MICHIGAN STATE UNIVERSITY LIBRARIES
3 1293 00782 6856

LIBRARY
Michigan State
University

This is to certify that the

dissertation entitled

The Role of International Trade
in
Economic Growth in Developing Countries:
The Case of Indonesia

presented by

Pos Marodjahan Hutabarat

has been accepted towards fulfillment
of the requirements for

Ph.D degree in Economics

Sutthiah Kannappan
Major professor

Date April 17, 1992

*MSU is an Affirmative Action/Equal Opportunity Institution*

O-12771

**PLACE IN RETURN BOX** to remove this checkout from your record.
**TO AVOID FINES** return on or before date due.

| DATE DUE | DATE DUE | DATE DUE |
|---|---|---|
| FEB 07 1994 225 | [illegible] | |
| FEB 01 [illegible] | | |
| JUN 06 [illegible] | | |
| MAY 30 1996 | | |
| JUN 07 1997 | | |
| | | |
| | | |

MSU Is An Affirmative Action/Equal Opportunity Institution
c:\circ\datedue.pm3-p.1

# THE ROLE OF INTERNATIONAL TRADE IN ECONOMIC GROWTH IN DEVELOPING COUNTRIES: THE CASE OF INDONESIA

by

Pos Marodjahan Hutabarat

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirement
for the degree of

DOCTOR OF PHILOSOPHY

Department of Economics

1992

## ABSTRACT

### THE ROLE OF INTERNATIONAL TRADE IN ECONOMIC GROWTH IN DEVELOPING COUNTRIES: THE CASE OF INDONESIA

by

Pos Marodjahan Hutabarat

This study examines the role of exports in economic growth in Indonesia. Within the framework of a neoclassical model of growth, we regressed its relationship to domestic investment, foreign investment, labor, and exports. Indonesian data from 1968 to 1990 shows that the export coefficient is positive and significant, and the inclusion of the export variable raises the $R^2$ value. These findings confirm the neoclassical theory that exports enhance productivity through improved resource allocation and fuller resource utilization.

This study provides recommendations for further efforts to promote exports, especially manufactures. Manufactures are favored over primary commodities by higher income and price elasticities of demand. The promotion of manufactured exports should focus on labor-intensive goods where Indonesia has a comparative advantage. It is recommended that the growth of resource-intensive manufactured exports should be reduced in order to protect natural resources from irreparable damage.

Strategies to develop the export sector should be approached from both external and internal perspectives. The external approach will further involve Indonesia in the dynamic global economic environment which it must be vigilant to adapt to. Of particular importance in this regard is more active utilization of various international commodity agreements, the study of market opportunities, the appraisal of competitors' strategies, etc. The internal approach stresses improvement in quality, design, and style of export products. The government should also concern itself with selective, purposeful, and enabling assistance aimed at the growth of exports including export finance, insurance, economic intelligence, etc. Finally, policy makers must not only maintain, but continue to develop, successful trade liberalization programs.

## DEDICATION

**This study is dedicated to my children:**

**Timothy, Edward and Marissa**

## ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to Dr. Subbiah Kannappan, my dissertation chairman, who so generously gave his time and energy, providing detailed guidance on every aspect of this study. Likewise, I wish to thank the other members of my committee; Dr. Carl Liedholm and Dr. Steven Matusz for their numerous constructive suggestions and valuable comments.

I would like to thank my wife, Riama L.Tobing for her invaluable support, understanding and patience during my graduate studies. I also acknowledge my indebtedness to my parents, Drs. Oscar Hutabarat and Lumongga br. Hutagalung, and to my parent in laws, Drs. Ignatius L.Tobing and Tiurlan br. Hutauruk for their support throughout my studies.

I also want to thank my employers in the Ministry of Trade and the Ministry of Finance, Republic of Indonesia for their financial support during my graduate studies.

Finally, special thanks are extended to R. Allen Drake for his editorial assistance of the final manuscript and years of friendship during my stay in East Lansing.

TABLE OF CONTENTS

LIST OF TABLES

## LIST OF FIGURES

## ABBREVIATIONS

| | | |
|---|---|---|
| ASEAN | : | Association of South East Asian Nations. |
| CACM | : | Central American Common Market. |
| CBS | : | Central Bureau of Statistics, Indonesian Government Agency. |
| EACM | : | East African Common Market. |
| EEC | : | European Economic Community. |
| ESCAP | : | Economic and Social Commission for Asia and The Pacific. |
| GATT | : | The General Agreement on Trade and Tariffs. |
| IMF | : | International Monetary Fund. |
| LAFTA | : | Latin American Free Trade Area. |
| LDC | : | Less Developed Countries or Developing Countries. |
| NIC's | : | The Newly Industrial Countries. |
| OPEC | : | Organization of Petroleum Exporter Countries. |
| OECD | : | Organization for Economic Co-operation and Development. |
| Rp. | : | Rupiah, Indonesian currency. Rp 2,000 = $ 1.00 in February 1992. |
| SITC | : | Standard International Trade Classification. |
| UN | : | The United Nations. |
| UNIDO | : | United Nations Industrial Development Organization. |
| UNCTAD | : | United Nations Conference on Trade and Development. |
| WB | : | The World Bank. |

# CHAPTER ONE

# I N T R O D U C T I O N.

## 1. Overview

During the nineteenth century, international trade functioned as an "engine of growth." It stimulated economic growth in Great Britain and spread to the rest of the world, including the developing economies (Robertson, 1946). Great Britain was then, the focal point for economic expansion: its population tripled, real national income increased nearly tenfold and the volume of its imports expanded more than twentyfold (Nurkse, 1961).[1] Great Britain and other Western European countries exported manufactured goods to the rest of the world, while the colonies and "the regions of recent settlement" exported raw materials and food in return (Findlay, 1988). Economic expansion was transmitted to the peripheries from the center (with Great Britain as a leading country) through steep and steady increases in demands for primary commodities.

Caves (1965) noted that the export sector provided the primary source of influence to the economy of several "regions of recent settlement" such as Canada, Australia and New Zealand during the nineteenth century.

---

[1]For this purpose Nurkse counted the nineteenth century as the period from 1815 to 1914.

Kravis (1970) rejected the "engine of growth" hypothesis in explaining the nineteenth century economic expansion. He pointed out that favorable internal factors caused economic growth to occur while external demand represented an additional stimulus. Riedel (1984) viewed trade as an engine, not to cause but to transmit growth impulses from the center to the peripheries.

In answering critics of this hypothesis about the role of trade as an engine of growth, Lewis (1980) stressed that trade fueled economic growth of the center during the nineteenth century, but has since slowed down during the twentieth century. Data from Maddison (1982) showed that the average export volume for 16 developed countries[1] grew at a rate of 4.0 percent and 3.9 percent respectively during 1820-1870 and 1870-1913, compared to only 1.0 percent during 1913-1950. In addition, real income which grew at an average of 2.1 percent in 1820-1870 and 2.5 percent in 1870-1913, only grew at a rate of 1.9 percent in 1913-1950. Therefore, developing countries must increase trade to each other, especially in manufactures, in order to sustain economic growth.

The wide disagreement about the role of trade on economic growth in the nineteenth century became even more controversial when its application to developing countries was discussed. It is argued that the success story of the

---

[1]Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Sweden, Switzerland, United Kingdom, and USA.

nineteenth century cannot be applied now to developing countries. The nineteenth century's economic situation is not comparable to current economic conditions. For example, the demand for a periphery country's exports in the twentieth century is far weaker than it was in the nineteenth century (Nurkse, 1961). Trade policies of the center are less liberal than those of the nineteenth century (Kenen, 1989).[1] In addition, there is no single country experiencing high economic growth to replace Great Britain in spreading out economic growth to the periphery.[2]

The prospects for those exports (mainly primary products) in which developing countries have a comparative advantage are held to be poor. Nurkse (1961) adduced two reasons for this: (1) slow growing international demand for primary commodities because of low price and income demand elasticities and the development of synthetic goods, which leads to declining export revenues and pressing terms of trade for developing countries and (2) trade restrictions imposed by importing countries to protect domestic industry.[3] Both would dampen

---

[1]For example, the average tariff on all goods in industrial countries in 1875 was 6 percent compared to 21 percent in 1925 and 11 percent in 1950 (World Bank, 1991).

[2]The USA or Japan were predicted to be a leading country in the twentieth century. However, the share of the USA in the world product declined from about 40 percent in 1950 to 30 percent in recent years. Japan, which increased its share in the world income from 2 percent in 1950 to 12 percent in recent years, imposes high barriers to imports (UNIDO, 1989).

[3]For example, sugar and beef are highly protected in the USA and the EEC, while Japan protects rice (World Bank, 1986).

employment and income growth of developing countries. For instance, data from 1960-1988 in Table 1.1 show that growth of income per capita in developing countries was very small, averaging 2.4 percent per year, despite a moderate growth of exports at 14.1 percent per year.

Table 1.1: Average Growth Rate of Exports and Real Per Capita Income in Developing Countries.

| | 1960-88 | 1960-70 | 1970-80 | 1980-88 |
|---|---|---|---|---|
| | | ------ % ------ | | |
| Export Growth | 14.1 | 7.2 | 25.9 | -1.0 |
| Income/capita Growth | 2.4 | 3.2 | 3.0 | -0.1 |
| - Latin America | 2.0 | 2.5 | 2.8 | -0.8 |
| - Africa | 1.0 | 3.2 | 1.1 | -1.9 |
| - Asia | 3.2 | 3.6 | 3.8 | 1.1 |

Source: UNCTAD (1990), Handbook of International Trade and Development Statistics 1989.

Tragically, real income per capita of developing countries as a group declined by an average of 0.1 percent per year during 1980-1988. Latin America and Africa experienced a negative growth average -0.8 percent and -1.9 percent respectively, only Asia showed a positive growth.[1]

Morton and Tulloch (1977) focused on three factors to provide further explanations of why export orientation would not generate widespread growth and development in developing

[1]Luders (1991) called the 1980s the lost decade since most developing countries experienced reductions in their per capita income.

countries. First, most of the gains from trade were distributed to foreigners in terms of profit, which did not stimulate the local economy. Second, the gains distributed to local wage earners tended to be spent on imports rather than local production. Finally, the exports industries set up had few links with the traditional or rural sector.

The first factor follows from the fact that most exports from developing countries (typically plantation and mining) are the product of multinational companies (MNCs) that invested specifically in the export sector to secure the return of their capital. The second is a consequence of many local wage earners demanding imported luxury goods. The third may be explained by using an example from Baldwin (1966) detailing the relatively few linkages of the copper mining industry to Rhodesia's domestic local economy.

There are, of course, economists who argue that exports are important to the economic growth of developing countries. Lewis (1989) found a strong role for exports of primary commodities in pushing economic expansion in Malaysia and the Ivory Coast. Fajana (1979) reported that trade was a major vehicle for economic growth in Nigeria. Studies by Balassa (1988) in seven major developing countries (Korea, Taiwan, Singapore, Hong Kong, India, Brazil, Mexico, and Argentina) showed a strong link between exports and economic growth. Krueger (1978) also found the same result in her study of Korea, Taiwan, Hong Kong, and Singapore. In addition, The

Economic and Social Commission for Asia and The Pacific (ESCAP, 1987) concluded that exports provided major stimuli for economic growth in Thailand in the 1980s, and fuelled Korean economic recovery in 1983 after its decline during 1980-1983. Conversely, the United Nations reported in 1984 that a decline in exports was responsible for the slow economic growth of developing countries early in the 1980s.

Statistically, Michalopoulus and Jay (1973), Balassa (1977, 1985), Kavoussi (1984), and Tyler (1981) proved that the contribution of exports to economic growth in developing countries was significant during the 1960s and 1970s.

However, the impact of export performance on economic growth is not equal for all developing countries. Ram (1985) found that the impact of export performance on growth was smaller on low income countries than on middle income countries.

The international trade theory states that when all nations open their economies to the international market, with each nation specializing in the production of the commodity of its comparative advantage, world output will be greater. Through trade, each nation will share in the resultant gain. Therefore trade will lead an open economy country to a higher level of welfare.

Haberler (1968) pointed out the following important beneficial effects that international trade may have on the economic development of developing countries: 1) international

trade is the vehicle for the transmission of new ideas, new technology, and new managerial and other skills; 2) trade stimulates and facilitates the international flow of capital from developed countries to developing countries; and 3) international trade is an excellent anti-monopoly weapon because it stimulates greater efficiency by domestic producers to meet foreign competition. Balassa (1988) added that by expanding the market size, trade makes possible the division of labor and economies of scale.

## 2. A Brief Introduction to the Indonesian Economy

Indonesia has enjoyed high economic growth during the last two decades. Real income increased 6.7 percent per year during 1970 to 1990, and the incidence of poverty declined from 58 percent in 1970 to 17 percent in 1987 (World Bank, 1990). The share of the agricultural sector on GDP declined from 45 percent in 1970 to 23 percent in 1989, while the manufacturing sector's share increased from 8 percent to 17 percent. Indonesia's increasing openness to international trade was indicated by the fact that the ratio of total trade (exports plus imports) to GDP increased from 24.8 percent in 1970 to 44.2 percent in 1990. Export value rose more than one hundred times and import value increased more than eighty times during the last twenty years.

In recent years, a few papers studied the success of the Indonesian economy since 1970, focusing on the abundance of

natural resources (Naya, 1988; Saito, 1983); economic reforms affecting prices and interest rates (Gillis, 1983); an increasing government budget as a result of higher revenue from exports of oil (Sundrum, 1988); an open door policy toward foreign investment (Pangestu and Habir, 1989); and increasing investment (Wickman, 1982). However, the role of international trade has not received much attention. The world economy has a strong impact on the Indonesian economy because of its dependence on foreign markets. Therefore, export performance has been a factor in the fluctuation of Indonesia's economic growth. This study focuses on the role of international trade, especially exports, in the economy. It is hoped that this study will fill an important gap in this literature.

## 3. Organization of the Thesis

The objectives of this study are:

(a) to examine the role of exports on economic growth in Indonesia by applying a neoclassical model (a Cobb-Douglas production function where output is a function of total investment, employment and exports).

(b) to estimate income and price elasticities of demand for Indonesian exports, including disaggregation of exports into mineral fuels, non-fuels, primary commodities, and manufactures.

(c) to suggest implications for government policy on exports.

This thesis begins with a discussion of the theoretical aspects of international trade and its relationship to economic development. Three basic theories are discussed: classical and neoclassical, Marxist, and structuralist. A review of some empirical results in recent years that can be interpreted optimistically or pessimistically is presented. The thesis also examines trade orientations and their relations to the industrialization process.

Chapter three focuses on Indonesia's economy since 1970. In particular, it addresses government policies, income growth, sectoral growth, employment, saving, investment, and foreign trade. The application of a neoclassical growth model for testing the role of exports on economic growth is performed in this chapter.

Chapter four discusses Indonesia's trade performance since 1970, including exports, imports, trade partners, terms of trade, and foreign exchange. In addition, we also estimate income and price elasticities of demand for Indonesian exports; the aggregate, mineral fuels, non-fuels, primary commodities, and manufactured goods.

Chapter five discusses a brief history of industrialization in Indonesia and focuses on an analysis of manufactured exports, including their markets. Conclusions and policy implications of this study are presented in chapter six.

Data used in this study cover 1968 through 1990. The main source of data is the Central Bureau of Statistics (CBS), which collects and officially publishes Indonesian data. In addition, we also use data from the World Bank, the United Nations, the International Monetary Fund (IMF), and the Organization for Economic Cooperation and Development (OECD). The CBS publishes data on international trade, exports and imports, with a three- to six-month lag. However, the lag for national income and sectoral accounts is two years.

# CHAPTER TWO

# INTERNATIONAL TRADE AND ECONOMIC GROWTH.

## 1. Theoretical Framework

### (a) Orthodox Theory

The orthodox trade theory may be traced from Adam Smith and David Ricardo to its recent formalization in the Heckscher-Ohlin-Samuelson model. The basic idea is that trade brings gains in national income through specialization and productive efficiency.

#### (i) Adam Smith

In the Wealth of Nations in 1776, Adam Smith wrote that the key to national wealth and power was economic growth. Economic growth is basically a function of the division of labor, which in turn is dependent upon the market's scale. Therefore, nations should open their economy to international markets and specialize in the goods they produce best. In other words, nations should export goods that are produced cheaply and import goods that are produced dearly. In Smith's words:

> If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it of them with some part of the produce of our own industry, employed in a way in which we have some advantage (Book IV, chap II, p. 456).

In addition, Smith also referred to trade as an exchange of surplus commodities above their domestic demand. Smith said:

> Between whatever places foreign trade is carried on, they all of them derive two distinct benefits from it. It carries out that surplus part of the produce of their land and labor for which there is no demand among them, and brings back in return for it something else for which there is a demand (Book IV, chap I, p. 446).

Smith saw no possibility of trading between two countries when one was able to produce every commodity at an absolutely lower real cost than the other. David Ricardo resolved this dilemma with the concept of relative cost advantage.

(ii) David Ricardo

Ricardo, in his Principles of Political Economy and Taxation (1817), illustrated how the relative (not absolute) cost of producing goods determined the flow of trade among countries. Countries tend to specialize in the production and export of those commodities for which they have a low - and import commodities for which they have a high - relative cost.

The classical theory of trade was based on a number of important assumptions. First, it assumed that transportation costs were zero and factors of production were mobile domestically but immobile internationally. Second, the law of comparative advantage was based on a two-country model. Third, the amount and efficiency of labor input was assumed to be the principal determinant of the cost of production. These

assumptions proved too simple for the real world. In recent years, countries have traded in both commodities and factors of production.

These shortcomings were taken into account in the neoclassical model of trade developed by Heckscher (1919), Ohlin (1933), and more recently by Samuelson (1948) as discussed below.

(iii) Heckscher-Ohlin-Samuelson (H-O-S)[1]

The H-O-S theory is based on a number of simplified assumptions. First, the model consists of only two countries, two factors of production in fixed amounts, and two goods. Second, each country possesses identical preferences (demand patterns) and technology, which is constant returns to scale. Third, factors are fully mobile within countries, but immobile between countries. Fourth, perfect competition in all markets and zero transportation costs are assumed.

The H-O-S theory maintains that a nation's comparative advantage is determined by the relative abundance of its factors of production, such as capital and labor. A country will export/import commodities that intensively use the country's relatively abundant/scarce factors.

Some important theories emerged as a consequence of the H-O-S theory.

---

[1]For a more comprehensive explanation of the Heckscher-Ohlin-Samuelson theory, see Ethier (1988). This section draws heavily on Ethier.

(1) The Factor Price Equalization Theory

Factor prices in both countries become equal if they produce both goods and engage in free trade. Therefore, free trade will eliminate rent and wage rate differentials between the two countries.

(2) The Stolper-Samuelson Theory

An increase in the relative price of a labor-intensive good will increase the wage rate relative to both commodity prices, and reduce the rent relative to both commodity prices. This theory has important implications for income distribution within a country. For example, when the price of capital-intensive goods increase, people who own capital will be better off while wage earners will be worse off.

(3) The Rybczynsky Theory

An increase in one factor endowment will increase by greater proportion the output of the good intensive in that factor, and will reduce the output of the other good, keeping prices constant. In other words, when the amount of capital increases by 10 percent (while labor is constant), the output of capital-intensive goods will increase by greater than 10 percent and the output of labor-intensive goods will decline.

Leontief (1953) was the first economist to test the H-O-S model empirically. He used United States data for the year 1947, expecting to find that the United States exported capital-intensive goods and imported labor-intensive goods, since it was the most capital-abundant nation in the world.

However, the result was contrary to his predictions. It showed that the United States' imports (calculated from import substitution goods) were more capital-intensive than its exports (the Leontief Paradox).

Some explanations of the Leontief Paradox[1] are: (a) Factor Intensity Reversal: the capital-labor ratio of producing a particular good may vary according to wage-rental ratios (Minhas, 1962); (b) Natural Resources: when natural resources become scarce and natural resources and capital are complimentary, those goods whose production require large quantities of natural resources will also require large quantities of capital (Vanek, 1959); (c) Skills and Human Capital: labor is not homogenous and the export sector could use higher skills compared to the import competing sector (Kravis, 1956; Keesing, 1966); and (d) tariffs and other protection measures imposed in foreign trade distort the pattern of trade (Travis, 1964).

(b) Neoclassical Growth Model

The neoclassical model of growth provides a useful method to explain the source of economic growth. An example is the Cobb-Douglas production function, where output is a function of capital, labor, and residual factors. This model was constructed with some important assumptions. First,

---

[1]Baldwin (1971) presented a useful survey of explanations for the Leontief Paradox.

technology is exogenous and independent of changes in factor inputs. Second, the elasticity of substitution between factors is constant. The model can be expressed in an equation:

$$Y = A K^a L^b$$

where: Y = output
K,L = capital and labor respectively
a,b = partial elasticity of capital and labor respectively, and
A = the residual factors.

Various studies attempted to utilize this model by using data from developing countries (Solow, 1962; Nadiri, 1970; Robinson, 1971).[1] They found that the relative contribution of conventional inputs (capital and labor) ranged from 44 percent to 72 percent. The remaining was treated as a residual, which included technical progress.

Parameter A in the model expresses shifts in the production function, and is unrelated to changes in the quantity of capital and labor employed. Because the parameter loomed so large in understanding the results of these studies, several researchers have proposed explanations of it. For example, Solow (1963) interpreted it to emphasize technical change; Dennison and Chung (1967) recognized it as an economic scale; and Christensen, et al. (1975) called it total factor productivity (TFP). Balassa (1977, 1985) emphasized exports that increased total factor productivity via its favorable effects on efficiency in resource allocation, capacity

---

[1]Thirwall (1989) presented a summary of studies about this subject.

utilization, economies of scale and technical change. In summary, neoclassical economists believe that international trade produces important beneficial effects on economic growth in developing countries.

(c) Marxist

The Marxist or neo-Marxist stances treat trade as a possible mechanism for exploitation of less-developed countries (periphery) by the industrialized West (center), since the center does not pay the periphery the opportunity costs of its products. Hence, free trade only benefits industrial countries. In Marx's words:

> If the free traders cannot understand how one nation can grow rich at the expense of another, we need not wonder, since the same gentlemen also refuse to understand how within one country one class can enrich itself at the expense of another (The Poverty of Philosophy, 1936, p. 226).

In the Marxist view, one class (labor) tends to be exploited by another (capitalist) in the presence of high unemployment rates. Capitalists may hire labor and pay low wages (below their marginal product) without concern for labor shortage. This application of reasoning to international trade is similar. Developed countries may import primary products from developing countries without any shortage of supply. Intense competition among producers of primary products pushes their prices lower.

It should be stressed that the concept of exploitation is quite compatible with gains from trade. Marxist concerns are about how the gains from trade are divided between the center and the periphery, and whether or not the periphery has a choice of engaging or not engaging in trade with the center.

In addition, Marxists believe that economic specialization and interdependence of foreign markets makes the states insecure and vulnerable to external developments. Hence, trade becomes an instrument that removes a society's ability to govern its own affairs.

(d) Structuralist

Structuralist writers such as Prebisch (1950) and Singer (1960) believed that trade will not produce gains to developing countries. Their ideas followed the economic structure of developing countries in which the demand for imported goods is income-elastic and the demand for its exports is inelastic.

Prebicsh (1959) developed a two-country, two-commodity model in which the advanced center produces and exports manufactured goods with income elasticity of demand greater than unity (1.3), and the backward periphery produces and exports primary commodities with an income elasticity of demand less than unity (0.8). If the rate of income growth in the center is assumed to be 3 percent, then the rate of growth of imports is equal to 2.4 percent (3 x 0.8) or equal to the

rate of exports from the periphery. In contrast, if income growth rate is 3 percent in the periphery, then the rate of imports is equal to 3.9 percent (3 x 1.3). Therefore, when trade occurs between the center and the periphery, keeping trade in balance (exports = imports), grows at a 5 percent level, the income of the periphery and the center will grow at a rate of 3.85 percent (5/1.3) and 6.25 percent (5/0.8), respectively. That is the periphery's income growth will amount to only 61 percent (3.85/6.25) of the center. The pace of economic growth in the periphery always lags behind that of the center. To solve this problem, the periphery would need a large amount of foreign exchange through aid or direct investment to balance its international payments.

Prebisch (1950) also predicted that the terms of trade for developing countries would deteriorate because their export prices would decline steadily, compared to the import prices.

There are three principal theoretical arguments that support the "secular deterioration hypothesis." The first states that demand conditions are anti-trade biased in developed countries and pro-trade biased in developing countries.[1] As a consequence, rising demands for imports on the part of developing countries coupled with relatively

---

[1]Anti-trade is defined as a lower growth of trade than growth of income. The reverse is true for pro-trade (see Salvatore, 1987).

declining import demand from developed countries should lead to deteriorating terms of trade.[1]

The second argument applies to raw material exports from developing countries. It follows that the demand in developed countries for such imports will fall due to technological change. Again, the terms of trade would move against the suppliers in developing nations.

The third argument begins with the premise that when technological change occurs in the production of export goods in developed countries, the money price of exports does not fall. Rather, because of oligopolistic systems in developed countries and the power of labor unions, the benefits of productivity increases are realized in the form of higher wages and profits while prices remain constant. In contrast, competition among developing countries in the world market results in productivity increases being passed on in the form of lower export prices.

Myrdal (1957) argued further that the structure of production in developing countries, notably primary products,[2] forced them into trade with poor prospects in terms of price and income. Developing countries are thus "gravely

---

[1]This assertion has a root in Angel's law. When incomes rise, households tend to spend a smaller proportion of their income on food (primary commodities) and a larger proportion on manufactures.

[2]Primary products depend heavily on unique characteristics of local and immobile resources such as: minerals, soil types, climate and geographic location.

disadvantaged" with respect to the balance of payments and the availability of foreign exchange.

## 2. The Effects of Growth on Trade

Economic growth, whether caused by an increase in factor endowments or by changes in technology, may affect trade in a variety of ways. Figure 2.1 illustrates the effects of economic growth on trade in general.[1] The curve $MR_1S_1$ is the economy's production possibility frontier. In an open economy, production occurs at point $P_1$ and consumption occurs at point $E_1$. Trade triangle $N_1P_1E_1$ shows that the country exports $N_1P_1$ exportable goods and imports $N_1E_1$ importable goods.

After the economy grows, $MR_2S_2$ is the new economy's production frontier. The new production and consumption points are located at point $P_2$ and $E_2$, respectively. Exports become $N_2P_2$ and imports become $N_2E_2$. The effects of growth on trade may be detected by comparing triangle $N_1P_1E_1$ to triangle $N_2P_2E_2$. However, this depends heavily on various characteristics of the country, such as size, terms of trade, and consumption and production patterns. There are three possible outcomes: 1) Neutral growth: when trade growth is equal to the growth of income. 2) Pro-trade biased growth: when trade growth is larger than income growth. This occurs

---

[1]For a more detailed discussion about the effects of economic growth on trade see Salvatore (1987).

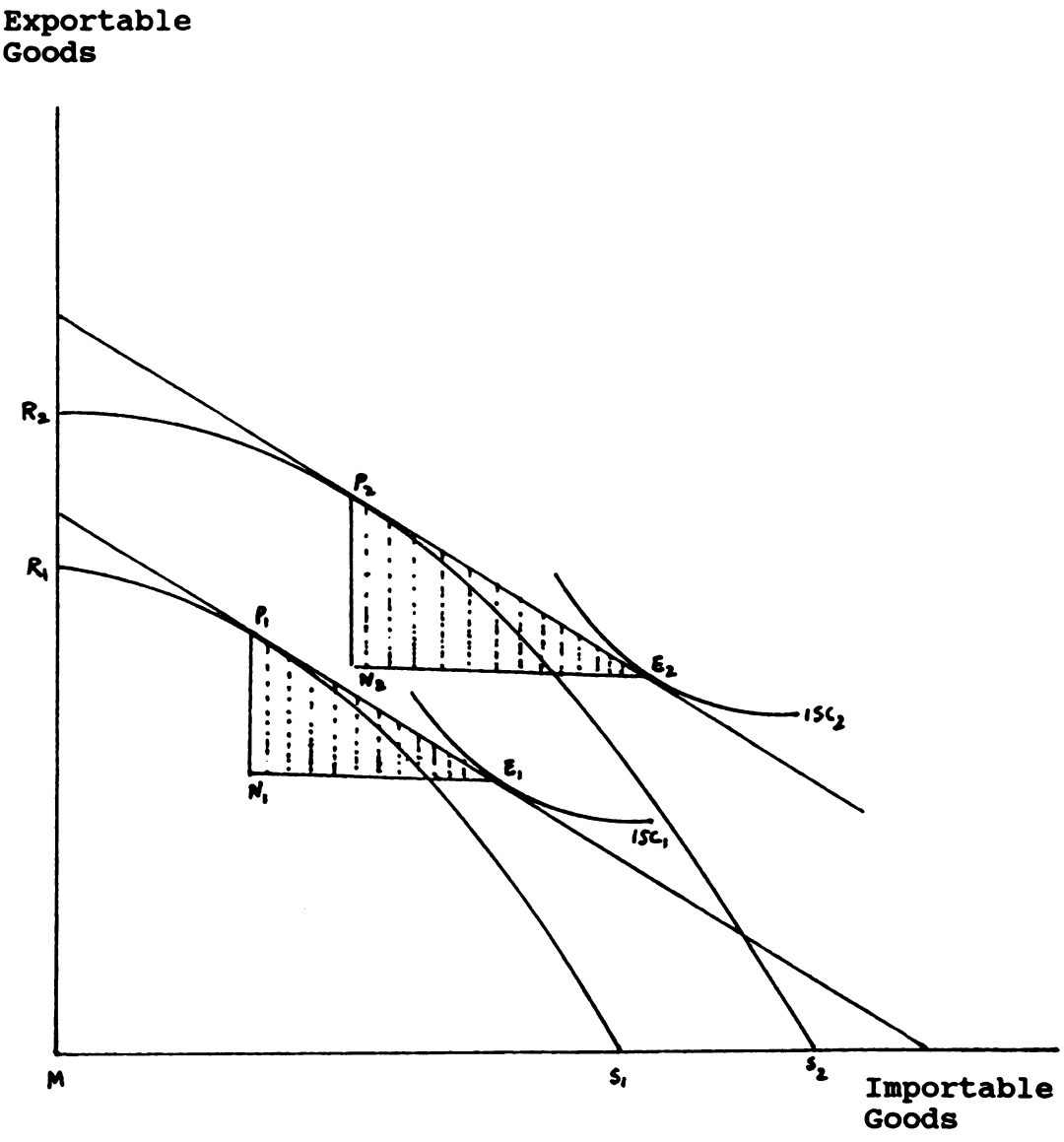


Figure 2.1: Effects of Economic Growth on Trade

The production possibility frontier expands from $MR_1S_1$ (before growth) to $MR_2S_2$ (after growth). The production point moves from $P_1$ to $P_2$ and the consumption point moves from $E_1$ to $E_2$. Exports change from $N_1P_1$ to $N_2P_2$, and imports change from $N_1E_1$ to $N_2E_2$. The effects of growth on trade may be detected by comparing triangle $N_1P_1E_1$ to triangle $N_2P_2E_2$.

if the production of exportable goods increases more than the production of importable goods. 3) Anti-trade biased growth: when the growth of trade is smaller than the growth of income. This happens when the production of importable goods increases at a greater rate than does the production of exportable goods. Thus, economic growth may influence trade growth.

However, growth may immiserize onself. This happens when growth in a country may impact so adversely on its terms of trade that the primary gain from economic growth is outweighed by the secondary loss from deterioration in the terms of trade (Bhagwati, 1958). Immiserizing growth is more likely to occur in a country that: (a) is heavily dependent on trade and (b) possesses a very low income elasticity of its exports (Salvatore, 1987). Theoretically, the immiserization concept may happen but no clear-cut example has yet occurred.[1]

## 3. The Gains From Trade

The gains from trade refer to the difference between a national income with trade and a hypothetical national income without trade under similar conditions of factor endowments and technology.

The gains from trade can be divided into static and dynamic gains. Static gains accrue from international

---

[1]Immiserizing growth may have happened in Brazil in the 1930s, when the expansion of coffee exports reduced international coffee prices drastically and dropped the Brazilian terms of trade (Kindleberger and Lindert, 1982).

specialization according to comparative advantage. Dynamic gains result from the impact of trade on production possibilities due to factors like economies of scale, technical growth, and the international flow of capital and knowledge.

Given a social indifference map, it can be demonstrated that international trade enables an economy to move from a lower to a higher social indifference curve. The total gains from trade are usually divided into the following two components:[1]

(1) The consumption gains, which accrue to the economy when the same bundle of commodities produced under autarky is also produced under free trade.

(2) The production gains, which accrue to the economy over and above the consumption gains as a result of the shift of the production frontier point due to the difference between pretrade and post-trade prices.

Figure 2.2 illustrates the breakdown of the total gains into consumption and production gains. The curve $MP_1P_0N$ is the economy's production possibilities frontier. Before trade, equilibrium occurs at point $P_0$, where production possibilities touch the highest possible social indifference curve ($SIC_1$).

When trade opens up, the economy produces at $P_1$ and consumes at $E_2$. Social welfare improves because the economy

---

[1]For a more detailed discussion about gains from trade, see Kenen (1989).

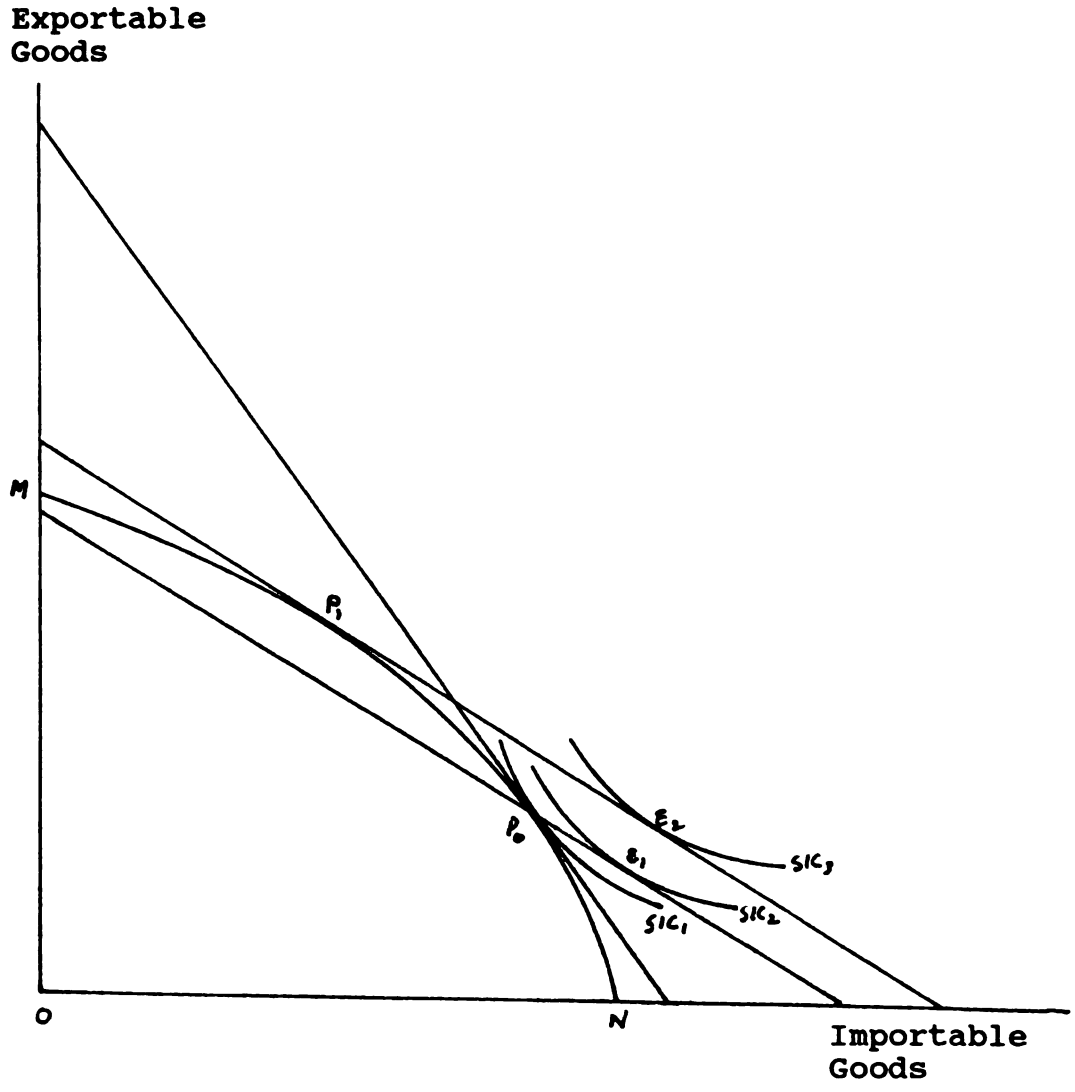


Figure 2.2: The Gains From Trade.

An autarkic equilibrium point occurs at $P_0$, where production equal consumption. After trade, production moves to point $P_1$ and consumption to a higher point $E_2$. Total gains can be divided into production gain (movement from point $P_0$ to $E_1$) and consumption gain (movement from point $E_1$ to $E_2$).

moves from a lower social indifference curve ($SIC_1$) to a higher one ($SIC_3$). To isolate the consumption gain, assume for the moment that with the opening up of trade, the production point is frozen at $P_0$. Even though production is frozen at $P_0$, the economy still benefits from trade. Its consumption point will move from $P_0$ to $E_1$, i.e, the economy moves from a lower social indifference curve ($SIC_1$) to a higher one ($SIC_2$). The movement from $SIC_1$ to $SIC_2$ represents consumption gain. Production gain is the movement from $E_1$ to $E_2$ as a result of the change in production pattern (from $P_0$ to $P_1$).

Empirical analysis serves to further clarify the relationships between exports and economic growth.

## 4. Review of Empirical Studies

The relationship between trade performance and economic growth is one of the most controversial areas in economics, despite the trade theory's straightforward clarity that world welfare would increase if all countries opened their economies to the world markets. Difficulties arise from the fact that trade is only one of several variables that determines economic growth.

Several economists focused on exports and their contributions to economic growth. Michaely (1977) found a positive correlation between the annual change of the ratio of exports to GNP and the annual change of per capita GNP in 41

developing countries from 1960 to 1973. He concluded that the more rapid the change in exports, the more rapid the economy's growth.

To further add explanatory power, Michalopoulus and Jay (1973), Balassa (1977), Kavoussi (1986), Tyler (1988), and Moschos (1989) analyzed the role of exports from the production side. They asserted that output was a function of foreign investment, domestic investment, employment and exports. For example, Balassa (1977) used the pooled data of 1960 to 1973 from ten developing countries (Argentina, Brazil, Chile, Colombia, India, Israel, Korea, Mexico, Taiwan, and Yugoslavia) to estimate the role of exports in economic growth. He regressed GNP growth as the dependent variable and domestic capital, foreign capital, employment and export growth as independent variables. He found that all four independent variables explained 77 percent of the intercountry variation in income growth rates. When he excluded exports, the remaining three independent variables explained 58 percent of the growth rate variation. The coefficient of exports in the regression was 0.04, meaning that an increase in the growth rate of exports of one percentage point tended to raise the rate of growth of the GNP 0.04 of one percent.

The most interesting implication of these results is the comparison between predicted values and the actual values of the export growth rate for individual countries. The increase in Korea's GNP would have been 37.4 percent smaller if its

export growth rate had equalled the average for ten countries during 1960 to 1973. On the other hand, the annual percentage increase in GNP would have been 8.4 percent, 12.4 percent, and 13.7 percent higher in Mexico, India and Chile, respectively, if these countries had experienced average export growth rates. Balassa concluded that the export growth favorably affected the rate of economic growth over and above the contributions of domestic and foreign capital and labor.

Taylor and Arida (1988) attacked the application of the trade theory to developing countries because it ignores the non competitiveness of most international transactions in poor countries. The trade theory also relies on hypothetical autarkic conditions as the basis for its comparison. Rapid export expansion did lead to high economic growth in a few countries, but the correlation does not extend to all developing countries. In addition, countries experiencing high economic growth were highly dirigiste, meaning the state interfered heavily in macroeconomic decision making, as seen in the experiences of South Korea, Taiwan, Hong Kong, and Singapore. Moreover, some countries like Taiwan and South Korea were "bastions of American hegemony," and benefitted from foreign aid and market access (Taylor, 1986).

The gains distributed among those countries engaged in trading may not be even. The distribution of gains presents quite different problems at the international level from those at the national level. For any national community, a central

government may tax and redistribute gains if this is deemed desirable, but at the international level this may not be done.

The role of international trade in a country is different for different countries. Large countries like India and Brazil tend to be less dependent on foreign trade, in terms of national income, than relatively small countries like those in Africa and Central America. As a group, developing countries are more dependent on foreign trade than developed countries.

One critical dimension of the trade characteristics of developing countries is the composition of their exports. Most developing countries depend heavily on exports of primary goods, approximately 85 percent in 1985, while developed countries export manufactured goods. The demand for primary goods is income inelastic, meaning the growth of demand for these goods is lower than the growth of income. Moreover, most developing countries rely on relatively few goods, such as: copper, cocoa, coffee, tea or natural rubber. Prices of these commodities are very unstable in the international market, leading to unstable exports earnings of developing countries.

As observed in Table 2.1, the price of primary commodities was very unstable during 1970 to 1990. Price indices of primary commodities reached their highest levels in 1980 and declined, never to recover. In the last two decades, the price of primary commodities increased less than two times

compared to more than four times for the price of manufactured goods. These data reveal that the Prebisch-Singer hypothesis of terms of trade deterioration of primary commodities appears inescapable.

Table 2.1: Indices of Free Market Prices of Primary Commodities, Petroleum and Manufactured Exports (1980 = 100).

| Year | Primary Commodities | Crude Petroleum | Manufactured Goods |
|---|---|---|---|
| 1970 | 31.8 | 5.9 | 34.0 |
| 1975 | 63.9 | 29.9 | 63.4 |
| 1980 | 100 | 100 | 100 |
| 1981 | 82.6 | 96.1 | 94.8 |
| 1982 | 64.5 | 88.5 | 91.7 |
| 1983 | 69.0 | 80.0 | 88.4 |
| 1984 | 66.4 | 79.7 | 85.4 |
| 1985 | 58.3 | 76.1 | 87.1 |
| 1986 | 60.6 | 38.9 | 103.2 |
| 1987 | 62.3 | 50.1 | 115.5 |
| 1988 | 78.6 | 40.0 | 123.5 |
| 1989 | 78.9 | 48.3 | 125.1 |
| 1990 | 56.3 | 62.2 | 136.8 |

Source: UNCTAD (1991), Handbook of International Trade and Development Statistics 1990.

However, long-term historical data reveal that non-fuel commodity terms of trade declined by an average of 0.6 percent per year between 1900 and 1986 (World Bank, 1991). The decline is much smaller when we choose a different period. Between 1920 and 1986, these terms of trade fell less than 0.3 percent a year. These figures are likely to overstate the decline because they ignore improvements in the quality of

manufactured goods. This means manufactured goods' prices may be increased over time because of better quality. For instance, Haberler (1961) noted that the quality of primary products such as copper, cotton, coffee, or wheat remained the same over time while the quality of manufactures such as tires, radios, and automobiles changed significantly. Thus, the terms of trade tend to move counter to the prices of primary products.

Besides the discovery of synthetic materials to replace some primary products, technological change in developed countries also reduces demand for primary commodities. One example of decreasing demand for primary commodities because of technological change was noted by Saleh (1991).

Table 2.2: Tire Replacement Factor (TRF)[1] in Industrialized Countries.

| Year | USA | EEC | Japan |
|---|---|---|---|
| 1970 | 1.49 | 1.07 | 1.17 |
| 1975 | 1.21 | 0.86 | 1.06 |
| 1980 | 0.94 | 0.75 | 0.93 |
| 1985 | 1.05 | 0.67 | 0.84 |

Source: Saleh, D. (1991)

According to his study, technological change in the automobile industry from rear wheel to front wheel drive increased the

[1]Tire Replacement Factor (TRF) refers to the ratio between total sales of replacement tires to total registered automobiles.

durability of tires 20 to 30 percent. In addition, the life time of radial tires increases about 50 percent to an average of 60,000 miles compared to conventional cross-ply tires. As a result, the tire replacement factor (TRF) declined in developed countries, as seen in Table 2.2.

In the 15 years since 1970, the value of the TRF declined significantly: about 29 percent, 37 percent, and 28 percent in the USA, the EEC and Japan, respectively. As a consequence of these figures the demand for natural rubber, which was produced by developing countries as a primary input for the tire industry, decreased.[1]

Table 2.3 shows the composition of world trade from 1950 to 1989. Note that in making conclusions about the changing share of developing countries in world trade, the period of analysis chosen is important. When 1950 is used as the beginning year, there is no doubt that the developing countries lost their share in the world market. However, when the starting period was 1970, the developing countries' share increased. This happened because the total export value of developing countries declined in 1970 due to a drop in the prices of most primary commodities.

The export performance of developing countries lagged behind that of developed countries. The share of developing countries in world trade declined about one third; from 31.1

---

[1]During 1970 to 1989, the industrial countries reduced their natural rubber consumption per dollar GDP by 18 percent.

percent in 1950 to 21.4 percent in 1989. Meanwhile, the share of developed countries increased from 60.8 percent to 70.0 percent, and socialist countries increased slightly from 8.1 percent to 8.6 percent in the same period.

Table 2.3: Composition of World Trade 1950-1989 (%).

| Countries | 1950 | 1960 | 1970 | 1975 | 1980 | 1985 | 1989 |
|---|---|---|---|---|---|---|---|
| Developed | 60.8 | 65.9 | 70.9 | 65.6 | 62.5 | 65.9 | 70.0 |
| Developing | 31.1 | 21.9 | 18.4 | 24.5 | 28.6 | 23.7 | 21.4 |
| -oil exporter | 6.3 | 6.8 | 6.3 | 13.8 | 16.4 | 8.9 | 5.3 |
| -mfg exporter | 6.2 | 3.6 | 3.8 | 4.3 | 6.1 | 8.9 | 10.4 |
| -others | 18.6 | 11.5 | 8.3 | 6.4 | 6.2 | 6.0 | 5.7 |
| Socialist | 8.1 | 12.2 | 10.7 | 9.9 | 8.9 | 10.4 | 8.6 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Source: UNCTAD (1991), Handbook of International Trade and Development Statistics 1990.

There was a period between 1975 and 1985 when the share of exports from developing countries increased mainly because of the increase in oil prices in the early 1970s. The oil boom during this period benefitted mostly a small number of developing countries which are members of OPEC.[1]

Given the declining export share of developing countries from 1950 to 1970, developing countries pressed for special

[1]OPEC is the Organization of Petroleum Exporter Countries consisting of 13 members. Together OPEC controlled 38.5 percent of world production and 60.0 percent of world exports of oil in 1990 (OPEC Bulletin, Jan 1992, p 21).

preference for their exports to developed countries; that is, for most favored nation (MFN) treatment. One qualified success of this effort was the internal acceptance of the general system of preference (GSP) by several developed countries in the early 1970s, which provided for preferential entry of selected exports at tariff rates lower than those applicable to other countries.

When we examine in more detail the composition of exports from developing countries, only the share of countries which are called manufacturing exporting countries (like South Korea, Taiwan, Hong Kong, Singapore, and Brazil) increased in the period 1950 to 1989 (from 6.2 percent to 10.4 percent). By contrast, the share of oil exporting and "other" countries, including primary commodity exporting countries, declined.

The increased share and value of exports of countries exporting manufactured goods has to do with the high income elasticity demand for these kinds of goods, and the special preference system given by the developed countries to developing countries.

Trade among countries in the same economic grouping shows a tendency to increase. Table 2.4 illustrates that exports within developed countries increased from 69.5 percent in 1960 to 75.9 percent in 1990. Over the same period, developing countries' exports among themselves increased from 21.9 percent to 33.6 percent.

Table 2.4: Network of World Exports

| Country of Origin | Country Destination | | |
|---|---|---|---|
| | Developed | Developing | Others |
| Developed | | | |
| 1960 | 69.5 | 24.4 | 6.1 |
| 1990 | 75.9 | 21.5 | 2.6 |
| Developing | | | |
| 1960 | 74.0 | 21.9 | 4.1 |
| 1990 | 63.6 | 33.6 | 2.8 |

Source: IMF, Direction of Trade Statistics, various issues.

Increased trade among developing countries themselves is regarded by some economists as essential to spurring growth in those economies (Lewis, 1980). This thesis is based, in part, on the opinion that the slowdown of economic growth in developed countries reduces demand for imports from developing countries. In addition, developed countries will increase trade among themselves as predicted by Brander (1981). Therefore, developing countries should increase their trade among themselves to maintain economic growth. However, increasing trade among economic groupings may reflect a serious problem of world equity. Amsden (1986) noted that the declining trade from developed countries to developing countries was caused by a greater income inequality between the two groups.

According to Bardhan (1988), the wide disagreement about the benefits of international trade for developing countries was mostly the consequence of misunderstanding of each other's

positions. It is better for the periphery to engage in trade with the center than not to trade at all. Without opening up to international trade the economic growth of the periphery would be even lower.

Adam Smith pointed out that the division of labor is limited by the extent of the market, mainly its geographical extent. However, Young (1980) added the reverse proposition, that the extent of the market, not only in the geographic sense, but also in the sense of the size and number of incomes, depended on the division of labor. Production, productivity, and income rise as specialization proceeds. It is on the interaction between these two -the division of labor and the extent of the market- that economic progress depends.

For successful export-led growth to occur, export demand must be strong, with linkages between exports and the domestic economy (Freeman, 1971). In addition, developing countries should shift their exports from primary products, which possess low demand elasticities, toward high-demand elasticities manufactures. As Lewis (1980) stressed, developing countries cannot force people in developed countries to drink more coffee or tea, or use more rubber or jute.

The data on manufactured exports from developing countries in the last twenty years are promising. From 1965 to 1985 manufactured exports from developing countries grew at an annual rate of 12.2 percent, as these countries increased

their market shares in manufactured trade from 7.3 percent to 17.4 percent (World Bank, 1987). However, manufactured exports from developing countries are dominated by a few countries such as China, Hong Kong, South Korea, Singapore, and Taiwan. Together these countries accounted for 60 percent of total manufactured exports from developing countries. The inclusion of Brazil and India would raise this share to 72 percent.

As a group, developing countries still have only a small share in world manufacturing output, but their output and exports of manufactures have grown more rapidly than those of the industrial countries since the 1960s. There was no developing country included in the top twenty exporters of manufactured goods in 1965. Today, five developing countries (China, Hong Kong, South Korea, Singapore, and Taiwan) are among the top twenty. Although this performance occurred during a period of unprecedented real growth in world output and trade in manufactured products, it is remarkable that the developing countries sustained their progress even when the world economy slowed after 1973. Moreover, manufactured exports from developing countries have became more sophisticated. Developing countries have diversified from traditional labor-intensive products (such as textiles) or those based on natural resources (such as crude petrochemicals) to chemical and engineering products (such as computers).

## 5. Growth of Industrial Sector and Trade Orientation

### (a) The Importance of Industrialization

Following World War II, economists viewed industrialization as an essential stage in reaching the goal of rapid economic growth in developing countries (Kuznets, 1966; Chenery, 1986). Industrialization is the process of increasing the role of the industrial sector in the economy through movement of resources from the low productive sector (agriculture) to the high productive sector (industry). Hence, industrialization changes the sectoral center of gravity of the economy from agricultural to more productive industrial sectors through reallocation of low productivity labor.

The importance attached to industrialization by developing countries lies in the close association that appears to exist between industrialization and real income per capita, and the growth of output as a whole (Thirlwall, 1989).

### (b) Industrial Strategies

The characterization of industrialization strategies is usually based on the trade orientation of the evolving industrial sector. Two alternative strategies are common in the literature, outward and inward orientation.

Most economists, among them Keesing (1967), Bhagwati (1978), Krueger (1978), Chenery (1980), Balassa (1989), and Dollar (1992), favor an outward-oriented strategy over inward-

oriented strategy. This because the former creates more employment and generates higher rate of economic growth than that of the latter.

(i) Outward Orientation

An outward-oriented strategy is a strategy in which industrialization favors export markets. This strategy emphasizes the promotion of some industries where the country has a potential comparative advantage in international markets. To support this strategy, exchange rate policies must be biased toward the export sector. In addition, selective subsidies are needed to induce manufacturers to invest in capacity for the export markets. The basic idea of the outward strategy is that exploitation of economies of scale and allocation of resources according to comparative advantage will improve the industry's efficiency.

(ii) Inward Orientation

An inward-oriented strategy favors expansion of the industrial sector in the domestic market to substitute for imports. To support this strategy, the government imposes tariff and other non-tariff barriers to protect those industries from foreign competition.[1] According to Bruton

---

[1]The inward strategy is supported by "the infant industry" argument. This argument says that a young industry (like an infant) needs protection to grow up from the education effects of learning by doing. For a more details see Kenen (1989).

(1989) protection is necessary for most developing countries to establish a strong base for domestic industry.

There is criticism of the inward-oriented policy. First, there is the potential for severe misallocation of national resources and foreign exchange. The overvalued exchange rate encourages use of imported inputs, especially those on which duties are also low, and reduces the competitiveness of agricultural exports, further widening the foreign exchange gap (Krueger, 1978). Second, there is the potential for greater use of capital-intensive technology than is desirable, raising the capital-output ratios and reducing growth from a given amount of savings (Balassa, 1989). Third, excessive government regulation of the economy may discourage productive initiative of the private sector (Little at al. 1979) and encourage the rent-seeking society (Bhagwati,1988).

Data from the World Bank (1987) show that the real GDP of countries adopting an outward-oriented strategy grew faster than inward-oriented countries during 1963 to 1985. Moreover, Schmitz (1984) calculated that the economies of the NICs adopting outward-strategies early in the 1960s grew at an annual rate of 8 to 11 percent over the period 1965 to 1988. Meanwhile, defenders of the inward-strategy pointed out that: (a) slow economic growth in some countries was not because of the inward-orientation strategy but, rather because of macro economic problems (Singer, 1988); and (b) the failure of some countries that implemented an import substitution strategy,

like India, was not because of the strategy itself but because of the method of implementation (Bruton, 1989).

## CHAPTER THREE

## ECONOMIC DEVELOPMENT AND FOREIGN TRADE IN INDONESIA

### 1. Introduction to the Indonesian Economy

#### (a) Geography

Indonesia consists of 13,667 islands between Australia and Asia. More than half have not been named, and only seven percent are inhabited. The population distribution is unequal among the islands. Of a population of 179 million in Indonesia, Java with only 7 percent of the land area contains almost two-thirds of the nation's population. There are two seasons in Indonesia: the dry season runs from April to September and the wet season from October to March. The weather is very humid and average temperatures run from 22 to 30 degrees Celsius (72 to 86 degrees Fahrenheit).

#### (b) Population and Employment

Indonesia is the fourth most populous country in the world after China, India, and the United States. The 1990 population of 179 million has increased from 119 million in 1971. The 1990 figure is lower than what most scholars originally predicted. The population growth declined sharply from 2.3 percent per year during 1971-1980 to 1.9 percent in 1980-1990. The declining population growth rate, due to a drop in the fertility rate, was caused by increasing education and labor

participation of women, and increasing access to cheap and safe birth control devices (World Bank, 1991).

Table 3.1 below summarizes the population distribution in 1971, 1980 and 1990. As noted earlier, Java has a disproportionate share of population with a high density: about 826 people per square km in 1990, compared to 92 in the other islands. However, in the last twenty years there has been a massive government-sponsored shift of the population from Java to other areas outside Java. Through this program, the proportion of population in Java has been reduced slightly from 63.8 percent in 1971 to 60 percent in 1990.

Table 3.1: Total Population by Region

| Region | 1971 | | 1980 | | 1990 | |
|---|---|---|---|---|---|---|
| | million | % | million | % | million | % |
| Java | 76.09 | 63.8 | 91.22 | 61.9 | 107.52 | 60.0 |
| Outside Java | 43.12 | 36.2 | 56.11 | 38.1 | 71.68 | 40.0 |
| -Sumatra | 20.81 | 17.4 | 27.99 | 19.0 | 36.42 | 20.3 |
| -Nusa Tenggara | 6.62 | 4.3 | 8.49 | 5.7 | 10.16 | 5.7 |
| -Kalimantan | 5.15 | 7.2 | 6.72 | 4.6 | 7.10 | 4.0 |
| -Sulawesi | 8.53 | 5.6 | 10.40 | 7.0 | 12.51 | 7.0 |
| -Maluku&Irian | 2.01 | 1.7 | 2.52 | 1.7 | 3.48 | 2.0 |
| Total | 119.21 | 100 | 147.33 | 100 | 179.19 | 100 |
| -Urban | | 19.9 | | 22.4 | | 31.0 |
| -Rural | | 80.1 | | 77.6 | | 69.0 |

Source: CBS, Statistical Yearbook of Indonesia, various issues.

The proportion of the urban population increased rapidly in the last two decades, from 19.9 percent in 1971 to 31

percent in 1990. Rapid rural-urban migration in Indonesia is due to increasing economic activity in urban areas. Other reasons for rapid urbanization are linked to the rapid development of urban facilities such as education, health services, sanitation and leisure (urban bias).

Table 3.2: Proportion of Employment by Main Sector.

| Sector | 1971 | | 1980 | | 1989 | |
|---|---|---|---|---|---|---|
| | million | % | million | % | million | % |
| Agriculture | 25.6 | 64.4 | 31.4 | 58.0 | 41.1 | 55.6 |
| Manufacturing | 2.7 | 6.5 | 4.4 | 8.0 | 6.5 | 8.8 |
| Wholesale&trade | 4.3 | 10.3 | 6.6 | 12.2 | 10.8 | 14.6 |
| Services | 4.2 | 10.2 | 8.0 | 14.7 | 11.7 | 15.9 |
| Others | 1.7 | 4.0 | 3.1 | 5.8 | 3.8 | 5.2 |
| Not Stated | 1.9 | 4.6 | 0.7 | 1.3 | 0.0 | 0.0 |
| Total | 41.3 | 100 | 54.2 | 100 | 73.9 | 100 |

Source: CBS, Statistical Yearbook of Indonesia, various issues.
Note: Employment refers to population 10 years of age and above who worked during the week previous to the survey.

The transformation of employment from the agricultural to industrial sectors was very slow, as seen in Table 3.2. In the last twenty years the proportion of employment in the manufacturing sector increased slightly, from 6.5 percent in 1971 to 8.8 percent in 1989. At the same time the proportion of employment in the agricultural sector declined from 64.4 percent to 55.6 percent. Service sectors absorbed the labor that left agriculture, but could not find employment in manufacturing.

The population structure shows a preponderance of people of working age. In 1990 more than two-thirds of the population was in the range of age from 10 to 55 years. This situation was caused by high population growth in the 1960s and 1970s. The large number of working age people and a limited number of jobs available became a huge burden for the economy.

A large population can benefit the economy in terms of a large domestic market, inducement for investment, and the reduction of investment risk for entrepreneurs (Williamson, 1988). However, since the average level of education in Indonesia is low and job availability is limited, the unemployment rate is high.

It is important to note that the measurement of employment poses a serious problem in a developing country like Indonesia. The problem arises from: (a) the difficulty of distinguishing between work and non-work activities for members of households in household enterprises, especially in the informal sector; (b) much of the work is seasonal, especially in agriculture; (c) the difficulty in specifying a minimum time period to consider an activity as work. Consequently, the true figures for employment and underemployment are difficult to obtain.

2. Income growth

The Indonesian economy has grown rapidly since the late 1960s. Real GDP grew at 6.7 percent per year during 1970-1990, compared to only 2.5 percent during 1960-1969. Despite a high

population growth of about 2.2 percent per year, real per capita income doubled in less than twenty years from Rp. 299,000 in 1970 to Rp. 734,000 in 1990.[1]

Table 3.3: Gross Domestic Product (GDP) per capita at Constant Prices and Current Prices.

| Years | Constant 1985 Prices | | Current Prices | |
|---|---|---|---|---|
| | Rupiah(000) | US $ | Rupiah(000) | US $ |
| 1970 | 299 | 824 | 28 | 77 |
| 1975 | 388 | 935 | 93 | 224 |
| 1980 | 522 | 832 | 308 | 491 |
| 1985 | 588 | 530 | 590 | 531 |
| 1986 | 610 | 476 | 609 | 475 |
| 1987 | 625 | 380 | 724 | 440 |
| 1988 | 647 | 384 | 794 | 471 |
| 1989 | 683 | 386 | 928 | 524 |
| 1990 | 734 | 398 | 1.103 | 598 |

Source: IMF (1991), International Financial Statistics, Yearly 1990.

Table 3.3 shows the expansion of GDP per capita at constant 1985 prices and current prices both in rupiahs and dollars. Income per capita in terms of the dollar has declined since 1977 at constant prices, and since 1981 at current prices, though in rupiahs it has increased. This was mainly caused by depreciation of the rupiah compared to the dollar.

[1]After World War II, many developing countries rapidly doubled their per capita output. For example, Brazil in 18 years, Indonesia in 17 years, South Korea in 11 years, and China in ten years, compared to the United Kingdom in 58 years, the USA in 47 years and Japan in 34 years (see World Bank, 1991).

In 1970, a dollar was valued Rp. 363, increasing considerably to Rp. 1,840 in 1990.

The percentage of the population below the poverty line declined from 58 percent in 1970 to 17 percent in 1987 (World Bank, 1990).[1] Moreover, a survey by CBS (Central Bureau of Statistics) showed that the Gini Ratio[2] for expenditure distribution declined from 0.38 in 1978 to 0.32 in 1987. However, expenditure distribution is a biased proxy of income distribution since it does not take the saving level into account.

Even though Indonesia experienced high economic growth over the last two decades, the level of income per capita is very low compared to neighboring countries like Malaysia, the Philippines, and Thailand. The 1991 World Development Report (WDR) of the World Bank placed Indonesia at the upper end of the low income economies.

---

[1]There are suspicions that income distribution is growing worse in Indonesia, following the downward U-hypothesis of Kuznets. Kuznets (1966) predicted that income distribution becomes worse in the early stages of economic development. The distribution will become more equal as economic development proceeds. Crone (1985) surveyed studies about income distribution in Indonesia and found that it was getting worse in the 1970s.

[2]The Gini Ratio is a method for calculating income distribution. Its value ranges from 0 to 1, with a larger value meaning that the distribution of income is getting worse.

3. Sectoral Growth

Economic development is not simply an increase in the availability of goods and services in the economy, but also an improvement in social indicators such as education and health. In addition, it involves structural shifts from low productivity (traditional agriculture and services) to relatively high productivity sectors.

Over the last two decades a rapid transformation of the economic structure occurred with the share of agriculture in GDP steadily declining and the share of manufacturing increasing.

Table 3.4: Share of Sectors in GDP in Indonesia (%).

| | 1965 | 1970 | 1980 | 1989 | Growth* 65-80 | 80-89 |
|---|---|---|---|---|---|---|
| Agriculture | 56 | 45 | 31 | 23 | 4.3 | 3.2 |
| Industry | 13 | 25 | 36 | 37 | 11.9 | 5.3 |
| - Manufacturing | 8 | 8 | 14 | 17 | 12.0 | 12.7 |
| Services | 31 | 30 | 33 | 39 | 7.3 | 6.6 |
| GDP | 100 | 100 | 100 | 100 | 8.0 | 5.3 |

Sources: World Bank (1991).
CBS, Statistical Yearbook of Indonesia, various issues.
* = compound rate.

Table 3.4 shows that agriculture's share that was 56 percent in 1965, declined to 23 percent in 1989, despite an annual real growth rate of 4.3 percent and 3.2 percent in the periods from 1965 to 1980 and from 1980 to 1989, respectively.

Within the agricultural sector, the growth of food output was the fastest, especially rice. This enabled Indonesia to realize the important objective of food self-sufficiency in 1984. By this time a large proportion of farmers, especially in Java, were already applying heavy doses of fertilizer and using high yield varieties (HYVs) on irrigated land. As a consequence, the growth of food output has remained stagnant for the last three years. Moreover, the rapid conversion of fertile land to industrial sites and housing also contributed to a reduced rate of increase of food output in recent years.

The growth of the industrial sector has been particularly impressive, although Indonesia was late in this development compared to its neighbors Malaysia, the Philippines, and Thailand. Between 1965 and 1989 the industrial sector's share in GDP increased from 11.9 percent to 37 percent. This represents an annual real growth of 11.9 percent in 1965-1980 and 5.3 percent in 1980-1989. Within the industrial sector,[1] the growth of manufacturing was the fastest, at 12.0 percent and 12.7 percent during 1965 to 1980 and 1980 to 1989 respectively. The principal products of the manufacturing sector are consumer goods, including processed food and beverages, tobacco products, textiles and garments, and electrical appliances. The production of intermediate goods, including chemicals, cement, glass, fertilizers, ceramics,

---

[1]The industrial sector includes manufacturing, mining, construction, and utilities. Manufacturing is generally the most dynamic part of the industrial sector.

machinery, and basic metal products also increased markedly in recent years.

Table 3.5: Share of Sectors in GDP in Selected ASEAN[1] Countries in 1989 (%).

| Sector | Indonesia | Philippines | Thailand | Malaysia |
|---|---|---|---|---|
| Agriculture | 23 | 24 | 15 | 20 |
| Industry | 37 | 33 | 38 | 41 |
| - Manufacturing | 17 | 22 | 21 | 25 |
| Services | 39 | 43 | 47 | 39 |
| Total | 100 | 100 | 100 | 100 |
| GNP/capita(US $) | 500 | 710 | 1,200 | 2,160 |

Sources: World Bank (1991).
UN (1991), Statistical Yearbook of Asia and the Pacific 1990.

There is a strong relationship between the share of the industrial sector in the economy and the level of economic development across countries, as seen in Table 3.5. For example, among the ASEAN countries, Indonesia lies at the bottom in term of manufacturing share of the GDP. Malaysia is at the top with a manufacturing share of 25 percent in 1989. In addition, Malaysia also has the highest per capita output while Indonesia has the lowest. This strong link forces developing countries to attempt to hasten the industrialization process in their economic development. The share of services

[1]The Association of South East Asian Nations consists of Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand.

demonstrated a smaller increase from 31 percent in 1965 to 39 percent in 1989. Among services, finance, insurance, and transportation were the most improved during the last twenty years. The reasons are: 1) deregulation of the financial sector in 1983, which allowed the interest rates to vary according to supply and demand for money; and 2) deregulation in 1988, which encouraged the role of the private sector by allowing state enterprises to open accounts in private banks and allowing foreign banks to open branches in five other cities beside Jakarta.

4. Saving

Saving is defined as the residual between life streams of consumption and income. Individuals are assumed to maximize utility over their life cycles. The level of national saving depends on many factors, such as average income, financial market conditions, government policies, etc.

In the early stages of development, national savings (public and private) are quite small due to the country's low income. Hence the country's ability to develop its economy is limited. Lewis (1954) emphasized that a high savings rate is a necessary condition if a country is successful in developing its economy.[1]

---

[1]For example, the average savings level in the late 1960s in three middle income countries (South Korea, Malaysia, and Thailand) achieved 15.1 percent, 21.5 percent, and 22.7 percent, respectively (World Bank, 1991). Indonesia achieved this level of savings in the late 1980s.

Table 3.6: Ratio of Total Saving by Personal, Enterprises and Government on GDP (%).

| Year | Personal | Enterprises | Government | Total Saving |
|---|---|---|---|---|
| 1970 | 1.0 | 0.5 | 0.8 | 2.3 |
| 1975 | 2.5 | 1.3 | 1.9 | 5.7 |
| 1980 | 0.9 | 0.6 | 7.3 | 8.8 |
| 1981 | 0.7 | 1.2 | 9.1 | 11.0 |
| 1982 | 0.5 | 1.2 | 8.6 | 10.3 |
| 1983 | 0.9 | 2.3 | 7.6 | 10.8 |
| 1984 | 1.0 | 2.2 | 7.1 | 10.3 |
| 1985 | 1.8 | 3.1 | 7.3 | 12.2 |
| 1986 | 4.3 | 5.1 | 3.7 | 13.1 |
| 1987 | 5.5 | 6.1 | 2.6 | 14.2 |
| 1988 | 5.8 | 7.4 | 1.8 | 15.0 |
| 1989 | 6.9 | 8.0 | 2.3 | 17.2 |
| 1990 | 8.2 | 10.3 | 2.8 | 21.3 |

Sources: Bank Indonesia (1991),
CBS, Statistics Yearbook of Indonesia, various issues.

Table 3.6 demonstrates that the availability of saving in Indonesia was very small, only 2.3 percent of GDP in 1970. The savings rate rose to about 21.3 percent in 1990. The source of savings varies from period to period. Personal savings dominated the total in the early 1970s, while government savings were very important in the late 1970s to early 1980s. In the late 1980s, enterprises' savings become the dominant share of the economy.

The declining share of public savings, which had dominated total savings from the late 1970s to early 1980s, was due to the continuously declining role of the public sector in the

economy.[1] The non-public sector grew faster than the public sector, while the growth of tax revenues was smaller than public spending over this period.

Private savings growth followed the deregulation of the banking sector in the 1980s. In 1983, the government freed interest rates to set the market, and the real interest rates increased to their opportunity cost.[2] Before 1983 the government -as the monetary authority and owner of seven state commercial banks controlling about 85 percent of credit market[3]- set interest rates on the basis of low nominal rates. From 1972 to 1983 real interest rates (nominal interest minus inflation rates) were very low, and even negative between 1972-1974 and 1979-1980, as seen in Table 3.7.

Private savings are responsive to real interest rates. When real interest rates are high, private savings are also high; they decline when real interest is low. The elimination of government control on financial institutions restored the private sector's confidence. This is one of the crucial factors in raising domestic savings.

---

[1]The ratio of government expenditure to GDP averaged 9.1 percent in the early 1970s, increased to 11.0 percent in the early 1980s. This ratio declined to 8.8 percent in 1990.

[2]The elimination of government control of interest rates in seven developing countries (Bangladesh, Kenya, Nigeria, Peru, Thailand, Turkey, and Uruguay) increased competition among financial institutions and raised private savings (World Bank, 1986).

[3]This share declined to about 60 percent in 1990.

Table 3.7: Nominal and Real Interest Rates (%).

| Year | Nominal Interest | Inflation rates | Real Interest |
|---|---|---|---|
| 1970 | 24.0 | 8.9 | 15.1 |
| 1971 | 24.0 | 2.5 | 21.5 |
| 1972 | 18.0 | 25.8 | -7.8 |
| 1973 | 15.0 | 27.3 | -12.3 |
| 1974 | 18.0 | 33.3 | -15.3 |
| 1975 | 18.0 | 19.7 | 1.7 |
| 1976 | 18.0 | 14.2 | 3.8 |
| 1977 | 12.0 | 11.8 | 0.2 |
| 1978 | 9.0 | 6.7 | 2.3 |
| 1979 | 9.0 | 21.8 | -12.8 |
| 1980 | 12.0 | 16.0 | -4.0 |
| 1981 | 12.0 | 7.1 | 4.9 |
| 1982 | 12.0 | 9.7 | 2.3 |
| 1983 | 12.0 | 11.5 | 0.5 |
| 1984 | 16.0 | 8.8 | 7.2 |
| 1985 | 18.0 | 4.3 | 13.7 |
| 1986 | 15.4 | 8.8 | 6.8 |
| 1987 | 16.8 | 8.9 | 7.9 |
| 1988 | 17.7 | 5.5 | 12.2 |
| 1989 | 18.6 | 6.0 | 12.6 |
| 1990 | 21.3 | 9.5 | 11.8 |

Sources: Bank Indonesia, Indonesian Financial Statistics various issues.
CBS, Monthly Statistics Bulletin, various issues.

Note: Nominal interest rates are based on one year time deposits on state banks. Inflation rates are based on consumer prices in 17 cities (before 1989) and 25 cities (from 1989).

## 5. Investment

Investment has been traditionally recognized as contributing to economic growth. High levels of investment will lead to accelerated economic growth. A study by the World Bank (1986) in 24 developing countries during 1960 to 1984 showed that the income of ten countries with a low investment level (10.8 %) grew at an annual rate of 0.4 percent while the income of the rest, with a higher average investment level (18.4 %), grew at an annual rate of 4.5 percent. Understanding the important role of investment in economic development, the Indonesian government opened the economy to foreign investment in 1967, and has promoted domestic investment since 1968.

### (a) Domestic Investment

Since 1968, the government has encouraged domestic entrepreneurs to invest in the economy, especially in the manufacturing sector. Domestic investment laws were passed in 1968. The laws guaranteed private companies easy access to lower interest rates, lower tariffs for imported raw materials, and deferred income tax or a tax holiday for the first five to eight years of investment.

Since the investment laws were passed, there has been a dramatic increase in domestic investment, as seen in Table 3.8. From 1968 to 1990, Rp. 144,885 billion was invested in the economy, a sharp jump over the Rp. 11,164 billion recorded for the period 1968 to 1980 by domestic private companies. Most

of the investments were in manufacturing (68.4%). Agriculture (16.1%), domestic trade and hotels (5.7%), and others (9.8%) made up the rest.

Table 3.8: Total Domestic Investment by Sectors

| Sectors | 1968-1980 (Rp.billion) | % | 1968-1990 (Rp.billion) | % |
|---|---|---|---|---|
| Agriculture,forestry | 2,298 | 20.6 | 23,276 | 16.1 |
| Mining and quarrying | 533 | 4.8 | 2,054 | 1.4 |
| Manufacturing | 7,438 | 66.6 | 99,083 | 68.4 |
| Construction | 59 | 0.5 | 872 | 0.6 |
| Wholesale and retail trade | 227 | 2.0 | 8,228 | 5.7 |
| Transport, storage | 249 | 2.2 | 3,774 | 2.6 |
| Financing, estate | 46 | 0.4 | 5,421 | 3.7 |
| Personal services | 314 | 2.8 | 2,176 | 1.5 |
| Total | 11,164 | 100 | 144,885 | 100 |

Source: CBS, Statistical Yearbook of Indonesia, various issues.

Investments moved away from primary sectors (agriculture and mining) to the secondary (industry) and tertiary (service) sectors. Through 1990, 17.5 percent of the total investment was allocated to the primary sectors, compared to 25.4 percent in 1980.

In terms of investment location, more than half were located in Java, 22 percent invested in Jakarta alone. The disparity in the investment location created unequal growth among the regions and accelerated urbanization.

(b) Foreign Investment

In 1967, foreign investment laws were liberalized, inviting a massive flow of investments into Indonesia. Between 1967 and 1990, more than US $ 38 billion were invested in Indonesia. These came largely from Japan (24.9%), Hong Kong (9.6%), Taiwan (5.9%), the USA (5.7%), and the Netherlands (5.1%).

Table 3.9: Total Foreign Investment by Countries

| Countries | 1967-1980 ($ million) | % | 1967-1990 ($ million) | % |
|---|---|---|---|---|
| J a p a n | 2,459 | 28.9 | 9,645 | 24.9 |
| Hong Kong | 663 | 7.8 | 3,731 | 9.6 |
| Taiwan | 94 | 1.1 | 2,302 | 5.9 |
| United States | 420 | 4.9 | 2,197 | 5.7 |
| Netherlands | 235 | 2.8 | 1,963 | 5.1 |
| South Korea | 88 | 1.0 | 1,863 | 4.8 |
| West Germany | 191 | 2.2 | 1,854 | 4.8 |
| Others | 4,367 | 51.3 | 15,123 | 39.1 |
| Total | 8,518 | 100 | 38,678 | 100 |

Source: CBS, Statistical Yearbook of Indonesia, various issues.

An interesting point found in Table 3.9 is the increasing share of Asian countries other than Japan. The three Asian "tigers" (Hong Kong, Taiwan and South Korea) increased their share from 9.9 percent in 1980 to 20.3 percent in 1990. This phenomenon reflects the increasing labor costs in these countries and lower wage rates in South-east Asia.[1]

[1]The average hourly wage of manufacturing workers in Hong Kong, Taiwan and South Korea in 1987 was $ 2.33 compared to $ 0.85 in South-east Asia (UNIDO, 1989).

Investment regulations require a joint venture between foreign and local investors as a pre-condition for a foreign firm to operate in Indonesia. Because of these regulations, local firms may gain valuable experience from involvement in a multinational company's operations.

## 6. Foreign Trade

The role of foreign trade in the Indonesian economy was small and relatively stable before 1970. The average share of total trade (exports plus imports) in GDP amounted to only 16 percent in the 1960s. Prior to 1966, the Indonesian government limited the economy's openness to international markets.

Table 3.10: Ratio of Trade Component on GDP (%)

| Year | Exports | Imports | Total Trade |
|---|---|---|---|
| 1970 | 12.7 | 12.1 | 24.8 |
| 1975 | 22.6 | 17.9 | 40.5 |
| 1980 | 30.1 | 17.4 | 47.5 |
| 1981 | 25.4 | 18.0 | 43.4 |
| 1982 | 20.9 | 18.9 | 39.8 |
| 1983 | 21.9 | 20.7 | 42.6 |
| 1984 | 23.7 | 17.2 | 40.9 |
| 1985 | 21.2 | 14.6 | 35.8 |
| 1986 | 18.0 | 14.9 | 32.9 |
| 1987 | 22.7 | 16.5 | 39.2 |
| 1988 | 23.6 | 16.7 | 40.3 |
| 1989 | 24.1 | 17.3 | 41.4 |
| 1990 | 23.9 | 20.3 | 44.2 |

Sources: IMF, International Financial Statistics, various issues.
CBS, Statistical Yearbook of Indonesia, various issues.

After the new government, or the "new order," took over in 1966, the economy was opened to international markets by inviting foreign investment and abandoning restrictions on obtaining foreign exchange. Ever since, foreign trade has played an important role in the economy. The share of total trade increased from 24.8 percent in 1970 to 44.2 percent in 1990, as seen in Table 3.10.

During the last twenty years, the share of total trade on GDP has fluctuated based on the condition of oil prices since revenue from oil exports contributed about 70 percent of the total exports earnings. When oil prices increased, as happened in 1975 and 1980, the share of total trade exceeded 40 percent. However, it declined below 40 percent when oil prices declined in 1986.

Table 3.11 shows figures for international trade since 1970. From 1970 to 1990, the export values increased by a factor of 23 and import values by a factor of 21.[1] During this period the export values grew at a rate of 17.0 percent and import values 16.6 percent per year, while world trade increased at a rate of 12.1 percent. Meanwhile, export volume grew at an annual rate of 4.6 percent while import volume grew at an annual rate of 10.2 percent over the same period. The higher growth of export and import values compared to volume created an increase in their unit value. Over the last two

---

[1]Export and import values are expressed in Free on Board (FOB) terms and Cost and Insurance for Freight (CIF) terms respectively, throughout unless noted otherwise.

Table 3.11: Indonesian Exports, Imports and Balance of Merchandise Trade

| Year | Exports | | Imports | | Balance of Trade |
|---|---|---|---|---|---|
| | value | volume | value | volume | value |
| 1970 | 1,108 | 44.1 | 1,002 | 4.3 | 106 |
| 1975 | 7,102 | 73.2 | 4,770 | 10,4 | 2,332 |
| 1980 | 21,909 | 92.5 | 10,834 | 18.2 | 11,075 |
| 1981 | 22,260 | 97.3 | 13,272 | 18.6 | 8,988 |
| 1982 | 22,328 | 98.4 | 16,859 | 23.5 | 5,469 |
| 1883 | 21,146 | 104.6 | 16,352 | 26.4 | 4,794 |
| 1984 | 21,888 | 105.9 | 13,882 | 23.7 | 8,006 |
| 1985 | 18,587 | 132.0 | 10,262 | 16.8 | 8,325 |
| 1986 | 14,805 | 148.1 | 10,718 | 19.2 | 4,087 |
| 1987 | 17,136 | 134.2 | 12,370 | 23.1 | 4,766 |
| 1988 | 19,218 | 115.4 | 13,249 | 21.5 | 5,969 |
| 1989 | 22,160 | 102.3 | 16,360 | 26.1 | 5,800 |
| 1990 | 25,675 | 107.6 | 21,834 | 30.3 | 3,841 |
| Compound growth rates | | | | | |
| 1970-1990 | 17.0 | 4.6 | 16.6 | 10.2 | |
| 1970-1980 | 34.8 | 4.2 | 26.9 | 15.5 | |
| 1980-1990 | 1.6 | 1.5 | 7.3 | 5.2 | |

Source: CBS, Statistical Yearbook of Indonesia, various issues.

Notes: Value in current US $ million
Volume in million metric ton

decade, unit value of exports and imports increased eleven and four times respectively.

Indonesia has experienced a huge favorable trade imbalance over the last twenty years. The amount of this imbalance increased from US $ 0.1 billion in 1970 to US $ 11.1 billion in 1980. Since 1980, the trade imbalance declined at a rate of 10 percent a year to about $ 3.8 billion in 1990.

During the last twenty-year period, there were boom years (1974-1980), when oil prices tripled in the world market, and recession years (1985-1987), when oil prices declined. Since 1987, the value of exports and imports showed signs of rebounding. Export values in 1989 returned to 1982 level and achieved a record high in 1990. In the last three years the growth of imports increased faster than the growth of exports, increasing the pressure on the balance of payments.

## 7. Exports and Economic Growth

Table 3.12 is suggestive of the positive links between export performance and economic growth. A high export growth rate during 1970-1980, averaging 27.9 percent per year, was associated with a high economic growth, 8.0 percent per year, over the same period. Conversely, a lower export growth rate from 1980 to 1990 was associated with a lower income growth at the same time. However, the strength of the linkage varied within the time covered with the 1980s become the strongest.

Table 3.12: The Relationship Between Real Export Growth and Economic Growth.

| Indicators | 1968-70 | 1970-80 | 1980-90 | 1968-90 |
|---|---|---|---|---|
| GDP growth average* | 6.8 | 8.0 | 5.5 | 6.4 |
| Export growth average* | 16.0 | 27.9 | 11.0 | 21.4 |

Sources: CBS, Statistical Yearbook of Indonesia, various issues.
IMF, International Financial Statistics, various issues.
* = Compound rate.

Estimating the independent contribution of exports to economic growth is not easy because it is unclear what the determinant is. Most studies assumed that export growth induces higher economic growth, although there is the possibility of a reverse relationship. Rapid economic growth may increase a country's export capacity (Goldstein and Khan, 1982). For example, economic growth increases various infrastructure facilities such as roads, transportation, and communications, which support exports. On the other hand, economic growth may also lead to a reduction in export growth if exportable goods are competitive in the domestic market. Increasing income may raise domestic consumption, leaving fewer goods available for export.

Several studies focused on the direction of the causality between exports and economic growth in developing countries, including Indonesia. For example, Jung and Marshal (1985)

tested the direction of causality by using the Granger method. By this method, the output growth rate is regressed on a constant, on past values of itself, and on past values of the export growth rate. The same treatment is also performed on export growth. The study limited the length of the lag to two for each right-hand side of the variables. Using data from 37 developing countries during 1950 to 1980,[1] they found that the causality was only detected in 14 countries (see Table 3.13).

Table 3.13: The direction of Causality Between Export Growth and Economic Growth in Developing Countries.

| Study by | Export growth causes economic growth | Economic growth causes export growth |
|---|---|---|
| Jung&Marshall 1950-1980 | Costa Rica, Egypt, Equador, Indonesia, Iran, Kenya, and Thailand. | Bolivia, Greece, Israel, Korea, Peru, Pakistan, and South Africa. |
| Bahmani-Oskooee et al. 1960-1985 | Dominican Republic*, El Salvador, Greece, Indonesia*, Korea*, Korea*, Morocco, Paraguay*, Peru, Taiwan, and Thailand*. | Dominican Republic*, Indonesia*, Korea*, Nigeria, Paraguay*, South Africa, and Thailand*. |

* = Countries with bidirectional causality.

[1]Actually Jung and Marshall used different time periods for each country according to the available of data. For example, they used data from 1966 to 1980 for Indonesia, data from 1953 to 1981 for Thailand, and data from 1950 to 1980 for the Dominican Republic.

Export growth caused economic growth in seven countries, and economic growth created export growth in seven countries.

According to Hsiao (1981), the use of the Granger test of causality suffered from arbitrariness in the choice of lags and the level of significance. To overcome these shortcomings, Hsiao suggested using a combination of Granger's causality test with Akaike's final prediction error (FPE) criterion (1970).

Bahmani-Oskooee, et al. (1991) utilized Hsiao's Granger-Akaike Synthesis for testing the causality in 20 developing countries from 1960 to 1985.[1] They found that causality ran from export growth to economic growth in ten countries and the reverse causality occurred in seven countries (see Table 3.13). Positive causality from export to economic growth was detected for two well-known cases of successful export promotion cases (Korea and Taiwan) and one moderately export promoting-country (Thailand). In contrast, their study failed to detect the causality in those countries pursuing import-substituting policies, such as Brazil and other South American countries. It is important to note that five countries, the Dominican Republic, Indonesia, Korea, Paraguay, and Thailand exhibited causality in both directions. In conclusion, Bahmani-Oskooee noted that export-led growth found some support.

---

[1]All 20 countries were also included in the Jung and Marshall's sample.

Both previous studies detected that the causality in Indonesia ran from export growth to income growth. To further confirm their findings, we replicate the study of Bahmani-Oskooee et al. by using Indonesian data during 1968-1990. This study tested two hypothesis:

(A) Export growth causes economic growth:

$$(A) \qquad Y_t = a + \sum_{i=1}^{M} b_i Y_{t-i} + \sum_{i=1}^{N} c_i X_{t-i} + u_t$$

(B) Economic growth causes export growth:

$$(B) \qquad X_t = d + \sum_{i=1}^{K} e_i X_{t-i} + \sum_{i=1}^{K} f_i Y_{t-i} + w_t$$

Where: $Y_t$ and $X_t$ are economic growth and export growth at period t respectively.

A two-step procedure was performed. First, we attempted to find the optimum number of lags that minimized FPE(m),

$$FPE(m) = \frac{T + m + 1}{T - m - 1} \cdot \frac{Q(m)}{T}$$

Where: T = the number of observations
m = the order of lags varying from 1 to M. The specific value of m, say m*, that minimize FPE.
Q = the value of sum squared of residual.

Second, we treated $Y_t$ as a control variable, with the optimum lag chosen from the first step. $X_t$ was treated as a manipulated variable, with a varying order of lags. This step was used to find the number of lags that minimized FPE(m,n):

$$FPE(m,n) = \frac{T + m + n + 1}{T - m - n - 1} \quad \frac{Q(m,n)}{T}$$

Where: T,m, and Q are equal to definitions in the first step.
n = the number of lag varying from 1 to N. The specific value of n, say n*, that minimize FPE (m*,n*)

This procedure concluded that the causality ran from export growth to economic growth if FPE(m*,n*) < FPE(m*). By repeating the same procedure for equation (b), we detected the direction of the causality from economic growth to export growth. The test results, from using Indonesian data during 1968-1990 are presented in Table 3.14.

Table 3.14: Testing of Causality Between Exports and Economic Growth in Indonesia.

| | Hypothesis A Export growth causes economic growth | Hypothesis B Economic growth causes export growth |
|---|---|---|
| Control variable | | |
| - variable | Y | X |
| - # of lags | 3 | 2 |
| - minimum FPE | 0.00082 | 0.10053 |
| Manipulated variable | | |
| - variable | X | Y |
| - # of lags | 1 | 3 |
| - minimum FPE | 0.00079 | 0.10374 |
| Sign of causality* | + | + |

* = Sign of causality is determined by totaling coefficient of lags of manipulated variable.

The data in Table 3.14 indicate that export growth affected economic growth in Indonesia during the period of study, since the value of minimum FPE in the manipulated variable (0.00079) is smaller than the value of minimum FPE the control variable (0.00082) of hypothesis A. In addition, the reverse direction of causality was not detected, since the value of minimum FPE in the manipulated variable (0.10374) is larger than minimum FPE value in the control variable (0.10053) of hypothesis B.[1]

Understanding the result of this study which demonstrated the causality from export growth to economic growth, we now will estimate the elasticity of exports on economic growth.

(a) Simple Regression.

A simple test of the role of exports on economic growth can be performed by using simple regression. In equation (1) we test the effect of export growth on income in Indonesia during 1968 to 1990. We also estimate elasticity of exports on income in the 1970s and the 1980s. We do not include lags of the independent variable since the preliminary test revealed that two lags of the independent variables were insignificant.

---

[1]It is important to note that the results of testing causality are very sensitive to the number of observations. However, the number of observations in this study (23) is larger than those of Jung and Marshall (19) and somewhat similar to that of Bahmani-Oskooee et al. (26).

$$(1) \quad \text{Log } Y = c + a \text{ Log } X$$

Where Y and X are GDP and exports respectively, both at constant prices.

Table 3.15 provides the results of regressions use data during 1968 to 1990. All export coefficients are positive and highly significant at the one percent level. The explanatory power of the regression is very large as seen from the value of the adjusted $R^2$.

Table 3.15: Regressions of Exports on Income.

| Period | Constant | Exports | Adjusted $R^2$ |
|---|---|---|---|
| 1968-1990 | 8.20 | 0.328 (28.62) | 0.97 |
| 1968-1980 | 8.64 | 0.269 (16.40) | 0.96 |
| 1980-1990 | 7.67 | 0.382 (9.91) | 0.90 |

Notes : Figures in parenthesis are t statistics.

Export growth makes a positive contribution to income growth; one percent increase in exports contributes 0.328 percent to growth in income over the period from 1968 to 1990. The elasticity of exports was smaller in the period from 1968 to 1980; only 0.269 compared to 0.382 in the following decade. Higher export elasticity in the 1980s was due to government-imposed trade liberalization during that decade. This liberalization affected other domestic economy aspects such as

interest rates, exchange rates and export procedures. This increased the economy's responsiveness to export performances, since economic liberalization directs the flow of resources from low productivity to high productivity.

(b) Neoclassical Model.

Michalopoulos and Jay (1973) pioneered the use of neoclassical models of growth to study the role of exports on economic growth in developing countries. They introduced variable exports in the production equation in addition to traditional inputs, labor and capital. This work spurred considerable research by Balassa (1978 and 1985), Tyler (1981), and Kavaoussi (1984). However, these studies used cross-section rather than time series data since the latter were unavailable. The model is:

$$(1) \qquad Y_t = A\,(K_d^a)_t\,(K_f^b)_t\,(L^c)_t$$

Where $Y$ = Income (GDP)
$K_d$ = Domestic Capital
$K_f$ = Foreign Capital
$L$ = Labor
$A$ = Constant

Differentiating (1) with respect to time and dividing through by the original equation, we obtain the following linear equation:

$$(2) \qquad \frac{dY_t/dt}{Y_t} = a\frac{d(K_d)_t/dt}{(K_d)_t} + b\frac{d(K_f)_t/dt}{(K_f)_t} + c\frac{d(L_t)/dt}{L_t}$$

Since

$$(2a) \qquad d(K_d)_t/dt = (K_d)_{t+1} - (K_d)_t = I_d$$

and

$$(2b) \qquad d(K_f)_t/dt = (K_f)_{t+1} - (K_f) = I_f$$

$I_d$ and $I_f$ represent investment for domestic and foreign sources respectively. We also assume that

$$(2c) \qquad K_d = k_d Y \quad \text{and}$$

$$(2d) \qquad K_f = k_f Y$$

where $k_d$ and $k_f$ are marginal propensity to invest domestically and foreign, respectively. Then: substituting (2a) - (2d) into (2) we obtain

$$(3) \qquad \frac{Y_{t+1}-Y_t}{Y_t} = a'\frac{(I_d)_t}{Y_t} + b'\frac{(I_f)_t}{Y_t} + c\frac{L_{t+1}-L_t}{L_t}$$

where

$$a' = \frac{a}{K_d}, \quad b' = \frac{b}{K_f}$$

Equations (4) and (5) are the main equations tested using data from developing countries.

$$(4) \qquad GDP = a\ DI + b\ FI + c\ L$$

$$(5) \qquad GDP = a\ DI + b\ FI + c\ L + d\ X$$

Where GDP = Growth of Income
DI = $I_d/Y$ and
FI = $I_f/Y$
L = Growth of labor
X = Growth of exports

To test the role of exports, we include the export variable in equation (5). The inclusion of exports into the regression does not mean that exports are inputs in the production function. The export variable may be seen as contributing to economic growth due to gains in productivity arising from increased competition, specialization and better resource allocation.

A summary of studies using the neoclassical model is presented in Table 3.16. All the studies prove that inclusion of the export variable into the equation raises the explanatory power of the regression, since the $R^2$ values increase in all studies. The export variables are statistically significant and different from zero at the 5 percent level in all studies except Tyler's. However, all studies are significant at the 10 percent level.

The export coefficient varies from a low of 0.04 in equation (1b) and (2b) to a high of 0.15 in equation (3b). The variation in the export coefficient arises from differences in the periods covered: it is higher in equation (3b) from 1973 to 1979, compared to equation (1b) from 1960 to 1969, and (2b) from 1960 to 1973.

Table 3.16: Summary of Regressions of Investment, Labor and Exports on Economic Growth

| No | Study by | Year | # of countries | Independent Variables C | DI | FI | I | L | X | $R^2$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1a | M&Jay (low and middle income LDC) | 1969-69 | 39 | | .25 (7.8)* | .20 (3.3)* | | .66 (2.4)* | | .53 |
| 1b | | | | | .24 (9.6)* | .12 (2.3)* | | .60 (2.8)* | .04 (4.8)* | .71 |
| 2a | Balassa (middle income LDC) | 1960-73 | 10 | | .18 (3.3)* | .30 (2.4)* | | 1.09 (1.7)** | | .58 |
| 2b | | | | | .15 (3.3)* | .23 (2.4)* | | .97 (2.0)* | .04 (3.6)* | .77 |
| 3a | Balassa (Non-OPEC low and middle income LDC) | 1973-79 | 41 | -14.0 (-1.1) | .18 (3.6)* | .07 (1.0) | | 1.16 (1.8)** | | .31 |
| 3b | | | | -6.8 (-5.2)* | .12 (2.2)* | .04 (.5) | | .98 (1.5) | .15 (2.0)* | .42 |
| 4a | Tyler (Non-OPEC middle income LDC) | 1960-77 | 37 | 2.0 | | | .29 (7.0)* | 1.02 (2.6)* | | .68 |
| 4b | | | | 2.0 | | | .26 (5.9)* | .95 (2.6)* | .05 (1.6)** | .71 |
| 5a | Kavaoussi (low and middle income LDC) | 1960-78 | 73 | 2.1 (3.9)* | | | .29 (6.9)* | .44 (1.7)** | | .49 |
| 5b | | | | 2.0 (4.0)* | | | .24 (5.8)* | .40 (1.7)** | .10 (3.7)* | .57 |

Notes : The figures in parentheses are t statistics.
* = Significant for at least 5% level
**= Significant for at least 10% level.

The role of exports for developing countries was more important in the 1970s than in the 1960s, since more countries opened to the world market. Some countries in South Asia, South America and Africa liberalized their trade regimes in the 1970s (Lal and Rajapatirana, 1987). Salvatore and Hatcher (1991) confirmed that the role of exports on economic growth in developing countries was larger in the period 1973 to 1985 compared to the period 1963 to 1973. Data from UNCTAD (1990) illustrated that real exports and income of developing countries grew at 7.8 percent and 5.8 percent annually in the 1960s, when exports grew only 1.3 percent and income 5.6 percent annually in the following decade.

Krueger (1978) noted that trade liberalization in the 1970s, besides the liberalized export sector, also covered other economic aspects such as foreign exchange and interest rates. All liberalization attempts would increase the responsiveness of the economy of developing countries to export performance.

Tyler and Kavaoussi preferred to use total capital instead of differentiating between domestic and foreign capital. The results, however, do not differ.

This study attempts to utilize the above model for Indonesian data from 1968 to 1990. The GDP data come from IMF publications. Following earlier studies, we use the current account balance as a proxy for foreign investment. Domestic investment is a residual between gross capital formation and

foreign investment. Sources of data are in appendix 1. We use population growth as a proxy for the labor force because labor force data are not always available. Even if such data were available, population growth may give a better result (Ram 1985). All data are expressed in constant values. The results of regression analysis are presented in Table 3.17.

Table 3.17: Regression of Domestic Capital, Foreign Capital, Labor and Exports on Economic Growth.

| Dependent Variable | Independent Variables | | | | Adjusted $R^2$ | D-W |
|---|---|---|---|---|---|---|
| | DI | FI | Labor | Exports | | |
| Y | 0.35 | 0.85 | 2.78 | | 0.32 | 2.11 |
| | (1.98) | (2.90) | (8.91) | | | |
| Y | 0.37 | 0.71 | 2.45 | 0.02 | 0.42 | 2.46 |
| | (2.32) | (2.57) | (7.56) | (2.16) | | |

Notes: The figures in parentheses are t statistics.
D-W = Durbin-Watson statistics.

All coefficients of independent variables are positive and statistically different from zero at the 5 percent level. This suggests that domestic investment, foreign investment, and labor contribute to income growth. However, the independent variables taken together explain only 32 percent of the variation in income growth. Inclusion of the export variable increases the explanatory power of the regression from 0.32 to 0.42.

The lower $R^2$ value in this study, compared to some previous studies, may be explained by the difference in the

time covered and the level of income of the countries included in the studies. All previous studies covered the period from 1960 to 1979 while this study covered the period from 1968 to 1990. The 1960s and 1970s included the period where developing countries experienced high export and income growth. Therefore, inclusion of exports possibly gave higher $R^2$ values in the regression analyses of developing countries.

In addition, the value of $R^2$ may be related to the level of income. Table 3.16 shows that regressions covering middle income LDCs (regressions 2b and 4b) gave higher $R^2$ value compared to the aggregation of low and middle income LDCs (regressions 1b; 3b; and 5b). Ram (1985) pointed out that the impact of export performance on economic growth is higher in middle income LDCs than that of low income LDCs. Therefore, the explanatory power of exports to explain the variation of economic growth could be higher in the former than in the latter. This may be why the $R^2$ value of regression in this study (Indonesia is a low income LDC) is lower than those in the previous studies.

Moreover, economic growth may caused by the growth of non-export sectors such as improvement in financial institutions, tax regulations, and infrastructures that could lower the $R^2$ value of regression of Indonesian data compared to those of other developing countries

Inclusion of the export variable also raises the t statistics value of domestic investment and reduces the t

statistics values of foreign investment and labor. However, all independent variables remain statistically significant at the 5 percent level.

The value of export coefficient is 0.02 meaning an increase of one percentage point in export growth leads to a 0.02 percentage point increase in income. However, the export coefficient in this regression is smaller than those studies using a similar model (see Table 3.16). There are some possible explanations for this difference. First, all the studies used pooled data, cross-section and short time-series. This approach explains only the variation among developing countries in the short period covered.[1] However, time series data in this study cover a longer period and capture the dynamic effects of exports in the economy. Second, some countries covered in previous studies went through trade liberalization in the 1970s, while Indonesia liberalized her trade regime later in the early 1980s.

It is possible that serial correlation may be found in the regression when we use time series data. However, in this study we do not find serial correlation since the Durbin-Watson (D-W) value of regressions vary from 2.11 to 2.46.[2]

---

[1]One can not expect identical results for cross-section and time-series analysis (Eckaus, 1978).

[2]Serial correlation will be found in the regression (n=23 and three independent variables) if value of D-W is less than 1.03 or larger than 2.93. See Kmenta (1986).

## 8. Summary and Conclusions.

Indonesia has experienced high economic growth in the last twenty years. This doubled per capita income in less than one generation, from Rp. 300,000 in 1970 to Rp. 735,000 in 1990, despite high population growth. Consequently, the incidence of poverty also declined sharply. Structural change also occurred as the share of agriculture in GDP declined and manufacturing increased. However, the transformation of employment from agricultural to manufacturing sector was extremely slow. This reflects the fact that the industrialization of the last two decades failed to absorb the majority of employment that left agricultural sector.

The role of trade became more important in the economy, reflecting the increasing share of total trade in the GDP. The higher degree of openness to trade led to two consequences: the Indonesian economy's performance became more dependent on the international market, and the possibility of increasing productivity of domestic economy through competition and specialization.

Of the many factors which may contribute to high economic growth such as investment (both domestic and foreign), technical change, etc, this study focuses on the role of exports; an important factor in explaining the growth of income in the last two decades. This assertion is supported by the positive and significant elasticity of exports in the

regressions shown above. In addition, this study also shows that causality ran from export growth to economic growth.

However, the export coefficient was lower in Indonesia when compared to the average developing country. The difference possibly comes from two sources: (a) the previous studies used cross-sectional data while this study used time-series data; and (b) trade liberalization in Indonesia began early in the 1980s while many developing countries liberalized their trade regimes during the 1960s or 1970s.

The results are not inconsistent with the neoclassical economic theory, which asserted exports enhance productivity through increased competition, specialization, and improved resource allocation. Opening up to international trade will increase market size and scope for specialization. Market expansion will also direct resource flows towards the production of goods in which a country has a comparative advantage; from activities characterized by low marginal productivity toward those with higher marginal productivity. All of these increase the economy's overall productivity.

Based on this understanding of the positive and significant contributions of exports to the Indonesian economy, the next chapter discusses the magnitude of Indonesian exports and strategies to increase exports.

# CHAPTER FOUR

## CHARACTERISTICS OF INDONESIAN FOREIGN TRADE

Indonesian foreign trade is similar to other developing countries. Most exports are primary goods and most imports are manufactured goods. Table 4.1 shows the composition of merchandise trade in three main classifications (non-fuel primary products, mineral fuels, and manufactured goods) from 1970 to 1990.

Table 4.1: Composition of Exports and Imports by Main Classification (%).[1]

| Classification | 1970 | | 1980 | | 1990 | |
|---|---|---|---|---|---|---|
| | X | M | X | M | X | M |
| Non-Fuel Primary Products | 65.8 | 20.1 | 22.4 | 18.8 | 20.5 | 14.8 |
| Mineral Fuels | 32.8 | 22.4 | 71.9 | 16.2 | 43.8 | 8.9 |
| Manufactured | 1.4 | 57.5 | 5.7 | 65.0 | 35.7 | 76.3 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 |

Source: CBS, Statistical Yearbook of Indonesia, various issues.
Notes: X = Exports and M = Imports.

[1]See appendix 2 for the classification of exports according to Standard International Trade Classification (SITC).

Exports in the 1970s were mainly non-fuel primary goods. Their share of total exports declined sharply from 65.8 percent in 1970 to 20.5 percent in 1990. Mineral fuels dominated exports from the mid-1970s to mid-1980s when their share averaged about 70 percent of total exports. The role of manufactured goods in total exports was very small in the 1970s, but has increased considerably since 1980. In 1990, the contribution of manufactured goods to total export earnings achieved a record high of 35.7 percent.

Imports, mostly manufactured goods, showed an increased from 57.5 percent in 1970 to 76.3 percent in 1990. Imports of non-fuel primary products declined slightly, from 20.1 percent to 14.8 percent over the same period. Even though Indonesia is a member of OPEC, its mineral fuel imports were large, amounting to 22.4 percent of the total in 1990. The reason for this was the inability of domestic oil refineries to fulfill domestic demands for gasoline. At that time, Indonesia exported crude petroleum and imported gasoline and other manufactured petroleum products. Mineral fuel imports have declined sharply to only 8.9 percent of the total imports in 1990 due to an increase in the capacity of domestic oil refinery facilities.[1]

---

[1]During the last two decades, Indonesia expanded domestic refinery capacity more than threefold; from 0.26 million barrel/day (m.b.d) in 1970 to 0.83 m.b.d. in 1990 (Republik Indonesia, 1990).

Table 4.2: Value and Volume of Exports 1970-1990

| | Mineral Fuels | | Non-Fuels | | Total | |
|---|---|---|---|---|---|---|
| | value | volume | value | volume | value | volume |
| 1970 | 346 | 34.2 | 709 | 9.6 | 1,108 | 44.1 |
| 1972 | 913 | 45.1 | 864 | 15.9 | 1,777 | 61.2 |
| 1974 | 5,211 | 60.3 | 2,215 | 20.6 | 7,426 | 80.9 |
| 1975 | 5,338 | 56.7 | 1,792 | 16.5 | 7,130 | 73.2 |
| 1976 | 6,014 | 63.4 | 2,533 | 20.3 | 8,547 | 83.7 |
| 1978 | 7,986 | 74.1 | 3,477 | 27.2 | 11,463 | 101.3 |
| 1979 | 10,166 | 66.0 | 5,424 | 32.3 | 15,590 | 98.3 |
| 1980 | 15,743 | 68.6 | 6,166 | 23.9 | 21,909 | 92.5 |
| 1981 | 17,764 | 78.6 | 4,496 | 18.7 | 22,260 | 97.3 |
| 1982 | 18,373 | 69.3 | 3,955 | 29.1 | 22,328 | 98.4 |
| 1983 | 16,153 | 70.4 | 4,993 | 34.2 | 21,146 | 104.6 |
| 1984 | 16,045 | 73.1 | 5,843 | 32.8 | 21,888 | 105.9 |
| 1985 | 12,757 | 60.1 | 5,830 | 71.9 | 18,587 | 132.0 |
| 1986 | 8,310 | 68.9 | 6,495 | 79.2 | 14,805 | 148.1 |
| 1987 | 8,582 | 66.4 | 8,553 | 67.8 | 17,135 | 134.2 |
| 1988 | 7,723 | 66.9 | 11,495 | 48.5 | 19,218 | 115.4 |
| 1989 | 8,760 | 71.0 | 13,480 | 31.3 | 22,160 | 102.3 |
| 1990 | 11,239 | 74.0 | 14,436 | 33.6 | 25,675 | 107.6 |
| Average growth | | | | | | |
| 1970-1990 | 19.0 | 3.9 | 16.3 | 6.3 | 17.0 | 4.6 |
| 1970-1980 | 46.5 | 7.2 | 24.1 | 9.2 | 34.8 | 4.2 |
| 1980-1990 | -3.3 | 0.8 | 8.9 | 3.5 | 1.6 | 1.5 |

Source: CBS, Statistical Yearbook of Indonesia, various issues.

Note: Value in current US $ million and volume in million ton.

Indonesia's foreign trade contribution to world trade is still small, due to its modest economy. In 1990, Indonesian exports amounted to only 0.7 percent of world trade. Nonetheless, this figure increased almost twofold from 0.4 percent in 1970.

1. Exports.

Since 1970, exports have been important to Indonesian's economy. Table 4.2 shows the expansion of exports from 1970 to 1990. Both the value and volume of mineral fuel exports grew at an annual rates of 19.0 percent and 3.9 percent respectively, during the period from 1970 to 1990. However, the value has increased only prior to 1982, and has declined since that time. The oil export revenues reached their peaks in 1982, then declined to their lowest point in 1988, when oil prices dropped in the world market.

The share of fuels in total exports increased from less than one third in 1970 to about three-fourths in 1980. The predominant role of mineral fuels on export earnings, which accounted for about 80 percent in the early 1980s, has been greatly eroded; partly by steep declines in oil prices and partly by the emergence of new exports.

.Unlike mineral fuels the value of non-fuel exports has grown steadily during 1970 to 1990, except briefly in 1974 to 1975 and 1980 to 1982. Their value and volume increased from 1970 to 1990 at annual rates of 16.3 percent and 6.3 percent

respectively. Indonesia suffered a "Dutch disease"[1] during 1974 to 1975 and 1980 to 1982, when the value of non-fuel exports declined significantly. However, the effects of the Dutch disease phenomenon in the Indonesian economy was less significant than for other OPEC countries, such as Nigeria and Iran (Sundrum, 1988). This occurred because Indonesia responded rapidly to prevent further disturbance to the domestic economy. The government implemented appropriate macroeconomic policies such as careful exchange rate management and inflation rate controls.

Decreasing fuel export values between 1982 and 1988 was compensated by increases in non-fuel exports since 1982, due to a negative relationship between earnings from fuel and non-fuel exports from 1979 to 1987. When oil prices declined, oil export revenues decreased and non-fuel export revenues increased. This reverse effect on non-fuel exports may have been caused by a higher demand from industrialized countries, since lower oil prices often reduce inflation and increase income growth in developed countries.

(a) Exports of Mineral Fuels

Exports of mineral fuels consist of crude petroleum and liquefied natural gas (LNG). Since Indonesia did not have

---

[1]"Dutch disease" refers to an adverse impact on non-resource exports resulting from a boom in the resource sector.

Table 4.3: Exports of Mineral Fuels

| Year | Crude Petroleum and Products | Natural Gas | Others | Total |
|---|---|---|---|---|
| | ------- US $ million -------- | | | |
| 1970 | 346 | - | - | 346 |
| 1971 | 478 | - | - | 478 |
| 1972 | 913 | - | - | 913 |
| 1973 | 1,609 | - | - | 1,609 |
| 1974 | 5,211 | - | - | 5,211 |
| 1975 | 5,338 | - | - | 5,338 |
| 1976 | 6,014 | - | - | 6,014 |
| 1977 | 7,298 | 80 | 1 | 7,379 |
| 1978 | 7,438 | 547 | 1 | 7,986 |
| 1979 | 8,871 | 1,293 | 2 | 10,166 |
| 1980 | 12,859 | 2,881 | 3 | 15,743 |
| 1981 | 14,393 | 3,366 | 5 | 17,764 |
| 1982 | 15,458 | 2,905 | 9 | 18,373 |
| 1983 | 13,558 | 2,583 | 12 | 16,153 |
| 1984 | 12,477 | 3,541 | 27 | 16,045 |
| 1985 | 9,083 | 3,635 | 39 | 12,757 |
| 1986 | 5,501 | 2,776 | 33 | 8,310 |
| 1987 | 6,157 | 2,399 | 26 | 8,582 |
| 1988 | 5,189 | 2,493 | 42 | 7,723 |
| 1989 | 6,060 | 2,618 | 82 | 8,760 |
| 1990 | 7,415 | 3,677 | 147 | 11,239 |

Sources: UN, International Trade Statistics Yearbook. various issues
CBS, Statistical Yearbook of Indonesia, Various issues.

domestic refinery facilities, its exports consisted of mostly crude petroleum. LNG exports began in 1977 as a result of the discovery of natural gas in some parts of the country. Utilization of LNG became more popular in the last decade, since this source of energy creates less pollution than petroleum. World consumption of natural gas increased 86.5 percent from 1971 to 1989, while oil consumption only increased 29.8 percent (OECD, 1991).

Revenue from exports of mineral fuels increased sharply during the period 1974 to 1982 due to a jump in oil prices. When oil prices dropped in 1986, revenue from petroleum and its products declined significantly as seen in Table 4.3.

Petroleum earnings depend on prices set by the OPEC cartel in the oil market. The cartel, of which Indonesia is a member, determines aggregate export volume and each member's quota. OPEC members meet twice a year to decide on the quota allocations.

OPEC exercised its power successfully to increase the price of oil several times in the 1970s by reducing total production. The first increase of 240 percent occurred in 1974 during the oil embargo by Middle East oil exporters. At that time, oil prices increased from $4.8 to $11.7 per barrel, as seen in Table 4.4. The second crisis in 1979 increased oil prices from $13.5 to $19.7 per barrel. Oil prices increased again in 1980 and 1981 to an all-time high of $35.0 per barrel.

Table 4.4: Average Prices of Crude Petroleum in the International Market.

| Year | Price ($/barrel) | |
|---|---|---|
| | Current Prices | Real Prices |
| 1970 | 2.6 | 12.8 |
| 1973 | 4.8 | 13.2 |
| 1974 | 11.7 | 26.2 |
| 1975 | 12.8 | 25.8 |
| 1976 | 12.8 | 21.4 |
| 1977 | 13.5 | 20.4 |
| 1978 | 13.5 | 19.0 |
| 1979 | 19.1 | 22.5 |
| 1980 | 29.5 | 29.5 |
| 1981 | 35.0 | 31.2 |
| 1982 | 34.5 | 28.0 |
| 1983 | 29.5 | 21.4 |
| 1984 | 29.5 | 19.4 |
| 1985 | 28.5 | 17.9 |
| 1986 | 13.8 | 8.2 |
| 1987 | 17.8 | 9.7 |
| 1988 | 14.1 | 7.1 |
| 1989 | 17.2 | 8.1 |
| 1990 | 22.1 | 9.1 |

Sources: IMF, International Financial Statistics, various issues.
CBS, Monthly Statistical Bulletin, various issue

Note: Real prices are obtained by deflating through world Consumer Price Index (CPI), 1980 = 100.

However, the high oil prices encouraged non-members to increase their production. It also encouraged energy conservation and reduced demands for oil.[1] The OPEC's share of world oil trade declined from 73 percent in 1970 to 60 percent in 1990, and its power thereby eroded. OPEC's efforts to regain an oil monopoly has been unsuccessful.[1] Oil prices have declined since 1981, and reaching their lowest levels in a decade by 1986. Real price of oil in 1990 was less than one third of its 1981 value.

The political situation in the Middle East, accompanied by speculation regarding the availability of oil supplies from that region also affected oil prices. These fears were realized in late 1990, when Iraq invaded Kuwait.

Indonesia's contribution to world petroleum exports was small, averaging 5.9 percent in the 1980s. OPEC managed to keep its share for all members constant in the world market. By contrast, the natural gas industry is not subject to any cartel. Indonesia managed to increase its share in world exports of natural gas from 3.3 percent in 1978 to 13.3 percent in 1989. This made Indonesia the third largest natural gas exporting country after Canada and Algeria.

---

[1]The industrial countries reduced their energy demands per dollar GNP by 23 percent between 1970 and 1987 (World Bank 1991).

[1]OPEC shows a poor record of member discipline with respect to obeying quota allocations, especially in the 1980s.

Indonesian proven crude-petroleum reserves was estimated at 8.2 billion barrels (OECD, 1991). At current levels of production, Indonesia can provide for both export and domestic needs for approximately another twenty years. Real reserves are much higher than proven reserves, however, since new exploration for oil continues to find new oil fields, especially off-shore reserves.

(b) Exports of Non-Fuels

Exports of Non-fuels consist of primary commodities and manufactured goods. Primary commodities may be grouped into: (a) food items (b) agriculture raw materials, and (c) ores and metals. Exports of manufactures are mainly plywood and light industry such as textiles, clothing, and footwear.

The performance of primary products was not impressive. Their export value increased by an annual rate of 23.4 percent in the 1970s but flattened out in the 1980s. Within the primary category the growth of food items was the fastest, being 14.0 percent a year during 1970 to 1990. Agricultural raw materials experienced the smallest growth at 6.5 percent, and even declined during 1980-1990 (see Table 4.5). The five agricultural commodities; natural rubber, coffee, tea, palm oil, and timber, were traditionally dominant. Their share of total exports declined from 61.4 percent in 1970 to 16.2 percent in 1990, although total export

Table 4.5: Exports of Non-Fuels by Commodity Classification

| Year | Primary Commodities | | | | Manufactures | Others | Total |
|---|---|---|---|---|---|---|---|
| | Food item | Agr. raw materials | Ores/ metals | Total | | | |
| | ------ US $ million ------ | | | | | | |
| 1970 | 206 | 368 | 120 | 694 | 12 | 3 | 709 |
| 1975 | 564 | 895 | 248 | 1,707 | 85 | - | 1,792 |
| 1980 | 1,676 | 3,130 | 859 | 5,665 | 501 | - | 6,166 |
| 1981 | 1,129 | 1,831 | 804 | 3,764 | 672 | 60 | 4,496 |
| 1982 | 1,084 | 1,285 | 684 | 3,053 | 808 | 59 | 3,920 |
| 1983 | 1,303 | 1,338 | 741 | 3,382 | 1,373 | 238 | 4,993 |
| 1984 | 1,592 | 1,376 | 782 | 3,750 | 1,929 | 164 | 5,843 |
| 1985 | 1,852 | 1,113 | 790 | 3,755 | 2,043 | 32 | 5,830 |
| 1986 | 2,011 | 1,143 | 674 | 3,828 | 2,637 | 30 | 6,495 |
| 1987 | 2,046 | 1,559 | 748 | 4,353 | 3,895 | 27 | 5,553 |
| 1988 | 2,612 | 1,987 | 1,213 | 5,812 | 5,364 | 318 | 11,495 |
| 1989 | 2,653 | 2,133 | 1,421 | 6,207 | 7,017 | 256 | 13,480 |
| 1990 | 2,853 | 1,301 | 1,119 | 5,273 | 9,041 | 122 | 14,436 |
| Average growth | | | | | | | |
| 1970-90 | 14.0 | 6.5 | 11.8 | 10.7 | 39.3 | 20.3 | 16.3 |
| 1970-80 | 23.3 | 23.9 | 21.7 | 23.4 | 45.2 | na | 24.1 |
| 1980-90 | 5.5 | -8.4 | 2.6 | 0.9 | 30.2 | na | 8.9 |

Sources: UN, International Trade Statistics Yearbook, various issues.
CBS, Statistical Yearbook of Indonesia, various issues.
CBS, Indonesian Foreign Trade Statistics, various issues.

earnings and unit values increased. This reflects the fact that their growth was much less than other commodities.

Unstable export earnings from primary products during 1970 to 1990 were due to unstable prices in the world market and the appreciation of exchange rates, which worsened Indonesian competitiveness.

Table 4.6: Index Prices of Selected Agricultural Commodities Exported by Indonesia.

| Year | Rubber | Coffee | Tea | Tobacco | Palm oil | Average | CPI |
|---|---|---|---|---|---|---|---|
| 1970 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1975 | 141 | 143 | 187 | 129 | 162 | 152 | 244 |
| 1980 | 349 | 298 | 457 | 177 | 225 | 301 | 491 |
| 1981 | 270 | 229 | 386 | 200 | 220 | 261 | 551 |
| 1982 | 215 | 248 | 350 | 227 | 172 | 242 | 604 |
| 1983 | 266 | 253 | 354 | 230 | 193 | 259 | 675 |
| 1984 | 235 | 279 | 333 | 230 | 281 | 272 | 746 |
| 1985 | 198 | 264 | 314 | 229 | 193 | 240 | 781 |
| 1986 | 196 | 337 | 305 | 203 | 99 | 228 | 826 |
| 1987 | 209 | 212 | 271 | 195 | 132 | 204 | 903 |
| 1988 | 232 | 227 | 284 | 202 | 168 | 223 | 976 |
| 1989 | 232 | 180 | 319 | 216 | 135 | 216 | 1039 |
| 1990 | 239 | 145 | 322 | 221 | 112 | 208 | 1116 |

Source: IMF, International Financial Statistics, various issues

Table 4.6 shows the price indices of selected commodities in the world market. The price indices of all major commodities exported by Indonesia increased in the last twenty years. However, the purchasing power of agricultural sector exports declined sharply compared to general prices. The average price index of all commodities increased by a factor

of 2.08, while the consumer price index in Indonesia increased by a factor of 11.1. The index price for tea increased by a factor of 3.2 while the index for palm oil increased by a factor of only 1.1.

Many exports of traditional commodities have changed structurally from primary products to manufactured exports. A good example is found within the timber industry. In the 1970s, Indonesia exported mostly lumber, but changed to sawed wood, plywood, furniture, and pulp and paper.[1] This structural change increased value added for the domestic economy which also increased job creation.

Export earnings from manufactured goods grown rapidly in the last two decades. Starting from a small base, the value of manufactures increased by an annual rate of 39.3 percent from 1970 to 1990. This growth increased the share of manufactured goods to total exports from 1.4 percent in 1970 to 35.7 percent in 1990.

The strong performance of manufactured goods exports during the 1980s (mainly textiles, clothing, footwear, and plywood) was caused in part by favorable world demand, and in part by the outward shift of industrial policy and economic deregulation. Deregulation of the economy not only reduced interest rates and tariffs on imported inputs, but also simplified export procedures for doing business.

---

[1]This subject will be discussed further in the next chapter.

(c) Commodity Concentration

Exports have increased not only in volume and value, but also in variety. Table 4.7 shows the number of commodities exported in the three-digit SITC from 1980 to 1990. The number increased from 149 in 1980 to 247 in 1990. Moreover, the number of commodities sharing in total exports greater than one percent increased from 10 to 25 over the same period.

Table 4.7: Commodity Concentration of Exports.

| | 1980 | 1985 | 1990 |
|---|---|---|---|
| Number of Commodities* | | | |
| - Total | 149 | 192 | 247 |
| - Over 1% share | 10 | 13 | 25 |
| Share of | | | |
| - The largest one (%) | 53.3 | 44.4 | 24.2 |
| - The largest three (%) | 73.5 | 69.0 | 41.8 |
| - The largest ten (%) | 93.5 | 83.1 | 66.6 |
| Hirschmann Coefficient[1] | 0.60 | 0.45 | 0.26 |

Source: CBS, Indonesian Foreign Trade Statistics, various issues.
* = three digit SITC.

From 1980 to 1990, exports became less concentrated. In 1980, one commodity contributed to 53.3 percent of the total export values, but in 1990 its contribution declined to 24.2 percent. Moreover, the share of the ten largest commodities

[1]The Hirschmann coefficient is a method to measure the commodity concentration of exports. The values range from 0 to 1. A higher value reflects a higher degree of concentration. See appendix 3 for the Hirschmann formula (UNCTAD, 1991).

in terms of export value declined from 93.5 percent in 1980 to 66.6 percent in 1990. In addition, the Hirschmann coefficient declined from 0.60 in 1980 to 0.26 in 1990. This demonstrates that the degree of commodity concentration has significantly fallen.

None of the top ten making the largest contribution in exports in 1980 were manufactured goods, but in 1990 five of the top ten were manufactured goods. This figure revealed that structural change occurred in the export sector moving toward an increasing role for manufacturing.

2. Imports

Imports may be divided into three categories; consumption goods, raw materials and auxiliary goods, and capital goods as seen in Table 4.8. The total value of imports increased by an annual rate of 16.5 percent during 1970-1990. The annual growth of consumption goods' imports was the smallest, at 6.4 percent, and raw material imports was the largest, at 20.2 percent, over the same period.

Since the 1970s, the ratio of consumption good imports on total imports declined significantly, both in absolute and relative value, due to increased self-sufficiency in food production. In the early 1980s, rice production exceeded domestic demand. Previously, Indonesia was the largest rice-importing country in the world.

Table 4.8: Imports by Economic Categories.

| Year | Consumption Goods | Raw Material Goods | Capital Goods | Total |
|---|---|---|---|---|
| | | US $ million | | |
| 1970 | 251 | 377 | 374 | 1,002 |
| 1975 | 677 | 1,961 | 2,131 | 4,769 |
| 1980 | 1,414 | 7,932 | 1,488 | 10,834 |
| 1981 | 807 | 10,446 | 2,019 | 13,272 |
| 1982 | 1,236 | 12,591 | 3,032 | 16,859 |
| 1983 | 1,726 | 11,732 | 2,894 | 16,352 |
| 1984 | 825 | 10,482 | 2,574 | 13,881 |
| 1985 | 380 | 8,160 | 1,719 | 10,259 |
| 1986 | 448 | 8,364 | 1,906 | 10,714 |
| 1987 | 461 | 9,474 | 2,436 | 12,371 |
| 1988 | 469 | 10,223 | 2,556 | 13,247 |
| 1989 | 689 | 11,905 | 3,765 | 16,359 |
| 1990 | 877 | 14,893 | 6,067 | 21,837 |
| Growth Rate* | | | | |
| 1970-1990 | 6.4 | 20.2 | 14.9 | 16.5 |
| 1970-1980 | 18.9 | 35.6 | 14.8 | 26.9 |
| 1980-1990 | -4.7 | 6.5 | 15.1 | 7.3 |

Source: CBS, Statistical Yearbook of Indonesia, various issues.
* = Compound annual rate.

Capital goods and raw materials imports are the most important of all imported goods, since these support the country's industrial development. The share of these goods amounted to 95 percent of total import values in the 1980s. In the 1970s, the industrial sector was highly protected in order to establish a strong base of industrial development. To achieved this goal the government imposed high tariff rates on final goods and encouraged domestic or foreign

entrepreneurs to invest in import-substitution type industries. As a result, imports of raw materials and capital goods increased by annual rates of 35.6 percent and 14.8 percent respectively in the 1970s.

In the 1980s, the government shifted to an outward-looking policy, emphasizing industrial expansion, primarily for external markets, by using domestic sources of raw materials. As a result, capital goods imports in the 1980s increased at an annual rate of 15.1 percent. Raw materials imports increased annually at 6.5 percent.

Raw materials imports consist of chemicals, spare parts and accessories, fuel and lubricants, and food and beverages, mainly for various domestic industry. Their share of total imports increased significantly from 37.7 percent in 1970 to 73.2 percent in 1980. However, their shares declined to 68.2 in 1990 despite an increase in absolute value.

Capital goods imports consist of transport equipment for industry, passenger cars, and other machinery. Imports of these goods showed a tendency to decline from 1975 to 1985, then increased after 1986. The reason for this rapid increase of capital goods imports in recent years has to do with a massive increase in private foreign investment in Indonesia.

3. Trade Partners.

Japan and the USA, in that order, are the most important destinies for Indonesian exports (see Table 4.9). In 1990,

they absorbed about 55 percent of its exports, compared to 40 percent in 1970.

Indonesian dependence on Japan and the USA rendered its economy vulnerable to fluctuations in their demand.[1] This encouraged the Indonesian government to look for alternative markets in Australia and Asia. Since 1980, exports to South Korea, Taiwan, and Hong Kong have increased considerably.

Table 4.9: Direction of Exports and Origin of Imports (%).

| Countries/ Regions | 1970 | | 1980 | | 1990 | |
|---|---|---|---|---|---|---|
| | Exports | Imports | Exports | Imports | Exports | Imports |
| Countries | | | | | | |
| Japan | 29.4 | 29.4 | 49.2 | 31.2 | 42.5 | 24.3 |
| USA | 10.9 | 17.8 | 19.6 | 13.0 | 13.1 | 11.5 |
| EEC | 12.5 | 21.6 | 6.3 | 13.0 | 11.8 | 18.6 |
| Singapore | 14.9 | 5.7 | 11.3 | 6.6 | 7.4 | 5.8 |
| S.Korea | 1.8 | 0.2 | 1.3 | 2.2 | 5.3 | 4.6 |
| Taiwan | 0.7 | 2.2 | 1.2 | 1.8 | 3.3 | 6.2 |
| Hong Kong | 0.9 | 2.3 | 0.7 | 1.3 | 2.4 | 1.2 |
| Others | 28.9 | 20.8 | 10.4 | 28.0 | 14.2 | 27.9 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 |
| Regions | | | | | | |
| LDC | 31.3 | 31.2 | 20.2 | 29.9 | 29.2 | 33.3 |
| Asia/Pacific | 70.8 | 53.0 | 66.3 | 54.4 | 72.4 | 55.1 |
| -ASEAN | 21.1 | 7.5 | 12.6 | 12.5 | 9.8 | 8.4 |
| Eastern Europe | 2.5 | 0.6 | 0.7 | 0.7 | 1.0 | 1.0 |

Sources: IMF, Direction of Trade Statistics, various issues.
CBS, Statistical Yearbook of Indonesia, various issues.

[1]Massell (1970) argued that geographical concentration of export sales results in greater export instability.

Exports to Eastern European countries have been modest, but have high potential due to economic and political reforms since 1989.

The declining share of exports to Singapore (from 14.9 percent in 1970 to 7.4 percent in 1990) demonstrates a tendency to bypass transit countries through increased direct shipment to final destinations.

Overall, exports to developing countries are not impressive, and have declined from 31.3 percent in 1970 to 29.2 percent in 1990. Within this group, exports are concentrated to a few countries such as South Korea, Taiwan, Singapore, and Hong Kong. In 1990, exports to these countries constituted about two-thirds of the total exports to developing countries.

Unlike exports, the share of origin of imports is more diversified. No single country is a dominant supplier. The shares of imports from Japan, the USA, and the EEC declined between 1970 and 1990 from 68.8 percent to 54.4 percent of the total. Meanwhile, the shares for Asia and the Pacific (excluding Japan) have increased.

One must note Indonesia's close relationship with the Asian and Pacific economies. In 1990, 72.4 percent of export earnings and 55.1 percent of imports came from these regions. This represents a significant increase compared to earlier years and is a key feature of changing economic relations.

According to Drysdale and Soesastro (1990), these shifts in the geographic structure and the pattern of commodity specialization of Indonesia's trade have had a significant impact upon the evolution of Indonesia's trade strategy and approach to international economic diplomacy.

At least three elements in the redirection of foreign trade policies must be recognized: (1) movement from protectionism and controls to a liberal trade system that lowered manufacturing costs (trade reforms in the 1980s reduced tariffs and removed non-tariff barriers, introduced duty rebates for export industry, and simplified export procedures); (2) the redirection of foreign trade policies to the Asia-Pacific economy (Drysdale, 1988); and (3) the expansion of trade and commercial ties with South Korea and the restoration of full trade and diplomatic ties with China (Soesastro, 1990).

4. Bilateral Trade

(a) Japan

Japan has been the Indonesia's largest trade partner since the early 1970s. Trade with Japan typically records a large surplus, reaching US $ 7.3 billion in 1980, but has declined recently. Most of the trade surplus came from mineral fuel exports to Japan. During 1980-1990 Japan imported more than 80 percent of Indonesia's mineral fuels.

Within the category of primary products, exports to Japan were mainly lumber and mining products such as steel and copper. Their values declined during 1980-1990, due to increased exports of final products such as plywood as a result of development of domestic lumber industries.

Table 4.10: Balance of Trade with Japan.

| Classification | 1980 | | | 1990 | | |
|---|---|---|---|---|---|---|
| | X | M | Balance | X | M | Balance |
| | US $ million | | | | | |
| Non-Fuels Primary | 1,716 | 227 | 1,489 | 1,450 | 144 | 1,306 |
| Mineral Fuels | 9,034 | 14 | 9,020 | 7,898 | 13 | 7,885 |
| Manufactures | 43 | 3,172 | -3,129 | 1,575 | 5,123 | -3,548 |
| Total | 10,793 | 3,413 | 7,379 | 10,923 | 5,300 | 5,623 |

Sources: UN, Commodity Trade Statistics, various issues.
CBS, Indonesian Foreign Trade Statistics, 1980-1990

Manufactured exports to Japan consist mainly of plywood and wood products. Exports of these goods has increased remarkably in the last decade. However, access to the Japanese market for other manufactures such as clothing, textiles, and footwear is difficult because of Japanese quality standards and its protectionist attitude towards imports of manufactures.

Imports from Japan were mainly manufactured goods such as machinery, automotive and chemical products. The value of

manufactured imports amounted to US $5.1 billion in 1990, making Japan the primary supplier of manufactured goods to Indonesia.

(b) The United States

Merchandise trade between Indonesia and the USA has grown slowly in the last ten years from $5.7 billion in 1980 to $5.8 billion in 1990. Over the same period, exports declined from $4.3 billion to $3.4 billion while imports increased from $1.1 billion to $2.5 billion (see Table 4.11).

Indonesia has always enjoyed a large surplus in trade with the USA. However, the surplus declined sharply from $2.9 billion in 1980 to $0.8 billion in 1990, due mainly to lower oil prices in 1990, and the consequent fall in the volume of mineral fuels exports.

Table 4.11: Balance of Trade with the USA

| Classification | 1980 | | | 1990 | | |
|---|---|---|---|---|---|---|
| | X | M | Balance | X | M | Balance |
| | US $ million | | | | | |
| Non-Fuels Primary | 695 | 410 | 285 | 791 | 477 | 354 |
| Mineral Fuels | 3,572 | 29 | 3,543 | 978 | 33 | 945 |
| Manufactures | 36 | 970 | -933 | 1,595 | 2,010 | -415 |
| Total | 4,303 | 1,409 | 2,894 | 3,364 | 2,520 | 844 |

Sources: UN, Commodity Trade Statistics, various issues.
CBS, Indonesian Foreign Trade Statistics, 1980-1990

Within the primary products category, exports to the USA are of a few goods such as natural rubber, coffee, and palm oil. However, Indonesia recently increased her manufactured exports (mainly textiles, garments, footwear, and plywood) to the USA.

Imports from the USA consist mainly of capital goods such as machinery and chemical products. Interestingly, Indonesia imports a significant volume of primary commodities from the USA, mostly cotton, which is important for the Indonesia's rapidly growing textile industry.

(c) The European Economic Community

Total trade with the European Economic Community (EEC) increased significantly in the last ten years from US$ 5.3 billion in 1980 to US $7.1 billion in 1990, as seen in Table 4.12. However, exports declined while imports continued to rise, leading to Indonesia's only deficit among important trade partners.

In 1980, mineral fuels constituted 74.4 percent of total exports to the EEC, followed by primary products (24.9%) and manufactures (0.7%). This proportion reversed significantly in 1990. Manufactures became the dominant exports (56.6%), while mineral fuels was negligible (0.5%). The EEC imports of mineral fuels were substantial in 1980 but have virtually stopped since the discovery of off-shore oil in the North Sea.

Table 4.12: Balance of Trade with the EEC.

| Classification | 1980 | | | 1990 | | |
|---|---|---|---|---|---|---|
| | X | M | Balance | X | M | Balance |
| | US $ million | | | | | |
| Non-Fuels Primary | 1,195 | 64 | 1,131 | 1,174 | 207 | 967 |
| Mineral Fuels | 3,572 | 29 | 3,543 | 38 | 21 | 17 |
| Manufactures | 36 | 970 | -933 | 1,817 | 3,835 | -2,018 |
| Total | 4,303 | 1,063 | 3,240 | 3,029 | 4,063 | -1,034 |

Sources: UN, Commodity Trade Statistics, various issues.
CBS, Indonesian Foreign Trade Statistics,1980-1990

More recently, manufactured exports to the EEC, especially textiles, footwear, and plywood, have increased and now constitute the largest share of total exports.

## 5. Regional Trade

The success of the EEC in the 1950s and 1960s created a belief that economic integration provides an important effect on the level and growth of economic activity (Brada and Mendez, 1988). This phenomenon encouraged developing countries to organize into integrated regions or associations. Four were formed in the 1960s: The Central American Common Market (CACM); The Latin American Free Trade Area (LAFTA); The East African Common Market (EACM); and The Association of South East Asian Nations (ASEAN).

The ASEAN consisted of Indonesia, Malaysia, the Philippines, Thailand, and Singapore.[1] Although this association's main objective was to promote economic relations, especially trade, and efforts were made to cut tariffs on imported goods from within the community, foreign trade among ASEAN countries in the last twenty years has been negligible. The exception is trade between Singapore and other members. As seen in Table 4.8, the share of Indonesian exports to the ASEAN declined from 21.1 percent to 9.8 percent during the period from 1970 to 1990. Imports from the ASEAN increased only slightly from 7.5 percent in 1970 to 8.4 percent in 1990.

The slow growth of foreign trade among ASEAN members has raised doubts about the benefits of economic integration among countries possessing similar resources.[2] For instance, Indonesia, Malaysia and Thailand are the main exporters of natural rubber (87 percent of total world export volume), tin (53%) and palm oil (85%). The Philippines and Thailand export sugar and canned food. Indonesia and Thailand export a significant share of fish and shrimp to the world market. These countries obviously compete with each other in marketing their products. Further, all ASEAN countries, except Singapore, are endowed by surplus labor and compete to attract

---

[1]Later, in 1982, Brunei became the sixth member.

[2]Kindleberger and Lindert (1982) questioned the benefits of economic integration in LDCs since they are typically more competitive than complementary.

investment from developed countries and Asian Newly Industrial Countries (NICs) such as Taiwan, Hong Kong, and South Korea.

Table 4.13 shows that the value of total trade between Indonesia and other ASEAN members increased slightly from US $3.7 billion to US $4.3 billion during the last ten years. However, exports declined from US $2.7 billion in 1980 to US $2.5 billion in 1990, while imports increased from US $1.0 billion to US $1.8 billion in the same period.

Table 4.13: Balance of Trade with the ASEAN

| Classification | 1980 | | | 1990 | | |
|---|---|---|---|---|---|---|
| | X | M | Balance | X | M | Balance |
| | US $ million | | | | | |
| Non-Fuels Primary | 990 | 36 | 954 | 919 | 258 | 661 |
| Mineral Fuels | 1,554 | 713 | 841 | 351 | 624 | -273 |
| Manufactures | 200 | 257 | 13 | 1,245 | 954 | 291 |
| Total | 2,744 | 1,006 | 1,738 | 2,515 | 1,836 | 679 |

Sources: UN, Commodity Trade Statistics, various issues.
CBS, Indonesian Foreign Trade Statistics, 1980-1990.

Trade with the ASEAN has had a unique pattern. Most Indonesian exports and imports in 1980 were mineral fuels. Conversely, in 1990 most of the exports and imports were manufactured goods. Most of this trade was with Singapore. For example, more than 75 percent of total Indonesian exports to ASEAN countries in 1990 was directed to Singapore. Before 1984, Indonesia sent some of its crude petroleum to Singapore

in order to be refined and returned back as gasoline. In the custom records, this actions were recorded as exports and imports of petroleum between Indonesia and Singapore.

The slow progress in the ASEAN economic cooperation may be attributed to member's reluctance to subordinate national considerations to regional interests (Min, 1980). Therefore, trade creation has been small. However, contrary to Lindert and Kindleberger's views, it is my impression that the economic integration of developing countries carries promise because of what Western Europe and North America have shown by such means.

6. Terms of Trade

The index of terms of trade (TOT) refers to the ratio of two indices: unit value of exports divided by unit value of imports.[1] TOT is an indicator of the performance of exports in relation to imports. If TOT declines/rises, the power of one unit of exports to acquire one unit of imports deteriorates/improves.

The TOT increased remarkably from 25 in 1970 to 105 in 1984, meaning Indonesia could obtain four units quantity of imported goods in 1984 (as compared to 1970), by exchanging one unit of exported goods. However, the TOT declined to 72 in 1990. The TOT ups and downs of the was caused by oil price fluctuations.

---

[1]The formula for TOT may be found in Appendix 4.

Table 4.14: Indonesian Terms of Trade (1980=100).

| Indicator | 1970 | 1975 | 1980 | 1984 | 1985 | 1988 | 1990 |
|---|---|---|---|---|---|---|---|
| Export Indices | | | | | | | |
| - Value | 5 | 30 | 100 | 91 | 78 | 80 | 117 |
| - Unit Value | 8 | 42 | 100 | 93 | 87 | 61 | 87 |
| - Quantum | 61 | 71 | 100 | 98 | 89 | 131 | 122 |
| Import Indices | | | | | | | |
| - Value | 9 | 44 | 100 | 128 | 95 | 122 | 201 |
| - Unit Value | 30 | 60 | 100 | 89 | 88 | 103 | 121 |
| - Quantum | 31 | 74 | 100 | 145 | 107 | 118 | 166 |
| Terms of Trade | 25 | 70 | 100 | 105 | 98 | 59 | 72 |
| Purchasing power of Exports | 15 | 50 | 100 | 103 | 88 | 78 | 97 |

Sources: UNCTAD (1991), Handbook of International Trade and Development Statistics 1990.
CBS, Statistical Yearbook of Indonesia, various issues.

Since TOT does not take account of the total value of exports, we derive the purchasing power of exports (PPX), by deflating the ratio of value of export index by unit value of import index. This will tell us how many units of imported goods can be obtained by total export value. Indonesia gained almost seven times the PPX from 1970 to 1984. However, Indonesia lost 6 percent of this power from 1984 to 1990. That is in 1990, Indonesia could only acquire imports at 94 percent of the 1984 level. Again, the increasing PPX in the 1970s and early 1980s was associated with increasing revenue from oil exports.

7. Exchange Rates

Exchange rates refer to the value of one unit of foreign currency in terms of the domestic currency. Exchange rates regimes may be based on fixed or floating exchange rates. The latter reflects continuous adjustment to changes in market supply and demand conditions.

When the value of foreign currency appreciates, the price of exports declines. The quantity demanded of exports increases, and a change in foreign earnings depends upon the elasticities of demand and supply. Total export earnings will rise if the total elasticity is greater than one. On the other hand, foreign currency depreciation increases the price of exported goods and the demand for exported goods will decline. A planned devaluation has the same effect as the appreciation of foreign currency, import prices will increase, thus lowering demand for imports.

Indonesia follows a fixed exchange rate regime but frequently adjusts it by devaluations as seen on Table 4.15. The rupiah was devalued four times during the last twenty years. The first devaluation in 1971 raised the value of the dollar from Rp. 365 to Rp. 415. Further major devaluations increased the dollar exchange rate to Rp. 635 (1978), to Rp. 1,000 (1983), and to Rp. 1,650 (1986).

Table 4.15: Relationship between Exports and Exchange Rates

| Year | Exch. Rates Rp/$ | Depre-ciation (%) | Mineral Fuels | | Non-Fuels | |
|---|---|---|---|---|---|---|
| | | | Value (mil.$) | Growth (%) | Value (mil.$) | Growth (%) |
| 1970 | 365 | - | 346 | - | 709 | - |
| 1971 | 393 | 1.0 | 478 | 38.1 | 756 | 6.6 |
| 1972 | 415 | 5.6 | 913 | 91.0 | 864 | 14.3 |
| 1973 | 415 | 0.0 | 1,609 | 76.2 | 1,602 | 85.4 |
| 1974 | 415 | 0.0 | 5,211 | 238.7 | 2,215 | 38.3 |
| 1975 | 415 | 0.0 | 5,338 | 2.4 | 1,792 | -19.1 |
| 1976 | 415 | 0.0 | 6,014 | 12.7 | 2,542 | 41.8 |
| 1977 | 415 | 0.0 | 7,379 | 22.7 | 3,474 | 36.6 |
| 1978 | 442 | 6.5 | 7,986 | 8.2 | 3,657 | 5.3 |
| 1979 | 623 | 40.9 | 10,166 | 27.3 | 5,425 | 48.3 |
| 1980 | 627 | 0.6 | 15,743 | 54.8 | 6,166 | 13.6 |
| 1981 | 632 | 0.8 | 17,764 | 12.8 | 4,496 | -27.1 |
| 1982 | 661 | 4.6 | 18,373 | 3.4 | 3,920 | -12.8 |
| 1983 | 909 | 37.5 | 16,153 | -12.1 | 4,993 | 27.4 |
| 1984 | 1,026 | 12.9 | 16,045 | -0.7 | 5.843 | 17.0 |
| 1985 | 1,111 | 8.3 | 12,757 | -24.5 | 5,830 | -0.2 |
| 1986 | 1,283 | 15.5 | 8,310 | -34.8 | 6,495 | 11.4 |
| 1987 | 1,644 | 28.1 | 8,582 | 3.3 | 8,553 | 31.7 |
| 1988 | 1,686 | 2.5 | 7,723 | -10.0 | 11,495 | 34.4 |
| 1989 | 1,770 | 5.0 | 8,760 | 13.4 | 13,480 | 17.3 |
| 1990 | 1,840 | 6.2 | 11,239 | 28.2 | 14,436 | 7.1 |

Sources: IMF (1991), International Financial Statistics,1990 CBS, Statistical Yearbook of Indonesia, various issues.

Devaluation does not affect fuel exports since the price of oil and the allocation of quotas to OPEC members are determined by the cartel. However, its effects on non-fuel exports are striking. These exports increased significantly following the devaluations. For example, the 1971 devaluation helped raise the value of non-fuel exports 14.3 percent in 1982, 85.4 percent in 1983, and 38.3 percent in 1984. The 1978 devaluation increased non-fuel export earnings by 48.3 percent and 13.6 percent, respectively in 1979 and 1980.

The last two devaluations, in 1983 and 1986, were mainly directed toward balancing the government budget. Declining oil prices since 1983 had pressed the revenue side of the budget. In the first half of the 1980s, 64 percent of total domestic revenue came from corporate taxes on the oil sector.[1] Hence, increasing the value of the dollar in terms of domestic currency raises government revenue.

7. External Demand for Indonesian Exports

The export performance of a country strongly depends on supply and demand conditions. The supply conditions for exports are determined by factors reflecting the comparative advantage of a country. Demand conditions are influenced by the growth of foreign markets and by competition from other countries.

---

[1]The Indonesian government imposed an 85 percent tax on the profits of foreign oil companies operating in Indonesia.

As previously mentioned, developed countries constitute the main market for Indonesian exports. Thus the economic performances of developed countries will directly affect Indonesian exports. Most exports consist of primary goods such as petroleum, LNG, mining products, and lumber. As Crafts (1973) emphasized, external demand is the leading factor that determines export performance.

In this section we applied model of external demand for exports following Houthaker and Magee (1969). We assumed that the demand for exports depends on the relative price of each commodity and world real income. The model is:

$$\text{Log } X_{it} = a + b \text{ Log } (PI_i/PW_i)_t + c \text{ log } IW_{it}$$

Where $X_i$ = export volume (in million metric ton), i = total exports, exports of mineral fuels, exports of non-fuels, exports of primary commodities, and exports of manufactured goods.

$PI_i$ = Unit value of Indonesian exports.

$PW_i$ = Unit value of competitor's exports

$IW_i$ = Weighted average of index of world real income.

The coefficient of price will be negative, since the increasing relative price of Indonesia's exports, compared to other countries will, reduce demand for Indonesian exports. The income coefficient will be positive because imports possess a positive income elasticity.

Goldstein and Khan (1978) and Marquez and McNelly (1988) argued that the estimation of demand for exports based on demand exports and ignoring supply would be biased, since importing countries do not face an infinite supply price elasticity. However, Houthaker and Magee (1969) pointed out that the supply elasticities are fairly high for many exporters, which reduces the likely bias in the estimated demand elasticities.

This study employed Indonesian data from 1968 to 1990 for the above model. We used annual data for aggregate exports, mineral fuels, non-fuels, primary commodities and manufactured goods. Data on exports and unit values were obtained from CBS, Indonesian Foreign Trade Statistics; while data on income of trading partners (USA, Japan, EEC and LDC) were obtained from the World Bank, World Tables. Data on prices came from UN, Handbook of International Trade and Development Statistics, (see appendix 5 for complete sources of data). The results may be seen in Table 4.16.

The sign of all independent variables are as expected (except for the price coefficient in regression 2), and all coefficients are statistically significant at the 1 percent level (except for the coefficients of price in regressions 2 and 3). The results strongly state that relative price negatively affects and trade partners' income positively affects export demand. However, the R2 value of the regressions indicate that price and income are sufficient to

explain variation in quantity of export demanded only in regressions 1, 3, and 5. In regressions 2 and 4, the $R^2$ values are small meaning the independent variables are not sufficient to explain variations of the dependent variable.

Table 4.16: Regression of Price and Income on Exports.

| No. | Dependent Variable | Independent Variables C | Price | Income | Adjusted $R^2$ |
|---|---|---|---|---|---|
| 1. | Total Exports | -4.12 | -0.606 | 0.941 | 0.82 |
| | | (-3.69) | (-3.58) | (8.16) | |
| 2. | Exports of Mineral Fuels | 1.56 | 0.402 | 0.554 | 0.38 |
| | | (1.86) | (1.19) | (2.98) | |
| 3. | Exports of Non Fuels | -5.34 | -0.076 | 1.897 | 0.51 |
| | | (-2.47) | (-0.38) | (4.11) | |
| 4. | Exports of Primary commodities | -2.25 | -0.318 | 1.175 | 0.36 |
| | | (-1.22) | (-2.05) | (2.92) | |
| 5. | Exports of Manufactured Goods | -34.52 | -0.951 | 7.631 | 0.99 |
| | | (-16.65) | (-12.00) | (17.39) | |

Notes: Figures in parenthesis are t statistics.
The relative price of each regression was determined as follows: (1) Unit value of Indonesian exports to unit value of LDC's exports. (2) Unit value of Indonesian mineral fuels exports to unit value of petroleum exports in the world market. (3) Unit value of Indonesian non-fuels exports to unit value of exports of non petroleum exporter LDC's. (4) Unit value of Indonesian primary commodity exports to unit value of primary commodity prices in the world market. (5) Unit value of Indonesian manufactured exports to unit value of world manufactured exports price.

Price elasticities range from a low of -0.076 for non-fuel exports to a high of -0.951 for manufactured exports. Income elasticities vary from 0.554 for exports of mineral fuels to 7.631 for exports of manufactured goods.

The price and income elasticities for the aggregate of all exports are in agreement with Houthaker and Mangee (1969). They estimated demand for eight developing countries (Argentina, Brazil, Chile, Columbia, India, Israel, Peru, and Venezuela) during 1951 to 1965. The price elasticities ranged from -0.07 to -0.70 and income elasticities varied from a low of 0.34 to a high of 4.0.

The price elasticity in this study for non-fuels is smaller than was given by Dornbusch (1985). Dornbusch estimated the price elasticity of exports of all non-oil LDCs during 1960 to 1983 to be -0.47. The higher Dornbusch price elasticity is likely because Brazil, Hong Kong, Singapore, South Korea, and Taiwan, that pull the value of average price elasticity upward, are major exporters of manufactures. Dornbusch's price elasticity of total exports for major LDC exporters of manufactures was -1.24.

The positive and insignificant price coefficient in regression 2 is puzzling. Theoretically price elasticity may be positive if the income effect is larger than the substitution effect in the case of inferior goods (Varian, 1984). However, this view is not a likely explanation for

this case since mineral fuels are not inferior goods, at least during the period covered by this study.

The are some possible reasons that explain the positive and insignificant price elasticities of demand for mineral fuels in this study. First, after experiencing a severe economic recession from higher oil prices during 1974 to 1980, industrialized countries reduced their demands for oil and took more positive steps to improve energy conservation. Consequently, the quantity demanded was not determined by prices. Second, petroleum prices are homogenous in the world markets. Therefore, the quantity demanded is not affected by relative prices. Third, exports of mineral fuels (mainly crude petroleum) are mostly determined by OPEC. Indonesia, as a disciplined member, always obeys its quota allocation. All of these lead to the insignificant role of prices in determining the demand for Indonesian mineral fuels exports.

As expected, the price and income elasticities are higher in regression 5 than in regression 4. This tells us that manufactured goods are more responsive to changes in price and income. Thus, a country concerned with increasing export earnings should capitalize on the sensitivity of manufactures to relative price and real income, since manufactured goods are very sensitive to these variables. Policies that increase manufacturing productivity and lower prices of manufactured exports offer promise. The manipulation of relative prices of

manufactured exports through trade liberalization may also stimulate manufactured exports.

However, improvement in the productivity of the primary sector that forces reduction of the relative price will mostly benefit the importing country. As Prebisch (1950) pointed out, the distribution of gains between primary commodity producers and producers of manufactures is uneven. The productivity gains in primary commodity production would benefit consumers in the form of falling prices while the benefits for producers would be negligible.

The high-income elasticity for manufactured exports brings the threat of large fluctuations in exports earnings. However, in the long run high elasticity may be a plus factor since real incomes of industrialized countries, and therefore, of exports of Indonesian manufactured goods, will continue to grow.

## 8. Summary and Conclusions.

The expansion of Indonesian foreign trade has been remarkable. During the last two decades, export and import values grew at an annual rate of 19.0 percent and 16.5 percent, respectively. Like most developing countries, Indonesian exports consist mainly of primary commodities, both mineral fuels and non-fuels. However, the proportion of manufactured goods has increased considerably from a negligible figure in 1970 to 35.7 percent in 1990.

The expansion of exports is not only in terms of volume and values but also in their variety. Variety increased by 65 percent from 1980 to 1990, and exports became less concentrated as the value of the Hirschmann coefficient declined from 0.62 to 0.26.

The direction of exports changed in favor of Japan and the USA. The share of these countries increased from 40.3 percent in 1970 to 55.6 percent in 1990. This increase was at the expense of the ASEAN countries, which declined sharply. Although ASEAN possess similar endowments and little difference in comparative advantages, the economic integration of these nations carries promise. ASEAN members should increase their efforts to promote other activities that will provide mutual benefits such as tourism and financial services.

Indonesia has not yet exploited trade possibilities with Eastern European countries. Trade with these countries carry considerable promise since their economic reforms late in the 1980s.

The TOT and PPX have improved and declined (with the 1984 value being the highest) according to oil price fluctuations. This reflects a high dependence of Indonesia's foreign trade on the oil sector.

The performance of exports was affected somewhat by exchange rates. Hence, the value of exchange rates must be kept free to reflect supply and demand in financial markets.

Demand elasticities for Indonesian exports are similar to those of other developing countries in various studies. This study confirms that primary commodities face lower price and income demand elasticities than manufactures. The price elasticity of manufactured goods is three time as high, and income elasticity is seven times as high, that of primary commodities.

The conclusion that the terms of trade between primary commodities and manufactures have deteriorated seems inescapable. In addition, exports of primary products are mainly mineral fuels and mining products, which can be replenished in the future. For sustaining economic growth in Indonesia, policies must aimed at promoting manufactured exports. We will focus our discussion on manufactured exports in the next chapter.

# CHAPTER FIVE

# INDONESIAN EXPORTS OF MANUFACTURED GOODS

## 1. Introduction

The role of manufactured goods in Indonesian exports during the 1970s was very small, less than 2 percent of total export earnings. This was due to the dominant role of primary goods in export earnings. In addition, inward orientation of the trade regime promoted production for domestic markets by imposing high import tariffs on final goods.

A long-term decline in terms of trade of non-fuel primary commodities, combined with inelastic demand for some of these products, indicated that Indonesia could boost exports earnings by diversifying into manufacturing. In addition, the high income growth of the NICs caused by a rapid increase of manufactured exports encouraged Indonesia to promote exports of manufactured goods.

It is common to discuss the trade of manufactured goods together with the process of industrialization in developing countries, since both have a very close relationship in the experiences of the New Industrial Countries (NICs) such as Korea and Taiwan (Chenery, 1986, World Bank, 1987, and Chow, 1987). A brief discussion of Indonesia's industrialization process will help focus attention the trade of manufactures.

## 2. A Brief History of Industrialization in Indonesia

In the early years of Indonesia's economic development, which was started in 1969, the share of the industrial sector in the economy was very small.[1] In 1970, the manufacturing sector accounted for only 8 percent of GDP. More than half of the value added to the GDP in 1965 came from agriculture. Most of the population also lived in the agricultural sector. Most manufactured goods were supplied from abroad. As per-capita income rose, the demand for manufactured goods also increased, in terms of both quantity and variety. Increased imports of manufactured goods led to deficits in foreign trade transactions and a loss of foreign exchange reserves. This led to a strategy emphasizing domestic manufactures. While the foreign exchange constraint was imperative, there were other major issues concerning the viability and priority accorded to various possibilities of an import substitution strategy.

At least four objectives of industrial development in Indonesia were defined[2]: (a) to produce consumption goods; (b) to complement agricultural development arising from backward linkages, by producing agricultural inputs such as fertilizers, pesticides, and machinery; and from forward linkages, by producing goods using agricultural output as

---

[1]Several studies have focused on industrial development in Indonesia such as McCawley (1981) and Hill (1990).

[2]See Ministry of Information, Government of Indonesia (1969).

inputs in manufactures such as tires and processed food; (c) to produce manufactured goods for exports to earn foreign exchange; and (d) to generate employment by placing a high priority on labor-intensive technology.

The country's industrial development should be viewed against the long-term objective of establishing a strong economic structure. This emphasis on relatively advanced industries such as fertilizer and steel industries, was supported by balanced development of its natural resources and agriculture. Priority was given to industries processing agricultural and mining products, both for export and domestic markets, and industries producing agricultural machinery. A principal aim is attempting to reduce the economy's dependence on the oil sector and to encourage the development of non-oil exports, especially manufactured goods.

To achieve this target of industrialization, the government adopted an inward-oriented strategy during the first decade of economic development. This strategy shifted outward in the following decade. In the 1970s, the government invited foreign investments, and encouraged domestic entrepreneurs to invest in import-substitution of industries. The government protected them from foreign competition through tariffs and non-tariff barriers. High tariffs were imposed for final goods and lower ones for raw materials and capital goods. Non-tariff protection included import quotas and other restrictions such as import bans, local content regulations,

and government procurement privileges to domestic over foreign contract suppliers.

Table 5.1: Average Nominal Tariff Rates (%)[a].

| Goods | 1973[b] | 1985[c] | 1989[d] |
|---|---|---|---|
| Consumption Goods | 52.3 | 46.3 | 39.1 |
| Intermediate Goods | 22.5 | 14.7 | 15.4 |
| Capital Goods | 18.9 | 17.2 | 16.4 |

Note [a]Unweighted
Sources: [b]McCawley (1981)
[c]and[d]The World Bank (1990)

Table 5.1 illustrates how tariff rates are differentiated among the import categories of consumption goods, intermediate goods, and capital goods. The tariff on consumption goods averaged 52.3 percent in 1973, but tariffs on intermediate and capital goods were lower, at 22.5 percent and 18.9 percent, respectively. All these tariffs were gradually lowered as the domestic industries matured and grew more competitive.

Table 5.2, provides a brief overview of the expansion of domestic industrial production from 1975, the earliest data available, to 1988. Production of manufactured goods more than tripled during this period. Basic metals registered the highest growth while textiles registered the lowest. The low textile growth rate during 1975-1988 reflects the deceleration that usually followed high growth periods during the first half of the 1970s (McCawley, 1981). Other industries were,

for the most part, just getting started in the second half of the 1970s.

Table 5.2: Changing in Index Numbers of Industrial Products. (1980=100)

| Industrial Products | 1975 | 1980 | 1988 | Ratio 80/75 | Ratio 88/75 |
|---|---|---|---|---|---|
| Food,beverages and tobacco | 59 | 100 | 157 | 1.7 | 2.7 |
| Textiles,clothing and leather | 81 | 100 | 153 | 1.2 | 1.9 |
| Wood and wood products | 26 | 100 | 271 | 3.8 | 10.4 |
| Paper and paper products | 65 | 100 | 204 | 1.5 | 3.1 |
| Chemical, plastics, etc | 45 | 100 | 141 | 2.2 | 3.1 |
| Non metalics mineral products | 35 | 100 | 162 | 2.9 | 4.6 |
| Basic metals | 10 | 100 | 205 | 10.0 | 20.5 |
| Machinery and equipment | 44 | 100 | 127 | 2.3 | 2.9 |
| All manufacturing | 51 | 100 | 158 | 2.0 | 3.1 |

Source: United Nations, Industrial Statistics Yearbook, various issues.

The overall result of industrialization are found in Table 5.3. The share of manufacturing in GDP increased from 8.0 percent in 1970 to 19 percent in 1990, or an average of 5.5 percentage points in each decade. This figure is far above the standard definition of industrialization.[1]

Another common feature of industrialization is the transformation of international trade away from primary commodities toward manufacturing goods (Chenery, 1986). Indonesian data show a slow transformation of exports, from 1.4 percent to 5.7 percent during 1970-1980. However, a rapid

[1]Kubo et al. (1986) proposed the "rule of thumb" that industrialization increases the share of manufacturing on GDP by an average of 3.2 percentage points during each decade.

transformation occurred in the following decade, from 5.7 percent in 1980 to 35.7 percent in 1990. This rapid transformation was due to a strategic shift to outward-looking orientations.

Table 5.3: Share of Manufacturing in GDP and Total Exports.

| Indicator | 1970 | 1980 | 1990 | Percentage point Change 1970-80 | Percentage point Change 1980-90 |
|---|---|---|---|---|---|
| Share of Manufacturing in GDP (%) | 8.0 | 14.0 | 19.0 | 6.0 | 5.0 |
| Share of Manufacturing in Total Exports (%) | 1.4 | 5.7 | 35.7 | 4.3 | 30.0 |

Source: CBS, Statistical Yearbook of Indonesia, various issues

The Indonesian strategy of emphasizing external markets began in 1982. A series of deregulations was launched to liberalize the economy and stimulate exports. The policies included provision of export incentives and administrative improvements. The structure of incentives included tax and financial subsidies geared to production. Export subsidies, mostly duty rebates by which the government returned import duties, were aimed at trade. In the administrative arena, the government simplified export procedures by reducing the number of licenses needed to export goods. Among the most significant changes in the export procedures was the hiring of

the international company, Swiss-based SGS, to inspect exports and imports in exit and entry ports. Previously, this had been a severe, cost-raising bottleneck in the flow of goods internationally. The government also freed exchange and interest rates to better reflect supply and demand in the financial market (see appendix 6 for a brief discription of trade liberalization).

Indonesia's outward-looking strategy also led to exports of many manufactured goods produced for domestic consumption before 1980. As seen in Table 5.4, the shift towards exports is striking.

Table 5.4: Ratio of Exports on Output of Selected Manufactured Goods (%).

| Sub sector | 1980 | 1985 | 1988 |
|---|---|---|---|
| 1. Tea Processing | 0 | 15.9 | 22.5 |
| 2. Fish Processing | 0.5 | 0.7 | 14.6 |
| 3. Weaving yarn | 4.9 | 12.6 | 32.6 |
| 4. Knitting | 3.5 | 38.7 | 76.5 |
| 5. Wearing apparel | 11.1 | 45.2 | 56.0 |
| 6. Footwear | 0.6 | 3.7 | 35.5 |
| 7. Saw mill, plywood | 32.4 | 48.3 | 62.5 |
| 8. Furniture | 1.3 | 1.3 | 8.1 |
| 9. Pulp and paper | 2.3 | 6.7 | 18.5 |
| 10.Tires and tubes | 0.2 | 2.9 | 15.3 |
| 11.Plastic products | 0 | 2.7 | 31.6 |
| 12.Iron and steel | 2.6 | 3.6 | 25.1 |

Source: Wymenga, P.S.J (1990).

Among the manufactures which more than half of domestic production are exported, are plywood, wearing apparel, and knitting. This illustrates that the leading manufactured goods which expanded in the 1980s were those goods in which

Indonesia maintained a high comparative advantage. For example, Indonesia is endowed with a large area of tropical forest from which timber is harvested to produce plywood. Wearing apparel and knitting are the most labor-intensive products in the manufactured exports structure drawing upon Indonesia's abundant cheap labor.

3. The Balance of Manufactured Trade

The result of the export performance of manufactures can be seen in Table 5.5. Exports of manufactured goods were negligible in the 1970s. Their value of $12 million in 1970 and $85 million in 1975 were very small compared to import value. This study focuses on the period from 1980 to 1990, when manufactured exports grew more important.

Manufactured exports grew at an average 35.5 percent per year from 1980 to 1990, the rate increasing more rapidly in the second half of the 1980s. By way of contrast, imports of manufactures grew at a rate of 8.9 percent over the same period.

Until 1982, manufactured trade recorded huge annual deficits, registering an all-time high of US $10.2 billion in 1982. However, in 1983, the deficit began declining because of the 38 percent devaluation of the rupiah against the dollar, which caused exports to rise by 70 percent and imports to fall by 8.5 percent. In 1990 the deficits on manufactured trade increased again to $7.6 billion. This strong growth of

manufactured imports in 1989 and 1990 reflected the increasing imports of capital goods like machinery and automotive products due to increasing private investments.

Table 5.5: Exports and Imports of Manufactured Goods*

| Year | Exports | Imports | Balance | Ratio M/X |
|---|---|---|---|---|
| | ------ US $ million ------ | | | |
| 1970 | 12 | 715 | - 703 | 59.6 |
| 1975 | 85 | 3,688 | - 3,603 | 43.4 |
| 1980 | 501 | 7,048 | - 6,547 | 14.1 |
| 1981 | 673 | 8,960 | - 8,287 | 13.3 |
| 1982 | 809 | 10,933 | -10,124 | 13.5 |
| 1983 | 1,373 | 10,080 | - 8,707 | 7.3 |
| 1984 | 1,839 | 9,273 | - 7,434 | 5.0 |
| 1985 | 2,044 | 7,373 | - 5,329 | 3.6 |
| 1986 | 2,639 | 7,901 | - 5,262 | 3.0 |
| 1987 | 3,895 | 9,175 | - 5,280 | 2.4 |
| 1988 | 5,364 | 9,888 | - 4,524 | 1.8 |
| 1989 | 7,012 | 12,005 | - 4,993 | 1.7 |
| 1990 | 9,041 | 16,662 | - 7,621 | 1.8 |
| Compound growth rates | | | | |
| 1980-1990 | 33.5 % | 8.9 % | 1.5 % | |
| 1980-1985 | 32.5 % | 0.9 % | -0.4 % | |
| 1985-1990 | 34.6 % | 17.7 % | 7.4 % | |

Source: CBS, Indonesian Foreign Trade Statistics, 1980-1990
* = Manufactured goods consist of SITC 5-8, excluding 68

In 1990 the imports were mostly intermediate goods for the economy's industrial sector. In addition, the May 1990 deregulation, which lifted the ban on truck imports, had taken effect. Previously the government banned imports all cars and trucks to protect domestic industry.

The most interesting figures in Table 5.5 are the sharp decline in the ratio between value of imports and exports of manufactured goods. In 1970, the ratio was 59.6 later declining to 1.8 in 1990. This phenomenon is one of the most striking results of Indonesia's outward-orientation strategies of the early 1980s.

Exports of manufactured goods concentrated more on four goods: plywood, textiles, clothing, and footwear. Combined these goods contributed 69.1 percent of the total value of manufactured exports in 1990, increasing from only 42.5 percent in 1980, as seen in Table 5.6. The share of 120 other manufactured goods declined during the 1980s. This evidence demonstrates that most of Indonesia's manufactured exports were still products of light, and resource-based industries.

The expansion of plywood exports is supported by a seemingly unlimited supply (at least through the next decade) of timber and low competition. Indonesia expanded its share of total world plywood exports from 1.6 percent in 1980 to 30.9 percent in 1989. External demand, especially a high price elasticity, also helps explain the rapid growth of plywood exports. For example, Parthama and Vincent (forthcoming) estimated that the price elasticity of demand for Indonesian plywood imports in the USA market was fairly high (-2.81) from 1979 to 1987.

Table 5.6: Exports of Four Leading Manufactured Goods.

| Year | Plywood | Textiles | Clothing | Footwear | Total Value | Share |
|---|---|---|---|---|---|---|
| | | | US $ million | | | |
| 1980 | 68 | 46 | 98 | 1 | 213 | 42.5 |
| 1981 | 195 | 36 | 95 | 3 | 329 | 48.9 |
| 1982 | 316 | 44 | 116 | 3 | 479 | 58.5 |
| 1983 | 738 | 120 | 157 | 3 | 1,018 | 74.1 |
| 1984 | 791 | 201 | 296 | 5 | 1,293 | 70.3 |
| 1985 | 941 | 240 | 339 | 8 | 1,528 | 74.7 |
| 1986 | 1,127 | 307 | 522 | 8 | 1,964 | 74.4 |
| 1987 | 1,901 | 469 | 596 | 22 | 2,988 | 76.7 |
| 1988 | 2,368 | 680 | 797 | 82 | 3,927 | 73.2 |
| 1989 | 2,414 | 839 | 1,170 | 220 | 4,643 | 66.2 |
| 1990 | 2,791 | 1,241 | 1,646 | 569 | 6,247 | 69.1 |

Sources: CBS, Indonesian Foreign Trade Statistics, 1980-1990

The large expansion of manufactured exports to the USA and the EEC during the 1980s (mainly in textiles, clothing, and footwear) was due to the preferential trade arrangements with those countries. The expansion of these exports has also aided by the shift of textiles manufacturing from developed to developing countries due to increased labor costs in the former.

4. Export Markets for Manufactured Goods

The exports of manufactured goods in terms of destination were more diversified than total exports. In 1990, no single country which dominated Indonesia's manufactured exports. Japan, the USA and the EEC together absorbed 55.1 percent of the total manufactured exports, compared to 67.4 percent of

total exports. However, the share of these countries increased from 26.1 percent in 1975 to 55.1 percent in 1990 as seen in Table 5.7.

Table 5.7: Direction of Exports of Manufactured Goods(%).

| Year | USA | Japan | EEC | The Big Three | LDC* |
|---|---|---|---|---|---|
| 1975 | 8.3 | 9.5 | 8.3 | 26.1 | 73.9 |
| 1980 | 6.5 | 8.5 | 15.0 | 30.0 | 70.0 |
| 1985 | 26.6 | 8.4 | 14.1 | 36.6 | 63.4 |
| 1990 | 17.6 | 17.4 | 20.1 | 55.1 | 44.9 |

Source: CBS, Indonesian Foreign Trade Statistics, various issues.
* = LDC actually is a residual, and includes non-LDCs, such as Australia, New Zealand and Socialist countries. However, export values to these countries are negligible, only 2% in 1975 and 5% in 1990.

The proportion of exports to developing countries declined sharply from 73.9 percent in 1975 to 44.9 percent in 1990. These figures are in accordance with the data from UNCTAD (1990) which showed that manufactured exports within developing countries declined from 32.5 percent in 1970 to 26.2 percent in 1988.

The increasing share of manufactured exports from Indonesia to developed countries was due in part to the preferential system from developed countries (especially in textiles, clothing and footwear) and in part by trade barriers

erected by developing countries against manufactured imports.[1] This made penetrating developing countries' market difficult.

Table 5.8: Direction of Exports of Four Leading Manufactured Goods in 1990 (%).

| Country/ Region | Plywood | Textiles | Clothing | Footwear | Others | Total |
|---|---|---|---|---|---|---|
| Japan | 30.8 | 3.3 | 6.5 | 7.0 | 19.4 | 17.4 |
| USA | 13.7 | 6.0 | 37.6 | 42.6 | 10.1 | 17.6 |
| EEC | 10.3 | 25.2 | 33.1 | 37.0 | 16.9 | 20.1 |
| ASEAN | 1.9 | 32.1 | 5.8 | 1.0 | 25.5 | 13.8 |
| Others | 43.6 | 33.3 | 17.0 | 12.3 | 30.6 | 31.1 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 |
| Value ($ million) | 2,791 | 1,241 | 1,646 | 569 | 2,714 | 9,041 |

Source: CBS (1991), Indonesia Foreign Trade Statistics 1990.

Table 5.8 shows the direction taken by four major manufactured exports. As mentioned before, these four goods contributed to 69.1 percent of total manufactured exports in 1990. The United States is the major destination for footwear (42.6%) and clothing (37.6%), while plywood's major destination is Japan (30.8%). Manufactured exports to the EEC were more diversified, since no single good dominated their share. However, ASEAN is the major destination of textile exports.

The overall share of manufactured exports from Indonesia within developed countries' total manufactured imports is very

[1]For example, in 1986 tariff rates on clothing in developing countries ranged from a low of 27 percent in Malaysia to a high of 192 percent in Pakistan (UNIDO, 1989).

small. For instance, the share of Indonesia's manufactures of total manufactured imports of the USA and Japan was less than 0.1 percent in 1990. However, plywood is an exception. The share of Indonesian plywood in total imported plywood to Japan and the USA in 1990 amounted to 79.9 percent and 34.4 percent, respectively.

5. The Structural Change in Exports of Manufactured Goods

From 1980 to 1990, structural change in Indonesian exports favored processing inputs and higher value added for the economy. The prices of manufactures are more stable in the international markets than primary goods prices so exports of the former are favored. In this section we discuss structural change of exports of the timber, rubber, and tobacco industries.

Growth and development in the timber industry occurred during the 1980s. The timber exports changed structurally from lumber to shapedwood, plywood, wood manufactures, paper and paper board, and furniture and its components. In the 1970s and early 1980s, rough wood dominated timber exports. As seen in Table 5.9, more than 80 percent of the timber industry's export value was in the form of rough wood in 1980.

In order to increase value added for domestic industry, the government banned exports of all rough wood in 1985 and all shaped wood in 1990. As a result of this policy, plywood as a new kind of timber has replaced rough and shaped wood

Table 5.9: Structural Change of Exports of the Timber Industry.

| Year | Rough wood | Shaped wood | Ply wood | Manufac wood | Paper/ paperboard | Furniture/ parts | Total |
|---|---|---|---|---|---|---|---|
| | | | US $ million | | | | |
| 1980 | 1,559 | 253 | 68 | 5 | 5 | 3 | 1,893 |
| 1981 | 658 | 217 | 195 | 6 | 1 | 2 | 1,079 |
| 1982 | 328 | 221 | 316 | 7 | 3 | 2 | 877 |
| 1983 | 286 | 55 | 738 | 8 | 6 | 4 | 1,097 |
| 1984 | 170 | 190 | 791 | 11 | 21 | 5 | 1,188 |
| 1985 | 7 | 231 | 941 | 11 | 21 | 7 | 1,218 |
| 1986 | - | 275 | 1,127 | 13 | 33 | 9 | 1,457 |
| 1987 | - | 410 | 1,901 | 22 | 98 | 27 | 2,458 |
| 1988 | - | 431 | 2,368 | 63 | 137 | 70 | 3,069 |
| 1989 | - | 886 | 2,414 | 125 | 166 | 167 | 3,758 |
| 1990 | - | 243 | 2,791 | 274 | 154 | 286 | 3,748 |

Source: CBS, Indonesian Foreign Trade Statistics, 1980-1990

since 1983, and in 1990 became the single largest commodity after petroleum to earn foreign exchange. Also, exports of wood manufactures, furniture, and paper have become more important in recent years.

In the rubber sector the structural change came late, as seen in Table 5.10. The change in rubber exports from latex to manufactured rubber has emerged only in the last three years.

Tire exports grew very slowly because of the domestic industry's reluctance actually a branch of a multi-national company (MNC), to expand its production for exports since the parent company also produced tires using Indonesian latex.

However, exports of other rubber manufactures like shoes and gloves increased markedly in the last year.

Table 5.10: The Structural Change in Exports of the Rubber Industry.

| Year | Rubber Latex | Tire | Other Manufactured Rubber* | Total |
|---|---|---|---|---|
| | | ------- US $ million ------- | | |
| 1980 | 1,174 | - | - | 1,174 |
| 1981 | 835 | - | - | 835 |
| 1982 | 607 | - | - | 607 |
| 1983 | 848 | 1 | - | 849 |
| 1984 | 952 | 2 | - | 954 |
| 1985 | 718 | 8 | - | 726 |
| 1986 | 713 | 11 | - | 724 |
| 1987 | 960 | 23 | 1 | 984 |
| 1988 | 1,246 | 45 | 3 | 1,294 |
| 1989 | 1,014 | 65 | 42 | 1,121 |
| 1990 | 855 | 66 | 288 | 1,209 |

Source: CBS, Indonesia Foreign Trade Statistics, 1980-1990
* = include rubber shoes and gloves.

In the tobacco industry the change in the export structure is striking. The average unit price of manufactured tobacco such as cigarettes, was about 3.5 times larger than those of unmanufactured tobacco in 1980. This price difference increased through 1986, then declined from 1987 to 1990 as seen in Table 5.11.

A disturbing fact is that the unit price of manufactured tobacco in 1990 was lower than that of unmanufactured tobacco, meaning that value added was negative.

Table 5.11: The Structural Change on Exports of Tobacco.

| Year | Tobacco-unmanufactured | | | Tobacco-manufactured | | |
|---|---|---|---|---|---|---|
| | weight (000 ton) | value (mil $) | unit price | weight (000 ton) | value (mil $) | unit price |
| 1980 | 28.3 | 58.8 | 2.1 | 0.2 | 1.4 | 7.0 |
| 1981 | 25.1 | 50.5 | 2.0 | 0.3 | 2.6 | 8.7 |
| 1982 | 19.4 | 37.7 | 1.9 | 0.5 | 4.5 | 9.0 |
| 1983 | 22.5 | 38.3 | 1.7 | 1.4 | 9.3 | 6.6 |
| 1984 | 19.3 | 32.9 | 1.7 | 0.9 | 10.1 | 11.2 |
| 1985 | 20.2 | 43.1 | 2.1 | 0.5 | 5.5 | 11.0 |
| 1986 | 23.1 | 62.5 | 2.7 | 0.6 | 5.8 | 9.7 |
| 1987 | 18.7 | 57.3 | 3.1 | 2.4 | 13.9 | 5.8 |
| 1988 | 18.2 | 42.7 | 2.3 | 3.7 | 22.5 | 6.1 |
| 1989 | 17.7 | 47.2 | 2.7 | 15.0 | 60.7 | 4.0 |
| 1990 | 17.4 | 58.6 | 3.4 | 21.6 | 66.2 | 3.1 |

Source: CBS, Indonesian Foreign Trade Statistics, 1980-1990

The value and volume of manufactured tobacco exports, mainly cigarettes, increased sharply during the last three years, even though the demand for cigarettes declined sharply in the developed world.

Not all primary commodities may be structurally changed to increase domestic value added. Some commodities, especially mining products, are difficult to process since they require high technology and large investments. Since skills and capital are limited, Indonesia's mining products exports are usually in the form of primary commodities. Structural changes in iron and steel did not occur during the last decade.

## 6. The Factor-Intensity Pattern of Manufactured Exports

Manufactured goods may be classified into three categories, according to the intensity of input embodied in the final goods. The three classifications are: (a) resource-intensive goods such as plywood, leather, and cement; (b) labor-intensive goods such as textiles, clothing, footwear, and electronics; and (c) capital-intensive goods such as fertilizer, chemicals, tires, paper and pulp, and iron and steel products.

Table 5.12: Exports of Manufactured Goods by Factor Intensity.

| Year | Resource Intensive (%) | Labor Intensive (%) | Capital Intensive (%) | Total Manufacturing $ mil. | (%) |
|---|---|---|---|---|---|
| 1980 | 24 | 57 | 19 | 501 | 100 |
| 1981 | 38 | 37 | 25 | 673 | 100 |
| 1982 | 44 | 40 | 16 | 809 | 100 |
| 1983 | 56 | 35 | 8 | 1,373 | 100 |
| 1984 | 45 | 45 | 10 | 1,839 | 100 |
| 1985 | 49 | 38 | 13 | 2,044 | 100 |
| 1986 | 46 | 40 | 14 | 2,639 | 100 |
| 1987 | 52 | 33 | 14 | 3,895 | 100 |
| 1988 | 48 | 35 | 16 | 5,364 | 100 |
| 1989 | 40 | 42 | 18 | 7,012 | 100 |
| 1990 | 37 | 47 | 14 | 9,041 | 100 |
| Average | | | | | |
| 1980-1985 | 43 | 42 | 15 | | |
| 1986-1990 | 45 | 40 | 15 | | |
| 1980-1990 | 44 | 41 | 15 | | |

Source: CBS, Indonesian Foreign Trade Statistics, 1980-1990.
Note : More detail about the categories of factor-intensity can be seen in Table 5.13.

During the 1980s, manufactured exports were dominated by resource- and labor-intensive goods, since Indonesia has a high comparative advantage in these goods. The country is endowed with vast tropical forests, enabling its position as major exporter of plywood. Indonesia also has large amount of cheap labor that increase its competitiveness in labor-intensive exports.

The average share of resource- and labor-intensive goods in total manufactured exports amounted to 85 percent in 1980 to 1990; the remaining 15 percent was capital-intensive manufactures (see Table 5.12). The resource-intensive share increased slightly from 43 percent in the first half of the 1980s to 45 percent in the later half. The labor-intensive share declined slightly from 42 percent to 40 percent and the capital-intensive share was unchanged during the same period.

Table 5.13 provides a breakdown of manufactured exports by three digit SITC numbers. Of those goods with an export value exceeding $10 million in 1990, five were resource-intensive, 31 were labor-intensive, and 27 were capital-intensive. Half of these emerged around 1980. Within the capital-intensive category, two major goods; fertilizer and paper, involved significant amounts of natural resources. Fertilizer requires a large amount of oil as an input and similarly much timber is required for paper.

Table 5.13: Breakdown of Manufactured Exports by Factor Intensity[a].

| SITC | 1980 | 1985 | 1990 | Growth[b] 1980-85 | 85-90 | 80-90 |
|---|---|---|---|---|---|---|
| I. Resource Intensive[c] | | | | | | |
| 611 Leather | 6.5 | 7.6 | 63.5 | 3.2 | 52.9 | 25.6 |
| 634 Plywood,veneer etc | 4.7 | 941.3 | 2,790.9 | 188.6 | 24.3 | 89.4 |
| 635 Wood manufactures | - | 11.0 | 273.8 | na | 90.2 | na |
| 661 Cement,cons. materials | 25.5 | 22.0 | 100.3 | -12.9 | 35.2 | 14.7 |
| 667 Pearl,precious stones | 3.4 | 4.4 | 14.1 | 5.3 | 26.2 | 15.3 |
| II. Labor Intensive[d] | | | | | | |
| 541 Medicinal,pharmaceutical | 11.7 | 15.4 | 13.6 | 5.6 | -2.4 | 1.5 |
| 551 Essential oils,perfume | 21.2 | 22.7 | 60.2 | 1.4 | 21.5 | 11.0 |
| 553 Perfumery,cosmetics | 0.3 | 27.6 | 49.4 | 147.0 | 12.3 | 66.6 |
| 554 Soap,cleansing prep. | 0.1 | 0.3 | 40.6 | 24.6 | 166.8 | 82.3 |
| 651 Textile Yarn | 3.1 | 12.6 | 109.3 | 32.4 | 54.0 | 42.8 |
| 652 Cotton fabrics,woven | 2.4 | 66.1 | 201.8 | 94.1 | 25.0 | 55.8 |
| 653 Fabrics,woven | 27.7 | 90.1 | 543.4 | 26.6 | 43.2 | 34.7 |
| 655 Knitted fabrics | 0.1 | 6.4 | 16.2 | 129.7 | 20.4 | 66.3 |
| 656 Tulle,lace,ribbons | 3.5 | 6.4 | 201.9 | 12.8 | 99.4 | 50.0 |
| 657 Special yarns | 7.7 | 7.4 | 73.7 | -0.8 | 58.4 | 25.3 |
| 664 Glass | 0.1 | 2.3 | 33.7 | 87.2 | 71.1 | 78.9 |
| 665 Glassware | 2.1 | 5.9 | 45.8 | 22.9 | 50.7 | 36.1 |
| 666 Pottery | 0.1 | 0.1 | 17.7 | 0 | 181.6 | 76.8 |
| 697 Household equipment,metal | 0.1 | 0.2 | 43.4 | 14.9 | 193.3 | 83.5 |
| 776 Thermionic | - | 71.7 | 18.3 | na | -23.9 | na |
| 778 Electrical apparatus | - | 1.4 | 64.7 | na | 115.2 | na |
| 793 Ships,boats | - | 1.4 | 57.2 | na | 110.0 | na |
| 821 Furniture and parts | 3.1 | 7.1 | 286.2 | 18.0 | 109.4 | 57.2 |
| 831 Travel goods | 0.1 | 0.5 | 20.5 | 38.0 | 110.2 | 70.2 |
| 841 Men's coats not knitted | - | - | 446.1 | na | na | na |
| 842 Women's coats not knitted | - | 71.7 | 449.6 | na | 44.4 | na |
| 843 Men's coats knitted | - | 115.1 | 152.1 | na | 5.7 | na |
| 844 Women's coats knitted | - | 66.4 | 165.1 | na | 20.0 | na |
| 845 Articles of apparel | - | 25.9 | 377.9 | na | 70.9 | na |
| 846 Clothing accessories | - | 31.1 | 37.6 | na | 3.9 | na |
| 848 Other articles | - | 24.8 | 18.0 | na | -6.2 | na |
| 851 Footwear | 1.4 | 7.9 | 569.5 | 41.3 | 135.2 | 82.2 |
| 893 Articles of plastics | 0.1 | 0.6 | 41.4 | 43.1 | 133.2 | 82.7 |
| 894 Baby carriages,toys | 0.6 | 0.4 | 56.9 | -7.8 | 169.5 | 57.6 |
| 898 Musical instrument,parts | 0.7 | 38.8 | 34.0 | 123.2 | -2.6 | 47.4 |
| 899 Misc. manufactured | 3.3 | 4.2 | 79.2 | 4.9 | 79.9 | 37.4 |

Table 5.13 (continued)

| SITC | 1980 | 1985 | 1990 | Growth[b] 1980-85 | 85-90 | 80-90 |
|---|---|---|---|---|---|---|
| III. Capital Intensive[e] | | | | | | |
| 512 Alcohols,phenols | 9.0 | 6.0 | 12.7 | -7.8 | 16.2 | 3.5 |
| 513 Carboxylic acids | 1.5 | 1.3 | 21.0 | -2.8 | 74.4 | 30.2 |
| 514 Nitrogen | 1.8 | 8.2 | 41.6 | 35.4 | 38.4 | 36.9 |
| 522 Inorganic chemical | - | 34.8 | 27.2 | na | -4.7 | na |
| 531 Synthetic organic | 0.2 | 4.3 | 30.6 | 83.8 | 48.1 | 65.4 |
| 562 Fertilizers | - | 80.0 | 192.8 | na | 19.2 | na |
| 573 Polymers or vinyl | - | - | 23.0 | na | na | na |
| 574 Poliacetals,polycarbon | - | - | 20.4 | na | na | na |
| 582 Plates,sheets of plastic | - | - | 18.2 | na | na | na |
| 591 Disinfectants,Insecticides | - | 3.5 | 25.5 | na | 48.8 | na |
| 598 Misc. chemical products | - | 0.1 | 10.0 | na | 151.2 | na |
| 625 Rubber tire, etc | - | 7.4 | 65.7 | na | 54.8 | na |
| 641 Paper and paperboard | 4.7 | 20.7 | 116.8 | 34.5 | 41.3 | 37.9 |
| 642 Paperboard cutted | 0.1 | 0.5 | 37.6 | 37.9 | 137.3 | 80.3 |
| 672 Ingots,primary form | - | 5.0 | 14.9 | na | 24.4 | na |
| 673 Flat products not clad | 7.7 | 22.8 | 97.5 | 24.2 | 33.7 | 28.9 |
| 674 Flat products clad | 0.1 | 0.1 | 14.8 | 0 | 171.7 | 64.8 |
| 676 Iron, steel shaped | - | - | 51.8 | na | na | na |
| 691 Structures,parts iron,steel | 1.6 | - | 24.2 | na | na | na |
| 694 Nails,screws,bolts,nuts | 0.1 | 0.1 | 10.3 | 0 | 152.7 | 58.9 |
| 699 Base metal manufactured | - | 0.2 | 11.0 | na | 122.9 | na |
| 762 Radio receivers | - | 0.1 | 37.3 | na | 226.8 | na |
| 764 Telecommunication equipment | - | 7.4 | 59.5 | na | 59.7 | na |
| 785 Motorcycles | - | 0.4 | 24.6 | na | 127.9 | na |
| 792 Aircraft equipments | - | 0.7 | 14.4 | na | 83.1 | na |
| 881 Photographic apparatus | - | 0.7 | 33.4 | na | 116.6 | na |
| 897 Jewellery,goldsmith | 0.1 | 8.1 | 56.7 | 140.8 | 47.6 | 88.5 |

Source : CBS, Indonesian Foreign Trade Statistics, various issues.

Notes [a]Three digits SITC with export value in 1990 larger than $ 10 million; Value in $ million.

[b]Compounded annually.

[c]Resource Intensive: SITC 61,63,66 (excluding 664-666), 671

[d]Labor Intensive : SITC 54,55,65, 664-666, 695-697, 749, 776 778,793, 81-85,89(excluding 896-897)

[e]Capital Intensive : SITC 5 (excluding 54-55), 62,64, 67 (exc 671), 69 (exc 695-697), 7 (exc 749,776,778,793), 86-88, 896-897.

[f]The source used for classifying industries into these categories base on Ariff and Hill (1986).

The five major goods (plywood, footwear, fabrics, men coats and women coats) whose exports exceeded $400 million in 1990, were insignificant in 1980. The last two did not even exist before 1980.

The strong performance of resource-intensive manufactured exports, will not last forever since the supply of timber is likely to decline in the future. Therefore, Indonesia must increase efforts to promote exports of labor-intensive goods in order to utilize its comparative advantage in this factor. A shift to labor-intensive goods would also increase productive employment rates. This would in turn bring a more favorable income distribution to the economy.

In recent years, issues of exploitation of natural resources have become more important (Dixon, 1990; Petocz, 1989). The Indonesian economy is most concern with the question of how long natural resources can support the growth of exports. Natural resources may be divided into two categories; renewable and non-renewable. Renewable resources are those that replenish or return to their original condition after usage. The use of non-renewable resources reduces the world's stock. Petroleum is one example of a non-renewable resource.

Although most resource-intensive manufactured exports from Indonesia are renewable, such as plywood from timber, their renewal would require more than one generation. Even though Indonesia is endowed with abundant rain forests, this

area has declined 7.5 percent in the last decade, from 89.0 million hectares (ha) in 1980 to 82.3 million ha in 1990 (ASEAN, 1991).[1] Most of the forest depletion (deforestation) has been caused through careless extraction by concession firms and illegal logging.[2] Other contributors to deforestation include shifting cultivation, large agricultural and transmigration programs, and forest fires. Indonesia should carefully manage forest exploitation to avoid further serious damage of the environment.[3] In the Indonesian timber industry, logging firms are allowed to harvest trees according to the following regulations: (a) each concession is divided into 35 blocks. Firms must submit yearly cutting plans to Ministry of Forestry prior to forest exploitation. They may cut down all trees over 50 cm diameter, except 25 trees in each block to act as seedling agents. In addition, the total annual cut of wood is limited to their natural growth[4]. Under these regulations, it is predicted that the forest will

---

[1]About 60 million ha are allocated as "production forests" and 53 million ha have been granted among 522 forest concession firms (Ministry of Forestry, 1990).

[2]see Far Eastern Economic Review (FEER), 19 April 1991.

[3]Deforestation in South America, especially in Brazil, is extensively covered in the world press; see National Geographic (Dec. 1988), Life Magazine (May, 1990) and Business Week (June, 1990).

[4]The natural growth of tree per ha is calculated by multiplying an estimated increase in diameter of the tree by the average number of trees per ha. For example, Indonesian annual wood extraction is limited to 31 million $m^3$ according to estimated natural growth of forest.

sustain itself at original levels. However, these regulations are difficult to monitor due to the large areas of forests and the limited field staffs which is poorly trained, under equipped and lacking in motivation.[1]

Table 5.14 provides comparative data on manufactured exports from Indonesia and other developing countries. The growth of total exports and exports of manufactured goods from Indonesia exceeded the growth of world exports and developing countries' exports the 1970-1988 period. Indonesian total exports increased by an annual growth of 17.8 percent from 1970 to 1988 while those of the developing countries increased by 13.7 percent. Moreover, the growth difference was larger for manufactured exports. Indonesia managed to increase its

Table 5.14: Growth* of Total Exports and Exports of Manufactured Goods 1970 - 1988 (%).

| | Total Exports | Manufactured Goods |
|---|---|---|
| World | 13.0 | 13.8 |
| Developed Countries | 12.8 | 13.3 |
| Developing Countries | 13.7 | 20.5 |
| Indonesia | 17.8 | 29.3 |

Source: UNCTAD (1991), Handbook of International Trade and Development Statistics 1990.
* = Compound rate.

[1]In 1990, the World Bank granted low interest loans to improve monitoring of log-extraction activities (FEER, 7 February 1991).

manufactured exports at an annual growth rate of 29.3 percent, compared to 20.5 percent for other developing countries.

When we exclude the exports of South Korea, Taiwan, Hong Kong, and Singapore (The Asian NICs), Indonesia's performance far exceeded the average growth rate of the other developing countries.

## 7. External Demand for Indonesian Manufactured Exports

In the previous chapter, we estimated price and income elasticities of world demand for Indonesian manufactured exports. In this section we focused our analysis on demand in individual countries or regions. We employed a similar model, using incomes of individual countries like the USA, Japan, the EEC, and the LDC, rather than world income.

The demand for quantity of manufacturing exports from Indonesia was assumed to depend on the income growth of its trade partner's and the relative price of Indonesian manufactured exports compared to world manufactures prices. The model of demand for manufactured exports is:

$$\text{Log } X_{it} = a + b \log (PX/PW)_t + c \log Y_{it}$$

where $X_{it}$ = quantity of manufactured exports demanded by country i, where i = USA, Japan, EEC and LDC

PX = unit value price of manufactured exports

PW = unit value price of world manufactured goods exported

$Y_{it}$ = real income (GDP) of country i, where i = USA (in constant 1985 dollar, OECD data), Japan (in constant 1982 Yen, OECD data), EEC (in constant dollar price and PPP 1985, OECD data) and LDC (in unweighted index value, 1987=100; World Bank data).

We applied the Indonesian data for manufactured exports to four countries: the USA, Japan, the EEC, and the LDC to the model. This study covers the period for 1975 to 1990 since breakdown by country of destination are available since 1975. The results of time-series regressions by using annual data are presented in Table 5.15 below.

Table 5.15: Regression of Manufactured Exports

| Dependent Variable | Independent Variables | | | Adjusted |
|---|---|---|---|---|
| | C | Price | Income | $R^2$ |
| USA | - 85.49 | - 1.02 | 11.17 | 0.87 |
| | (-5.80) | (-2.62) | (6.23) | |
| Japan | -106.93 | - 0.60 | 8.97 | 0.92 |
| | (-11.88) | (-2.81) | (12.55) | |
| EEC | - 88.30 | - 1.07 | 11.41 | 0.97 |
| | (-11.47) | (-7.15) | (11.65) | |
| LDC | -20.50 | - 1.15 | 6.01 | 0.99 |
| | (-9.26) | (-12.86) | (12.85) | |

Note: Figures in parentheses are t statistics.

The income and relative price coefficients are positive and negative, respectively as expected. All parameters are

statistically significant at the 1% level. Values of $R^2$ are very high and ranging from 0.87 to 0.99, meaning that the variables, income and relative prices, are sufficient to explain most of the variations of demand for manufactured exports in each country.

The value of price elasticities vary from a low of -0.60 for Japan to a high of -1.15 in LDC. It seems that relative prices do not greatly affect the Japanese's decision to import manufactured goods from Indonesia, while LDC imports are more sensitive to relative prices. The income elasticities were high, ranging from 6.0 in LDCs to 11.4 in the EEC.

The estimated bilateral price and income elasticities calculated in this chapter may help formulate effective export strategies for the different countries. For example, Japan's low price elasticity suggests the appropriateness of a different strategy from those for the LDCs. Price manipulation is of little help in increasing exports of manufactures to Japan. Indonesia should apply other inducements such as improving quality and style, fast delivery, and increasing promotion of its products in Japan. By contrast, efforts to increase manufactured exports to LDC must rely on pricing strategies.

## 8. Summary and Conclusions

Trade orientations have shaped Indonesia's industrial development. Inward-orientation contributed to a

strengthening of the industrial base and increased manufacturing share in the GDP. This strong base allowed Indonesia to shift to an outward-orientation.

In shifting from inward- to outward-orientation policies, Indonesia passed three tests for successful export-led development strategies as noted by Robinson (1988). First, Indonesia managed to maintain an evolving industrial base to support manufactured exports. Second, Indonesia's natural resources (oil and timber) gave a sufficient amount of foreign exchange to finance imports of capital goods in the early phase of the industrialization process. Three, Indonesia's manufacturing sector increased its productivity from learning by doing during the inward-orientation period.

Outward-orientation policies led to a high growth of manufactured exports, especially during the 1980s. However, manufactured exports concentrated more on a few goods: plywood, textiles, clothing, and footwear. The first is resource-intensive and the others are labor-intensive. This demonstrates that Indonesia utilizes its comparative advantage in promoting manufactured exports in accordance with the H-O-S theory.

However, an increasing share of resource-intensive manufactured exports threatens the environment. Therefore, the Indonesian government should slow the export growth of these goods and increase efforts to expand exports of labor-intensive goods. The expansion of labor-intensive goods must

contend with a high degree of competition from other developing countries. For instance, low-income countries such as China, Pakistan and Bangladesh provide strong competition in the textiles, clothing, and footwear markets.

The competitiveness of Indonesian labor-intensive exports may be improved by higher quality and competitive prices. This can be done by increasing the industry's productivity and by reducing production costs through trade barrier elimination, including administrative obstacles. In other words, the outward-orientation policies and economic liberalization must be maintained and even improved upon.

The destination of manufactured exports shows a tendency to favor developed countries. This is due to their high income elasticity and preferential treatments. Exports of manufactures to developing countries is not significant, because of high tariff walls. Their markets are also not promising, despite their large populations, because low incomes mean small markets.

# CHAPTER SIX

# CONCLUSION AND POLICY IMPLICATIONS

International trade, especially exports, are an important factor in Indonesia's economy. High economic growth in Indonesia in the last two decades has been associated with high export growth over the same period. Statistical results that increase the $R^2$ value of the regressions help explain the important role of exports in economic growth. Exports contributed to economic growth by enhancing productivity through increased specialization and improved resource allocation.

Mineral fuels were the leading exports in terms of their contributions to total export earnings from the second half of the 1970s to the first half of the 1980s. The predominance of mineral fuels has declined with the drop in oil prices and the emergence of new exports.

The overall performance of non-mineral primary commodities is not encouraging. This is due to unstable prices and low demand elasticities. Manufactures became more important to the exports structure, especially in the second half of the 1980s.

The strong growth of manufactured exports especially textile, clothing and footwear must be associated with the shift in government strategy from inward- to outward-

orientation, as well as the high demand elasticities of these products in terms of price and income. The inward-oriented strategy in the 1970s developed a strong base of domestic industry. This strategy helped Indonesia raise its manufacturing share of the GDP, 11 percentage points, from 8 percent in 1970 to 19 percent in 1990. This figure is, however, small compared to neighboring countries. Nonetheless, if this growth is maintained at the current rate, the role of manufacturing in Indonesia will reach the level of current NICs early in the next century.

If a country succeeds in transforming its exports from primary commodities to manufactures it has the preconditions necessary for a strongly based domestic industry, as the experiences of South Korea and Taiwan have shown. Chenery (1980) pointed out that most of the countries that succeeded in transforming their exports went from inward- to outward-oriented strategies. This argument is consistent with the Indonesian experience of the last two decades. Indonesian manufacturing sector has learned experiences during the phase of inward-orientation period. This valuable experience enabled Indonesia to expand its market size of manufactured exports.

Structural change in the export sector also contributed to the high growth of manufactured exports. This changed the pattern of Indonesian exports from primary commodities to higher, value-added manufactured goods.

The strong performance of manufactured exports has mainly relied on a single good, resource-intensive plywood. The growth of this good has been supported by an unlimited supply of timber, high external demand, and a lack of competition in the world market. However, the prospect for plywood exports may not endure for the following reasons: 1) Substitutions from other reconstituted panel products such as fiber board or particle board; and 2) Restrictive policies reflecting the growing concern with over-extraction from Indonesian rain forests.

Labor-intensive exports such as textiles, clothing, and footwear have brighter prospects because Indonesia possesses an abundant supply of cheap labor. Prospects for market access for these goods are mixed. In the first place , penetrating developed countries' markets (except Japan) is relatively easy due to preferential treatment. On the other hand, a high degree of competition from other developing countries makes this business difficult. It is important for Indonesia's textile industries to increase productivity and reduce costs in order to improve their competitiveness in worldwide textile markets.

Several leading theorists have emphasized the positive contribution of trade to the economic growth of developing countries. However, the impact is not equal among countries. It is larger in middle-income countries than in those with lower incomes. Exports may have greater effects on economic

growth (a) if there are significant linkages between the export sector and the rest of the domestic economy; and (b) if they target the growth of manufactured exports that are consistent with its given and growing factor endowments.

This study has demonstrated the relevance of insights from the neoclassical economic theory to understand recent Indonesian economic performance. It is, however, necessary to build further on this performance by conscious policies aimed at enhancing Indonesia's export capability. Consequently, to further conform to this approach, policy makers should not only maintain outward-oriented policies and economic liberalization, that have thus far been a success, but indeed further develop these policies.

Some alternatives for improving and strengthening Indonesian strategies for increasing exports are suggested by this study. Policy makers should approach the development of the export sector from external and internal perspectives. External approaches deal with increasing efforts to utilize the general system preferences (GSP) through negotiations with developed economies and international organizations such as the General Agreement on Trade and Tariffs (GATT). In addition, Indonesia should take advantage of full participation in the international commodities agreements such as the International Coffee Organization (ICO), the International Tin Council (ITC), the Association of Natural Rubber Producing Countries (ANRPC), etc. Finally, it is

important to increase the intensity of the promotion of Indonesian products in developed countries and carefully appraise its competitors' strategies. This is so important to consider because most developing countries compete in penetrating developed economies' markets.

The internal approaches stress increasing the productivity of the export sector and the quality of export goods. In addition, Indonesia should increase efforts to reduce domestic obstacles to the export sector, such as regulations and licensing

Strategies to increase manufactured exports are different for different economic targets. For developed countries which possess relatively high income elasticity, the strategies must rely on higher quality and improvement of style and design. By contrast, the strategies for developing countries must rely on pricing. In fact, better knowledge of the different economic targets is required to become more competitive. Following the examples of the NICs, detailed studies of these potential markets should be made to identify particular exporting opportunities, and the resulting information distributed to exporters.

Another area to be alert to is the stabilization of the domestic economy in order to maintain low inflation rates and stable wages in order that Indonesia can compete in labor-intensive goods markets. In addition, providing public services will also keep wages low. However, policy makers

should be keenly aware that opening the country to international markets frequently has the effects of raising wage rates toward those of more advanced countries.

Clearly, export expansion has a prominent role to play in Indonesia's economic growth. Indonesia needs high economic growth to reach its goal of achieving acceptable levels of well-being found in NICs.

# APPENDICES

# Appendix 1

$$GDP = a\ Dominv + b\ Frinv + c\ L + d\ X$$

GDP = Growth of real GDP in domestic currency in constant 1985 prices; IMF data.

Dominv = Level of domestic investment (ratio of domestic investment to GDP), as a residual between current account and gross capital formation, in constant 1985 prices; IMF data.

Frinv = Current account (approached by resource balance), transformed into domestic currency by yearly average exchange rates, deflated by CPI to have constant 1985 prices; IMF data.

L = Population growth as a proxy of labor growth.

X = Growth of real export value in domestic currency deflated by index of import unit value; CBS data.

## Appendix 2

### Composition of Commodities by SITC

| Commodities | SITC |
|---|---|
| Mineral Fuels | 3 |
| - Crude Petroleum and Products | 33 |
| - Natural Gas | 34 |
| Non-Fuels | |
| - Primary Commodities | 0 + 1 + 2 + 4 + 68 |
| - Food items | 0 + 1 + 4 + 22 |
| - Agricultural Raw Materials | 2 - 22 |
| - Ores and Metals | 27 + 28 + 68 |
| - Manufactured Goods | 5 + 6 + 7 + 8 - 68 |
| - Others | 9 |

Source: UNCTAD (1991), UNCTAD Commodity Yearbook 1990.

## Appendix 3

The Hirschmann coefficient of export commodity concentration:

$$H_j = \frac{\sqrt{\sum_{i=1}^{n} \left(\frac{X_i}{X}\right)^2} - \sqrt{\frac{1}{n}}}{1 - \sqrt{\frac{1}{n}}}$$

Where $H_j$ = Hirschmann coefficient index, the values range from 0 to 1.

$X_i$ = The export value of commodity i.

X = The value of total exports.

n = Number of commodities exported: 149, 229, and 249 in 1980, 1985, and 1990 respectively.

## Appendix 4

The formula of TOT and PPX are:

$$TOT = \frac{\text{UVX index}}{\text{UVM index}}, \quad \text{and} \quad PPX = \frac{\text{VX index}}{\text{UVM index}}$$

Where TOT = Terms of Trade

PPX = Purchasing Power of Exports

UVX = Unit Value of Exports, obtained by dividing the value of total exports (VX) by the volume of total exports.

UVM = Unit Value of Imports, obtained by dividing the value of total imports by the volume of total imports

## Appendix 5

$$\text{Log } X_{it} = a + b \text{ Log } (PI_i/PW_i)_t + c \text{ log } IW_{it}$$

Where, $X_i$ = Volume of total exports (TX), exports of mineral fuels (XMF = SITC 3), exports of non-fuels (XNF = SITC 1-9, exc 3), exports of primary commodities (XPR = SITC 0-3, 4, 68) and exports of manufactured goods (XM = SITC 5-8, exc 68); annual data from CBS.

$PI_i$ = Index price of unit value of Indonesian TX, XMF, XNF, XPR, and XM (1980=100).

$PW_i$ = Index price of unit value of LDCs TX, Index price of unit value of crude petroleum in the world market, Index price of unit value of total exports of non-oil exporter LDCs, Index price of unit value of primary commodities in the world market, Index prices of unit value of exports of world manufactured goods, (1980=100), data from United Nations, Handbook of International Trade and Development Statistics.

$IW_i$ = Index of real world income (1980=100), data from the World Bank weighted by share of exports from Indonesia to the USA, Japan, the EEC, and the LDC. Country shares are based on annual share (TX, and XMF), and on average of 10 years (XNF, and XPR), and on annual share from 1975-1990 and average of 10 years from 1971-1974 (XM), CBS data.

## Appendix 6

### A Brief Summary of Indonesian Trade Liberalization.

| Year | Policies |
|---|---|
| 1982 | -Provision of export credit at 9% for strong exports (such as coffee, tea and palm oil) and 6% for others (including manufactures). |
| 1983 | -Devaluation of Rupiah from Rp 700/US $ to Rp 1000/US $.<br>-Interest rates were freed to fluctuate with supply and demand in the financial market.<br>-Simplification of procedures to obtain permits to process industrial goods. |
| 1985 | -Hiring of a private firm (Swiss based SGS) to examine and certify exports and imports, and reorganization of ports and shipping operations.<br>-Reduction of the number of tariff categories from 25 to 11, and reducing the highest tariff rates from 225% to 100%. |
| 1986 | -Creation of a duty exemption and drawback facility to enable exporters to purchase imported inputs at world prices.<br>-Devaluation of Rupiah to Rp 1650/US $.<br>-Simplification of procedures to obtain exports and imports licenses. |
| 1987 | -Continue to simplify procedures for exporting and importing goods.<br>-Reduction of the number of products subject to non-tariff barriers (NTB). |
| 1988 | -Reduction and simplification of business license procedures on shipping industries. |
| 1989 | -Encourage investment especially in the export sector. |
| 1990 | -Additional reduction of nominal tariffs to a ceiling of 40%. |

Source : Republik Indonesia, Pidato Kenegaraan Presiden, various years.

# BIBLIOGRAPHY

## BIBLIOGRAPHY


Akaike, H. (1970) "Statistical Predictor Identification", Annals of the Institute of Statistical Mathematics 21: 203-247.

Amsden, Alice H.(1986) "The Direction of Trade, Past and Present: and the Learning Effects' of Exports to Different Directions", Journal of Development Economics, 23:249-274.

Ariff, M. and Hill, H. (1986) "A Factor-Intensity Analysis of Structural Change in ASEAN Manufacturing", Industry Development, 19:77-101.

ASEAN (1991) ASEAN Statistical Yearbook on Food, Agriculture and Forestry 1980-1990. Bangkok: ASEAN Agricultural Development Planning Center.

Bahmani-Oskooee, M., Mohtadi, H., and Shabsigh, G. (1991) "Exports, Growth and Causality in LDC: A re-examination", Journal of Development Economics, 36: 405- 415.

Balassa, Bela (1977) "Exports and Economic growth; Further evidence", Journal of Development Economics, 5: 181-189.

Balassa, Bela (1985) "Exports, Policy Choices, and Economic Growth in Developing Countries after the 1973 oil shock", Journal of Development Economics, 18:23-35.

Balassa, Bela (1988) "Interest of Developing Countries in The Uruguay Round", The World Economy, 2: 39-54.

Balassa, Bela (1989) "Outward Orientation" in Handbook of Development Economics Vol I. edited by H. Chenery and T.N. Srinivasan. Amsterdam: North Holland.

Baldwin, R.E. (1963) Economic Development and Export Growth: A Study of Northern Rhodesia, 1920-1960. Berkeley, CA: University of California Press.

Baldwin, R.E. (1971) "Determinants of the Commodity Structure of U.S Trade", American Economic Review, 61:126-146.

Bank Indonesia (1991) Indonesian Financial Statistics. Jakarta.

Bardhan, P. (1988) "Alternative Approaches to Development Economics", in Handbook of Development Economics. vol I. edited by H. Chenery and T.N. Srinivasan. Amsterdam: North Holland.

Bauer, Lord P. (1981) Equity, the Third World Economy Delusion. Cambridge, MA: Harvard University Press.

Bhagwati, J.N. (1958) "Immiserizing Growth: A Geometric Note", Review of Economic Studies, 26:201-205.

Bhagwati, J.N. (1978) Foreign Trade Regimes and Economic Development: The Anatomy and Consequences of Exchange Control. Cambridge: NBER Balinger.

Bhagwati, J.N. (1988) "Export Promoting Trade Strategy Issues and Evidence", Research Observer, 3:27-56.

Bliss, Christopher (1989) "Trade and Development", in Handbook of Development Economics Vol II. edited by H. Chenery and T.N. Srinivasan. Amsterdam: North Holland.

Brada, J.C. and Mendez, J.A. (1988) "An Estimate of the Dynamics Effects of Economic Integration", The Review of Economics and Statistics, 70:163-168.

Brander, James A. (1981) "Intra-Industry Trade in Identical Commodities", Journal of International Economics, 11:1-14.

Bruton, H. (1989) "Import Substitution" in Handbook of Development Economics vol II. edited by H. Chenery and T.N. Srinivasan. Amsterdam: North Holland.

Caves, R.E (1965) "Vent of Surplus, Models of Trade and Growth" in Trade, Growth, and the Balance of Payments, by Baldwin, R.E at al. Chicago: Rand McNally.

CBS (Central Bureau of Statistics) Statistical Yearbook of Indonesia, various issues.

CBS (Central Bureau of Statistics) Indonesian Foreign Trade Statistics, various issues.

Chenery, H. (1980) "Interacting Between Industrialization and Exports", American Economic Review, 70:281-192.

Chenery, H. and Syrquin, M. (1986) "Typical Patterns of Transformation" in Industrialization and Growth: A Comparative Study. edited by H. Chenery, S. Robinson and M. Syrquin. New York: Oxford University Press for the World Bank.

Chow, P.C.Y. (1987) "Causality between Export Growth and Industrial Development", Journal of Development Economics, 26: 55-63.

Christensen, L., Cummings, D., and Jorgenson, D.W. (1975) "Economic Growth, 1947-1973: An International Comparison" in New Developments in Productivity Measurement and Analysis. edited by J.W. Kendrick and B. Vaccara. Chicago: The University of Chicago Press.

Crafts, N.F.R (1973) "Trade as a Handmaiden of Growth: An Alternative View", Economic Journal, 83: 875-884.

Crone. Donald K. (1985) The Growth and Equity: Experience of South East Asia. E. Lansing, Michigan State University, CASID Occasional Paper no 8.

Dennison, E. and Chung, W. (1967) "Economic Growth and Its Sources" in Asia's New Giant, How the Japanese Economy Works. edited by H. Patrick and H. Rosovsky. Washington DC: The Brooking Institution.

Dixon, John A. (1990) "Environment and Economic Growth of Resource Management in ASEAN", ASEAN Economic Bulletin, 7:159-172.

Dollar, David (1982) "Outward-oriented Developing Economies Really Do Grow more Rapidly: Evidence from 95 LDCs, 1976-1985", Economic Development and Cultural Change, 40:523-544.

Dornbusch, R. (1985) "Policy Performance Links between LDC Debtors and Industrial Nations", Brookings Papers on Economic Activity, 2:303-366.

Drysdale, Peter (1988) International Economic Pluralism: Economic Policy in East Asia and Pacific. New York: Columbia University Press.

Drysdale, Peter and Soesastro M. Hadi (1990) "Survey of Recent Developments", Bulletin of Indonesian Economic Studies, 26: 3-44.

Eckaus, R (1978) "Review of Chenery and Syrquin, Pattern of Development 1950-1970", Economic Development and Cultural Change, 26:621-625.

Economic and Social Commission for ASIA and the Pacific (ESCAP) Economic and Social Survey of Asia and The Pacific 1987. Bangkok.

Economic and Social Commission for ASIA and the Pacific (ESCAP) Statistical Yearbook for ASIA and the Pacific 1988. Bangkok.

Ethier, W. (1988) Modern International Economics. New York: Norton.

Evans, David (1989) "Alternative Perspectives on Trade and Development" in Handbook of Development Economics vol II. edited by H. Chenery and T.N. Srinivasan. Amsterdam: North Holland.

Fajana, Olufemi (1979) "Trade and Growth: The Nigerian Experience", World Development, 7(1):73-78.

Findlay, Ronald (1988) "Trade Development, and the State" in The State of Development Economics: Progress and Perspectives. edited by G. Ranis and T.P. Schultz. New York: Basil Blackwell.

Freeman, A. M. (1971) International Trade: An Introduction to Method and Theory. New York: Harper & Row.

Gillis, Malcom (1983) "Economic Growth in Indonesia 1950-1980", HIID Development Discussion Paper no 146, Cambridge, MA: HIID.

Goldstein, M. and Khan, M. (1978) "The Supply and Demand for Exports: A simultaneous Approach", Review of Economics and Statistics, 60:275-286.

Goldstein, M. and Khan, M. (1982) Effects of Slowdown in Industrial Countries on Growth in Non-Oil Developing Countries. Washington, DC: IMF Occasional Paper No. 12.

Griffin, K.B.(1978) International Inequality and Poverty. London: MacMillan.

Haberler, Gottfried (1961) "Terms of Trade and Economic Development" in Economic Development of Latin America. edited by H. Ellis. New York: St. Martin's Press.

Haberler, Gottfried (1968) "International Trade and Economic Development" in Expansion of World Trade and the Growth of National Economies. edited by Richards S. Weckstein. New York: Harper Torchbooks.

Heckscher, E.F (1919) "The Effects of Foreign Trade on the Distribution of Income", Ekonomisk Tidskrift. Reprinted in H.S Ellis and L.M. Metzler, Readings in the Theory of International Trade. Homewood Ill: Irwin, 1950.

Hill, Hal (1990) "Indonesia's Industrial Transformation Part I", Bulletin of Indonesian Economic Studies, 26:79-120.

Houthakker, H.S and Mangee, Stephen P. (1969) "Income and Price Elasticities in World Trade", The Review of Economics and Statistics, 51:111-125.

Hsiao, C. (1981) "Autoregressive Modeling and Money-Income Causality Detection", Journal of Monetary Economics, 7:85-106.

International Monetary Funds (IMF) International Financial Statistics, various issues.

International Monetary Funds (IMF) Direction of Trade Statistics, various issues.

Jung, W and Marshall, P (1985) "Exports, Growth and Causality in Developing Countries", Journal of Development Economics, 18: 1-12.

Kavoussi, R.M. (1984) "Export Expansion and Economic Growth: Further Evidence", Journal of Development Economics, 14:241-250.

Keesing, Donald B. (1966) "Labor Skills and Comparative Advantage", American Economic Review, 56:249-258

Keesing, Donald B. (1967) "Outward Looking Policies and Economic Development", Economic Journal, 77: 303-320.

Kenen, Peter (1989) The International Economy. second edition Englewood Cliffs, NJ: Prentice-Hall.

Kindleberger, C.P and Lindert P.H (1982) International Economics, 6th edition. Homewood, Il: Richard Irwin Inc.

Kmenta, Jan (1986) Elements of Econometrics second edition. New York: Macmillan Publishing.

Kravis, Irving B. (1956) "Wages and Foreign Trade", Review Economic Statistics. 38:14-30.

Kravis, Irving B. (1970) "Trade as a Handmaiden of Growth", Economic Journal, 80: 850-872.

Krueger, Anne O. (1978) Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences. Cambridge: NBER Balinger.

Kubo, Y., De Mello, J., and Robinson, S. (1986) "Trade Strategy and Growth Episodes" in Industrialization and Growth. edited by H. Chenery, S. Robinson and M. Syrquin. New York: Oxford University Press for the World Bank.

Kuznets, S. (1966) Modern Economic Growth. New Haven, CT: Yale University Press.

Lal, Depak and Rajapatirana, Sarath (1987) "Foreign Trade Regimes and Economic Growth in Developing Countries", Research Observer, 2(2):1989-216.

Leontief, W. (1953) "Domestic Production and Foreign Trade: The American Capital Re-Examined", Proceedings of The American Philosophical Society, 97: 333-349.

Lewis, Arthur (1954) "Economic Development with Unlimited Supplies of Labor", The Manchester School, 22:139-191.

Lewis, Arthur (1980) "The Slowing Down of the Engine of Growth", American Economic Review, 70:555-564.

Lewis, S.R. Jr (1989) "Primary Exporting Countries" in Handbook of Development Economics vol II. edited by H. Chenery and T.N. Srinivasan. Amsterdam: North Holland.

Little, I., Scitovsky, T., and Scott M. (1970). Industry and Trade in Some Developing Countries: A Comparative Study. New York: Oxford University Press.

Luders, Rolf J. (1990) "Economic Revolution in Latin America, Continuing Development in Asia", ASEAN Economic Bulletin, 8:1-14.

McCawley, Peter (1981) "The Growth of Industrial Sector" in The Indonesian Economy during the Soeharto Era, Edited by Anne Both and Peter McCawley. Kualalumpur: Oxford University Press.

Maddison, Angus (1982) Phases of Capitalist Development. New York: Oxford University Press.

Marx, Karl (1936) The Poverty of Philosophy. Translated by H. Quelch. Chicago: Charles H. Kerr&Company.

Marquez, J. and McNeilly, C. (1988) "Income and Price Elasticities for Developing Countries", The Review of Economics and Statistics, 70:306-314.

Massell, B.F. (1970) "Export Instability and Economic Structure", American Economic Review, 60:618-630.

Michaely, Michael (1977) "Exports and Economic Growth: An empirical investigation", Journal of Development Economics, 4:49-54.

Michalopoulus, C. and Jay, K. (1973) "Growth of Exports and Income in the Developing World: A neoclassical view", AID discussion paper no 28.

Min, Lin Jiang (1980) "Competitiveness and Complementary of ASEAN Economies" in ASEAN Economies in Transition. edited by Saw Swee Hock. Singapore: Singapore University Press.

Minhas, Bagicha (1962) "The Homohypallagic Production Function, Factor Intensity Reversal, and the Hekscher-Ohlin Theorem", Journal Of Political Economy, 70:138-156.

Ministry of Forestry (1990) Situation and Outlook of the Forestry Sector in Indonesia. Jakarta

Ministry of Information (1969) The First Five-Year Plan. Jakarta.

Myrdal, Gunmar (1956) An International Economy, Problems and Prospects. New York: Harper and Row.

Morton, K. and Tulloch, P. (1977) Trade and Developing Countries. New York: John Wiley & Sons.

Moschos, Demitrios (1989) "Export Expansion, Growth and the level of Economic Development", Journal of Development Economics, 30:93-102.

Nadiri, M.I. (1970) "Some Approach to the Theory of and Measurement of Total Factor Productivity: A Survey", Journal of Economic Literature, 8:1137-1177

Naya, Seiji (1985) "Economic Performance and Growth Factors of the ASEAN Countries" in The ASEAN Success Story, edited by Linda G. Martin. An East West Center Book, University of Hawaii Press.

Nurkse, Ragnar (1961) Equilibrium and Growth in the World Economy. Cambridge: Harvard University Press.

OECD (1991) Oil and Gas Information 1988-1990. Paris

OECD (1991) National Account 1970-1990. Paris

Ohlin, B. (1933) Interregional and International Trade. Cambridge: Harvard University Press.

Pack, Howard (1988) "Industrialization and Trade" in Handbook of Development Economics vol I. edited by H. Chenery and T.N. Srinivasan. Amsterdam: North Holland.

Pangestu, M. and Habir, P. (1989) "Trends and Prospects in Privatization and Deregulation in Indonesia", ASEAN Economic Bulletin, 5:224-241.

Petocz, Ronald G. (1989) Conservation and Development in Irian Jaya: A Strategy for Rational Resource Utilization. New York: E.J. Brill.

Parthama, I.B.P and Vincent, J. (forthcoming) "United States Demand for Indonesian Plywood", Bulletin of Indonesian Economics Studies.

Prebisch, R. (1950) The Economic Development of Latin America and its Principle Problems. New York: United Nations.

Prebisch, R. (1959) "International Trade and Payments in an Era of Coexistence, Commercial Policy in the Underdeveloped Countries", American Economic Review, 49:251-173.

Ram, Rati (1985) "Exports and Economic Growth: Some Additional Evidence", Economic Development and Cultural Change, 33:415-425.

Republik Indonesia (1990). Lampiran Pidato Kenegaraan Presiden Republik Indonesia 16 Agustus 1990. Jakarta.

Ricardo, David (1817) Principle of Political Economy and Taxation. Reprinted, New York: Dutton, 1969.

Riedel, James (1984) "Trade as the Engine of Growth in Developing Countries, Revisited", Economic Journal, 94:56-73.

Robertson, Sir Dennis (1946) Essays in Monetary Theory. London: Staples Press.

Robinson, S. (1971) "The Sources of Growth in Less Developed Countries: A Cross-Section Study", Quarterly Journal of Economics, 85:391-408.

Robinson, S. (1988) "Multisectoral Models", in Handbook of Development Economics vol I. edited by H. Chenery and T.N. Srinivasan. Amsterdam, North Holland.

Rybczynski T.M. (1955) "Factor Endowments and Relative Commodity Prices", Economica, 22:336-341.

Saito, Kunio (1983) "Economic Development Adjustment and their Financing: An Overview of the experiences of selected Asian Countries in the 1960s and the 1970s", in Two Decades of Asian Development and Outlook for the 1980s edited by Takahiko Haseyama et al.Tokyo: Institute for Developing Economies.

Saleh, Dedi (1991) Optimisasi Produksi dan Pemasaran Karet Alam Indonesia dalam Dinamika Struktur Industri Karet Dunia. IPB, Bogor. PhD Thesis, unpublished.

Salvatore, D. (1987) International Economics, 2nd edition, New York: Macmillan.

Salvatore, D. and Hatcher, T. (1991) "Inward Oriented and Outward Oriented Trade Strategies", Journal of Development Studies, 27:7-25.

Samuelson, P.A. (1948) "International Trade and the Equalization of Factor Prices", Economic Journal, 58:163-184.

Schmitz, Hubert (1984) "Industrialization Strategies in Less Developed Countries: Some Lessons of Historical Experience", Journal of Development Studies, 21:1-21

Singer, H.W. (1960) "The Distribution Gains between Investing and Borrowing countries", American Economic Review, paper and proceedings.

Singer, H.W. (1975) "The Distribution Gains from Trade and Investment, Revisited", Journal of Development Studies, 11:377-382.

Singer, H.W. (1988) "The World Development Report 1987 on the Blessing of Outward Orientation: A Necessary Correction", Journal of Development Studies, 24:232-236.

Smith, Adam (1766) An Inquiry into the Nature of Causes of the Wealth of Nations. edited by R.H. Campbell and A.S. Skinner. Indianapolis: Liberty Class.

Soesastro, M. Hadi (1990). Indonesia-China relations: Trade and Beyond. Jakarta: Center for Strategic and International Studies.

Solow, Robert M. (1962) "Technical Progress, Capital Formation and Economic Growth", American Economic Review, 52:76-86.

Solow, Robert M. (1963) Capital Theory and The rate of return. Amsterdam: North Holland.

Solow, Robert M. (1988) "Growth Theory and After", American Economic Review, 78:307-317.

Stolper, W.F. and Samuelson, P.A. (1941) "Protection and Real Wages", Review of Economic Studies, 9:58-73.

Sundrum, R.M. (1988) "Indonesia's Slow Economic Growth 1981-1986", Bulletin of Indonesian Economic Studies, 24:37-72.

Taylor, Lance (1986) "Trade and Growth", The Review of Black Political Economy, 14:17-36.

Taylor, L. and Arida, P. (1988) "Long-run Income Distribution and Growth" in Handbook of Development Economics vol I. edited by H. Chenery and T.N. Srinivasan. Amsterdam: North Holland.

Thirlwall, A.P. (1989) Growth and Development: with Special Reference to Developing Economies. 4th edition. London: MacMillan.

Travis, W.P (1964) The Theory of Trade and Protection. Cambridge, MA: Harvard University Press.

Tyler, William G. (1981) "Growth and Export Expansion in Developing Countries", Journal of Development Economics 9:121-130.

UNCTAD Handbook of International Trade and Development Statistics, New York. various issues.

United Nations (1989) International Trade Statistics Yearbook 1988. New York.

United Nations (1985) World Economic Survey 1984, Current Trends and Policies in the World Economy. New York.

United Nations (1989) Industry and Development: Global Report 1988/1989. New York.

United Nations (1989) Industry and Development: Global Report 1989/1990.

United Nations (1981) World Industry 1980. New York.

Vanek, J. (1959) "The Natural Resource Content of Foreign Trade, 1870-1955 and the Relative Abundance of the United States", Review of Economics and Statistics, 41:146-153.

Varian, Hal (1984) Microeconomics Analysis, 2nd edition. New York: Norton.

Wickman, Stephen B. (1982) "Indonesian Economy" in Indonesia: A Country Study. edited by F.M. Bunge. Washington DC: The American University Press.

World Bank (1987) World Development Report 1987. Washington DC.

World Bank (1989) Indonesia, Strategy for Growth and Structural Change, Report no. 7758-IND, Washington DC.

World Bank (1990) World Development Report 1990. Washington DC.

World Bank (1991) World Development Report 1991. Washington DC.

Wymenga, P.S.J. (1991) The International Competitiveness in Non-Oil Manufacturing in Indonesia. Working Paper No. 19, Jakarta: Ministry of Industry.

Young, O.R.(1980) "International Regimes", World Politics 32:331-356.

MICHIGAN STATE UNIV. LIBRARIES
31293007826856