exports is primarily divided into the structural and the competitive effects. The exporting country with larger competitive effect is considered to be more competitive.

The results of this research are:

- All exporting countries increased their agri-food exports to Asia during the 1980 – 1997 period. The increase in their exports to Asia can be primarily attributed to the structural effect – particularly to the large increase of total Asian agri-food import (growth effect).
- Canada was ranked second after China in terms of competitive effect during the 1980 – 1997 period. Indonesia and Thailand also exhibit strong competitiveness in Asia. Canada's traditional competitors such as the United States, Europe, Australia and New Zealand were found to be non-competitive.
- Compared with other competitors in the Asian market, Canada exhibit two areas of weakness. First, Canada did not concentrate their agri-food exports to Asia on fast-growing commodities such as consumer-ready products. Second, Canada's competitiveness was deteriorated in the processed intermediate goods in Korea and South Asia, the consumer-ready goods in Japan and Asia 7, and the bulk commodities in Taiwan.

If Asia was considered to be target region for Canadian agri-food exports, one would need not only to know the exporting strategies that will be adopted by countries such as the United States, Europe, Australia, and New Zealand. But also those adopted by countries such as China, Indonesia, and Thailand. In order for Canada to maintain and improve its export performance in Asia in the future, it will be most effective if Canada could increase its market shares of processed intermediate goods in Korea and

South Asia, the consumer-ready goods in Japan and Asia 7, and the bulk commodities in Taiwan.

2.7. Jakaria (2002)

He used Constant Market Share analysis in order to examine the Indonesia's manufactured export performance of SITC 842 (men's and boy's outerwear, textile fabrics not knitted or crocheted) and 843 (women's, girls, infants outerwear, textile, not knitted or crocheted) to United States, Japan, Germany, Dutch, England, and France.

He used Constant Market Share (CMS) model in order to look for components, which contribute the export growth. In other words, CMS explains export share of a country as a function of relative competitiveness. The change of market share will cause the change of competitiveness. In this CMS model, the export growth of a country is explained by the world export growth effect and competitiveness effect. The first effect shows the export growth happen when the export share is constant. The second effect shows the export growth caused by the change of relative competitiveness.

The assumptions of CMS model in this research are:

1. Free market competitiveness
2. Export commodity homogeneity
3. Competitiveness measured by relative price

In this research, the market distribution is not measured because it is bilateral trade only and it is not related to an area.

The result of measurement and analysis of this research are:

1. Export of commodity SITC 842

- Most of World Export Growth Effect signifies positive. It means that the increase of world export growth in the export destination countries (United States, Japan, Germany, Dutch, England, and France) cause the increase of Indonesia's export of commodity SITC 842 to those destination countries. But, in last of 1991-1993 periods, the world export growth effect to Germany, Dutch, England and France experience negative sign.
- Most of Commodity Composition Effect signifies negative. This condition shows that Indonesia's export of commodity SITC 842 distributed to the market in which the demand is relatively slow in the export destination countries.
- Most of Competitiveness Effect signifies positive. It means that Indonesia's export of commodity SITC 842 has strong competitiveness in the export destination countries.

2. Export of commodity SITC 843

- Most of World Export Growth Effect signifies positive. It means that the increase of world export growth in the export destination countries (United States, Japan, Germany, Dutch, England, and France) cause the increase of Indonesia's export of commodity SITC 843 to those destination countries. But, in last of 1991-1993 periods,

the world export growth effect to Germany, Dutch, England and France experience negative sign.

- Most of Commodity Composition Effect signifies negative. This condition shows that Indonesia's export of commodity SITC 843 distributed to the market in which the demand is relatively slow in the export destination countries.
- Most of Competitiveness Effect signifies positive. It means that Indonesia's export of commodity SITC 843 has strong competitiveness in the export destination countries.

The prospect of Indonesia's export of commodity SITC 842 and 843 to those export destination countries is great, therefore, there must be an increase in the export growth. The Indonesia's great export of commodity SITC 842 and 843 is caused by:

- The world export growth effect and competitiveness effect are profitable (most of them signify positive). Although most of Commodity composition effect signifies negative, it can be improved by strategy in advertising to those export destination countries. Therefore, Indonesia's export commodity SITC 842 and 843 will grow and famous.
- The purchasing power of society in those export destination countries has really supported the Indonesia's export of commodity 842 and 843 to those export destination countries. One important thing is that there must be an effort in order to maintain the quality of products exported so that

export market to those export destination countries can be increased in the future and has Term of Trade.

- The production of commodity SITC 842 and 843 is labor-intensive manufacture so that increase its export can push the economic growth and can reduce unemployment in this country.



CHAPTER III

THEORETICAL BACKGROUND

3.1. International Trade Theory

3.1.1. Comparative Advantages Theory

The Comparative Advantages theory is attributed to David Ricardo. The Comparative Advantages theory is included as the classical theory of international trade. The Comparative Advantages theory is concerned to a difference in *comparative costs* of production, which, in fact, reflect a difference in the techniques of production. The theory is aimed to make the trade to be beneficial to all participating countries.

The Comparative Advantages theory has the following assumptions:

1. Two countries
2. Two commodities
3. Labor Theory of Value

Labor is a single one input, which is used in production process. The commodities price is determined by the number of labor used.

4. There is a process of learning by doing in which if the division of labor follows, it will bear efficiency.
5. Perfect Competition

6. Full employment
7. Inputs and Outputs Homogeneities
8. The cost of transport is assumed to be absent
9. Trade is done by barter
10. Taste and factor endowments is assumed to be absent
11. Perfect Mobility of Inputs domestically
12. Perfect Immobility of Inputs between countries

The comparative advantage theory is stressed on the technology differences and shows that a country will export the goods in which the production process is more efficient, and therefore, the export will give a comparative advantage.

3.1.2. Heckscher-Ohlin Theory

Heckscher-Ohlin theory is included as the neoclassical theory of international trade. Heckscher-Ohlin trade theory explains that factor endowment which causes the international trade. Heckscher-Ohlin assumes that every country have the same level of technology but have difference of endowment. Heckscher-Ohlin trade theory shows that a country, which has natural resources abundant, will export commodities, which the natural resources contents are relatively high. Heckscher-Ohlin trade theory said that a country would specialize in international trade based on endowment factor support, which owned by that country.

Heckscher-Ohlin trade theory involves two countries, two final goods and two primary factors of production. Heckscher-Ohlin theorem said that each country exports the commodity, which uses the country's more abundant factor more intensively.

The basic assumptions of Heckscher-Ohlin trade theory are as follows:

1. The endowment factor of each country is different, so that there are countries, which have labor abundant, capital poor, and countries, which have capital abundant, labor poor.
2. The intensity factor of output is different, so that there are labor-intensive outputs and capital-intensive outputs.
3. The availability of inputs in each country is limited. It is called perfectly inelastic supply of input.
4. The quality of the same input in each country is homogen.

3.1.3. New-Techno Economic Paradigm

The New-Techno Economic Paradigm is a new paradigm of international trade, which involves technology in its activity. This paradigm uses technology as content of a product, which is trade in international market. A product which is produced contains technology, therefore, the product becomes the high technology product. Consumers in international market are

interested in the high technology product. The main reason is, because, this product can make their life easier.

The New-Techno Economic Paradigm involves some countries in production process of a good. A good can be produced not only in a country but it takes place in some countries. It means that a country only produces a part of good and other countries produce other parts. The countries which are involved are not only developing countries but also developed countries. Therefore, a good has high value to enter the market.

Nevertheless, not all countries can produce the high technology products. The developed countries can produce and enjoy the high technology products, while the developing countries have difficulties in producing these products. The difficulties of the developing countries are the lack of ability in technological mastery and the lack of the quality of human resources.

The difficulties of developing countries are solved by the new-techno economic paradigm. This paradigm can make the developing countries get access of their products to enter the international market. It is because the trade process in this paradigm enables products inflow, which after added by local components, the products re-export to the market. It means that the production process of a product is not involving a country, but it also involves some countries both the developed countries and the

developing countries. The production process of a product takes place in some countries.

The production process of a product is done in some countries enables the technology transfer from the developed countries to the developing countries. The developing countries can adopt the new technology in production process. It means that the developing countries can improve their ability to produce the high technology products. Therefore, the developing countries raise their competitiveness in international trade. It shows that the new-techno economic paradigm change the developing countries from comparative advantage to be competitive advantage in international trade.

3.2. Constant Market Share Analysis

The constant market share analysis is a method, which can look for the export growth of a country to other competitor countries. This method is used in order to know whether a country can maintain its export market from other competitor countries or not. This method assumes that four effects influence the change of export of a country, namely the growth of world export effect, the commodity composition effect, the market distribution effect and the competitive effect.

The growth of world export effect, the commodity composition effect and the market distribution effect are the constant market share

effects, which explain the change of export from demand side. The competitive effect is the constant market share effect, which explains the change of export from both demand side and supply side.

The effects of constant market share analysis could be positive or negative. The effects of constant market share analysis influence the change of export of a country. The positive sign of the growth of world export shows that the increase of world export influences to the increase of a country's export. The negative sign of the growth export shows that the decrease of world export influences to the decrease of a country's export.

The positive sign of the commodity composition effect shows that commodity composition of a country's export are distributed to the commodities in which its demand relatively high in the export destination country. The negative sign of the commodity composition effect shows that commodity composition of a country's export is distributed to the commodities in which its demand relatively low in the export destination country. It also shows that positive and negative sign of the commodity composition effect gives contribution to the increase or decrease of export of a country.

The positive sign of the market distribution effect shows that the market growth in the export destination country is relatively high. It means that this effect gives contribution to the increase of export. The negative sign of the market distribution effect shows that the market growth in the

export destination country is relatively low. It means that this effect gives contribution to the decrease of export.

The positive sign of the competitive effect shows that the commodity gives contribution to the increase of export and the country is a powerful competitor. The negative sign of the competitive effect shows that the commodity gives contribution to the decrease of export and the country is a weak competitor.

3.3. Hypotheses Formulation

The hypotheses, which are examined in this research, is that the change on Indonesia's export of natural-resources-intensive manufactured products are contributed by all effects of the Constant Market Share analysis, which means Growth of World Export Effect, Commodity Composition Effect and Competitiveness Effect contribute to the change on Indonesia's export of natural-resources-intensive manufactured products.

CHAPTER IV

RESEARCH METHODOLOGY

4.1. Type of Data

The data, which are used in this research, consists of Indonesia's Export of Natural-Resources-Intensive Manufactured Products and World Import of Natural-Resources-Intensive Manufactured Products. The data are based on Standard International Trade Classification. The writer uses the annual data, which were started from 1979 until 1996.

4.2. Methods of Data Collection

In this research, the writer uses quantitative method and secondary data which are obtained from other sources that are competent with the research, such as International Trade Statistics which were published by International Monetary Fund and Foreign Trade Statistics of Indonesia were published by Central Bureau of Statistic.

4.3. Technique of Data Analysis

Constant Market Share (CMS) model assumes that export share of a country is a function of relative competitiveness of that country.¹

$$s \equiv \frac{q}{Q} = f \frac{c}{C}, f' = \left(\frac{df}{dt} \right) > 0 \quad (1)$$

¹ J.D. Richardson, "Constant Market Share Analysis of Export Growth". Journal of International Economics, 1971.

where : s = export share of a country

q, Q = total export of a country and world respectively

c, C = competitiveness of a country and world respectively

Rearrange equation (1) and difference in matter of time:

$$\begin{aligned}\dot{q} &\equiv s\dot{Q} + Q\dot{s} \\ &= s\dot{Q} + Qf'\left(\frac{c}{C}\right)\end{aligned}\quad (2)$$

• = change or growth of export (time derivative)

In this model of CMS, the change of total export of a country (\dot{q}) is explained by the growth of world effect ($s\dot{Q}$) and the competitiveness effect ($Q\dot{s}$). The growth of world effect shows that the change of export of a country will happen if that country can maintain its share of export. The competitiveness effect shows that the growth of change of export is related to the change in relative competitiveness.

When a country specializes to its export to a particular commodity, which has high growth, or specializes to its export to a particular geographic area, which has high growth, therefore, s in equation (1) will become a function of relative competitiveness.

$$s_{ij} \equiv \frac{q_{ij}}{Q_{ij}} = f_{ij}\left(\frac{c_{ij}}{C_{ij}}\right), f_{ij}' = \left(\frac{f_{ij}}{dt}\right) > 0 \quad (3)$$

Where: i = particular commodity

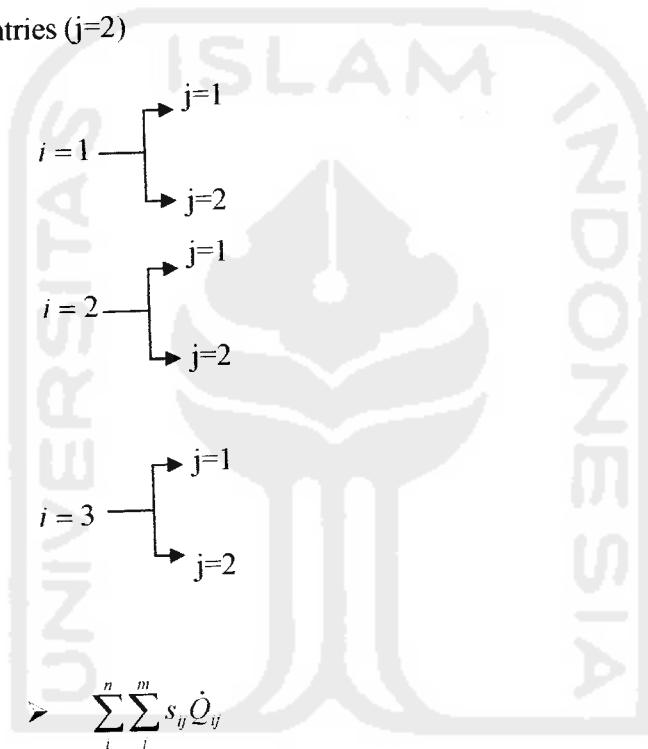
j = particular importing region/geographic area

Rearrange equation (3), the change of total export of a country (\dot{q}):

$$\dot{q} \equiv \sum_i^n \sum_j^m s_{ij} \dot{Q}_{ij} + \sum_i^n \sum_j^m Q_{ij} \dot{s}_{ij} \quad (4)$$

In this equation, there are double summations. The double summations work from the right to the left.

For example there are three commodities ($i=3$) and two importing countries ($j=2$)



We sum the export share of a country of commodity i to export destination of country j (s_{ij}) multiplied by the change of total export of world of commodity i from country j (\dot{Q}_{ij}).

$$\begin{aligned} \sum_i^n \sum_j^m s_{ij} \dot{Q}_{ij} = & (s_{11} \dot{Q}_{11} + s_{21} \dot{Q}_{21} + \dots + s_{n1} \dot{Q}_{n1}) + (s_{12} \dot{Q}_{12} + s_{22} \dot{Q}_{22} + \dots + \\ & + s_{n2} \dot{Q}_{n2}) + (s_{13} \dot{Q}_{13} + s_{23} \dot{Q}_{23} + \dots + s_{n3} \dot{Q}_{n3}) + \dots + \\ & (s_{1j} \dot{Q}_{1j} + s_{2j} \dot{Q}_{2j} + \dots + s_{ij} \dot{Q}_{ij}) \end{aligned}$$

$$\rightarrow \sum_i^n \sum_j^m Q_{ij} \dot{s}_{ij}$$

We sum the total export of world of commodity i from country j (Q_{ij}) multiplied by the change of export share of a country of commodity i to export destination of country j (\dot{s}_{ij}).

$$\begin{aligned} \sum_i^n \sum_j^m Q_{ij} \dot{s}_{ij} = & (Q_{11} \dot{s}_{11} + Q_{21} \dot{s}_{21} + \dots + Q_{i1} \dot{s}_{i1}) + (Q_{12} \dot{s}_{12} + Q_{22} \dot{s}_{22} + \dots + \\ & + s_{i2} \dot{Q}_{i2}) + (s_{13} \dot{Q}_{13} + s_{23} \dot{Q}_{23} + \dots + s_{i3} \dot{Q}_{i3}) + \dots + \\ & (s_{1j} \dot{Q}_{1j} + s_{2j} \dot{Q}_{2j} + \dots + s_{ij} \dot{Q}_{ij}) \end{aligned}$$

Extend equation 4, the complete form of CMS:

$$\dot{q} \equiv \underbrace{s \dot{Q}}_{(a)} + \underbrace{\left[\sum_i^n s_i \dot{Q}_i - s \dot{Q} \right]}_{(b)} + \underbrace{\left[\sum_i^n \sum_j^m s_{ij} \dot{Q}_{ij} - \sum_i^n s_i \dot{Q}_i \right]}_{(c)} + \underbrace{\sum_i^n \sum_j^m Q_{ij} \dot{s}_{ij}}_{(d)} \quad (5)$$

The change export of a country is explained by the growth of world effect (a), the commodity composition effect (b), the market distribution effect (c) and the competitiveness effect (d).

➤ The growth of world effect $s \dot{Q}$

This effect represents the growth of a country's exports due to the general growth in world exports. World exports are the sum of exports of all competitors of the country in question.

➤ The commodity composition effect $\sum_i^n s_i \dot{Q}_i - s \dot{Q}$

This effect represents the additional change of a country's exports due to the initial commodity composition of its exports.

- The market distribution effect
$$\sum_i^n \sum_j^m s_{ij} \dot{Q}_{ij} - \sum_i^n s_i \dot{Q}_i$$

This effect represents the additional change of a country's exports due to initial market distribution.

- The competitiveness effect
$$\sum_i^n \sum_j^m Q_{ij} \dot{s}_{ij}$$

This effect reflects the changes in competitiveness of a country's exports.



CHAPTER V

DATA ANALYSIS

This chapter concerns with the data that will be analyzed, research findings and analysis.

5.1. Data Description

The data was gathered from secondary data by searching in United Nations Information Centre (UNIC) and Central Bureau of Statistics. The data are used to calculate Growth of World Export Effect (GWE), Commodity Composition Effect (CCE) and Competitiveness Effect (CE).

5.2. Research Findings and Analysis

The Constant Market Share analysis is an analysis about the changes in export, which are contributed by the Growth of World export effect, the Commodity Composition effect, the Market Distribution Effect and the Competitiveness effect. The market distribution effect is not calculated because the export destination country is single country.

This research uses the periods from 1979 until 1996. The period was divided by four periods for Singapore namely 1979-1982, 1982-1986, 1986-1991 and 1991-1996. The period was divided into three periods for South Korea namely 1987-1989, 1989-1991 and 1991-1994. The natural-

resources-intensive manufactured product is SITC 661 namely lime, cement, and fabricated construction materials.

5.2.1. Indonesia's Export of Natural-Resources-Intensive Manufactured Products to Singapore

Indonesia's export of natural-resources-intensive manufactured products to Singapore experience increase in all research periods. The research analyzed Indonesia's export of natural-resources-intensive manufactured products to Singapore in different period of time. The result can be seen in table 5.1. (see at page 41)

In period of 1979-1982, the change of Indonesia's export of natural-resources-intensive manufactured products was contributed by the growth of world export effect and the competitiveness effect. The commodity composition effect was not giving any contribution; even it is weaker role by giving negative contribution. This make the other effects have to work harder to give more contribution in order to the change in Indonesia's export on natural-resources-intensive manufactured product has a positive sign. In period of 1982-1986, the change of Indonesia's export of natural-resources-intensive manufactured products was contributed by the commodity composition effect and the competitiveness effect. The growth of world export effect was not giving any contribution. In period of 1986-1991, the change of Indonesia's export of natural-resources-

intensive manufactured products was contributed by the growth of world export effect and the competitiveness effect. The commodity composition effect was not giving any contribution. In period of 1991-1996, the change of Indonesia's export of natural-resources-intensive manufactured products was contributed by the growth of world export effect and the commodity composition. The competitiveness effect was not giving any contribution.

The **Growth of World Export Effect** contributes to the change of Indonesia's export of natural-resources-intensive manufactured products in periods of 1979-1982, 1986-1991 and 1991-1996. In period of 1982-1986, the growth of world export effect was not giving any contribution to the change of Indonesia's export of natural-resources-intensive manufactured products. It shows that Indonesia's export was interested by world market in periods 1979-1982, 1986-1991 and 1991-1996. In other word, Indonesia can follow the trend of world trade. But, Indonesia's export was not interested by world market in period of 1982-1986. In other world, Indonesia can not follow the trend of world trade.

The **Commodity Composition Effect** contributes to the change of Indonesia's export of natural-resources-intensive manufactured products in periods of 1982-1986 and 1991-1996. It shows that natural-resources-intensive manufactured products were export commodity which its demand growth in world market was

fast. It means that Indonesia concentrate to export the commodity which its demand growth in world market was fast. The commodity composition effect was not giving any contribution to the change of Indonesia's export of natural-resources-intensive manufactured products in periods of 1979-1982 and 1986-1991. It shows that natural-resources-intensive manufactured products were export commodity which its demand growth in world market was low. It means that Indonesia concentrate to export the commodity which its demand growth in world market was low.

The **Competitiveness Effect** contributes to the change of Indonesia's export of natural-resources-intensive manufactured products in periods of 1979-1982, 1982-1986 and 1986-1991. The contribution of the competitiveness effect shows that Indonesia exports the commodity which was its advantages and Indonesia was powerful competitor of export of natural-resources-intensive manufactured products in world. But, the competitiveness effect was not giving any contribution to the change of Indonesia's export of natural-resources-intensive manufactured products in period of 1991-1996. The competitiveness effect did not contribute to the change of Indonesia's export of natural-resources-intensive manufactured products shows that Indonesia's advantages in export of natural-resources-intensive manufactured products decreased and Indonesia was not powerful competitor anymore.

The **competitiveness effect** is the biggest contributor, the **growth of world export effect** is the second contributor and the **commodity composition effect** is the smallest contributor for the change of Indonesia's export of natural-resources-intensive manufactured products. The fluctuation sign of the commodity composition effect shows that market strategy of Indonesia's export of natural-resources-intensive manufactured products was not good such as Indonesia's export ignore the demand of export destination market.



TABLE 5.1.
Indonesia's Export of Natural-Resources-Intensive Manufactured Products to Singapore 1979-1996:
CMS Analysis (in Thousands of US\$)

Year	Change of Export q	Growth of World Export Effect sQ (-1-)	Commodity Composition Effect $\sum s_i Q_i - sQ$ (-2-)	Competitiveness Effect $\dot{s}_y Q_y$ (-3-)	Total of (-1-)+(-2-)+(-3-)
1979-1982	401261 100	235678.1 58.734	-155447.1 -38.740	321030 80.005	401261 100
1982-1986	582469.3 100	-648641 -111.361	500296 85.892	730814.3 125.468	582469.3 100
1986-1991	1732052 100	1342567 77.513	-455697.4 -26.310	845182.4 48.797	1732052 100
1991-1996	601787.4 100	1763956 293.119	1543811 256.538	-2705979.6 -449.657	601787.4 100

Source : proceed from table 1,2,3 and 4

5.2.2. Indonesia's Export of Natural-Resources-Intensive Manufactured Products to South Korea

Indonesia's export of natural-resources-intensive manufactured products to Singapore experience increase in all research periods. The research analyzed Indonesia's export of natural-resources-intensive manufactured products to South Korea in different period of time. The result can be seen in table 5.2. (see at page 46)

Indonesia's export of natural-resources-intensive manufactured products to South Korea experience increase in research period 1987-1989. Then Indonesia's export of natural-resources-intensive manufactured products to South Korea experience increase in research periods 1989-1991 and 1991-1994. In period of 1987-1989, the change of Indonesia's export of natural-resources-intensive manufactured products was contributed by the growth of world export effect and the competitiveness effect. The commodity composition effect was not giving any contribution; even it is weaker role by giving negative contribution. This make the other effects have to work harder to give more contribution in order to the change in Indonesia's export on natural-resources-intensive manufactured product has a positive sign. In period of 1989-1991, the change of Indonesia's export of natural-resources-intensive manufactured products was contributed by the growth of world export effect and the

commodity composition effect. the competitiveness effect was not giving any contribution. In period of 1991-1994, all of Constant Market Share effect (the growth of world export effect, the competitiveness effect and the commodity composition effect) was not giving any contribution to the change of Indonesia's export of natural-resources-intensive manufactured products.

The Growth of World Export Effect contributes to the change of Indonesia's export of natural-resources-intensive manufactured products in periods of 1987-1989 and 1989-1991. In period of 1991-1994, the growth of world export effect was not giving any contribution to the change of Indonesia's export of natural-resources-intensive manufactured products. It shows that Indonesia's export was interested by world market in periods 1987-1989 and 1989-1991. In other word, Indonesia can follow the trend of world trade. But, Indonesia's export was not interested by world market in period of 1991-1994. In other world, Indonesia can not follow the trend of world trade.

The Commodity Composition Effect only contributes to the change of Indonesia's export of natural-resources-intensive manufactured products in period of 1989-1991. It shows that natural-resources-intensive manufactured products were export commodity which its demand growth in world market was fast. It means that Indonesia concentrate to export the commodity which its demand

growth in world market was fast. The commodity composition effect was not giving any contribution to the change of Indonesia's export of natural-resources-intensive manufactured products in periods of 1987-1989 and 1991-1994. It shows that natural-resources-intensive manufactured products were export commodity which its demand growth in world market was low. It means that Indonesia concentrate to export the commodity which its demand growth in world market was low.

The **Competitiveness Effect** only contributes to the change of Indonesia's export of natural-resources-intensive manufactured products in period of 1987-1989. The contribution of the competitiveness effect shows that Indonesia exports the commodity which was its advantages and Indonesia was powerful competitor of export of natural-resources-intensive manufactured products in world. The competitiveness effect was not giving any contribution to the change of Indonesia's export of natural-resources-intensive manufactured products in periods of 1989-1991 and 1991-1996. The competitiveness effect did not contribute to the change of Indonesia's export of natural-resources-intensive manufactured products shows that Indonesia's advantages in export of natural-resources-intensive manufactured products decreased and Indonesia was not powerful competitor anymore.

The **growth of world export effect** is the biggest contributor, the **competitiveness effect** is the second contributor and the **commodity composition effect** is the smallest contributor for the increase of Indonesia's export of natural-resources-intensive manufactured products. The fluctuation sign of the commodity composition effect shows that market strategy of Indonesia's export of natural-resources-intensive manufactured products was not good such as Indonesia's export ignore the demand of export destination market.



TABLE 5.2.
Indonesia's Export of Natural-Resources-Intensive Manufactured Products to South Korea 1983-1994:
CMS Analysis (in Thousands of US\$)

Year	Change of Export q	Growth of World Export Effect $s_i \dot{Q}_i$ (-1-)	Commodity Composition Effect $\sum_i s_i \dot{Q}_i - s_i \dot{Q}_i$ (-2-)	Competitiveness Effect $\dot{s}_i Q_i$ (-3-)	Total of (-1-)+(-2-)+(-3-)
1987-1989	4128470 100	2991353 72.457	-2979612 -72.172	4116729 99.716	4128470 100
1989-1991	-4071123 100	55754.78 -1.370	37889648.22 -930.693	-42016526 1032.062	-4071123 100
1991-1994	-353519 100	-111127 31.435	-159236 45.043	-83156 23.522	-353519 100

Source : proceed from table 5,6 and 7

CHAPTER VI

CONCLUSIONS AND IMPLICATION

6.1. Conclusions

The constant market share analysis is a method, which explains the export growth of a country to other competitor countries. This method is used in order to know whether a country can maintain its export market from other competitor countries or not, can enjoy the growth of its export led by the world market growth or not, and can maintain its importance of export in export destination countries. This method assumes that three effects contribute to the change of export of a country, namely the growth of world export effect, the commodity composition effect and the competitive effect. There are some conclusions based on this research as follows:

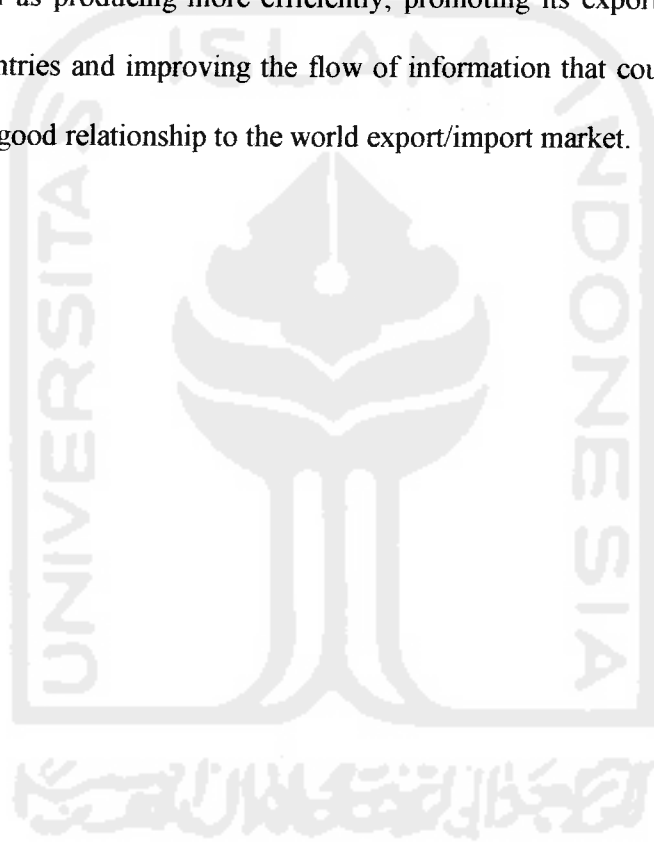
1. The growth of world export has positive effect to the growth of Indonesia's export of natural-resources-intensive manufactured products in most of research periods in both of export destination countries. The growth of world export effect contributes to the growth of Indonesia's export of natural-resources-intensive manufactured products. The growth of world export effect is the second contributor to the growth of Indonesia's export of natural-resources-intensive manufactured products to Singapore. The growth of world export

effect is the biggest contributor to the growth of Indonesia's export of natural-resources-intensive manufactured products to South Korea.

2. The commodity composition has negative effect to the growth of Indonesia's export of natural-resources-intensive manufactured products in most of research periods in both of export destination countries. The commodity composition did not contribute to the growth of Indonesia's export of natural-resources-intensive manufactured products. The commodity composition effect is the smallest contributor the growth of Indonesia's export of natural-resources-intensive manufactured products to both of Singapore and South Korea.
3. The competitiveness has positive effect to the growth of Indonesia's export of natural-resources-intensive manufactured products in most of research periods in both of export destination countries. The competitiveness contributes to the growth of Indonesia's export of natural-resources-intensive manufactured products. The competitiveness is the biggest contributor to the growth of Indonesia's export of natural-resources-intensive manufactured products to Singapore. The competitiveness is the second contributor to the growth of Indonesia's export of natural-resources-intensive manufactured products to South Korea.

6.2. Implication

Indonesia's export of natural-resources-intensive manufactured products faces problem in competitiveness, problem in its importance in the export destination countries, and also can not enjoy the growth of export led by the world market growth. Therefore, Indonesia must pay more attention and focused on the effort of improving its export to overcome those problem such as producing more efficiently, promoting its export to the destination countries and improving the flow of information that could make Indonesia has good relationship to the world export/import market.



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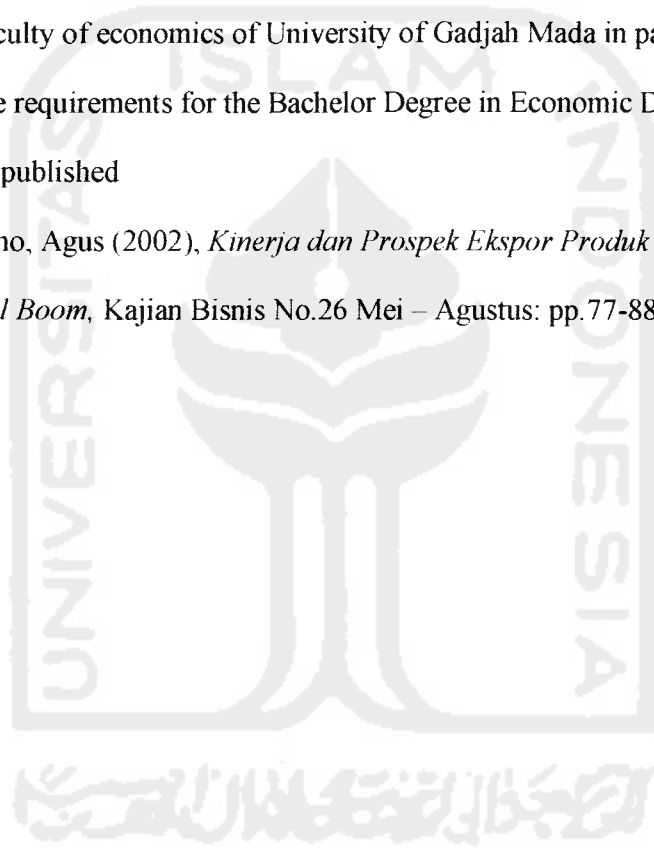
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APPENDICES

TABLE 1
Indonesia's Export of Natural-Resources-Intensive Manufactured Products to Singapore 1979 - 1982 : CMS Analysis

SITC	World Import		Indonesia's Export		\dot{q}	s	\dot{Q}	$s\dot{Q}$	s_t	\dot{Q}_t	$s_t\dot{Q}_t$	$s_{ij}\dot{Q}_{ij}$
	1979	1982	1979	1982								
661	78154	151524	256387	1460170	401261	9.636559	73370	235678.1	3.280536	73370	80230.97	321030
Total	78154	151524	256387	1460170	401261	9.636559	73370	235678.1	3.280536	73370	80230.97	321030

Sources : United Nations, International Trade Statistics, Volume II

Sources : BPS, Statistik Perdagangan Luar Negeri Indonesia, Volume II

TABLE 2
Indonesia's Export of Natural-Resources-Intensive Manufactured Products to Singapore 1982 - 1986 : CMS Analysis

SITC	World Import		Indonesia's Export		\dot{q}	s	\dot{Q}	$s\dot{Q}$	s_t	\dot{Q}_t	$s_t\dot{Q}_t$	$s_{ij}\dot{Q}_{ij}$
	1982	1986	1982	1986								
661	151524	89948	1460170	3790047	582469.3	42.13598	-61576	-648641	9.636559	-61576	-148345	730814.4
Total	151524	89948	1460170	3790047	582469.3	42.13598	-61576	-648641	9.636559	-61576	-148345	730814.4

Sources : United Nations, International Trade Statistics, Volume II

Sources : BPS, Statistik Perdagangan Luar Negeri Indonesia, Volume II

TABLE 3
Indonesia's Export of Natural-Resources-Intensive Manufactured Products to Singapore 1986 - 1991 : CMS Analysis

SITC	World Import		Indonesia's Export		\dot{q}	s	\dot{Q}	$s\dot{Q}$	s_t	\dot{Q}_t	$s_t\dot{Q}_t$	$s_{ij}\dot{Q}_{ij}$
	1986	1991	1986	1991								
661	89948	195187	3790047	12450307	1732052	63.78656	105239	1342567	42.13598	105239	886869.6	845182.4
Total	89948	195187	3790047	12450307	1732052	63.78656	105239	1342567	42.13598	105239	886869.6	845182.4

Sources : United Nations, International Trade Statistics, Volume II

Sources : BPS, Statistik Perdagangan Luar Negeri Indonesia, Volume II

TABLE 4
Indonesia's Export of Natural-Resources-Intensive Manufactured Products to Singapore 1991 - 1996 : CMS Analysis

SITC	World Import		Indonesia's Export		\dot{q}	s	\dot{Q}	$s\dot{Q}$	s_t	\dot{Q}_t	$s_t\dot{Q}_t$	$s_{ij}\dot{Q}_{ij}$
	1991	1996	1991	1996								
661	195187	454471	12450307	15459244	601787.4	34.01591	259284	1763956	63.78656	259284	3307767	-2705979
Total	195187	454471	12450307	15459244	601787.4	34.01591	259284	1763956	63.78656	259284	3307767	-2705979

Sources : United Nations, International Trade Statistics, Volume II

Sources : BPS, Statistik Perdagangan Luar Negeri Indonesia, Volume II

TABLE 5

Indonesia's Export of Natural-Resources-Intensive Manufactured Products to South Korea 1987 - 1989 : CMS Analysis

SITC	World Import		Indonesia's Export		q	s	\dot{Q}	$s\dot{Q}$	s_i	\dot{Q}_i	$s_i\dot{Q}_i$	$s_{ij}Q_{ij}$
	1987	1989	1987	1989								
661	14054	50880	8961	8265900	4128470	162.4587	36826	2991353	0.637612	36826	11740.35	4116729
Total	14054	50880	8961	8265900	4128470	162.4587	36826	2991353	0.637612	36826	11740.35	4116729

Sources : United Nations, International Trade Statistics, Volume II

Sources : BPS, Statistik Perdagangan Luar Negeri Indonesia, Volume II

TABLE 6

Indonesia's Export of Natural-Resources-Intensive Manufactured Products to South Korea 1989 - 1991 : CMS Analysis

SITC	World Import		Indonesia's Export		q	s	\dot{Q}	$s\dot{Q}$	s_i	\dot{Q}_i	$s_i\dot{Q}_i$	$s_{ij}Q_{ij}$
	1989	1991	1989	1991								
661	50880	518019	8265900	123655	-4071123	0.238707	467139	55754.78	162.4587	467139	37945403	-42016526
Total	50880	518019	8265900	123655	-4071123	0.238707	467139	55754.78	162.4587	467139	37945403	-42016526

Sources : United Nations, International Trade Statistics, Volume II

Sources : BPS, Statistik Perdagangan Luar Negeri Indonesia, Volume II

TABLE 7

Indonesia's Export of Natural-Resources-Intensive Manufactured Products to South Korea 1991 - 1994 : CMS Analysis

SITC	World Import		Indonesia's Export		q	s	\dot{Q}	$s\dot{Q}$	s_i	\dot{Q}_i	$s_i\dot{Q}_i$	$s_{ij}Q_{ij}$
	1991	1994	1991	1994								
661	518019	177714	1234655	174098	-353519	0.979653	-340305	-111127	2.383416	-340305	-270363	-83156.16
Total	518019	177714	1234655	174098	-353519	0.979653	-340305	-111127	2.383416	-340305	-270363	-83156.16

Sources : United Nations, International Trade Statistics, Volume II

Sources : BPS, Statistik Perdagangan Luar Negeri Indonesia, Volume II

TABLE 8
Indonesia's Export of Natural-Resources-Intensive Manufactured Products to Singapore 1979-1996:
CMS Analysis (in Thousands of US\$)

Year	Change of Export \dot{q}	Growth of World Export Effect $s\dot{Q}$ (-1-)	Commodity Composition Effect $\sum_r s_r \dot{Q}_r - s\dot{Q}$ (-2-)	Competitiveness Effect $s_y \dot{Q}_y$ (-3-)	Total of (-1-)+(-2-)+(-3-)
1979-1982	401261 100	235678.1 58.734	-155447.1 -38.740	321030 80.005	401261 100
1982-1986	582469.3 100	-648641 -111.361	500296 85.892	730814.3 125.468	582469.3 100
1986-1991	1732052 100	1342567 77.513	-455697.4 -26.310	845182.4 48.797	1732052 100
1991-1996	601787.4 100	1763956 293.119	1543811 256.538	-2705979.6 -449.657	601787.4 100

Source : proceed from table 1,2,3 and 4

TABLE 9
Indonesia's Export of Natural-Resources-Intensive Manufactured Products to South Korea 1983-1994:
CMS Analysis (in Thousands of US\$)

Year	Change of Export \dot{q}	Growth of World Export Effect $s\dot{Q}$ (-1-)	Commodity Composition Effect $\sum_i s_i \dot{Q}_i - s\dot{Q}$ (-2-)	Competitiveness Effect $\dot{s}_i \dot{Q}_i$ (-3-)	Total of (-1-)+(-2-)+(-3-)
1987-1989	4128470 100	2991353 72.457	-2979612 -72.172	4116729 99.716	4128470 100
1989-1991	-4071123 100	55754.78 -1.370	37889648.22 -930.693	-42016526 1032.062	-4071123 100
1991-1994	-353519 100	-111127 31.435	-159236 45.043	-83156 23.522	-353519 100

Source : proceed from table 5,6 and 7