COMPARATIVE MACRO ECONOMIC STUDIES

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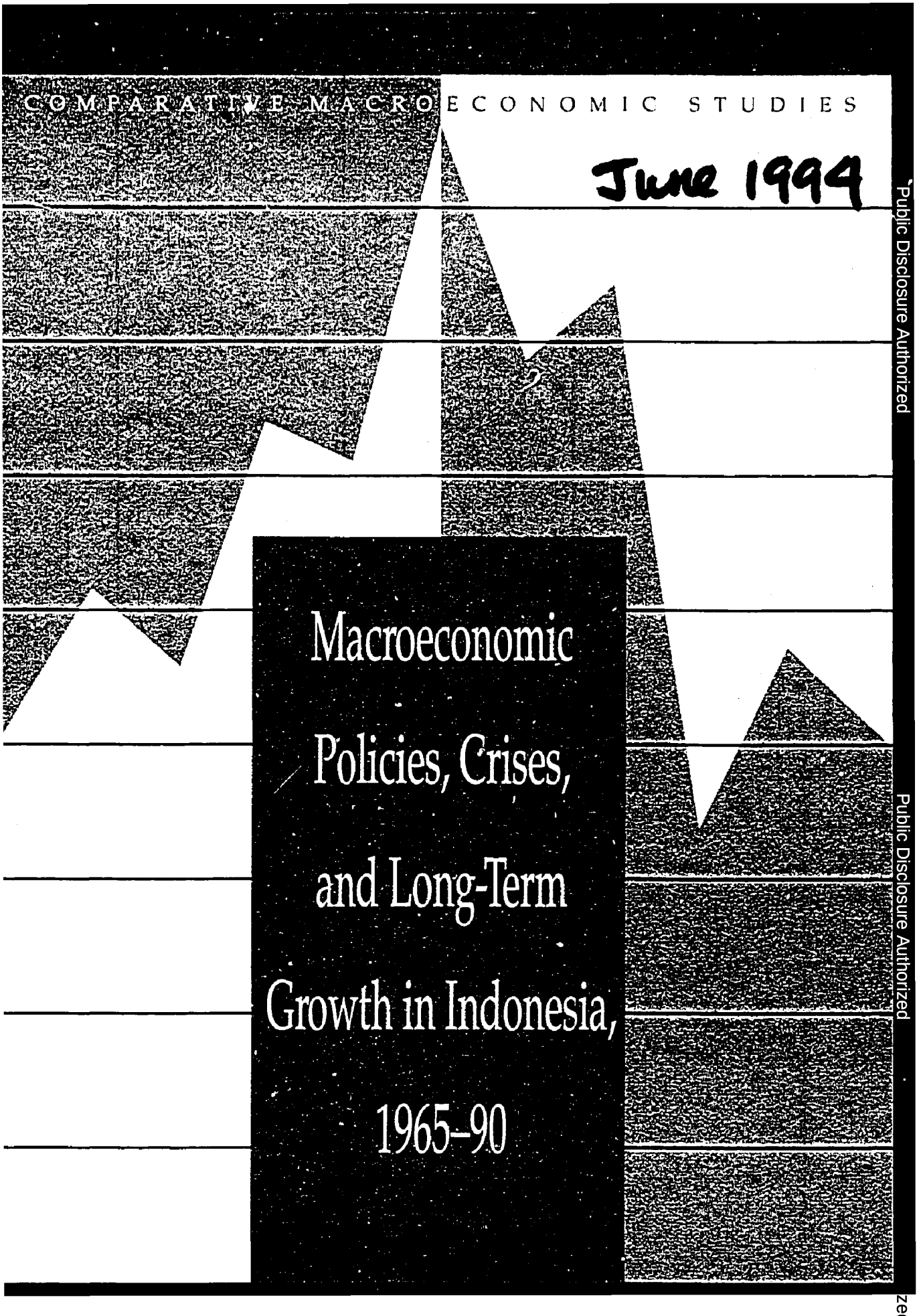
Macroeconomic Policies, Crises, and Long-Term Growth in Indonesia, 1965–90



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W O R L D B A N K

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Macroeconomic Policies, Crises, and Long-Term Growth in Indonesia, 1965–90

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Foreword

This volume is the product of a World Bank project on macroeconomic policy that reviewed the recent experience of eighteen countries as they attempted to maintain economic stability in the face of international price, interest rate, and demand shocks or domestic crises in the forms of investment booms and related budgetary problems. The project paid particular attention to the 1974–79 period (which included the first and second oil price shocks), the 1980–82 period of worldwide recession and external debt problems for many developing countries, and the 1983–90 period of adjustment to economic difficulties and the resumption of growth.

The objective of the project was to glean instructive lessons by analyzing the stabilization and adjustment policies pursued by these countries and assessing the outcomes. The authors of each country study were asked to deal with a common set of questions concerning the nature of the shocks or crises: their origin and degree of seriousness; the fiscal, monetary, exchange rate, and trade policies adopted in hopes of preventing permanent harm to the economy; and the results of the policies.

No single computable macroeconomic model was used in the project, but the framework of the open-economy macroeconomic model was followed to ensure consistency in generalizing about results. This intensive study of many episodes generated ideas and suggested relationships showing the cause and effect behind policies, the nature of the shocks and crises, and the governmental response to them. The overall findings of the project are presented in a synthesis volume by I. M. D. Little, Richard N. Cooper, W. Max Corden, and Sarath Rajapatirana, *Boom, Crisis, and Adjustment: The Macroeconomic Experience of Developing Countries.*

The Indonesian economy did very well in the 1965–90 period. Per capita income growth averaged 4.3 percent a year despite four economic crises: hyperinflation in 1965 and 1966, the 1975 default by Pertamina (the state oil company), the serious weakening of Indonesia's nonenergy tradable sector by "Dutch disease" between 1973 and 1978, and the post-1982 fall in the price of oil, one of Indonesia's chief exports. All four crises were handled competently and had no adverse consequences for long-term growth.

Of special interest are the results of the structural adjustment programs implemented to cope with the first and fourth crises. The quick subduing of hyperinflation in 1965–66 was followed by substantial and immediate economic growth.

The post-1982 adjustment program involved an increase in investment as a share of expenditures and reoriented the economy toward the manufacturing sector while raising the income of the poorest segments of the population.

Indonesia's experience challenges two conventional views about macroeconomic management. It challenges the claim that "announcement effects" make price stabilization easier when a credible program is undertaken by the government. Economic agents in Indonesia waited two years before revising downward their expectations of future inflation. The Indonesian case also suggests that the customary recommendations about the optimal sequencing of economic reforms may be flawed. Indonesia reversed the recommended sequence but still reaped benefits from the realistic exchange rate that had to be adopted in light of its open capital account.

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We also owe a special word of thanks to the Australian taxpayers who gave the world the *Bulletin of Indonesian Economic Studies* (BIES). The broad coverage of the BIES and its timely "Survey of Recent Developments" made it an extremely valuable reference to us. BIES not only made us better scholars but also led us to be careful scholars when we deviated from its assessment of the issues. We are happy to acknowledge the contribution to our analysis by its editors and contributors.

Wing Thye Woo wrote this study, drawing partly upon materials prepared by Bruce Glassburner for chapters 2 and 4, and by Anwar Nasution for chapters 3, 6, and 9. He is intellectually beholden to Iwan Jaya Azis, Erina Azis, Beddu Amang, Binhadi, Boediono, David Cole, David Dapice, David Edwards, Peter Gajewski, Evelyn Go, Donald Hanna, Harinowo, James Harrison, Hal Hill, Dono Iskandar, Nihad Kaibni, Kwik Kian Gie, Jeffrey Lewis, Okkie Monterie, Richard Monteverde, Sean Nolan, the late Jusuf Panglaykim Pangestu, Mari Elka Pangestu, Stephen Parker, Kyle Peters, Aulia Pohan, Mukhlis Rasyid, Klaus Regling, Lee Ann Ross, Syahril Sabirin, Mohammad Sadli, Usmanto Setiawan, Tarmiden Sitorus, Sjahrir, Kartini Sjahrir, Betty Slade, Slangor, Joseph Stern, Paul Sutopo, Hasudungan Tampubolon, Hasnah Thajib, Thee Kian Wie, Peter Timmer, Marzuki Usman, Bill Wallace, Christianto Wibisono, and Soekarno Wirokartono for enlightening discussions on the Indonesian economy. He is deeply appreciative of the gracious hospitality of Ayuna Nasution, Marita Nolan, and Patty Parker.

We dedicate this book to our wives, Jennie Hay Woo, Eleanor Glassburner, and Ayuna Nasution, who responded with love, support, and understanding to our long and frequent absences from home during the three years we devoted to this book.

Acronyms

ASEAN	Association of Southeast Asian Nations
BE	Bonus Ekspor
BIES	*Bulletin of Indonesian Economic Studies*
BIMAS	Bimbingan Massal (Mass Guidance)
BNI	Bank Negara Indonesia
BRI	Bank Rakyat Indonesia
BULOG	*Badan Urusan Logistic* (National Logistics Board)
CCCN	Customs Cooperation Council Nomenclature
CONEFO	Conference of the Newly Emerging Forces
CPI	Consumer Price Index
DP	Devisa Pelangkap
DSXR	Debt Service-to-Export Ratio
GANEFO	Games of the Newly Emerging Forces
GDP	Gross Domestic Product
GOLKAR	Golongan Karya ("Functional Groups")
GNP	Gross National Product
IGGI	Inter-Governmental Group for Indonesia
IMF	International Monetary Fund
INMAS	Intensificasi Massal (Mass Intensification)
KIB	Kredit Investasi Bank
KIK	Kredit Investasi Kecil
KMKP	Kredit Modal Kerja Permanen
KOGAM	Crush Malaysia Command
KOTARI	Self-Reliance Council
KOTOE	Supreme Council of Economic Operations
LIBOR	London Interbank Offered Rate
LNG	Liquefied Natural Gas
NIEU	Nationally Integrated Economic Unit
NTBs	Nontariff Barriers
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of Petroleum Exporting Countries
PKI	Partai Kommunis Indonesia
QRs	Quantitative Restrictions
SBI	Sertifikat Bank Indonesia

SBPU	Surat Berharga Pasar Uang
SGS	Société Général de Surveillance
SOEs	State-Owned Enterprises
SPP	Surat Pendorong Produksi
SUSENAS	National Socioeconomic Surveys
TFP	Total Factor Productivity
VAT	Value Added Tax

Data Notes

- *Billion* is 1,000 million.
- *Dollars* are current U.S. dollars unless otherwise specified.
- The symbol — in tables means not available.

Chapter One

The Indonesian Growth Experience, 1965–90

The twenty-five year span covered by this study began with a two-year period of political turmoil and high inflation that was followed by a dramatic revival of the Indonesian economy. Real gross domestic product (GDP) per capita grew at an annual average rate of 4.3 percent, causing income per capita to almost triple (see table 1.1). Agricultural activities declined in importance, dropping from 59 percent of GDP in 1965 to 24 percent in 1989. The activities that expanded the most were the mining and refining of oil and liquefied natural gas (LNG), 12 percentage points; nonoil and non-LNG manufacturing, 7.6 percentage points; and services, 7 percentage points.

There is little disagreement that high growth in the 1970–80 period (when per capita income grew 5.7 percent a year) was driven by the development of the oil and LNG industries and the Organization of Petroleum Exporting Countries (OPEC) price increases in 1973 and 1979. Earnings from exports of petroleum products and LNG went from 5 percent of GDP in 1970 to 14 percent in 1975 and 21 percent in 1980. This translated into $0.4 billion, $5.3 billion, and $12.9 billion, respectively.

It reflected well on policymaking that much of the oil and LNG revenue went into investments. Gross domestic investment was 13.2 percent of GDP in 1970, 20.0 percent in 1975, and 24.3 percent in 1980.

The most intriguing part of the Indonesian experience was its growth in the 1980s. Two other economies with similar structure and circumstances, Mexico and Nigeria, also experienced oil booms in the 1970s, but their growth rates weakened far more than Indonesia's after the price of oil began declining in 1982 (table 1.2).

Indonesia's 6 percent increase in real GDP per capita between 1981 and 1985 was unimpressive by its own past standard but was a success compared with the experiences of other populous low-income oil-exporting countries. Even more noteworthy was Indonesia's continued growth after the price of oil dropped sharply in 1986, to half of its 1985 level.

Table 1.1 Sources and Distribution of GDP by Sector, Selected Years, 1960–89
(percent)

Item	*1960*	*1965*	*1970*	*1975*	*1980*	*1985*	*1989*
GDP in 1983 prices (billions of rupiahs)	21,158.2	23,310.9	30,956.4	45,585.2	66,723.0	85,082.0	114,940.8
Index of income per capita (1960 = 100)	100.0	97.2	113.5	147.2	198.2	227.2	276.1
Sector share of GDP							
Agriculture, forestry, fisheries, and livestock	53.9	58.7	47.2	31.7	24.0	23.2	24.1
Mining and quarrying	3.7	2.5	5.2	19.7	23.0	14.0	11.6
Manufacturing	8.4	7.6	9.3	8.9	13.0	16.0	18.5
(Oil and LNG refining)	—	—	—	—	(2.6)	(4.4)	(3.3)
Electricity, gas, and water	0.3	—	0.4	0.6	0.5	0.4	0.6
Construction	2.0	1.8	3.0	4.7	5.3	5.5	5.0
Transport and communications	3.7	2.2	2.9	4.1	4.5	6.3	5.8
Other services	28.0	27.2	32.0	30.5	29.8	34.7	34.4
Distribution of GDP							
Private consumption	79.8	88.2	78.0	68.1	52.3	59.0	53.4
Government consumption	11.6	5.6	8.5	9.8	10.5	11.2	9.4
Gross domestic investment	7.9	6.7	13.2	20.0	24.3	28.0	34.7
Fixed investment	—	—	—	—	21.6	23.1	27.4
Inventory investment	—	—	—	—	2.7	5.0	7.3
Exports of goods and nonfactor services	13.3	5.3	12.4	22.6	33.0	22.2	25.6
(Nonoil, non-LNG exports)	(10.0)	(3.0)	(7.7)	(8.4)	(11.4)	(11.1)	(18.5)
Imports of goods and nonfactor services	12.6	5.7	15.3	21.9	20.2	20.4	23.1

Source: World Bank data.

Table 1.2 Annual Real GDP Growth Rates, Indonesia, Mexico, and Nigeria, 1973–85
(percent)

Country	*1973–81*	*1982*	*1983*	*1984*	*1985*
Indonesia	7.7	–0.3	3.3	6.0	2.4
Mexico	6.8	–0.6	–5.3	3.7	2.8
Nigeria	3.0[a]	–3.2	–6.3	–5.2	5.3

a. 1973–80.
Source: IMF (various years).

Despite the external negative shock of falling oil prices that began in 1982 and intensified in 1986, the poorest segments of Indonesia's population continued to experience a rise in income, and the distribution of income continued to improve. The consumption share of the bottom 20 percent of the population went from 6.9 percent in 1970 to 7.7 percent in 1980 and 9.2 percent in 1987. These figures on consumption are consistent with the drop in the number of people below the official poverty line (54 million in 1976, 42 million in 1980, and 30 million in 1987) and with the increases in the real wage (with a value set at 100 in 1983, the agricultural real wage was 117 in 1990 and the industrial real wage was 122 in 1989).[1]

Furthermore, Indonesia's nonoil and non-LNG manufacturing sector surged dramatically in the 1980s. The sector's share of output went from 8.5 percent of GDP in 1980 to 15.9 percent in 1989, and its exports rose from $4.2 billion in fiscal 1981 to $15.5 billion in fiscal 1990.

This book attempts to explain why Indonesia's economic performance during the period far surpassed that of countries endowed with similar assets and subject to the same shocks. It emphasizes the role of macroeconomic policies in influencing economic growth and transformation—especially the resilience of the Indonesian economy to the external shocks of the 1980s. While this study is primarily an assessment of macroeconomic management, it also assesses trade and financial policies because of their importance in shaping the response of the economy to macroeconomic policies and to nonpolicy disturbances.

Chapter 2 discusses the characteristics of the country (such as resource endowment and ethnic composition), the organization of the economy (for example, the role of state-owned enterprises and the policymaking process), and the workings of key markets. Chapter 3 provides a brief history of Indonesia up to the tumultuous events of 1965 that led to significant and long-lasting changes in economic philosophy. Chapter 4 reviews macroeconomic developments in the 1965–90 period, and chapter 5 explains the political constraints on economic policymaking arising from the strength of key interest groups.

Chapters 6 through 9 explore the four episodes of crisis management in the 1965–90 period: the economic stabilization program of 1966, the external debt crisis sparked by Pertamina's default in 1975, the profit squeeze experienced by the tradable sector because of the overvalued exchange rate that prevailed from 1974 to 1978, and the structural adjustment programs enacted since 1982.

The first crisis episode (chapter 6) is the story of how the New Order government of President Soeharto cut its teeth on the economic stabilization and rehabilitation program of 1966. Per capita income had declined steadily over the 1960–65 period, and the annual inflation rate had exceeded 100 percent since 1961. The central plank of the stabilization component of the program was an unequivocal commitment to end the printing of money to finance government budget deficits; the focus of the rehabilitation component was to allow market forces a greater role in resource allocation.

To understand the origins of the second, third, and fourth crises, it should be remembered that the history of macroeconomic management in Indonesia since 1970 has been mainly the history of adjustments to changes in the price of oil. For the 1972–81 period, a figurative picture of Indonesia might show an economy skidding on an oil slick, with policymakers gleeful at the speed but trying hard to control the direction of movement and maintain political stability. The post-1981 image would also be one of harried policymakers trying to control the direction of motion and maintain political equilibrium while putting on a pair of skates—one skate marked "agricultural exports" and the other "manufactured exports." The second and third crisis episodes show how Indonesia managed to maintain its balance while skating over the oil slick; the fourth crisis episode shows how balance was kept while leaving the slick.

The second crisis (chapter 7) was the default on an external loan by the state oil company, Pertamina, in February 1975. There are two analytically different parts to the Pertamina affair, each with a different time horizon, and each with ramifications for different objectives in economic management. The main part of the crisis came prior to the default, a period when Pertamina became an unofficial and largely unsupervised development agency that used its oil earnings and external loans to fund a wide range of large commercial projects. The default itself was less significant, even though the government and the international banking community were worried that one of the creditors would invoke a cross-default clause and hence unravel the settlement of the pre-1966 external debt.

The third crisis (chapter 8) was the erosion of the nonoil tradable sector between 1973 and 1978 as a result of real exchange rate appreciation—a malaise known as the Dutch disease. The oil boom caused inflation to jump from 6.4 percent in 1972 to 31 percent in 1973 and to stay at the two-digit level until 1977. Since Indonesia kept its nominal exchange rate fixed throughout this period, the nonoil tradable sector experienced a profit squeeze because the prices of its output were restrained by external competition while the prices of its inputs (especially wages) rose with inflation. The government responded to the distress of the agricultural sector in November 1978 by devaluing the rupiah by 50 percent, even though its stock of nongold reserves was at a historical high.

The fourth crisis (chapter 9) was the specter of a balance of payments crisis caused by the fall in the price of oil after 1982. The breadth and depth of the policy response were impressive. The government implemented fiscal austerity, currency devaluations, financial sector deregulation, tax reforms, and trade liberalization to head off potential debt-servicing difficulties and to restore growth.

In chapter 10 we analyze how macroeconomic and exchange rate management during each of the four crises influenced the long-term growth rate, and we simulate a macroeconomic model to help us assess the effects of fiscal and monetary policies in the 1973–80 period. Chapter 11 summarizes Indonesian experience with macroeconomic management, points out lessons for other countries, and raises some general questions.

Chapter Two

A Profile of the Indonesian Economy

Indonesia is demographically the fifth largest nation in the world; in 1990 it had an estimated population of about 182 million. Geographically, Indonesia is an archipelago of about 13,000 islands that extend over 3,000 miles along the equator, from 95 to 140 degrees east longitude, and its 735,268 square miles of territory make it the world's thirteenth largest country in area. About 3,000 of the islands are inhabited. Because of the proximity of Malaysian and Singaporean ports and financial centers and the difficulty of patrolling so many islands, strict control of trade and financial flows is impossible. Geography has made Indonesia a truly open economy.

Natural Resources

The island of Java is the heart of Indonesia. It and nearby Madura had a population of more than 100 million in 1986, making the islands two of the most densely populated areas in the world, with about 800 people per square kilometer. No other large island in the archipelago approaches these demographic magnitudes. Java has always been heavily populated, in part because it has more land suitable for intensive wet rice cultivation than any of the other islands and in part because the Dutch colonialists concentrated the production of agricultural export commodities (for example, rubber and coffee) on Java and on Sumatra to the west.

Western Indonesia receives abundant rainfall (60 to 90 inches in most areas), reasonably well distributed throughout the year. Thus, the soil is leached and thin except where volcanic activity or runoff from volcanic slopes has restored natural fertility quickly. The islands of eastern Indonesia are relatively arid, have poorer soils, and are much less densely inhabited.

The archipelago is endowed with significant resources. Fish, particularly from the Java and Banda seas, are abundant, and there are large forested regions,

particularly in Kalimantan (the Indonesian part of Borneo). The *Oil and Gas Journal Databook* (1993) has estimated that in 1991 the petroleum reserve amounts to 6.6 billion barrels and natural gas reserve to be 64.8 trillion cubic feet. (However, the estimate for petroleum reserves at the end of 1990 was 11.8 billion barrels. No explanation was given for this big downward adjustment in 1991.) Domestic demand for oil has been rising at a rapid rate, and oil exports are expected to decline rapidly at the end of the century. Production of crude oil is largely the province of foreign firms, who pay a premium for the privilege.

While oil and natural gas overshadow other types of mineral production, Indonesia is a major exporter of tin (primarily from the islands of Banka and Billiton) and copper (from Irian Jaya). Commercially significant nickel deposits also exist (in Sulawesi and Irian Jaya), and coal of mediocre quality is mined in Sumatra. Gold and a variety of other mineral resources have also been discovered in modest quantities.

Thus, although the phrase "the fabulous wealth of the Indies" was an exaggeration at the time of the early European explorations, it is nevertheless true that Indonesia's physical resource base is sufficient to sustain economic growth at a high level. Long-term success in economic development will therefore depend on proper management.

Human Resources

The population of Indonesia grew at a rate of 2.3 percent a year between 1973 and 1984. As a result, 40 percent of the population was under the age of 14 in 1984. Labor force growth was as much as 0.3 percent a year higher than population growth, implying a need to create jobs for more than 2.4 million people annually. A growing proportion of the new entrants to the labor force was born in the cities and educated to the middle school level.[1]

The occupational distribution of the labor force is given in table 2.1. Indonesia was still predominantly an agricultural nation in 1985, with more than half of the labor force employed in agriculture, forestry, hunting, and fishing. However, a good deal of structural transformation had taken place since the 1960s, when more than 70 percent of the labor force was employed in those activities. The wholesale and retail trade sector employed 15 percent of the work force in 1985 and the manufacturing-construction sector 13 percent, both up about 5 percentage points from 1971.

The general educational level of the Indonesian labor force is low, despite a large and sustained effort by the government to strengthen schools and universities. The nation's education problem is in some measure the legacy of Dutch colonialism, since the Dutch government provided few educational opportunities for non-Dutch residents of the colony. Fortunately, the minority that did have access to schools and universities prior to World War II received good schooling. This

Table 2.1 Employment by Sector, Selected Years, 1971–85

Sector	1971		1980		1982		1985	
	Millions	Percent	Millions	Percent	Millions	Percent	Millions	Percent
Agriculture, forestry, hunting, and fishing	26.5	64.2	28.0	54.8	31.6	54.7	34.1	54.6
Mining and quarrying	0.1	0.2	0.4	0.7	0.4	0.7	0.4	0.7
Manufacturing	2.7	6.5	4.4	8.5	6.0	10.4	5.8	9.3
Electricity, gas, and water	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Construction	0.7	1.6	1.6	3.1	2.2	3.7	2.1	3.4
Wholesale and retail trade and restaurants	4.3	10.3	6.6	12.9	8.6	14.8	9.4	15.0
Transportation, storage, and communications	1.0	2.3	1.5	2.9	1.8	3.1	2.0	3.1
Finance, insurance, real estate, and business services	0.1	0.2	0.2	0.4	0.1	0.2	0.3	0.4
Public services	4.1	10.0	7.7	15.1	7.1	12.3	8.3	13.3
Other	1.9	4.6	0.7	1.4	0.0	0.0	0.1	0.1
Total	42.3	100.0	51.2	100.0	57.8	100.0	62.5	100.0

Source: Central Bureau of Statistics.

provided thin but very high quality leadership for the new republic in 1945, when independence was declared.

Adult literacy was 64 percent in 1986, up from 39 percent in 1960. Great emphasis has been placed on the expansion of the school and university system, but rapid expansion has come at the expense of quality. The education system has grown much more swiftly than the supply of well-trained teachers. In 1986 only 7 percent of the university-level age group was in institutions of higher education, compared with 17 percent for lower-middle-income countries as a group. The education gap remains large even in comparison with Indonesia's poorer neighbors, Thailand and the Philippines.

Ethnicity

The dominant ethnic group is the Javanese, who are concentrated in Central and East Java. West Java is predominantly inhabited by Sundanese, another large population group with unique linguistic and cultural characteristics. The variety of other Malayo-Polynesian groups throughout the islands is astonishing. There are more than 300 ethnic groups, with at least 250 distinct languages.

Although Indonesia's Chinese minority accounts for only about 3 percent of the total population, it holds a disproportionate share of economic power. A recent estimate was that 70 percent of all corporate assets were owned by Chinese Indonesians.[2] As a result, the period since Indonesia gained its independence in

1949 has been characterized by the enactment of measures intended to assist the "economically weak," a euphemism meaning "indigenous" Indonesians (*pribumi* is the official term). These measures have included the granting to the *pribumi* of special import licenses, cheap credit, and trade and manufacturing monopolies. Although these measures have been sidestepped in varying degree, they still have significant market-distorting effects.

Religion

The nation has a variety of religious beliefs. The first of the five principles of the state ideology, known as *Pancasila*, is belief in God. This means that some profession of religion is expected of all Indonesians. But it has also meant that Indonesian governments have respected religious variety and have resisted the demands of fundamentalist Islamic groups. Probably 90 percent of all Indonesians declare themselves to be Muslims. The rest are animists, Christians, Hindus, and Buddhists.

The main religious tension is between the *abangan* Muslims and the *santri* Muslims. Abangan Muslims are nominal Muslims who subscribe to ancient Javanese beliefs (*kebatinan*) and live mostly in West and East Java, while the santri Muslims are more orthodox Muslims who live in northern Java and the Outer Islands. The abangan/santri distinction approximately follows the ethnic cleavage of Javanese/Outer Islanders. The Darul Islam rebellion to establish a fundamentalist Muslim state, lasted from 1949 to 1965; it embodied the political rivalry between the abangan and the santri.

Although the Soeharto government has managed to avoid political crises associated with its policy on the relationship between religion and state, it has not been able to avoid occasional outbreaks of religion-inspired opposition. Muslim opposition was a significant factor in the protests against social and economic policy in the 1973–74 period which culminated in the Malari riot. More recently, on September 12, 1984, a group of Muslim youths engaged in a battle with state police in Tanjung Priok (the port area of Jakarta) which resulted in the deaths of 28 people. The incident led to instructions to Muslim educators to avoid giving their religious teachings political content.

The economic significance of this religious variety is controversial and is often exaggerated. Sievers (1974), for example, has argued that the mystical beliefs of the dominant Javanese would ultimately doom economic development because of their supposed incompatibility with economic rationality. Of late, there have been calls to set up Islamic banks—banks that neither charge interest on loans nor pay interest on deposits.

State-Owned Enterprises

Dirigisme has been a strong force in Indonesia since independence, and state participation in business is enshrined in the Indonesian constitution. Article 33 states that the economy should be organized as a "family-like endeavor" and that the state should control those branches of production that affect the lives of most people. The cooperative is specified as the institutional vehicle for implementing the "economy as a family" ideal. At the moment, however, the cooperative movement is weak; only the state firms are of economic importance.

At the end of 1987 Indonesia's central government owned 214 enterprises, including 23 financial institutions. These enterprises spanned a wide range of activities: manufacturing, mining, logging, plantation agriculture, transportation, trade, insurance, and public utilities.[3] One reason for this diversity is that many of the enterprises were Dutch companies nationalized in the 1950s. Some of these enterprises were set up to prevent Chinese domination of the corporate sector; some, such as the aerospace company, were established for infant industry reasons; and some were created when the state took over failed private enterprises (for example, PT Indocement, a cement company, and PT CRMI, a cold-rolling steel mill). Many of these government enterprises are monopolies. The most frequently cited example is Krakatau Steel Corporation, which, until the promulgation of a new policy package in May 1986, was able to impose a premium of as much as 40 percent over the world price on sales to domestic users of steel products.

The biggest and best-known of the state enterprises is the oil company, Pertamina. It is the government's agent in contracting with foreign oil- and gas-producing firms, and it acts as the government's tax collector in the oil sector.[4] It also has a monopoly on domestic sales of petroleum products. The domestic prices of oil, gasoline, and other petroleum sector products have been kept below international levels.

There is no reliable information on financial flows between the central government and state enterprises during most of the study period. The budget figures were understatements, since many of the activities of the enterprises were financed by loans from state banks. World Bank data on state enterprises for the first half of the 1980s are given in table 2.2.

The stagnancy of capital inflows to state-owned enterprises during the 1981–85 period probably reflects the shortage of revenue caused by the fall in oil prices rather than a change in government attitude or an improvement in enterprise performance. The low rates of return to assets suggest that most state enterprises were less efficient than either private enterprises in Indonesia or privately owned counterparts in other countries. Lack of competition may be the primary reason.

Another reason for the low profitability of many state enterprises was that the government sometimes ordered them to carry out unsuitable functions. For example, state enterprises under the Department of Industry were ordered to become *bapak angkat* (foster father) to small and medium-size private firms in their localities. PT Semen Padang, a state cement plant in West Sumatra, was assigned the task of developing markets for the cinnamon produced by local farmers. PT Pupuk

Table 2.2 Financial Data on State Enterprises, 1981–86
(trillions of rupiahs)

Item	*1981–82*	*1983–84*	*1985–86*
Total assets	19.9	34.6	44.5
Investment funds from government budget	0.5	0.5	0.4
Total sales	13.4	20.9	27.7
Investment funds from government budget (percentage of GNP)	0.8	0.7	0.4
Pretax profit per unit sale (percent)	6.1	4.1	4.3
Pretax profit per unit asset (percent)	4.1	2.5	2.7

Source: World Bank (1988).

Iskandar Muda, a state fertilizer firm in North Sumatra, was to create markets for local handicrafts.

The Private Manufacturing Sector

Large-scale manufacturing companies in the private sector were heavily protected and regulated during most of the period of this study. Automobile manufacturing, for example, was protected by a ban on the import of fully assembled automobiles and of many auto parts.

Private investment decisions are made under the guidance of the Badan Koordinisasi Penanaman Modal (Investment Coordination Board), which establishes investment priorities and licenses all investment in the formal sector. This organization has been the target of much criticism. In its earliest years, when its objective was seen as expediting investment, the board was criticized for casualness in evaluating investment proposals. At one point a sample of approved projects was examined, and more than half were judged by conventional project evaluation standards to have negative value added. More recently, criticism of the board has shifted toward the time-consuming nature of the review process and a general unwillingness to allow foreign competitors access to markets where domestic firms might be hurt by competition.

In some cases, the heavy involvement of government officials in private sector firms has obscured the distinction between government and private enterprise. Examples can be found in private banking, automobile manufacture, importation of cloves and wheat, flour milling, and hotels. No systematic study of the social costs of these enterprises has been undertaken, but the validity of their position has repeatedly been called into question because of Indonesia's problems in meeting international competition in the post-oil-boom period.

The Role of Economic Planning

Although there were planning efforts in the pre-Soeharto period, the present system of five-year plans went into effect in 1969 with the introduction of the first Five Year Plan (Repelita I) for the period 1969–70 through 1973–74. Since then, plans have been issued at regular five-year intervals. The plans have been essentially indicative, in that they have primarily been detailed statements of aggregate and sectoral objectives. Very few mechanisms have been created to monitor planning targets. The Planning Council staff has screened the investment plans of the government (including those of the provincial planning councils), but that has been primarily a rudimentary form of project evaluation.

The lack of a genuine planning and enforcement structure has, not surprisingly, led to there being little relationship between targets and achievements. Table 2.3 shows that the average deviation from 1969 to 1989 was 43 percent. It should be noted, however, that unanticipated shocks in each of these periods made it difficult to guide the economy toward the targets of the five-year plans.

The Annual State Budget

Of far greater importance than the five-year plans, both as an indicator of what government was doing and of how it was being done, are the annual budget documents, especially the *Nota Keuangan* (Financial Note).[5] Although there have been many anomalies in the budgeting process, it is clear that the Soeharto government's capacity to command real resources has risen over the years. Government expenditure, which was only 8 percent of GDP in 1965, grew to 13 percent in 1969 and 25 percent in 1985. (Real GDP grew 2.5 times over the twenty-year period.)

Since 1968 all budgets have been "balanced" in that planned expenditures have been paid for with a combination of taxes and external borrowing. The position of the president and his cabinet has been one of adamant insistence on the inviolability of this approach, to the point of asserting that it is a constitutional constraint (Thorbecke 1991). Since the government has always had access to external financial markets, this procedure has not restrained government spending. This "balanced budget" practice constitutes in essence a ban on the creation of money to finance government expenditure.

Government Employment

After Soeharto formally replaced Soekarno as president in 1967, the government's role as an employer decreased dramatically. The government employed 4 percent

Table 2.3 Plan Targets and Actual Outcome, 1969–89
(percent)

Plan	I (1969–74)	II (1974–79)	III (1979–84)	IV (1984–89)
GDP				
Target	5.0	7.5	6.5	5.0
Realized	8.0	6.7	5.9	2.7[a]
Inflation				
Target	—	—	—	8.0
Realized	19.4	15.2	14.3	6.8[a]
Agriculture				
Target	—	4.6	3.5	3.0
Realized	4.3	2.9	4.2	—
Mining				
Target	—	10.1	8.1	2.4
Realized	12.8	4.0	–2.3	—
Industry				
Target	—	13.0	11.0	9.5
Realized	12.8	12.3	8.3	—
Transportation and communications				
Target	—	—	10.0	5.2
Realized	12.0	13.3	7.4	—
Construction				
Target	—	9.2	—	5.0
Realized	20.6	11.3	6.5	—
Investment				
Target	—	13.0	9.7	19.1
Realized	16.2	10.5	11.9	—
Exports				
Target	—	10.5	11.2	10.0
Realized	13.2	4.6	–4.3	—

a. Estimated.
Source: Bank Indonesia.

of the aggregate labor force in 1980, or approximately 2 million persons. This employment was concentrated in urban areas. Although government jobs were secure and nominal government wages were sticky downward, the real wages of government employees rose less rapidly than those of workers in the urban private sector in the 1965–85 period. Some part of the wages paid to government and military

employees was made in kind, and to that extent real wages were sticky downward. Virtually all government employees in the lower grades of the civil service received a rice ration, and many higher-echelon employees also received subsidized housing and transportation. This may be the reason why private firms in manufacturing also paid wages partly in kind.

The Foreign Debt Situation

It is the standing policy of the Soeharto government to avoid borrowing in the domestic capital market, with the modest exception of sales of Central Bank certificates. The proportion of development expenditures financed externally ranged from 25 to 69 percent in the 1976–87 period. This caused outstanding disbursed external debt to grow at an annual rate of 13 percent a year (see table 2.4). Public sector (long- and intermediate-term) external debt reached $41.3 billion in 1987, with the ratio of debt-to-GDP standing at 63 percent and the ratio of debt service-to-exports at 28 percent.

Although these figures do not mean that Indonesia was approaching a debt service crisis by 1987, external debt was clearly a burden. In fiscal 1988 interest on the external debt was the largest item in the routine budget, at 6.8 trillion rupiahs (45 percent of all expenditures). Debt service payments exceeded disbursements of aid funds between 1985 and 1988. As will be shown in chapter 10, however, Indonesia's debt management saved it from the debt-induced problems experienced by many other developing country borrowers in the 1980s.

The Banking System

When the Soekarno government invaded Dutch-held New Guinea in 1958, it also nationalized the Dutch-owned banks that dominated the Indonesian financial system. When budget deficits began soaring in the 1960s as the result of disastrous economic policies, the government merged all state-owned banks into one institution, Bank Negara Indonesia (BNI), to facilitate the financing of the deficits.

The New Order government of President Soeharto dismantled this monolithic structure through the enactment of Banking Act No. 14 of 1967 and the Central Bank Act No. 13 of 1968. The complex BNI was split into four parts: a Central Bank (Bank Indonesia), with no commercial banking functions; five state-owned commercial banks; a state-owned savings bank; and a state development bank. Each of the five state commercial banks was assigned a sector for lending activities: Bank Rakyat Indonesia (BRI) was given rural development and small-holder agriculture; Bank Bumi Daya, estate agriculture and forestry; Bank Negara Indonesia, industry; Bank Dagang Negara, mining; and Bank Ekspor-Impor, export.

Table 2.4 Public Sector External Debt, 1976–89

(millions of dollars)

Item	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*
Disbursed and outstanding debt	10,002	11,670	13,150	13,278	14,971	15,870	18,514	21,654	22,355	26,863	32,851	40,908	41,241	41,092
Bilateral and multilateral	5,910	7,073	8,389	8,509	9,504	10,059	11,111	11,997	12,318	15,191	18,729	24,788	26,552	28,256
Other	4,092	4,597	4,761	4,769	5,465	5,811	7,403	9,657	10,037	11,672	14,122	16,120	14,689	12,836
Total debt outstanding, including														
Undisbursed	14,575	16,197	19,037	21,202	22,452	27,210	32,226	35,567	36,587	42,493	49,769	60,448	60,076	59,715
Bilateral and multilateral	8,828	10,636	12,835	14,199	16,677	17,966	19,561	20,849	21,776	25,557	29,665	37,334	38,984	41,454
Other	5,747	5,561	6,202	7,003	5,775	9,244	12,665	14,718	14,811	16,936	20,104	23,114	21,093	18,261
Commitments	3,133	1,721	3,285	4,101	4,277	5,266	7,074	5,723	4,780	4,183	4,081	5,992	6,088	7,166
Bilateral and multilateral	1,698	1,383	1,590	2,247	2,640	2,472	2,610	2,344	2,737	2,405	2,048	4,791	4,779	5,752
Other	1,435	338	1,695	1,854	1,638	2,795	4,464	3,379	2,042	1,778	2,034	1,202	1,308	1,413
Gross disbursements	2,332	1,959	2,215	1,587	2,551	2,673	4,191	4,929	3,804	3,615	4,119	5,463	6,423	6,472
Bilateral and multilateral	920	867	935	826	1,130	1,363	1,835	1,709	1,865	1,699	1,988	3,694	4,287	4,265
Other	1,412	1,092	1,280	1,062	1,421	1,310	2,356	3,220	1,939	1,916	2,130	1,769	2,136	2,206
Net disbursements	1,898	1,138	667	559	1,615	1,621	3,089	3,642	2,192	1,268	1,784	2,057	1,985	2,036
Bilateral and multilateral	834	751	732	560	810	968	1,370	1,159	1,280	1,063	1,074	2,543	2,952	2,890
Other	1,064	387	-65	-1	805	633	1,720	2,483	912	205	711	-486	-966	-854
Net resource transfers	1,572	698	153	-212	792	626	1,945	2,387	564	-376	-260	-216	-540	-465
Bilateral and multilateral	734	592	506	263	499	652	963	686	698	353	124	1,462	1,643	1,495
Other	837	106	-353	-475	293	-26	981	1,701	-134	-728	-348	-1,677	-2,183	-1,960
Public debt service	761	1,262	2,062	2,099	1,759	2,047	2,246	2,542	3,240	3,991	4,379	5,679	6,963	6,936
Amortization	636	821	1,548	1,328	935	1,052	1,102	1,287	1,613	2,347	2,334	3,406	4,438	4,435
Interest	327	441	514	771	823	994	1,145	1,255	1,628	1,644	2,044	2,273	2,525	2,501
Public debt service	761	1,262	2,062	2,099	1,759	2,047	2,246	2,542	3,240	3,991	4,379	5,679	6,963	6,936
Bilateral and multilateral	186	276	429	563	631	710	872	1,023	1,167	1,346	1,864	2,232	2,645	2,770
Other	575	986	1,633	1,536	1,128	1,337	1,374	1,519	2,074	2,644	2,514	3,447	4,319	4,166

Source: World Bank, *World Debt Tables* (various years), and Bank Indonesia.

Table 2.5 Credit by Source, 1974–83
(billions of rupiahs)

Source	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Bank Indonesia (direct credits)	231	894	1,212	1,229	1,935	2,163	2,454	2,649	2,771	2,356
State commercial banks	1,136	1,602	2,007	2,267	2,832	3,270	4,295	5,881	8,031	9,787
National private banks	89	133	197	257	366	493	711	1,081	1,554	2,294
Foreign banks	117	122	150	184	262	342	414	548	666	862
Total	1,573	2,750	3,566	3,937	5,394	6,269	7,880	10,159	13,022	15,299

Source: *Nota Keuangan* (various years).

The state banks dominated the banking system (see table 2.5) through the central bank's use of credit ceilings and selective credit allocation in the 1974–83 period. Because every bank had to be assigned a specific credit quota, entry into the banking system was minimized in order to make it easier for the Central Bank to administer the credit ceilings. Selective credit allocation consolidated the dominance of the state-owned banks because they were used as the vehicle for disbursing oil revenue. Bank Indonesia not only gave direct credits to certain enterprises, it also gave "liquidity credits" to the banking system (mainly to the state-owned banks) to promote targeted activities. The result was that Bank Indonesia and the state-owned banks supplied 86 to 90 percent of all bank credits during the 1974–80 oil boom.

Table 2.6 summarizes the sectoral allocation of Central Bank credits over time. One troubling feature of nonmarket credit allocation in Indonesia was the tendency for the coverage to increase; see appendix table A.21. This tendency came from political difficulties in insulating the process of discretionary credit allocation from interest group pressures. The sugar, estate, and contractor lobbies gained access to liquidity credits in 1980; the education lobby, in 1982; and the consultants who prepare feasibility reports for investment projects, in 1987.

The liquidity credit system has three notable features: the interest rate that a state-owned bank can charge on a loan is regulated; the proportion of the loan that a state-owned bank can rediscount with the Central Bank is regulated; and the rediscount rate for any particular credit program is regulated. Another result of the inability to shut off interest group pressures was the tendency for the terms of a program to become more generous over time.

Beginning in January 1978, contractors for some government projects had their borrowing rate lowered from 21 to 13.5 percent, the proportion of their loans that could be rediscounted by the Central Bank rose from 20 to 70 percent, and the rediscount rate was reduced from 10 to 6 percent. Although it is quite usual in the East Asian context to subsidize exports, Indonesia went one step further; it extend-

Table 2.6 Credits Supplied by Bank Indonesia, 1969–84
(billions of rupiahs)

	Liquidity credits							
		Agriculture and primary	*Invest-ment*	*Manufac-turing*	*Direct credits*			*Total*
Year	*Total*	*products*	*credits*	*industry*	*Total*	*Mining*	*Trade*	*credits*
1969	80	60	6	3	87	0	72	167
1970	113	67	26	6	97	0	62	210
1971	143	67	56	3	104	0	60	247
1972	150	63	73	2	127	0	89	278
1973	195	108	73	3	155	0	118	349
1974	294	181	82	4	235	0	193	529
1975	565	321	88	106	894	726	143	1,459
1976	640	372	122	90	1,212	1,020	167	1,852
1977	682	322	183	123	1,229	1,042	176	1,911
1978	846	414	173	169	1,935	1,679	238	2,781
1979	1,129	419	277	278	2,163	1,875	248	3,292
1980	1,722	418	419	449	2,454	1,849	507	4,176
1981	2,548	535	829	625	2,649	1,644	809	5,197
1982	3,742	908	1,226	688	2,771	1,402	994	6,513
1983	4,365	801	1,685	695	2,356	720	1,110	6,721
1984	6,938	2,320	2,165	819	870	169	—	7,808

Source: Odano, Sabirin, and Diwandono (1988).

ed credit subsidies to cover import activities. Importers saw their borrowing rate decline from 24 to 18 percent in 1978, and banks financing import activities could begin rediscounting 40 percent of these loans with the Central Bank at 6 percent.

The major credit schemes include the following:

- *Ordinary investment credits (Kredit Investasi Biasa program).* The Kredit Investasi Biasa (KIB) began in April 1969. It provided investment credits which had a (maximum) ten-year maturity if issued through the state-owned banks and the national private banks and a (maximum) fifteen-year maturity if issued through the national development bank, Bapindo. The borrower had to pledge collateral worth 150 percent of the loan amount and to provide at least 35 percent of project cost in equity contributions. If the loan exceeded 200 million rupiahs, the borrower also had to submit a feasibility report, which normally cost the borrower 5 to 10 percent of the loan amount.
- *Small-scale investment credit and permanent working capital credit programs (Kredit Investasi Kecil/Kredit Modal Kerja Permanen).* It soon became obvious that very few of the KIB loans were going to small-scale indigenous (pribumi) entrepreneurs. The Kredit Investasi Kecil (KIK) and

Kredit Modal Kerja Permanen (KMKP) programs were started in December 1973 to address this problem. They differ from the KIB in that (a) the national private banks were not eligible to participate; (b) the collateral requirement was the project itself and a maximum of 50 percent of the loan; (c) the maximum loan amount was 10 million rupiahs; (d) the maximum maturity was ten years for a KIK loan and three years for a KMKP loan; and (e) no minimum equity contribution was required.

- *BIMAS/INMAS agricultural credit programs.* The BIMAS program (launched in 1965–66) was the first large-scale credit program of the New Order government. The credits were an attempt to increase rice production by allowing farmers to buy high-yielding seeds, fertilizer, and pesticide. Over time the BIMAS program broadened its coverage to other crops. The INMAS program was meant to provide only extension services and subsidized inputs, but it expanded in 1977–78 to include credits for fertilizer purchases. Bank Rakyat Indonesia was put in charge of dispensing these credits. BRI would lend to farmers at 12 percent and could rediscount the entire loan with Bank Indonesia at 3 percent. This generous interest rate differential was felt to be necessary to compensate BRI for setting up branch offices in every village unit cooperative (which may consist of two or more villages) and to induce it to be aggressive in extending loans.

The banking system has been greatly deregulated since 1983. State banks are now free to set deposit rates on virtually all maturities, and the credit ceilings have been eliminated. With the near-total abolition of geographic constraints on the activities of foreign and domestic private banks, the banking system seems certain to be transformed during the 1990s.

The Jakarta Stock Market

The Jakarta stock market was established in 1952 but was closed in 1958 because of political and economic instability and did not reopen until August 1977. In September 1986 there were only twenty-four equity stocks and three bonds listed on the exchange. Sixteen of the companies issuing equity certificates were foreign companies, and eight were private domestic firms. The three bonds were issued by public enterprises.

Most of the listed shares prior to 1987 were issued in the 1981–84 period, when many foreign companies were required to "go public" to comply with the "Indonesianization" process. Through their overseas networks, these foreign companies had access to international capital markets and did not really need to raise money in the small Indonesian capital market. Going public was, in other words, similar to paying an entrance fee to become a part of the Indonesian market.

Another reason for the burst of equity issues during 1981–84 was that companies received generous tax concessions for going public—so generous, in fact, as to actually exceed the value of the shares issued. These tax concessions were quickly rescinded.

Financial deregulation heightened the level of activity in the Jakarta stock market after 1987. The value of trade in the last two months of 1988 was more than six times greater than in 1981. The number of companies listed on the stock exchange jumped from 24 in 1987 to 132 in 1990, the value of listed shares went from 133 billion rupiahs to 8,034 billion rupiahs, and the share price index soared from 83 to 418.

Informal Credit

The loan criteria of the KIK/KMKP programs were too strict for most small and medium-size enterprises. This demand for credit and the tolerance of the Soeharto government (unlike the Soekarno government) toward informal credit institutions have allowed many such institutions to appear throughout the archipelago. But the costs of informal credit are high. Rural banks in the late 1970s charged interest rates two and half times those of urban commercial banks, and loan rates of private moneylenders were as much as six times more.

The degree to which these informal credit transactions were integrated across maturities and regions is difficult to ascertain. Survey evidence from Yogjakarta in Java suggests that the informal credit allocation there was efficient in the sense that the interest rate accurately reflected the risk characteristics of the borrower, see McLeod (1980 and 1984). The interest rate premiums charged by the informal credit institutions stemmed from at least three factors: the small and medium-size enterprises were inherently more risky than large enterprises; the informal credit institutions had higher intermediation costs; and the informal institutions had local monopoly power. Since available evidence cannot show that the last two factors were negligible, we cannot say that the informal credit institutions have been efficient.

The Foreign Exchange Market

The foreign exchange market has been largely free of regulation since the early years of the Soeharto government. Not all banks are free to deal in foreign exchange, but those that do have many branches, and the licensing of money changers has been liberal. Exchange rates have been kept at levels that were sufficiently close to market equilibrium to make it possible for the Central Bank to administer rates through market intervention rather than through rationing. As the later dis-

cussion will show, exchange rate and foreign exchange market policies have been bright spots in the Soeharto government's macroeconomic policy pattern.

The Labor Market

Overall unemployment in the 1980s ranged from 2 to 3 percent, while urban unemployment ran as high as 6 percent (Gelb 1988). This marked difference indicates that rural wages (particularly in nonagricultural employment) were more flexible and that labor mobility in rural areas was high.

Wage data for Indonesia are weak. Any attempt to analyze the structure and behavior of wages must rely on very incomplete information, such as plantation, public employees, and public works wages, or family expenditure surveys. The only comprehensive set of time-series data by sectoral category presents only "maximum" and "minimum" wages.

Tables 2.7 and 2.8 and figure 2.1 provide information on wage changes over the 1976–86 period. The nine sectors named in the tables accounted for 44 percent of total employment in 1980, with the most obvious omission being employment in agriculture, forestry, and fisheries.

Wages in Indonesia generally have not been so rigid as to hinder labor mobility. Rucker (1985:89), for example, states that

> Indonesia's labor markets can be viewed as a multiplicity of interconnecting markets with varying ease of entry depending on the specific markets between which labor flows occur. Labor mobility appears greatest within the urban informal, the rural off-farm, and the unskilled labor markets and between the urban informal and rural labor markets as a whole and the agricultural labor and rural off-farm markets. Labor mobility appears least between the skilled labor markets, the urban formal and urban informal markets, the urban formal and rural markets and the inter-island labor markets. Nevertheless, although labor mobility is not perfect, with the possible exception of the relative immobility between inter-island markets, the functioning of Indonesian labor markets does not appear to be a major factor contributing to the existence of an employment problem.

The overall record of stable or declining unemployment and the shift of nearly 10 percent of the labor force from agriculture to the nonagricultural sectors in the last two decades support the view that labor is highly mobile both occupationally and geographically.

Table 2.7 Minimum Wage, 1976–86
(rupiahs per month)

Sector	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1986*
Plantations	9,101	10,932	12,993	14,919	17,606	21,877	25,485	27,207	31,974	38,688	43,861
Mining	37,187	41,061	44,118	46,826	60,069	64,510	69,423	72,540	83,421	95,896	102,999
Industry	28,589	29,178	34,720	36,255	42,137	46,299	57,278	65,570	75,405	83,291	92,072
Construction	20,655	24,498	25,881	26,381	29,015	29,893	3[illegible],025	36,718	50,290	53,129	78,837
Electricity	14,262	14,262	17,318	20,494	21,050	27,279	33,843	40,121	48,039	60,901	80,608
Trade, banking, and insurance	25,782	29,754	32,914	34,681	42,112	53,245	63,009	67,283	77,735	90,117	136,121
Communications	23,114	27,051	35,128	36,116	41,972	50,517	60,662	69,475	79,896	85,724	110,756
Services	29,158	29,158	29,158	30,977	33,270	39,391	50,972	56,491	64,965	71,597	71,957
Government and miscellaneous	14,300	16,280	16,280	16,280	26,500	32,400	32,400	32,400	35,760	46,327	55,500
Average	22,461	24,686	27,612	29,214	34,859	40,601	47,566	51,978	60,832	69,519	85,857

Source: *Nota Keuangan* (various years).

Table 2.8 Average and Real Wages, by Sector, 1976–86
(rupiahs per month)

Sector	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Average annual change (percent)
Plantations												
Average	73,658	80,577	92,762	95,478	104,509	142,299	126,407	158,308	167,926	179,834	266,890	
Average real	126,342	124,539	132,516	113,125	104,509	126,826	102,853	115,217	110,696	113,174	158,674	2.3
Mining												
Average	123,507	155,120	162,228	178,177	254,397	307,268	312,199	346,370	367,316	393,022	545,863	
Average real	211,847	239,753	231,754	211,110	254,397	273,857	254,027	252,089	242,133	247,339	324,532	4.3
Industry												
Average	162,914	181,413	221,983	239,606	269,438	301,324	364,968	388,868	411,589	440,985	636,594	
Average real	279,440	280,390	317,119	283,893	269,438	268,559	296,963	283,019	271,318	277,523	378,474	3.0
Construction												
Average	97,123	115,138	156,524	160,431	200,005	242,659	272,023	280,557	300,452	344,544	391,229	
Average real	166,591	177,957	223,605	190,084	200,005	216,273	221,337	204,190	198,057	216,830	232,598	3.3
Electricity												
Average	51,929	74,654	83,757	120,163	126,385	173,789	192,783	252,821	256,780	289,287	316,209	
Average real	89,071	115,385	119,653	142,373	126,385	154,892	156,862	184,003	169,268	182,056	187,996	7.5

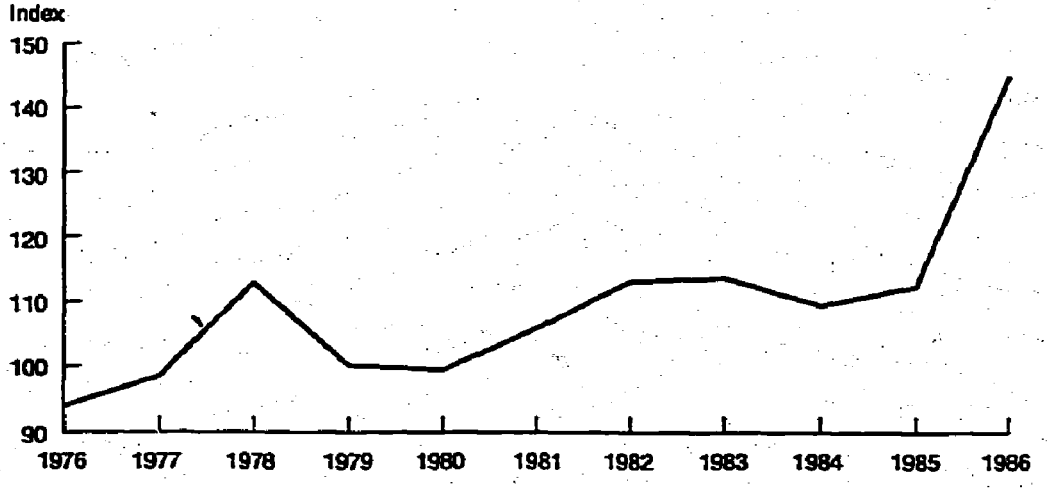
(table continues on next page.)

Table 2.8 ***continued***
(rupiahs per month)

Sector	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1986*	*Average annual change (percent)*
Trade, banking, and insurance												
Average	107,406	140,085	165,305	177,740	201,683	246,874	297,578	361,980	383,623	407,250	568,007	
Average real	184,230	216,515	236,149	210,592	201,683	220,030	242,130	263,449	252,882	256,293	337,697	6.1
Communications												
Average	97,767	116,289	141,767	152,326	212,319	271,571	294,012	312,054	331,130	349,158	421,827	
Average real	167,696	179,736	202,524	180,481	212,319	242,041	239,228	227,113	218,279	219,734	250,789	4.0
Services												
Average	128,197	128,955	128,955	153,105	177,805	199,213	216,025	224,952	239,024	256,405	324,197	
Average real	219,891	199,312	184,221	181,404	177,805	177,552	175,773	163,720	157,563	161,362	192,745	−1.3
Government and miscellaneous												
Average	49,500	128,740	128,740	128,740	159,000	169,900	169,900	169,900	171,580	207,604	212,190	
Average real	84,906	198,980	183,914	152,536	159,000	151,426	138,242	123,654	113,105	130,650	126,153	4.0

Note: Monthly wages deflated by consumer price index, 1980 = 100.
Source: *Nota Keuangan*.

Figure 2.1 Index of Real Wages, 9 Sectors



Agricultural Markets

Markets for agricultural products in Indonesia are highly competitive, as would be expected for a sector dominated by smallholders and tenant farmers and for an economy so open to smuggling to and from Malaysian and Singaporean ports. The one exception to this generalization about competition is the rice market, where prices are determined by the National Logistics Board (Badan Urusan Logistic, or BULOG). Although BULOG has the authority to operate in other food commodity markets, it focuses its attention on rice, the chief staple in Indonesia.

BULOG has three objectives with regard to rice. The first objective is to support domestic prices at levels that provide incentives to farmers to undertake production using new varieties and adequate fertilizer. The second is to ensure that domestic consumers and employers are not unduly burdened by high prices brought on by variations in international prices or in domestic production. The third is to keep regional variations in price within acceptable bounds (Mears and Affif 1969).

Rice production rose from 15.3 million tons in 1974 to 25.8 million tons in 1984, making Indonesia a self-sufficient rice producer, but the cost was high. For example, fertilizer subsidies for rice cultivation totaled $369 million in fiscal 1981, and BULOG's rice storage losses (those costs of storage not recovered in BULOG's selling prices) were estimated by the World Bank to be between $8 million and $15 million. The subsidies amounted to approximately 263 billion rupiahs, or nearly 3 percent of the contribution of the food crop sector to GDP in 1982. Moreover, many other types of costs were involved in the rice intensification program, such as subsidies for pesticides and sprayers, farm machinery, agricultural research and extension, and irrigation.

Chapter Three

The Chaotic Years: 1949–65

Indonesia had a "revolving-door" system of government during the 1949–57 period of constitutional democracy (Feith 1962). Eight coalition governments were formed and fell. The longest survived two years and the shortest only six months, see appendix table A. 22. Although political turmoil brought frequent changes in the economic policy regime, these short-lived governments maintained reasonable fiscal discipline. The budget deficits averaged only 1.5 percent of GDP in the 1951–57 period, with none exceeding 3 percent (see table 3.1). In comparison with the annual average budget deficit of 5 percent of GDP during the 1958–65 period, the deficits of the 1951–57 governments were remarkably small even though administrations were under constant pressure to dispense political patronage in order to hold on to power.

During the constitutional democracy period the government was preoccupied with survival, and the antiquated tax system inherited from the Dutch was left intact. Trade taxes continued to be the chief source of revenue. An increasing need for revenue led to the imposition of various devices, such as multiple exchange rates and export surcharges on the export sector. Since most export industries are situated in the Outer Islands, the trade taxes were perceived by the Outer Islanders as oppression by the Javanese majority. The weak state of the central government naturally invited regional recalcitrance.

In 1956, two big export regions (Central Sumatra and North Sulawesi) stopped forwarding their foreign exchange earnings to Jakarta. The upshot was that in February 1957 the foreign exchange reserves of the Central Bank fell below 20 percent of short-term liabilities, or less than required by the Bank of Indonesia Act of 1953. The government reacted to the foreign exchange crisis by invalidating nearly all import licenses. Such a blanket curtailing of imports was, of course, not sustainable. In June, a "certificate of urgency" system was created to allow important industries to obtain essential inputs.

The impending secessionist action, the economic crisis, and the general frustration of the populace with the political intrigues of the coalition governments

Table 3.1 Fiscal Policy, 1950–66
(billions of old rupiahs for 1950–66, billions of new rupiahs for 1967–71)

Year	Gross revenue	Gross expenditure	Balance	
			Percentage of expenditure	Percentage of GDP
1950	7.0	8.7	–19.5	–3.4
1951	11.8	10.6	11.3	1.5
1952	12.3	15.0	–18.0	–2.8
1953	13.6	15.7	–13.4	–2.0
1954	12.5	15.4	–18.8	–2.6
1955	14.2	16.3	–12.9	–1.4
1956	19.2	20.8	–7.7	–0.9
1957	20.6	25.6	–19.5	–2.5
1958	25.3	35.5	–28.7	–4.8
1959	30.5	44.3	–31.2	–4.7
1960	49.8	58.3	–14.6	–2.2
1961	62.2	88.5	–29.7	–5.6
1962	75.0	122.0	–38.5	–3.5
1963	162.0	330.0	–50.9	–5.2
1964	283.0	681.0	–58.4	–5.6
1965	960.8	2,526.3	–62.0	–6.6
1966	13,142.0	29,433.0	–55.3	–5.2
1967	60.2	87.6	–31.2	–3.2
1968	149.8	185.3	–19.2	–1.7
Jan-Mar 1969	45.9	58.6	–21.7	—
1969/70	251.6	342.7	–26.6	–3.4
1970/71	354.7	467.8	–21.0	–3.5

Source: World Bank data; 1 new rupiah = 1,000 old rupiahs.

prompted Soekarno to declare in 1957 that Indonesia would thenceforth be a "guided democracy." The elected parliament was replaced by appointed representatives of functional (for example, peasants', fishers', and women's) groups. To divert attention from domestic problems and to muster national unity, Soekarno embarked on his first military adventure—the liberation of West New Guinea (now known as Irian Jaya), the last Dutch colony.[1] The pressing need to finance an unprecedented budget deficit of 5 billion rupiahs through money creation caused the government in May 1957 to enact Emergency Law No. 14, which lifted the 20 percent foreign exchange reserve requirement. The money supply increased by 41 percent in 1957, compared with less than 10 percent in the two preceding years. The result was an inflation rate of 55 percent in 1957. This emphasis on "nation-building" also meant less money for economic service and government investment, see table 3.2.

Blaming Indonesia's economic ills on the ideology of "free-fight [untrammeled] capitalism," Soekarno announced that the "guided democracy" would have a "rationally guided economy." Foreign exploitation was eliminated by

Table 3.2 Components of Government Expenditures, 1951–66
(percent of total)

Year	*Defense*	*Economic services*	*Social services*	*Other current expenditures*	*Investment*
1951	30.8	2.9	9.7	50.3	6.3
1952	20.2	11.7	9.6	51.4	7.1
1953	24.9	10.1	8.0	51.1	6.0
1954	22.0	12.2	9.5	48.9	7.5
1955	24.1	9.1	9.6	50.9	6.3
1956	20.4	4.9	10.6	58.2	5.9
1957	23.6	4.2	9.1	58.9	4.2
1958	31.4	4.0	8.2	52.8	3.7
1959	31.7	4.3	7.0	52.5	4.4
1960	38.5	5.2	8.7	41.1	6.6
1961	46.5	6.9	7.8	30.9	7.9
1962	46.6	4.6	5.5	39.7	3.7
1963	29.7	16.3	7.0	14.3	32.8
1964	28.7	6.0	6.1	21.3	38.0
1965	40.0	7.7	4.3	14.0	34.1
1966	9.3	—	75.5	—	15.2

Source: World Bank data.

nationalizing Dutch enterprises. These were turned over to the army, partly as political patronage and partly as a way to help finance the Irian Jaya military adventure. Domestic exploitation was curbed by forbidding Chinese Indonesians from engaging in their traditional retail activities in rural areas. Both "anti-exploitation" measures created severe dislocations within the economy at the same time that the fiscal imbalance was destabilizing the economy.

Djuanda Kartawidjaja, appointed prime minister of a nonpartisan cabinet to focus on the "business of governing,"[2] sought to reduce the budget deficit by replacing import quotas with tariffs, and to improve the balance of payments and thwart the secession movement by devaluing the exchange rate for export transactions by 48 percent and removing almost all export taxes. These measures came too late, however. Portions of Sumatra and Sulawesi declared their independence in March 1958. The consequent rise in military spending caused the budget deficit to soar from 5 billion rupiahs in 1957 to 10 billion rupiahs in 1958. Government investment spending as a share of government expenditure plunged to 3.7 percent.

The Years of Living Dangerously: 1959–65

The army was able to crush the regional rebellions very quickly; the fight was over within a year. Claiming a need for strong leadership, Soekarno imposed presidential

rule in June 1959. A few years later he appointed himself president-for-life. His assumption of direct administrative power removed the last vestiges of technocratic control over the budget process. From 1959 until 1966 many ministries were given supplementary budgets the existence of which was not publicly acknowledged. The president himself controlled the Revolution Fund, which was financed from undisclosed nontax sources. The use of this Revolution Fund was not disclosed. During the last years of the Soekarno regime the government did not even bother to submit budget proposals to parliament for approval. Furthermore, the Central Bank was ordered at the beginning of 1961 to cease publication of its weekly, monthly, and annual reports in order to restrict information on the disintegrating economy.[3]

It is appropriate to point out here some of the elements that helped to shape Soekarno's "guided economy" agenda. When Indonesia obtained independence from the Netherlands, it agreed to respect existing Dutch economic interests. This was a major concession that turned out to be unworkable. The independence agreement left in place an economy dominated in many sectors by Dutch monopolies.

An unfortunate semantic confusion occurred at that time. The sorry state of the economy was described as the consequence of economic liberalism, and economic liberalism was interpreted to mean a hands-off attitude toward the monopolies. This is why the term "free-fight capitalism" still arouses negative feelings in Indonesia today. Soekarno's idea of a "guided economy" met with little resistance because its first item of business was the nationalization of the Dutch firms. That the rest of the "guided economy" agenda was unspecified made criticism difficult.

Given the socialist rhetoric that cloaked most nationalistic movements, many Indonesians had come to see their country's economic situation as a result of exploitation by international monopoly capital. The economic nationalism that accompanied political nationalism thus naturally supported autarkic industrialization. The Indonesian proclivity for import-substituting industrialization (ISI) was reinforced not only by arguments from leftist economists such as Paul Baran (1957) but also by the writings of respected bourgeois economists such as Gunnar Myrdal (1957) and Ragnar Nurkse (1967). (It is interesting to note in retrospect that Baran predicted that only Myanmar and Indonesia, which were pursuing isolationist economic policies, had any chance of sustained growth.) Myrdal hailed ISI as an appropriate way to break free from the cycle of poverty, while Nurkse was pessimistic about the tolerance of the advanced capitalist countries toward manufactured exports from the developing world.

Under these circumstances, Soekarno found it expedient to blame Indonesia's social and economic problems on neocolonial (NEKOLIM) forces seeking to subjugate Indonesia. Evidence of U.S. complicity in the 1958 regional revolts helped to bolster xenophobic economic nationalism.

The "guided economy" program meant expanding state control over the means of production, using quantitative restrictions and multiple exchange rates to address balance of payments deficits, favoring autarkic policies to promote

industrialization, and printing money to finance budget deficits enlarged by extravagant showcase projects and the military buildup. The budget deficits in the 1958–65 period averaged 5 percent of GDP, and the resulting money creation caused the inflation rate to stay at the triple-digit level from 1962 to 1966.

Dirigiste economic policies reached new heights after 1959. The floating exchange rate device (proof of export, or *Bukti Ekspor*) introduced by Djuanda in 1957 to promote exports was ended. Quantitative restrictions became the preferred instrument for dealing with the trade deficits generated by the macroeconomic imbalance.

Indonesia also sought to confront neocolonialism (NEKOLIM) on the international stage. Western domination of international forums had to be ended, in Soekarno's view, by setting up a new set of institutions. The United Nations was to be replaced by the Conference of the Newly Emerging Forces (CONEFO) and the Olympic Games by the Games of the Newly Emerging Forces (GANEFO). Besides undertaking construction of CONEFO and GANEFO facilities, Indonesia embarked on an ambitious program of erecting national symbols.[4] The rise in government investment spending to more than 30 percent of government expenditure between 1963 and 1965 came from building these ornamental monuments and not from building infrastructure projects.

In the 1963–65 period the military made greater demands on domestic resources. When Britain advised its colonies of North Borneo and Sarawak to join Malaya in a political union, Soekarno launched in 1963, a "confrontation" (KONFRONTAKSI) campaign against the new country of Malaysia. The army was instructed to prepare for a full-scale invasion, and the business community was barred from using the two Malaysian ports (George Town and Singapore) through which most of Indonesia's trade was conducted. Since the latter action reduced export revenue at the same time that the former demanded more of it, the budget deficit continued to climb rapidly (see table 3.1). Soekarno soon broadened his campaign to include most Western countries. All foreign enterprises were nationalized. The large-scale embezzlement that followed turned these businesses from being taxpayers to being recipients of subsidized credit. From 1961 onward (with the exception of 1962), the budget deficit was over 5 percent of GDP.

Indonesia also began cutting itself off from foreign resources, withdrawing from the United Nations, the World Bank, and the International Monetary Fund. Meanwhile, Soekarno embraced isolationist *berdikari* policies.[5] As the public sector began to place more demands on domestic resources, economic management became more diffused, and the Supreme Council of Economic Operations (KOTOE) was established in late 1964 to coordinate decisionmaking. But this cohesiveness in management did not last, and in September 1965 a Self-Reliance Council (KOTARI) was founded to implement berdikari policies.

The domestic economic situation became so bad that in an August 1964 Independence Day speech Soekarno said 1965 would be "the year of living dangerously." This unfortunately turned out to be one of Soekarno's few successes at prediction.

Chapter Four

An Overview of Macroeconomic Developments: 1965–90

The year 1965 was a watershed in Indonesian politics. The inflation rate was soaring, the nominal value of exports had dropped by 24 percent since 1959, and foreign exchange reserves had fallen from $267 million (6.7 months of imports) to $17 million (0.29 months of imports). Debt service obligations were $530 million, whereas export earnings were only $527 million. Real GDP growth in 1959–65 had averaged only 1.8 percent a year, while population had grown 2.5 percent a year. Overt unemployment was estimated to be more than 2 million.

It was in this chaotic economic situation that a Communist-inspired coup was attempted in September 1965. Quick suppression of the coup by the army established General Soeharto as a rival to Soekarno. Economic and political conditions continued to worsen and Soekarno was compelled to hand over executive power to General Soeharto in March 1966. (Soekarno continued to be the titular head of the government until the spring of 1967, when he was forced to retire.) The economic team of Soeharto's New Order government consisted of professional economists with a neoclassical orientation. The key figures in the team remained in the government throughout the period of this study, and this continuity proved valuable when Indonesia encountered other crises.

The new team did not unveil its stabilization program until it had reached an agreement with Western creditors in September 1966 on debt relief and new loans. Presidential decrees were then promulgated to reinstate bank reserve requirements, raise interest rates, stop automatic Central Bank credits to state enterprises, end subsidies for "key" consumer goods, abolish all quantitative restrictions on imports, and devalue the rupiah. Shortly after the implementation of these measures, the Western creditors formed the Inter-Governmental Group for Indonesia (IGGI) to provide new concessionary loans to ease the dislocations caused by the structural adjustments.

As will be clear from our detailed analysis of this episode in chapter 6, austere budget and credit policies played principal roles in bringing inflation down from 635 percent in 1965 to 6 percent in 1970. Budget deficits averaged 3.4 percent of GDP in the 1967–70 period, compared with 5.7 percent in the 1963–66 period. Since the smaller budget deficits were entirely financed by foreign loans and automatic credits were no longer available to state enterprises, money growth in 1970 was only 36 percent, as against 763 percent in 1966.

The changes in the exchange rate and trade systems increased exports not only through the usual incentive effect but also by redirecting exports from illegal trade channels. The export surge helped relieve the balance of payments and fiscal imbalances. Export earnings (measured in U.S. dollars) went up by about 10 percent every year during the stabilization period, and trade tax revenues (measured in constant 1966 prices) jumped from 0.4 billion rupiahs in 1965 to 6 billion rupiahs in 1966 and 13 billion rupiahs in 1967.

The most remarkable aspect of the 1966 stabilization program was that the drop in inflation was accompanied by economic expansion rather than contraction. Real GDP in 1967 (the first year of the program) was actually 2 percent higher than in 1966.[1] This unusual phenomenon of growth under a stabilization program with tight fiscal and monetary policies was the result of increased productivity achieved through better allocation of resources, an increase in exports induced by devaluation, and foreign aid, which reduced inflation by making imported consumer goods available and by increasing the output of domestically produced goods manufactured with imported capital goods.

Output expanded by 11 percent in 1968 and 7 percent in 1969, proving that the 1966 program had succeeded in generating sustained economic growth. A case can be made that more than that was accomplished. The changes were of such depth that they probably raised the trend growth rate as well. The liberalization of capital account transactions lowered the risk of investing in rupiah-denominated assets. Meanwhile, interest rates were raised to eliminate negative real rates in the formal market. This adjustment led to a rapid increase in banking intermediation. Moreover, the elimination of the ban on informal financial markets lowered the transaction costs of financing agricultural activities. And the elimination of the thicket of regulations created by the Soekarno government increased production efficiency and raised the rate of return on investment.

A new policy of making direct subventions to local government was successful in expanding basic infrastructure—bridges, farm-to-market roads, and processing facilities for farm products. These subventions were made directly to the village level as well as to the subdistrict, district, and provincial levels. Such a policy, as opposed to one in which decisions about investments by local governments were directed through central planning, raised the probability that local investment would yield a high social rate of return.

The Inflation of 1972–73

By 1971 the inflation rate was less than 5 percent, exchange rate unification and substantial trade liberalization had been achieved, the dollar value of exports had increased by 70 percent since 1967, and real GDP per capita had grown more than 5 percent a year. But poor rainfall caused a decline in rice production in 1972, by more than 500,000 tons from the previous year, or 4 percent. The domestic shortage of rice was compounded by delays in the placing of import orders by BULOG and a tight world market. Between June and December 1972 the price of rice in Jakarta jumped from 44 rupiahs a kilogram to 98 rupiahs a kilogram, a rise of 123 percent. Meanwhile, the Jakarta cost of living index rose 26 percent in 1972 and 27 percent in 1973. It is hence quite understandable that this inflation was interpreted by many as a "rice-push" phenomenon, since rice was the principal wage good.

But there were three other contributing factors. First, there was a sharp increase in money growth. Second, the prices of many traded commodities rose rapidly in 1972 and 1973 (Arndt 1973). Third, the rupiah (which had been pegged to the U.S. dollar) was implicitly devalued in February 1973, when the dollar depreciated 11 percent against the SDR.

An econometric analysis of the link between the price of rice and the general price level found a direct relationship between them, suggesting an induced acceleration of nonrice price increases (Amang 1984). However, the contribution from the increase in the rice price to the rise in the general price level was small compared with the contribution from the increase in the money supply. The heart of the problem was the monetization of the rapid inflow of foreign assets. There was a rapid rise in the value of exports: export volume rose 42 percent in 1971–73, and export unit value rose 75 percent. In addition, capital inflow was stimulated by high interest rates on time deposits.

The First Oil Shock, 1973–74

In 1971, Minas light crude (Indonesia's benchmark grade) sold for an average price of $1.70 a barrel. By July 1, 1974, the price had risen to $12.60. This increase, together with an expansion in production, caused the value of Indonesia's crude petroleum exports to rise from $834 million in 1972 to $4.7 billion in 1974. The macroeconomic impact of this bonanza was enormous. Oil company taxes were paid in dollars which were sold to the Central Bank in exchange for increases in the government's rupiah account. This change in denomination did not, in itself, necessitate an increase in the money supply. Had the additional rupiah revenue remained deposited as idle funds at the Central Bank, the money supply would not have increased. The government, however, had concluded that it was politically impossible (given the extent of poverty) not to expand development expenditures

in proportion with the increase in oil revenue. This additional spending automatically injected new reserves into the banking system.

Open-market operations to sterilize these new reserves were not possible in 1973 because the bond and equity markets were virtually nonexistent. The chief instrument of monetary control was direct Central Bank credit to state and private enterprises. Since these credits were extended for a contractually fixed period of time, there was no way to reduce domestic credit quickly, and the money supply (M_1) went up by more than 40 percent in 1973. In April 1974 the government reacted to the situation by imposing credit ceilings on the banks. We will document in chapter 8 that this method of monetary control did not cut the link between fiscal policy and monetary policy.

The Pertamina Crisis of 1975

Even before the oil shock of 1973–74 had expanded Pertamina's cash flow to gargantuan proportions, the corporation had taken advantage of its position by beginning to build a conglomerate complex which would eventually include 2,600 filling stations, a fleet of tank wagons, a steel plant, several office buildings, a data processing center, a tanker fleet, a tourist resort, a fertilizer factory, an airline, and several rice plantations. Pertamina became, in effect, an independent development agency. In an attempt to control its activities, the technocrats argued successfully for the issuance of a presidential decree that required state enterprises to obtain the approval of the minister of finance and the governor of the Bank of Indonesia before negotiating medium- and long-term loans from international financial sources. Pertamina responded by switching to short-term loans to finance its capital expenditures, thereby sowing the seeds of its downfall. When the growth of oil revenues began to subside in the latter half of 1974, Pertamina found itself caught in a financial bind and unable to roll over a short-term $40 million loan.The government was then obliged to take responsibility for Pertamina's liabilities to ensure Indonesia's continued access to external financial markets.

Our analysis of the Pertamina crisis in chapter 7 suggests that the episode did not have many negative short-run macroeconomic consequences. In chapter 10 we argue that this incident yielded beneficial long-run macroeconomic effects by restoring the technocrats as the primary economic managers.

The 1978 Devaluation

The performance of the balance of payments was very impressive throughout the 1970s, thanks to the rapid development of the petroleum and LNG sectors and the fourfold oil price increase at the end of 1973. It was therefore a surprise to many

when the government devalued the rupiah by 50 percent in November 1978. The primary reason for the devaluation was to prevent the nonoil tradable sector from shrinking because the real exchange rate was overvalued. The oil boom caused inflation to average 24 percent a year in the 1973–77 period, and this rate of inflation under a fixed exchange rate system eroded the competitiveness of the nonoil tradable sector. Our analysis in chapter 8 suggests that the production disincentive for the tradable sector increased by about 26 percent in the 1973–78 interval. This squeeze on the nonoil tradable sector is known as the Dutch disease.

Another indication that the tradable sector was suffering from Dutch disease was its poor growth performance compared with that of Malaysia, which exported similar products, also had an oil boom, and, like Indonesia, kept its currency virtually fixed to the dollar. The big difference was that Malaysia's average annual inflation rate was 7.5 percent, compared with Indonesia's 21.6 percent. The annual growth rates of nonoil exports over the 1973–78 period were 32 percent for Malaysia and 16 percent for Indonesia.

Adjusting to Low Oil Prices, 1982–90

When world GDP growth dropped from 3 percent in 1979 to 2 percent in 1980 and in 1981, the drop in exports caused Indonesia's growth rate to fall to –0.3 percent in 1982 and the current account deficit to rise from 1 to 6 percent. The government then brought forward an austere budget in January 1983. Nominal government expenditure was to be only 6 percent above the level of the previous year, even though the inflation rate was expected to be about 10 percent. The construction of four major public sector projects (costing $5 billion) was stopped, and many projects were put under review, an effective postponement. Monetary policy was also tightened. The money stock (M_1) grew only 6 percent in 1983, compared with 10 percent in 1982. On March 30, 1983, the rupiah was devalued by 38 percent to bring the real exchange rate back to the level set by the 1978 devaluation. New export incentives were introduced, and import barriers in the form of quantitative restrictions were raised.

Resource mobilization was also stressed as a way of reducing pressure on the balance of payments. In June 1983 the credit ceilings in effect since 1974 were removed, and the regulations governing the financial system were drastically relaxed in order to narrow the gap between savings and investment and discourage capital flight. Most of the Central Bank credits given to state banks for disbursement to targeted groups were discontinued. In return, the state banks were free to set their own interest rates so that they could compete with private banks, which had been exempted from interest rate regulations. Exceptions to that sweeping change were made for a number of special programs in which interest subsidies were considered to be necessary, such as agricultural credit and small business credit.

In December 1983 the tax system was reformed to raise revenue more efficiently. The reform included a self-reporting income tax system and a simplification to three tax rates—15, 25, and 35 percent. To make enforcement easier, the cutoff point for taxable income was doubled, reducing the proportion of the population subject to income tax to only 10 to 15 percent. In April 1985 the complicated sales tax system was replaced by a flat value added tax of 10 percent.

The seriousness of the attempt to increase economic efficiency was exemplified by Inpres (presidential instruction) No. 4, promulgated in April 1985. It drastically reduced and simplified administrative procedures for imports and exports, allowed greater use of foreign vessels in international commerce, reduced port charges, and extended loading and unloading operations at the port to a twenty-four-hour day. Even more dramatically, import transactions in excess of $5,000 in value were taken out of the hands of the customs service (where delays in order to extract bribes were notorious) and placed with the Société Général de Surveillance (SGS), a privately owned Swiss firm.[2]

New external shocks appeared after 1985. The price of oil took a steep slide in 1986, and the depreciation of the U.S. dollar after 1985 hit Indonesia particularly hard because 60 percent of the country's external debt was denominated in nondollar currencies. The government responded with additional adjustment measures. On May 6, 1986, a policy package was introduced to neutralize the unfavorable impact of domestic protection on exporters' costs. Exporters were allowed to import "necessary" inputs if domestic suppliers could not provide them at internationally competitive prices. The rupiah was devalued by 45 percent in September 1986, the development of a domestic capital market was speeded up, and restrictions on direct investment by foreigners were relaxed. The trade regime was further deregulated in 1988 and 1990.

Preliminary evidence indicates that the adjustment packages implemented by the government during the 1980s succeeded in maintaining external balance and restoring growth.

Chapter Five

The Political Economy of Policymaking in the New Order Government

Since economic policymaking is seldom a straightforward exercise in unconstrained optimization, one response of the economics profession is to extend the paradigm of rational, self-interested (self-serving) maximizers to encompass nonmarket collective decisionmaking. This chapter makes this public choice problem explicit by laying out the political context within which the economic strategies of the New Order government have been formulated. This public choice framework provides an additional thread of intellectual coherence in our analysis of Indonesia's crisis episodes.[1]

The Nature of the Indonesian State

Since Soeharto's election as president in March 1967, the only serious challenge to his rule has been the Malari riots of January 1974. There is little disagreement that Indonesia is an authoritarian state. To the extent that Indonesia can be thought of as having democratic traits—elections for Parliament are held every five or six years—they are more of the consultative than the plebiscitary variety. Of the 500 parliamentary seats, 100 are reserved for presidential appointees. The People's Consultative Assembly, which meets for a fortnight every five years to elect a president, consists of all members of Parliament and 500 appointed representatives of different interest groups.

Parliament is dominated by the government party, GOLKAR, an umbrella organization of labor unions, trade associations, and youth, peasant, veterans', and women's groups, which is, in turn, dominated by Soeharto.[2] GOLKAR does not formulate the national agenda. The opposition parties are in such disarray that they receive annual government subsidies. Their plight may be as much a result of their

squabbling during the 1949–57 period of Western-style liberal pluralistic democracy as of government intimidation.

The Variables in the Economic Policymaking Equation

The New Order government might have began as an army state, but it has evolved into an implicit corporatist state in which President Soeharto serves as chairman of the board; the army and the bureaucratic elite serve as senior partners; and indigenous capital, the rural sector, and regional interests are junior partners. These groups have won themselves a place through being essential to the functioning of the state (the bureaucracy) by being an important source of discretionary funds (indigenous capital), or by reason of a history of belligerence that threatened the existence of the state (the rural sector and regional interests). Many actions of the state are determined through presidential brokering of compromises among the principal social groups. That Soeharto has won an increasing proportion of the popular vote over the years suggests that he has been successful in balancing sectoral concerns. With Soeharto at the head of the ticket, GOLKAR won 62 percent of the votes cast in 1971, 62 percent in 1977, 64 percent in 1982, and 73 percent in 1987.[3]

Our discussion of decisionmaking is organized around the reaction function, which specifies the constraints on the set of possible outcomes as the right-hand-side variables.[4] The chief variables in the policymaking equation of the Indonesian corporatist state are the institutional memory of Soekarno's disastrous economic policies, agrarian radicalism, the history of secessions, economic nationalism and *pribumi*-ism, the use of political patronage, and certain personal traits of President Soeharto.

Variable 1. The Institutional Memory

Indonesia's economic stagnation prior to 1966 was inevitable, given the existence of many microeconomic distortions and huge macroeconomic imbalances. An overvalued exchange rate had caused decline among export industries, the most productive sector of the economy. One of the first acts of the New Order government was to devalue the currency from 10 rupiahs per dollar to 100 rupiahs per dollar.[5]

The effects of the devaluation in the rural areas were dramatic. Agricultural production in 1968 was 13 percent above the 1965 level, and nonpetroleum exports (in dollars) rose 14 percent in the same period. Smallholders benefited more from the export boom than the estates, whose production increased only marginally in the 1965–68 period. The distributional aspects of the devaluation were clear. Since the prices of commodities were set in dollars, devaluation of the rupiah translated directly into increased income for small agricultural producers. Since then, competitive exchange rate management has been one of the constants in economic policymaking.

The other constant in economic policymaking has been the "balanced budget principle." Hyperinflation in the last years of the Soekarno regime impressed the ruling elite of the New Order government so thoroughly that it foreswore the printing of money to finance future budget deficits.

Variable 2. Agrarian Radicalism

One of the New Order's chief concerns has been to prevent economic conditions favorable to the resuscitation of the Communist Party of Indonesia (Partai Kommunis Indonesia, or PKI). In 1965 Indonesia had "the strongest communist party outside the communist bloc, with a membership of over 3 million and affiliated mass organizations of farmers, workers, women, and students that claimed over 20 million followers" (Dake 1973:1–2). The fact that the party membership consisted largely of landless peasants in Central and East Java indicates that any prolonged impoverishment of the rural heartland could lead to a resurgence of the PKI. The political implication is clear: the specter of communism can be exorcised only by improvements in the lives of the rural population.

This fear of communism in official circles may reflect awareness that agrarian radicalism has a long tradition in Java.[6] There is a widespread millenarianistic belief that a Javanese messiah, Ratu Adil, will eventually emerge and lead the peasants to the creation of an ideal society after a violent confrontation with the forces of oppression. Immediately after the killing of half a million Communists in the 1965–66 aftermath of the abortive leftist coup, the government crushed two millenarianistic movements.[7] In 1976 a Javanese mystic, Sawito Kartowibowo, declared himself the messiah predicted by folklore and asked Soeharto to step down. While this action may seem comical and the resulting eight-year jail sentence draconian, it is noteworthy that a manifesto written by Sawito was signed by the first former vice-president, the head of the Roman Catholic church in Indonesia, the leader of the Indonesian Protestant Church Council, the head of the National Islamic Scholars' Council, and two retired generals.

Millenarianism in the guise of communism may be what the Soeharto government has been fundamentally concerned about. Or perhaps the official attitude toward the rural areas may have been based on fear of the proletarianization of the peasants if they were to move into the cities.[8] In any case, whether the problem is seen as communism, millenarianism, or proletarianization, it has been understood that the correct political response was to raise the standard of living in the rural areas.

Variable 3. Regionalism, Ethnicity, and Religion

The ethnic diversity of Indonesia resulted in numerous secession attempts in the 1950s. The sense of alienation felt by Outer Islanders has not been helped by the fact that the inner circles of the government have been dominated by Javanese

ever since independence in 1949. It was hence necessary to assuage feelings of discrimination among the non-Javanese by delivering tangible economic benefits to them. The government had to do more than raise living standards, as it did in rural Java; it also had to make it clear that interisland (regional) equity was a primary goal of the government.

The specter of separatism has meant that spending for regional development has been a high priority. That has reinforced Soeharto's readiness to devalue the currency. Most of the import-substitution industries, whose products were practically nontradable because of cost, were located in Java, and a devaluation would always turn the regional terms of trade in favor of the agricultural commodity-exporting Outer Islands.

Variable 4. Economic Nationalism

There is widespread popular sentiment and significant intellectual support for the rapid development of a large and diversified industrial base. The president himself is sympathetic to this view. Soeharto, like most members of the 1945 generation who fought in the war for independence, is influenced by an economic nationalism which is related to Indonesian nationalism. Colonial Dutch economic policies were seen as designed (a) to impose a plantation economy on Indonesia to serve the needs of Dutch manufacturing industries for raw materials and (b) to drain Indonesia of its wealth through profit repatriation. Indonesians regarded industrialization as the key to economic prosperity because technological advances were supposedly less likely to occur in the agricultural sector. They saw the repatriation of profits to the Netherlands as effectively ruling out the possibility of investment in manufacturing.

It is therefore understandable that economic nationalism in postcolonial Indonesia took the form of state support for industrialization programs and intolerance toward foreign ownership of capital (except in extractive industries in the Outer Islands, where the capital requirements are immense). Economic nationalism translated into policy in the form of high trade barriers to cushion the development of a manufacturing sector and foreign investment laws which are still stricter than those of neighboring countries. It is Soeharto's economic nationalism that explains the vacillating attitude toward laissez-faire. The simultaneous introduction in 1983 of liberalizing measures such as financial deregulation and interventionist measures such as additional nontariff barriers illustrates this ideological influence.

Variable 5. Pribumi-*ism*

Economic nationalism in Indonesia is strongly tinged by *pribumi*-ism. Many indigenous Indonesians resent the fact that Chinese Indonesians wield economic power disproportionate to their share of the population. It is widely felt that this state of affairs originated from the victimization of the indigenous Indonesians by

Dutch colonial policies. Resentment against the Chinese has led to occasional mob destruction of Chinese property.

Many Indonesian intellectuals have been pessimistic about the possibility that laissez-faire will reduce economic inequality. They have proposed that Chinese domination be reduced through the establishment of large state-sponsored enterprises, each headed by one of the small number of talented *pribumi* entrepreneurs.[9] If these Indonesian *zaibatsu* were regarded as holding their capital in trust for indigenous Indonesians, indigenous ownership of capital would increase very rapidly. Since this *zaibatsu* method of defusing racial tension gives patronage power to the government, it has received enthusiastic support from economic nationalists.

It is important to stress that supporters of economic nationalism and *pribumi*-ism have not been concerned about whether industrialization is inward oriented or outward oriented. If the only political factors had been agrarian radicalism and regionalism, there would have been a strong export bias, given the outward orientation of the agricultural sector (except for rice). Under these circumstances industrialization would also have been export oriented.

Variable 6. Political Patronage

Outward-oriented industrialization did not occur, however, because of the political need for resources to reward supporters of the Soeharto regime and to co-opt opponents. Import-substituting industrialization has provided Soeharto with a convenient way to distribute political patronage. Former generals who have fallen out with the president are offered directorships on the boards of state and private enterprises on condition that they refrain from criticizing the administration (Jenkins 1984).

The legacy of the past may have been equally important in explaining the reliance on protectionism. During the war for independence the various army units were necessarily self-supporting, and in the Soekarno years army generals were expected to continue supporting their troops by raising outside revenue. Joint business ventures involving senior army generals and the private sector became common. This practice has been expanded under the Soeharto regime, which has sought to justify the use of army personnel in business management by a doctrine of *dwifungsi*.[10]

The imposition of trade barriers served to support the army's economic nationalism, reward political supporters, and provide additional funds to the armed forces. These last two purposes explain why manufacturing industries are oriented toward internal markets. Competition in external markets might make the industrial sector more efficient, but it would also make funding for the army more uncertain.

Variable 7. The Personal Element

President Soeharto has never downplayed his peasant origin.[11] On the contrary, he has consistently emphasized the need to improve rural living standards. Even if one were to dismiss as political opportunism Soeharto's avowed desire to alleviate rural poverty, it must be conceded that his frequent expressions of interest in the topic suggest that he does place importance on rural development.

Soeharto's style of economic management reflects his military background. He sees the bureaucratic proclivity for detailed accountability to be a drag on the pace of development. The result is the appointment first of General Ibnu Sutowo, and then of Technology Minister Habibie, as the czar of industrialization. To use the parlance of Indonesian government documents, the industrialization czar was to be a "dynamizer"—a capable and dedicated individual who could quickly formulate and decisively implement programs that would hasten economic development. Since quick actions dictate that the "dynamizer" be unconstrained by the usual bureaucratic checks, the outcome of some of Indonesia's development schemes was a drain on the public treasury. The most well-known case is the financial rescue operation in 1975 when the unwieldy conglomerate headed by Sutowo brought the state oil company, Pertamina, to the brink of bankruptcy in the middle of an oil boom.

Political Interests and the Decisionmaking Process

Indonesia has frequently pursued a contradictory mix of liberalizing and protectionist policies because the variables discussed above are filtered through two groups of economic advisers: the technocrats (the "economists") and the technicians (the "engineers").

The technocrats are mostly economists with more neoclassical leanings who work at the Ministry of Finance and the National Planning Body (Bappenas). Their acceptance of the comparative advantage principle has led them to emphasize the development of nonoil export industries, particularly agricultural commodities and labor-intensive manufactured goods. This has meant favorable treatment for the agricultural sector, which supplied 82 percent of Indonesia's nonoil exports in 1970 and 75 percent in 1980. Exchange rate devaluation rather than the removal of trade barriers on imported inputs has been used to promote exports because the technocrats have controlled the ministries in charge of macroeconomic policies but not the ministries that have the authority to set quotas and grant import licenses. The technocrats are not free-market ideologues, however, and have not been averse to state intervention to promote other objectives besides economic efficiency. They practice neoclassical economics in the sense that they believe that some methods of intervention (especially those that are market-compatible) yield better results than others.

The technicians include technicians-turned-managers, military advisers, and economists with structuralist inclinations, united by their belief in the general validity of the infant industry argument and a dislike of foreign ownership of capital. The technicians have generally been allied with members of the intelligentsia who have viewed state enterprises as the way to balance Chinese domination of the private corporate sector.

The technicians' control of the Ministry of Trade, the Ministry of Industry, and the National Investment Coordinating Board has allowed them to promote domestic production of manufactured goods, including airplanes. Furthermore, their support for import-substituting industrialization won them the support of the rent-seeking coalition composed of indigenous capitalists, army officials, and civilian bureaucrats. Thanks to the *dwifungsi* doctrine, the expansion of state enterprises produced additional managerial positions that were filled by senior military personnel. It must be noted that since most of the import-competing industries have been set up in urban Java, the higher prices of manufactured goods represent an implicit tax on the residents in the rural sector and in the Outer Islands.

Unlike the technicians, the technocrats do not have a large domestic constituency outside the universities. They have, however, been influential with the president. One reason for this has been their proven competence, as shown by their implementation of the 1966 stabilization program, the restructuring of Pertamina's debt in 1975, and their professionalism in economic management in general. They have also found favor with the president because their more neoclassical economic programs have addressed his concern for political stability (the agrarian radicalism variable and the regionalism variable) and his commitment to rural development (the personal element variable). The World Bank, the International Monetary Fund, and the IGGI helped in the early years of the Soeharto regime to confirm the role and power of the technocrats by agreeing to their proposals for foreign concessionary loans.[12]

Chapter Six

The First Crisis: Restoring Stability and Growth

The year 1961 marked the beginning of a period of increasing economic instability that was finally ended by the 1966 stabilization program. Government expenditures increased by more than 50 percent in 1961, causing the budget deficit/GNP ratio to increase 2.5 times. The budget deficit of 26 billion rupiahs in 1961 was financed by 23 billion rupiahs of credit from the domestic banking system (see tables 3.1 and A. 23). This strong stimulus to aggregate demand caused inflation to reach the unprecedented rate of 77 percent, and output to grow almost 6 percent.

But the economy quickly adjusted to the increased fiscal imbalance, and further increases in the budget deficit and the money supply in the 1962–65 period produced only high inflation and meager growth. The annual inflation rate in 1962–65 averaged 250 percent, while the annual growth rate averaged only 1 percent (see tables A.1 and A.2). To be fair, the large budget deficits were not the only cause of accelerated money growth. The public enterprise sector created by the nationalization of foreign businesses meant significant expansion of Central Bank credit from 1962 on. The government regarded the economic contribution of the state enterprises to be so significant that the Central Bank was ordered to extend credit to them without checking for creditworthiness. Mismanagement of the state enterprises meant that about one-fifth of the money created annually was wasted.

It is instructive to note that the authorities devalued the exchange rate steadily in response to the rising domestic price level, but these devaluations were generally not undertaken in a straightforward manner because of the state's growing appetite for revenue. The usual method was to require exporters to turn in their foreign exchange earnings at the (seldom changed) official export exchange rate and receive foreign exchange certificates (FECs) in addition to the rupiah payment. The FECs had a face value equal to an officially determined percentage (5 to 100 percent) of the foreign currency turned in. They entitled the holder to buy foreign currency at the slightly higher official import exchange rate. The FECs had to be

sold within a specified time period (normally less than three months) to licensed importers. The price of FECs was occasionally decontrolled, especially when the government had to stimulate exports to improve the balance of payments. Hence, a devaluation under the FEC system involved at least four separate decisions: what percentage of export earnings was to be sold to the private sector, how long the maturity of the FEC ought to be, whether the certificates should be valid only for some classes of imports, and whether their price should be market determined.

A large jump in the effective exchange rate—from 17 rupiahs per dollar in 1957 to 30 rupiahs per dollar in 1958—reflected an attempt to dissuade the export-oriented Outer Islands from seceding (see table A.5). The fact that economic matters took a back seat under the Soekarno government can be gleaned from the ratio of the free (black market) exchange rate to the effective exchange rate. The black market versus effective exchange rate ratio went from the 2:3 range in 1951–58 to the 4:8 range in 1959–65. The result of this increasing overvaluation was that export earnings dropped from $766 million in 1961 to $634 million in 1965. Correspondingly, the net gold and foreign exchange holdings of the Central Bank dropped from $112 million in 1961 to $73 million in 1965.

The response to dwindling foreign reserves was to increase import substitution and to borrow more from abroad. The only sources of funds, however, were governments hoping to influence Indonesia's foreign policy. The willingness of these countries to provide funds declined as it became clear that unsustainable policies were undermining the Soekarno regime.[1] The gradual drying up of foreign loans was an important reason for the downward trend in imports from $1,056 million in 1961 to $736 million in 1962, $602 million in 1963, $590 million in 1964, and $609 million in 1965. A reduction in "solidarity" credits from socialist countries also contributed to the acceleration of import-substitution industrialization policies.

Inspection of the components of aggregate demand during 1962–65 confirms that the economy was caught in a downward spiral (see table A. 24). Exports, investment, and government consumption provided minimal stimulus to growth. Real government consumption fell because the dirigiste economic policies eroded the tax base, and the military buildup and the construction of prestige projects absorbed whatever funds were available. It is clear that the predominance of the agricultural sector made it the most important factor in determining the overall growth rate. Since almost all the products of the agricultural sector were tradable, it is plausible to attribute a large part of the sluggish growth of the period to the grossly overvalued rupiah.

As a consequence of the fall in government consumption, government employees became grossly underpaid. A survey conducted in mid-1966 found the following daily wage rates: auto mechanic, 70 rupiahs; child newspaper vendor, 20 rupiahs; cigarette vendor, 35 rupiahs; automobile guard, 55 rupiahs; civil servant, class E II, 4 rupiahs; civil servant, class F V, 17 rupiahs; bricklayer, 100 rupiahs; black market ticket seller, 125 rupiahs; barber, 40 rupiahs; and doctor, 300 rupiahs.

These figures help to explain why the administrative infrastructure was virtually nonexistent by the end of 1965. All regulations could be avoided with appropriate side payments. Pitt (1991:76) went so far as to suggest that the result of this "guided economy" might have been a Pareto-optimal situation:

> It is conceivable that the chaos and corruption that characterized the last half of 1965 resulted in something akin to a liberal trade regime because of the magnitude of transactions that took place illegally. Obviously, if all quantitative restrictions and distortionary taxes are ignored by all economic agents with impunity (that is, without cost), then all the resulting prices and resource allocations are those that would exist in a free trade economy. Relative prices for tradables differed from international prices as a result of the additional costs incurred by illegal transactions . . . Real costs of illegal trade were probably small . . . [because] corruption was so rampant that those officials of the state with authority over potentially profit-making activities would compete away much of the rents (in the form of bribes) associated with the authority.

Pitt is correct in that quantitative restrictions were nonbinding, and that extensive black market activities helped to liberalize the economy. However, it is an exaggeration to claim that the resulting situation was even a gross approximation of a laissez-faire outcome. Enforcement of trade barriers is only one part of the many functions performed by any government. The public security and adjudication activities of the state are public goods that greatly lower the transaction costs among agents. No private institutions ever emerged in Indonesia during the chaos to allow agents to insure against nonfulfillment of contracts.

Another reason to doubt that the resource allocation approximated a free market allocation was that the bribes at each step of a transaction constituted an arbitrary tax system. There is no reason to believe that the tax rate for each economic activity would be similar unless bureaucrats were able to bid competitively to be transferred to different ministries. It is hence unlikely that the tax rates were equal or that they somehow canceled out.

Even if we abandon the "public goods" and "arbitrary tax system" considerations, the outcome would have at best been one of static efficiency and not one of dynamic (intertemporal) efficiency. While the existing instability was obviously temporary, agents could not know how long it would last or what its replacement would be. The result of this uncertainty was perversion of savings and investment behavior.

It was in this atmosphere of economic disorder that the Communist-inspired coup attempt of September 30, 1965, took place. The restoration of political order by the army gave General Soeharto a political status which rivalled that of President Soekarno.

Stabilization and Rehabilitation, 1966–70

October 1965 to March 1966 was a transition period, with great uncertainty over the outcome of the struggle for political leadership. The decisionmaking process was overhauled in November, when KOTOE and KOTARI were replaced by KOTI (Supreme Operations Command), with Soekarno as Great Commander and Soeharto as Chief of Staff. But it was inevitable that political institutions could not be long-lived in the face of constant bargaining over political power. KOTI was superseded in February 1966 by KOGAM (Crush Malaysia Command). Attempts at economic stabilization were mainly limited to policy announcements: the budget for 1966 would be balanced, state enterprises would no longer be subsidized, and tax collection would be more thorough. The most dramatic cosmetic measure was a currency reform in December 1965 that established a rate of 1 new rupiah for 1,000 old rupiahs.

In December 1965, the value of the old rupiah was changed from 45 rupiahs per U.S. dollar to 10,000 rupiahs per U.S. dollar. This big devaluation did not cause a correspondingly large improvement in the trade account, possibly because the foreign exchange certificate (FEC) system (called Surat Pendorong Produksi, SPP, in this incarnation) had been terminated in November 1965, and the devaluation merely replaced the lost incentive.[2] In February 1966 the government introduced a new FEC system called Bonus Ekspor (BE) to boost exports.

These new economic policies were regarded as temporary because of the widespread perception that the uneasy political relationship of Soekarno and Soeharto could not endure. Soekarno behaved as if he were still in charge. In November 1965, for example, he issued a decree giving the state the exclusive right to import and distribute textiles. The fact that KOGAM succeeded KOTI in February 1966 appeared to confirm that Soekarno was still setting national priorities.

Given the absence of concrete policy implementation, the economic chaos continued. The Communist bloc suspended its aid following the large-scale massacre of Communist sympathizers after the attempted coup. Indonesia then defaulted on its external debt, and this was followed by a drastic drop in imports. The subsequent decline in the availability of many goods caused inflation to reach an annual rate of 1,000 percent during the first quarter of 1966. These economic difficulties produced increasingly frequent, increasingly widespread, and increasingly larger student demonstrations demanding reform.

It was in this crisis atmosphere that Soekarno was compelled to yield his remaining powers to General Soeharto in March 1966. Soeharto proclaimed his administration the New Order government and appointed Hamengkubuwono to be the deputy premier in charge of economic affairs. In Hamengkubuwono's first major speech on economic management, he declared that the private sector was not an enemy of the state and would be encouraged to expand, and that Indonesia would welcome foreign investment (Panglaykim and Arndt 1966). He also called for a meeting of Indonesia's non-Communist creditors to discuss debt

rescheduling and announced that Indonesia would rejoin the International Monetary Fund (IMF).

After successfully obtaining promises from its Western creditors in September 1966 to reschedule debt and to grant new credit, the New Order government launched a comprehensive economic stabilization and rehabilitation program on October 3, 1966. Soeharto's commitment to economic development has been explained by Sundhaussen (1982:97) as follows:

> [Soeharto's legitimacy] . . . as chief policymaker was seen to depend on his ability to improve economic conditions. The question for Soeharto was which path to follow. Sukarno's radical nationalistic, anti-Western, anti-capitalist 'concepts' . . . were thoroughly discredited and anathema to him [Soeharto] and his followers. Soeharto, whose concern for the economy did not blind him to the fact that he would be unable by himself to find the cures for Indonesia's economic ills, turned to the leading economists in the universities. These mainly American-trained academics, soon known as the "Berkeley Mafia," advised the government that the only solution to the economic problems of the country was to obtain foreign aid on a large scale.

Sundhaussen overstated the foreign aid component of the Berkeley Mafia's program. The program also called for correcting the fiscal imbalance, restructuring the financial system, improving the exchange rate mechanism, and reforming the trade sector. But there is no denying that foreign aid was important. By reducing the inevitable adjustment costs of the austerity program, foreign aid helped make possible public acceptance of the stabilization program. Foreign aid by itself was no silver bullet, as proved by the substantial aid that Soekarno received in the last seven years of his reign.

Managing External Resource Flows

The New Order government inherited an external public debt of $2.4 billion. The bulk of the debt (60 percent) was owed to the Communist bloc. Of the $1.4 billion "solidarity" credit, $0.9 billion had been used to buy military hardware. Faced with debt payments (including arrears) of $530 million for 1966 (an amount equivalent to 70 percent of GDP and 132 percent of exports), Indonesia requested a meeting with its Western debtors to reorganize its debt.

The result of the rescheduling meetings in Tokyo (September 1966) and in Paris (December 1966) was that the major Western countries gave Indonesia

> . . . 100 percent relief from principal and interest payments on credits of more than 180 days, related to contracts effective prior to July 1,

> 1966, [and which were due in 1966 and 1967]. The new schedule of payments [was] to start January 1, 1971, after a four-year grace period, and the rescheduled or refinanced amount [was] to be repaid over a period of eight years on an ascending scale starting at 5 percent in 1971 and reaching 20 percent in 1978 ... The Paris meeting also reaffirmed that, in respect of the interest rate on the rescheduled payments, interest during the respective grace periods (moratorium interest) should not exceed 4 percent per annum; that this interest should not be payable during the grace periods, and when paid, should not be compounded. (World Bank 1968:54–55)

Given the desperate situation of Indonesia and the existence of a credible stabilization package, the Western countries established the IGGI to draw up a long-term plan of official assistance and to coordinate the aid to maximize its effectiveness. To ensure maximum institutional flexibility, IGGI was not given formal status. The terms of IGGI lending were kept as soft as possible: a repayment period of twenty-five years, including seven years of grace, and an interest rate of 3 percent. IGGI was also generous in the amount of official assistance it granted: 1967, $167.3 million; 1968, $361.2 million; 1969/70, $507.7 million; 1970/71, $609.7 million; 1971/72, $633.7 million; and 1972/73, $670.0 million. Indonesia's actual borrowings from IGGI during these years were much less than the authorized maximums (see table A. 25).

Foreign aid accounted for over 30 percent of government expenditure in 1967, 19 percent in 1968, 27 percent in 1969, and 24 percent in 1970. Most of the program aid consisted of credit to finance private sector inputs and PL 480 food aid. Project aid consisted of loans tied to specific infrastructure investments. Roughly speaking, program aid helped stabilization by making imported consumer goods available and expanding the amount of domestically produced goods whose production required imported intermediate and capital goods. Foreign aid was also the principal reason for the spectacular jump in imports from $596 million in 1966 to $805 million in 1967.

The revival of domestic production was also helped by the easing of restrictions on direct foreign investment. The Foreign Investment Law passed in 1967 made the usual hard-to-keep promise that the government would not nationalize without due compensation and gave immediate benefits in the form of tax holidays to private firms. The upshot was that private capital inflows increased dramatically in 1967, according to both the official balance of payments data and the revisionist estimates of Rosendale (1978); (see table A. 26). While the exact size of the increased inflows may be debatable, the self-sustaining nature of the inflow is not. Of particular interest is Rosendale's finding that most of the Indonesian capital that was repatriated from abroad occurred in the very first years of the stabilization program. This finding does not necessarily imply that the private sector perceived as early as 1967 that the October 1966 stabilization program was economically wise or that the government was politically committed to it. The repatriation of

capital may have been due to a more prosaic reason—a rise in real interest rates in Indonesia. In other words, the shortage of working capital caused by the government's tight money policy forced Indonesian entrepreneurs to bring back some of their funds stashed abroad.

Most of the foreign investment was in the raw resources sector (forestry, mining, and quarrying) and in the manufacturing sector (see table A. 25). Foreign interest in the manufacturing sector was only partly aroused by the recovery of domestic purchasing power and the tax holidays. A more important factor may have been the heavy protection enjoyed by this sector.[3]

Trade and Exchange Rates

The entire system of quantitative restrictions was abolished in October 1966. For major exports, the proportion of earnings paid in foreign exchange certificates was raised to 50 percent from the 20 percent set in May 1966.[4] The certificates were also made freely negotiable during their three-month life span.

The new rules also eased restrictions on the use of "complementary foreign exchange" (Devisa Pelangkap, or DP). The DP market had existed ever since a "checkprice/overprice" mechanism had been set up in 1961 to encourage exports. The "checkprice/overprice" mechanism was a compromise between tolerance of private holdings of foreign exchange and the official attitude that all foreign exchange earnings ought to be surrendered to the government. The "checkprice" was the price used by the government to calculate the foreign currency value of exports (that is, the amount of foreign currency to be surrendered to the state). The "overprice" was the amount of foreign exchange retained by exporters because the checkprice was set below the actual export price.[5] This retained foreign exchange could be sold in the DP market.

Because DP exchange, unlike BE exchange, could be used to import "nonessential" consumer items and because imports purchased with DP exchange did not require import licenses, the DP exchange rate was higher than the BE exchange rate. The checkprice/overprice mechanism, by allowing legal underinvoicing of exports, was actually another channel for stimulating the incentive effects of a currency devaluation.

The government consistently "devalued" through the checkprice/overprice mechanism. The overprice margin rose from 15 percent in 1965 to 17 percent in 1967 and 36 percent in 1969. One result of this legal underinvoicing was that the official export figures were understated. The level of nonoil exports was understated by 20 percent in 1968 and by 40 percent in 1969.

Exchange rate realignment and unification continued after October 1966. In July 1967 the BE percentage was raised to 100 percent, and to an increasing degree the BE exchange rate was determined by market forces. The BE market was unified with the DP market in April 1970 at the DP exchange rate of 378 rupiahs per U.S. dollar. In August 1971 the rupiah was devalued to 415 rupiahs per U.S. dollar.

While the dismantling of the multiple exchange rate system was unswerving, the same could not be said of the elimination of trade barriers. Although a big step forward occurred in October 1966 with the abolition of the import licensing system, the trend toward lower tariffs was slowed in April 1967 and came to a halt in April 1968. Effective tariff rates had gradually fallen after October 1966 because the import exchange rate used for calculating tariff charges remained fixed at 75 rupiahs per U.S. dollar while the actual import exchange rate depreciated over time. The remonstrations of domestic industries led to the rate being raised to 90 rupiahs in April 1967, 130 rupiahs in July 1967, and 240 rupiahs in January 1968.

Protectionist pressures culminated in the tariff revisions of April 1968. The tariff rate was increased for 1,292 items and marginally lowered for 43 "essential" items. The unweighted average tariff rate rose from 58 to 65 percent. The "good news" was that the government did not impose any new quantitative restrictions.

The depreciation of the exchange rate increased exports not only through the usual incentive effect but also by redirecting exports from illegal to legal trade channels. Export earnings went up by about 10 percent every year during the stabilization period (1966–70).

The export surge helped to relieve both the balance of payments imbalance and the fiscal imbalance.[6] In real terms (that is, 1966 prices), trade tax revenue jumped from 0.4 billion rupiahs in 1965 to 6 billion rupiahs in 1966 and 13 billion rupiahs in 1967. These translated into increases of 1,300 percent in 1966 and 100 percent in 1967. Trade taxes rose from 6 percent of total government revenue in 1965 to an average of 44 percent in 1966 and 1967. The proportion fell in 1971–72 because of continued reductions in export taxes and increasingly large amounts of oil revenue.

Monetary and Fiscal Reforms

The October 1966 program changed both the conduct and stance of monetary policy. State enterprises no longer received command credits on demand and were forced to compete with private enterprises for credit on an equal footing.

There was also a general tightening of Central Bank credit. Official interest rates were raised from 26 to 53 percent a year to 72 to 108 percent a year, and credits for imports were banned. Long-term credit was available only to the food production and export sectors, and for the distribution of nine basic consumer goods. Overdue credits carried a penalty rate of 50 percent above the normal rate, and overdrafts were charged 1 percent each day.

The immediate result was that money growth in 1967 slowed to 132 percent from 763 percent in 1966 and 281 percent in 1965 (see table 6.1). The year 1967 was the first time since 1955 that more credit was extended to the private sector than to the government. The private sector received 25 billion rupiahs in new credit, compared with 8.3 billion rupiahs for the government and zero for public enter-

Table 6.1 Macroeconomic Indicators, 1950–70
(billions of 1966 rupiahs)

Year	Real revenue	Real expenditure	Balance	Change in real money stock, M_1 (percent)	Real wage index	Velocity of money	Change in nominal money stock, M_1 (percent)
1950	62.1	77.2	–15.1	38.2	—	9.6	30.2
1951	63.6	57.1	6.5	27.1	154.1	14.4	16.9
1952	62.5	76.3	–13.7	33.6	195.5	12.0	31.0
1953	65.5	75.6	–10.1	36.0	203.4	11.9	13.3
1954	56.6	69.7	–13.1	50.2	136.9	9.2	48.4
1955	47.6	54.6	–7.0	40.9	136.9	11.9	9.9
1956	65.3	70.8	–5.4	45.6	143.3	10.9	9.8
1957	45.2	56.2	–11.0	41.5	147.0	12.9	41.0
1958	47.1	66.1	–19.0	54.7	128.4	9.4	55.6
1959	50.2	72.9	–22.7	57.4	115.3	9.1	18.7
1960	68.3	80.0	–11.7	65.5	117.2	8.2	37.0
1961	43.7	62.2	–18.5	47.7	103.7	11.9	42.1
1962	20.6	33.5	–12.9	37.2	—	15.5	99.3
1963	19.4	39.6	–20.2	31.6	75.4	17.8	94.7
1964	14.4	34.7	–20.3	34.4	—	16.9	156.3
1965	7.1	18.6	–11.5	18.9	—	31.2	281.0
1966	13.1	29.4	–16.3	22.2	100.0	27.2	763.1
1967	28.4	41.3	–12.9	24.3	102.6	25.4	132.0
1968	38.2	47.3	–9.1	29.6	88.8	23.7	125.6
1969	58.4	79.5	–21.1	42.5	108.6	17.2	57.8
1970	77.3	102.0	–24.7	54.5	129.9	14.3	36.4

Note: Velocity constructed by using M_1, CPI, and real GDP.
Source: Arndt (1978); Greenville (1977); World Bank data; Papanek (1980).

prises (see table A.23). The decline in the money growth rate continued. The practice of not favoring state enterprises remained in force throughout the stabilization period, and the private sector obtained an increasing proportion of new credit each year.

Subsidies were reduced through increases in the prices of essential consumer goods (for example, soap and sugar), transportation fees, and some public utility charges. The government showed a firm commitment to raising unrealistically low prices, even when they were the prices of politically sensitive items. When the price of gasoline was raised from 4 old rupiahs to 10,000 old rupiahs in December 1965, there was so much protest that the government cut the price to 5,000 old rupiahs. But in February 1967 the government increased the price of gasoline to 40,000 old rupiahs and did not retreat despite many objections.

In December 1966 the government presented a "balanced" budget for 1967 (which it almost achieved). The Soekarno-era practice of each ministry having an

additional "special" budget funded through undisclosed means was forbidden. The budget has always been "balanced" since then. The foreign borrowing used to balance the budget is called "development revenue" in official budget documents. In the years before 1972, the balanced budget practice put a limit to government expenditure because of the inelastic supply of official foreign credit. But with the development of the oil sector and the OPEC price increases, Indonesia became a low-risk country in the eyes of the international banking community. The easy availability of private foreign credit meant that the balanced budget principle did not exercise effective control over state spending after 1972.

The Effectiveness of the Stabilization Program

There is no doubt that the austere budget and tight credit policies played principal roles in ending Indonesia's high inflation. The budget deficits of 3.4 percent of GDP in the 1967–70 period represented a permanent shift away from the destabilizing fiscal imbalances that began in 1958 with the onset of guided democracy and guided economy (see table 3.1). The fact that real government expenditures in 1967 and 1968 were higher than those in the preceding five years does not refute our conclusion that government spending was reined in.

First, the average (real) 44 billion rupiahs expenditure in 1967–68 was less than real government expenditure in every year throughout 1950–61. Second, the inflow of foreign goods financed with foreign aid meant that absorption of domestically produced output by the government was only 28 billion rupiahs in 1967, 38 billion rupiahs in 1968, and 58 billion rupiahs in 1969. Under this criteria, only the 1970 expenditures could be considered high.

The drastic cut in money growth deserves equal credit for the successful stabilization of prices. Although the velocity of money fell significantly, from 27 in 1966 to 14 in 1970, it would be wrong to see velocity as having an independent effect on the inflation rate.

It is incorrect to view the decline in the inflation rate as the joint outcome of an exogenous (policy-determined) fall in the money supply and an exogenous rise in the money demand function.[7] The amount of money demanded was not independent of the rate at which the money supply was being expanded. The higher the money growth rate, the higher the expected inflation rate and the lower the demand for money.[8]

If we assume that the trend nominal money growth rate during times of high inflation was an adequate proxy for the expected inflation rate, theory predicts that both the real money stock and the velocity of money would be inversely correlated with the nominal money growth rate. These two predictions are supported by the data in table 6.1. The nominal money growth rate was 99 percent in 1962, 763 percent in 1966, and 36 percent in 1970. For these years, the respective real stocks of money were 37 billion rupiahs, 22 billion rupiahs, and 54 billion rupiahs; the velocity of money in these years was 16, 27, and 14.

The rational expectations view is that inflation can be stopped quickly and relatively costlessly if the government promises a permanent shift to a noninflationary policy regime. The reason is that, on announcement of a new policy regime, agents will lower their expectations of inflation and become more willing to hold money instead of goods. This quick halt to the "rush out of money" will bring inflation abruptly down to the lower expected level. In short, the view is that a draconian tightening of the money supply to stop high inflation will not cause a sharp recession because of the "announcement effects."

Indonesian history provides a good opportunity to assess this "hearing is believing" view of stopping inflation, for there was a permanent shift in the monetary regime in October 1966. We are able to assess the contribution that expectations played in the moderation of inflation because, theory suggests, the velocity of money is a positive function of the expected inflation rate. This allows us to use velocity during the period of high inflation as a proxy of expected inflation. (The implicit assumption is that changes in the real interest rate were negligible compared with changes in the inflation rate.)

Prior to the stabilization program, changes in velocity were in line with theory. Until 1962 the direction of change coincided with that of the inflation rate. There were no synchronized changes in the directions of velocity and inflation in 1963–66, but their broad movements were consistent with theory. Velocity reached its highest levels in 1965 and 1966, which were also the years when inflation reached its highest levels.

The noteworthy development is that velocity did not come down noticeably when inflation fell precipitously in 1967 and 1968. Velocity changed only marginally, from 27 in 1966 to 24 in 1968, while inflation dropped from 635 to 85 percent. Only when inflation continued its downward trend did agents revise their expectations drastically enough to bring velocity down to 14 in 1970.[9] This suggests that it took two years before private agents were convinced that a permanent shift in policy regime had occurred. Our evidence thus supports the moderate proposition that "seeing is believing" rather than the rational expectations proposition that "hearing is believing."

The evidence on the cost of the stabilization program in terms of lost output is contrary to the usual stabilization experience. The huge drop in inflation from 1966 to 1967 was accompanied by an increase in output level, regardless of whether GDP is measured at 1960 prices or 1973 prices. The only cost was a drop in the growth rate from 2.8 percent in 1966 to 1.4 percent in 1967 when GDP is measured at 1960 prices. There is no drop in the growth rate when GDP is measured in 1973 prices (see tables A.1 and A.24).

But since the rice harvest was particularly low in 1967 and rice accounts for a big portion of farm output, it is difficult to know how much of the decline in the 1967 growth rate (as measured in 1960 prices) was attributable to austere macroeconomic policies. If agricultural output in 1967 had remained at the 1966 level, real GDP (in 1960 prices) would have increased 2.3 percent instead of 1.4 percent

(see table A.24). It therefore appears that the 523 percentage point reduction in inflation in 1967 came at the cost of a 0.5 percentage point drop in the growth rate.

Given the lag in the decline of velocity, we conclude that the small cost in terms of output came from the extreme flexibility of the labor market rather than from the "hearing is believing" view. The fact that the real wage index could drop from a value of 196 in 1952 to 75 in 1963 indicates that real wage resistance was absent.

The low cost of economic adjustment in the first year of the stabilization program was not the only remarkable outcome of the program. Equally remarkable was the alacrity with which the economy rebounded despite the continuation of austere macroeconomic policies. In the second year of the program, output grew at 11 percent. Foreign aid doubtless played a crucial role by allowing the government to once again make infrastructure investments and to relieve supply bottlenecks in the manufacturing sector.

The 5 percentage point contribution of the agricultural sector to growth in 1968 could not have been the result of a normal rice harvest alone. Part of the growth spurt may have been attributable to the elimination of excess capacity in the tradable agricultural sector achieved through the trade and exchange rate measures. Cooper and Glassburner (1973) has documented that during 1967 to 1970, the exchange rate was continuously adjusted to maintain a stable real exchange rate in order to preserve the incentive to keep production of tradables at capacity level.

The economy continued to improve. Domestic capital formation contributed 2.2 percentage points to the 1969 growth rate, while the expansion of manufacturing activities added 1.2 percentage points. The 1969 and 1970 growth rate of 7 percent was confirmation that the 1966 stabilization had succeeded in rejuvenating economic growth. It very likely also put the economy on a higher growth path. The ingredients of success were the implementation of balanced macroeconomic policies and market-oriented microeconomic policies, and the inflow of external resources.

Chapter Seven

The Second Crisis: The Pertamina Affair

The resuscitation of the Indonesian economy in the last half of the 1960s was led by the growth of the domestic oil sector. Expansion of oil sector capacity by 74 percent in the 1967–71 period, along with foreign aid, relieved the fiscal pressure that had caused the pre-1966 explosion of the money stock and the depletion of foreign reserves. The economic picture in 1971 was rosy, and most commentators were optimistic about Indonesia's future.

Each succeeding year made the picture look rosier (see table 7.1). The price of oil rose 58 percent in 1972, 33 percent in 1973, and 300 percent in 1974. In response to this exogenous price increase, intensified exploration activity raised oil production 54 percent higher in 1974 than in 1971. The oil sector had become the engine of growth. In 1974 it accounted for 22 percent of GDP, 70 percent of export earnings, and 55 percent of total government revenue. The forecasts of astronomical oil prices in the immediate aftermath of the first OPEC shock created grounds to believe that great prosperity was just around the corner for Indonesia.

It was therefore a surprise to the international financial community when the state oil company, Pertamina, defaulted on a relatively small debt in February 1975. This shock threatened to unravel the external debt arrangements of the 1966 stabilization program. Panic is perhaps the right word to describe the reaction at that time in Jakarta, London, Washington, and Zurich.

The Origins of Pertamina

Successful commercial exploitation of Indonesia's oil wealth began in north Sumatra in 1885. That early success led to the founding of the Royal Dutch Oil Company five years later. By the beginning of the twentieth century, oil was being mined in north Sumatra, south Sumatra, central Java, east Java, and northeast Borneo. By the 1930s three multinational oil companies (Caltex, Shell, and

Table 7.1 Oil Sector Index, 1967 and 1970–78
(1975 = 100)

Item	*1967*	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*
Volume of crude oil production	39.1	65.4	68.2	83.2	102.5	105.2	100.0	115.5	129.1	125.2
Volume of oil exports	34.3	45.1	51.0	62.7	83.3	102.9	100.0	113.7	130.4	132.4
Price of oil in dollars	5.3	5.8	5.7	9.0	12.2	37.4	41.1	41.7	43.9	44.1
Price of oil in units of imports from industrialized countries	26.8	27.4	25.5	36.7	41.2	101.3	100.0	101.8	99.1	88.3
Share of GDP (percent)	2.7	5.2	8.0	10.8	12.3	22.0	19.6	18.9	18.3	15.3
Share of export earnings (percent)	36.1	40.3	45.8	51.4	50.1	70.2	74.8	70.2	67.2	63.9
Share of government revenue (percent)	0.0	28.0	32.0	39.0	39.5	54.6	55.7	56.3	55.1	54.1
Memorandum items										
Revenue from oil sector (billions of rupiahs)	—	90.9	130.3	208.1	344.3	813.5	1,175.3	1,538.5	1,870.4	2,218.7

Source: *Nota Keuangan* (various years).

Stanvac) dominated the Indonesian oil industry. The Big Three resumed their oil operations after World War II, and in 1948, on the eve of Indonesian independence, they signed "let-alone" agreements on the exploitation of oil with the Dutch colonial government. The government gave the three companies the exclusive rights to explore, develop, process, and market Indonesian oil, in return for less than 50 percent of the profits.

In its independence agreement with the Netherlands, Indonesia promised to honor the existing contracts of the colonial government. This was unrealistic. Many Indonesians accused the oil companies of exaggerating their costs in order to keep profits low. The chairman of the Indonesian Committee on Trade and Industry "stated that the Big Three were actually earning five times as much as they reported," citing "an offer by a Japanese group to pay 950 rupiahs per ton of crude, compared to the 100 rupiahs per ton the companies were reporting for tax purposes" (Bartlett and others 1972:109–110). So, in August 1951, the Indonesian parliament postponed the granting of any new concession and exploration permits until the newly established State Commission on Mining could formulate a national oil policy. Meanwhile, the government started new negotiations with the Big Three.

The State Commission on Mining was originally given three months to complete its work. Prolonged debate within the commission over the role of foreign capital, however, delayed the submission of a draft of a proposed mining law to parliament until 1956. The division of opinion within the commission was replicated on a larger scale in parliament, which remained deadlocked until October 1960, when Soekarno used emergency powers granted him under the Guided

Democracy program to put into effect a new oil and mining law (No. 44). The law stated that "the mining of oil and gas shall only be undertaken by the State . . . [and] mining undertakings of mineral oil and gas are exclusively carried out by State Enterprises."

Since no new mining permits had been issued during the decade-long formulation of a national oil policy, the oil industry was moving from stagnation into decline. By the end of the decade Stanvac was, like Shell, importing crude oil from abroad in order to continue the operations of its refinery. The new law reflected both the need to push oil development in order to prevent revenues from collapsing and the bravado of economic nationalism.

Because of the confiscation of Dutch enterprises in 1957, Indonesia had three small indigenous "private" oil companies in 1960 when the new law was promulgated. The army ran two of them—PT Permina in north Sumatra, and PT Nglobo in east and central Java. The third was a Shell/government joint venture, PT Permindo, with oil wells in south Sumatra and northeast Borneo. These three firms became state-owned enterprises in 1961. PT Permina became PN Permina, PT Nglobo became PN Permigan, and PT Permindo became PN Pertamin. General Ibnu Sutowo, the head of Permina since 1957, was appointed chairman of the General Management Board (Badan Pimpinan Umum, or BPU) that coordinated the policies of the three companies.

It took three years of negotiation before the Big Three relinquished their rights under the "let-alone" agreements and became contractors to the state oil companies. The contractors received twenty-year work contracts on their former concessions and thirty-year work contracts on the new areas. The profit split was changed from 50–50 to a 60–40 split in the government's favor, and the three companies withdrew from refining and domestic marketing activities.

In the immediate aftermath of the abortive Communist-inspired coup in 1965, Permigan (which was situated in the heartland of the Communist party and hence had a more radical work force) was absorbed into Permina.

Sutowo was appointed minister of oil and gas affairs in February 1966 while remaining president-director of Permina. One of his first actions was to put all exploration and production activities under the jurisdiction of Permina. A few months later Sutowo stepped down as minister so that he could focus on reshaping Indonesia's relationship with the Big Three. He proposed shifting the oil industry from a work-contract system to a production-sharing system. In the production-sharing system, the state oil companies would have management control (if they chose to exercise it) and the split in profits between the state and the foreign companies would be based on production output.

Sutowo's proposal did not win the support of his successor at the Ministry of Mines, however, and in the second half of 1966 Sutuwo was signing production-sharing agreements with foreign oil companies while his supervisor (the minister of mines) was issuing directives that the work-contract system be continued. This conflict was resolved in January 1967, when Soeharto removed the oil and gas

division from the Ministry of Mines and placed it under presidential supervision. About a year later Pertamin and Permina were merged to form Pertamina.

The Pertamina Crisis

The conventional view is that the Pertamina crisis occurred in February 1975, when Pertamina was unable to roll over a short-term loan of $40 million. Tensions ran high in international and commercial banking circles because of fear that one of the banks would declare Pertamina to be in default, automatically invoking the cross-default clauses in the numerous international agreements made to reschedule the 1965 debt. There was a scramble to arrange new credit to bail out Pertamina.

But a more significant crisis had occurred before the potential default. Economic policymaking had been rendered schizophrenic by the implementation of two very different economic programs. One was a relatively orthodox development program associated with the Ministry of Finance and Bappenas. The other was the dirigiste Pertamina program promoted by General Sutowo. The former was financed by government revenue and concessionary foreign loans, the latter by retained oil earnings and commercial bank loans. Pertamina's program was in ascendancy. Had it not been for the 1975 emergency, Pertamina's import-substituting industrialization program and its freewheeling management style would have crippled Indonesia's long-term growth.

The financial rescue was accomplished rather easily. Indonesia had to pay no unusual premium above the London interbank offered rate (LIBOR) for its new commercial loans. This is because the problem was a liquidity crisis brought on by inept financial management and not a solvency crisis based on the fact that the net present value of the firm was negative.[1] Competent management prevented the debt-servicing difficulties from escalating into a balance of payments crisis.

The Pertamina affair illustrates the policymaking equation identified in chapter 5. The alignment of rural and Outer Island interests behind the technocrats and the coalescing of forces representing economic nationalism, indigenous capital, and political patronage behind the technicians produced a protracted struggle over the control of economic policy. The controversy ended with the ascendancy of the technocrats over the technicians.

Roots of the Pertamina Crisis

General Sutowo had lived up to Soeharto's belief that Pertamina's chief should be a "dynamizer." Under his supervision, oil production rose from less than half a million barrels a day in 1966 to 1.4 million barrels a day in 1973. Furthermore, it

was widely agreed that Sutowo had driven a hard bargain with the foreign oil companies, obtaining terms more favorable than those gained earlier by the Saudis.

Sutowo's ability to "get things done," albeit many times by paying a high premium,[2] resulted in his being asked by the president to take over lagging projects. Partly by allowing himself to be volunteered to take over the management of more and more state projects, and partly because of his desire to play a pioneering role in development, Sutowo turned Pertamina into a development agency parallel to but independent of Bappenas. Pertamina improved harbors, managed a hotel chain, ran a tanker operation, developed residential and commercial estates, built roads and hospitals, and established insurance subsidiaries in Hong Kong, Los Angeles, Singapore, and Tokyo. Table 7.2 is only a partial listing of the activities engaged in by Pertamina, which by February 1975 was the largest corporation in Asia outside Japan.

Despite Pertamina's success, Sutowo did not lack for critics. Some of the criticism pertained to Pertamina's unaudited and often secretive spending, and some of it was directed at Sutowo's own lavish lifestyle. Already known for his penchant for high-priced suits and air-conditioned limousines, Sutowo became even more of a target for government critics after the extravagant wedding of his daughter in 1969.

Later that year a series of newspaper articles appeared alleging corruption in high places throughout the government, including Pertamina. The giant oil company was accused, among other things, of having failed to pay any taxes in certain years and of seriously underpaying its taxes at other times. Another charge was that Pertamina had failed to pay, as required by a 1960 law, 55 percent of its profits to the nation's Development Fund. Large expenditures by Pertamina had not been explained, and foreign exchange earnings had been deposited in foreign banks instead of Bank Indonesia. Sutowo himself was accused of having given away oil leases which the recipients had sold at a handsome profit.

Public pressure forced Soeharto to appoint a commission in January 1970 to investigate these and other charges, and the commission's report issued later that year confirmed many of them. But Sutowo, still backed strongly by Soeharto, lost neither his job nor his ambition.

The rise of Pertamina was due to more than Soeharto's predilection for quick results. Political patronage was perhaps an even more important factor. The huge revenue generated by rapid development of the petroleum sector was very important to the Soeharto government in its early days because it obviated the unpopular step of raising taxes to pay for routine government expenditure. Since the Ministry of Finance had no firm knowledge of the amount of oil revenue which Pertamina had collected on the ministry's behalf, Pertamina was able to withhold some of its revenue for extrabudgetary activities.

These activities helped to consolidate Soeharto's power base by channeling resources to key constituents. It is highly likely that the armed forces, whose official budget was capped in order to convince external aid donors of the government's commitment to development, was a big recipient of extrabudgetary

Table 7.2 Pertamina Subsidiaries and Joint Ventures and their Activities

Wholly owned subsidiaries in Indonesia	
PT Electronika Nusantara (Elnusa)	Services for marine, land, and offshore operations
PT Palembang Rice Estate	Large-scale rice project in south Sumatra
PT Patra Jasa	Provision of facilities to oil and service contractors (offices, housing, and land transport)
PT Pelita Air Service	Air services
Pertamina Gulf Industrial Processing	Packaging of fertilizer and other chemical products
PT Pertamina Tongkang	Operation of nonvessel tankers
Wholly owned subsidiaries outside Indonesia	
Ocean Petrol Ltd. (Hong Kong)	Operation and management of ocean-going tankers
Joint ventures in Indonesia	
PT Arun Natural Gas Liquefaction Co. (Pertamina, 55 percent; Mobil, 30 percent; Jilco, 15 percent)	Processing and sale of LNG produced in Aceh
PT Badak Natural Gas Liquefaction Co. (Pertamina, 55 percent; Huffco, 30 percent; Jilco, 15 percent)	Processing and sale of LNG produced in East Kalimantan
PT Brown and Root Indonesia (Pertamina, 20 percent; Brown & Root U.S.A., 80 percent)	Manufacture of components and appurtenances for offshore constructions; concrete coating of steel pipes; design and construction of processing plants and engineering works for oil and gas; procurement and storage of materials
PT Chicago Bridge and Iron Indonesia (Pertamina, 51 percent; Chicago Bridge and Iron Co., U.S.A., 49 percent)	Furnishing of metal plate, processing facilities equipment, and construction services throughout Indonesia for government agencies of Indonesia and companies operating in Indonesia
PT Dresser Magcobar (Pertamina, 10 percent; Dresser Magcobar, U.S.A., 90 percent)	Provision of mud for drilling

(table continues on next page.)

Table 7.2 (continued)

PT Indonesia Chemical Co. (Pertamina, 60 percent; PT Sempurna, 10 percent; Teijin Ltd. and Toyo Menka, 30 percent)	Production of 100,000 tons of peravele and 120,000 tons of dimathyl telethalate (DMT) annually in south Sumatra
PT Krakatau Steel (Infrastructure) (On behalf of the GOI $6 million)	Rehabilitation and operation of the abandoned Soviet steel mill project at Cilegon
PT Kuda Laut Batam Island (Pertamina, 50 percent; Interagencies Hong Kong, 50 percent)	Supply of frozen and dry foodstuff and equipment
PT Nippon Steel Construction (Nisconi) (Pertamina, 10 percent; Nippon Steel Japan, 90 percent)	Provision of support for the oil and gas industry, including fabrication, assembling and construction of steel structures; coating of gas and oil pipes; supply, storage and servicing
PT Patra Vickers Batam (Pertamina, 50 percent; Vickers Ruwolt Australia, 50 percent)	Heavy engineering facilities to service the oil, mineral processing, extraction, and other manufacturing industries
PT Permiko Engineering and Construction (Pertamina, 10 percent; Nippon Kokan KK and Mitsubishi, 90 percent)	Fabrication, coating, assembly, installation, and construction of pipelines and steel structures for oil and gas exploration, drilling, production, and distribution; supply of services including design, inspection and testing, repairing and surveying for gas and oil, storage and lease of goods and equipment related to these
PT Pertafenikki (Pertamina, 30 percent; Japan Gasoline, 60 percent; Far East Trading Co., 10 percent)	Engineering consulting
Pexa Oil Co. (Pertamina, 25 percent; Pexa Oil Co., 75 percent)	Oil exploration onshore, south and east Kalimantan
PT Burna Bina Indonesia (Pertamina, 51 percent; Bechtel Inc., 49 percent)	Engineering consulting
PT Sankyu International (Pertamina, 10 percent; Sankyu Tokyo, 90 percent)	Fabrication, assembling, installation, and construction of pipelines and steel structures

PT Toyo Kanetsu (Pertamina, 51 percent; Toyo Kanetsu, 35 percent; Nissho Iwai, 14 percent)	Engineering consulting
Joint ventures outside Indonesia	
Far East Oil Trading Co. Ltd. (Japan) (Pertamina, 50 percent; various Japanese companies, 50 percent)	Marketing of crude oil in Japan
Indonesia Enterprise Ltd. (U.S.A.) (Pertamina, 50 percent; various companies, 50 percent)	Promotion of tourism in the United States
Japan—Indonesia LNG Import Co. (JILCO) (Pertamina, 15 percent through Far East Oil Trading Co.; five Japanese companies, 51 percent; Tokyo Electric and Tokyo Gas, 4 percent; Industrial Bank of Japan, 6 percent; Nisano Iwai, 15 percent; other trading companies, 9 percent)	Supervision of importation into Japan of Indonesian LNG
Japan Indonesian Oil Kabushiki (Pertamina, 50 percent; Toyota Motor Sales Co., The Tokyo Electric Power Co., The Kansai Electric Power Co., The Chubu Electric Power Co., Maruzen Oil Co., Daikyo Oil Co., Idemitsu Kosan Co., total 50 percent)	Supply to Japan of low sulfur crude oil and handling of other associated matters
Perta Oil Co. (U.S.A.) (Pertamina, 50 percent; United States International Investment Corp., 50 percent)	Transport and marketing of Indonesian crude oil
Tugu Insurance Co. Ltd. (Hong Kong) (Pertamina, 40 percent; private investors, 60 percent)	Insurance

Source: *Bulletin of Indonesian Economic Studies* (July 1974).

allowances from Pertamina. Given these extra functions, it was no surprise that Sutowo adopted a management style which "ensured that few people apart from himself even had a rough overall picture of the finances of operations of the company" (McCawley 1980:5). Nothing illustrated this attempt at obfuscation better than the fact that Pertamina had six uncoordinated accounting departments.

Three widely held beliefs helped to boost the political legitimacy of the Pertamina conglomerate. The first was that effective containment of Chinese economic strength demanded the creation of capable indigenous *pribumi* entrepreneurs to head large state enterprises modeled after the Japanese *zaibatsu* (*pribumi*-ism). The second was that only gigantic enterprises could reap the economies of scale and thus sustain the short-term losses of an infant industry (industrialism). The third was that only the existence of domestic *zaibatsus* could prevent the penetration of exploitative multinational corporations (economic nationalism). Successful competition against the multinational corporations, it was argued, required the establishment of nationally integrated economic units (NIEUs).[3] The ideal NIEU was a self-contained firm; it would be so thoroughly integrated vertically that it would not be required to buy any significant amounts of inputs from other firms.

Sutowo's initial and much-heralded success seemed to confirm not only the viability of *zaibatsu*-type economic nationalism but also the entrepreneurial ability of *pribumis*. It was thus only natural that the comparatively orthodox economic program of the technocrats came under heavy attack in the 1972–75 period.

Pertamina Is Brought under Control

Although many of the activities of Pertamina intruded on the economic policy-making of the technocrats, they were unable to exert much domestic pressure to reverse this state of affairs. Indeed, Soeharto had ignored the recommendation of his commission on corruption that Pertamina be placed under the supervision of the Ministry of Finance.[4]

This conflict between the technocrats and the technicians was not only over jurisdiction but also over style of economic management and choice of development strategy. The nature of the clash was well summarized by the magazine *Ekpres*, which was identified with the military advisors to the president:

> One [path of economic development] leads via the Bappenas technocrats to a free-fight and laissez-faire pattern of development in the Western and American fashion. Another [path] takes the form of cooperation with Japan on the basis of one's own strength without loans from the IGGI, the IMF and the World Bank with Pertamina as guarantee. [January 18, 1974. Quoted in the *Far Eastern Economic Review*, February 4, 1974, p. 12]

Since the technocrats could not muster domestic pressure to curtail Pertamina's activities, they resorted to external pressure. In March 1972 the minister of finance chose to enter into a standby agreement with the IMF, even though the IMF had concluded that Indonesia's proposed fiscal and credit policies, a depreciation in the effective exchange rate, and a substantial increase in net receipts from crude oil exports would make it possible to achieve a higher rate of economic growth, relative price stability, and an increase in net international reserves without any IMF assistance.

The standby agreement set a ceiling of $14 million on medium-term external borrowing for 1972–73. Given this ceiling, a decree was issued requiring all state bodies to seek approval from the Ministry of Finance before borrowing abroad.

Pertamina ignored this decree. The agency borrowed $350 million in short- and medium-term debt in 1972 without informing the Ministry of Finance. When this transgression came to the attention of the United States (the biggest aid donor), American economic aid was suspended. The Indonesian government then agreed to an unusual subceiling on Pertamina borrowing in the 1973 IMF standby agreement. This unusual clause stated that Pertamina would not contract any more loans with a maturity of between one and fifteen years. Pertamina responded to this restriction by switching to short-term (less than twelve-month) loans to finance its long-term projects.

It was borrowing in the short-term market that precipitated the 1975 emergency. Short-term rates had risen dramatically after the first OPEC price increase because the central banks in the industrialized countries wanted to dampen aggregate demand to offset supply-side price pressures. At the end of 1974 the short-term discount rate was 7.8 percent in the United States and 9 percent in Japan, compared with 1972 rates of 4.5 percent and 4.3 percent.

It was also around that time that the international banking community was shocked into greater cautiousness by the failures of the Franklin National Bank and the Herstatt Bank as a result of foreign exchange speculation. The fact that Pertamina had to borrow more in order to meet the increased interest payments caused by the higher interest rates caused the banks to reevaluate the corporation's creditworthiness.

The bankers were alarmed that they had extended so much (it turned out to be $10.5 billion) credit to Pertamina without having seen a full statement of Pertamina's finances, and that Pertamina was showing increasing signs of mismanagement.[5] They were further troubled by an increase in the number of nonoil projects being undertaken by Pertamina and by a drop in the agency's revenues because of recession in the industrial countries.

In the face of these developments, the banks refused to automatically roll over existing debts unless they were given more information about Pertamina's financial position. Pertamina then effectively defaulted in February 1975, when it could not make a $40 million payment. Given the cross-default clauses in loan contracts which applied to all external sovereign debt, the Indonesian government

announced that it would assume responsibility for Pertamina's debt to prevent any contagion effects.

It was subsequently revealed that Pertamina had about $10.5 billion in committed loans, of which $1.5 billion was short term. The total debt consisted of $2.5 billion in civil engineering and commercial contracts, $1.9 billion for oil and gas related projects (for example, pipelines and fertilizer plants), $2.1 billion to quadruple the capacity of the Krakatau steel mill, $3.3 billion for tanker hire-purchase contracts, and $0.8 billion for other contracts.

Pertamina's accumulated debt exceeded the government's entire budget of $8.5 billion in 1976. In reviewing the debt, the government discovered many cases in which the "contractors were selected before tenders were called and official contract prices exaggerated" (Robison 1986:256). Pertamina had bought oil tankers for a sum of $150 million from General Dynamics when equivalent Norwegian tankers would have cost only $100 million. *Time* magazine reported that "most of Pertamina's contracts were padded by as much as 40 percent, and that most oil shipping contracts contained a 30 percent 'kicker' clause, providing a substantial private tribute for officials of the company."[6]

The rescue operation obligated the Indonesian government to undertake its first big borrowing in the external private credit market since the 1960s. The Pertamina crisis was solved by a combination of repayments, rolling over of existing debt into longer term instruments, cutting contracted prices (by 50 percent in some cases), and cancellation of contracts.

Impact of the Pertamina Crisis on External Borrowing

The steady rise in Indonesia's gross stock of international reserves after 1968 was brought to a halt by the Pertamina debacle. The reserves fell from $1.5 billion at the end of 1974 to $0.6 billion at the end of 1975 (see table 7.3). Meanwhile, the foreign liabilities of the Central Bank jumped from 0.1 billion rupiahs to 540 billion rupiahs. This brought its net foreign reserve position from $1.5 billion to a deficit of $0.7 billion.

The decline in foreign reserves prompted the government to promote exports by eliminating the tax on 116 export products, reducing the 10 percent export tax to 5 percent for 39 other products, and reducing the cost of export credits for many goods from 15 to 10 percent. The net foreign reserve position returned to positive only in the first quarter of 1977. The net foreign reserve position in the second quarter of 1977 was the same as in the fourth quarter of 1972, but inflation meant the reserve could support only 2.7 weeks of imports in 1977, compared with 12 weeks of imports in 1972.

Since detailed information on the Pertamina rescue operation has never been released, any estimate of how much of the government's $2.0 billion external public borrowing in 1975–76 (as revealed by the balance of payments account) was

Table 7.3 Reserves before and after Pertamina Rescue
(billions of rupiahs unless otherwise noted)

Reserves	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*[a]
Gross international reserves (millions of dollars)	187.0	574.0	807.0	1,492.0	586.0	1,499.0	2,071.0
Central Bank							
Foreign assets	85.3	246.6	342.1	619.7	252.9	628.0	866.6
Foreign liabilities	62.5	48.3	9.7	0.1	539.8	694.3	669.2
Net foreign asset position	22.8	198.3	332.4	619.6	-286.9	-66.3	197.4
Central Bank net foreign asset position (millions of dollars)	54.9	477.8	801.0	1,493.0	-691.3	-159.8.	475.7
Memorandum items							
Unit value of export from industrial countries (1980 = 100)		31.3					67.7
Imports		862.0					3,817.0

a. Second quarter.
Source: IMF, *International Financial Statistics* (various years).

Pertamina-related is necessarily speculative. It could be argued that the Pertamina affair accounted for only 40 percent of the borrowing because $1.2 billion was required to finance the budget deficit. On the other hand, Pertamina had collected $819.0 million in oil tax revenue on behalf of the Ministry of Finance but had kept it for its own use. If this revenue had been forwarded to the government, only $365.6 million would have been needed for budgetary reasons. This seems to suggest that more than 80 percent of Bank Indonesia's large external borrowing in 1975–76 was a result of the mismanagement of Pertamina.[7]

The size of the Pertamina rescue operation is indicated by the jump in the debt-to-export ratio from 85 percent in 1974 to 114 percent in 1975; the ratio returned to the 85 percent level only in 1979 (see table A. 26). The government proportion of private credit to total credit jumped by an unprecedented 10 percentage points. It is clear that most of Pertamina's debt bore variable rates because the percentage of variable interest rate loans almost trebled between 1974 and 1975.

At the time of the default, public enterprises accounted for 33 percent of the external long-term debt of the total public sector. If Pertamina's $1.5 billion short-term debt had been included, the public enterprise share of total public sector debt would have risen to 45 percent. The debt rise of 1975–76 was extraordinary compared with the preceding two years; the $1.9 billion increase was more than three times the size of the increases in 1973–74 and 1974–75. If Pertamina had not been prevented from further borrowing, it might well have accumulated by 1982 a foreign debt comparable to the $20 billion debt of PEMEX, the Mexican state oil company.

In the wake of the Pertamina default, two prudential measures were implemented. The first was that official borrowing in the short-term market was disallowed, and the second was that all external borrowing by the state and state

Table 7.4 Debt Structure: Indonesia, Mexico, and Brazil, 1978–82
(percent, unless otherwise noted)

Debt categories	*1978*	*1980*	*1981*	*1982*
Short-term debt/imports				
Indonesia	14.0	14.3	12.7	17.9
Mexico	33.5	48.9	55.9	76.7
Brazil	32.8	37.3	39.3	43.8
Proportion of short-term debt attributable to official borrowing[a]				
Mexico	58.2	70.7	77.3	76.7
Brazil	57.3	61.7	67.7	59.1
Proportion of total official debt that is short term				
Mexico	10.2	25.3	31.1	28.1
Brazil	11.8	17.3	18.8	17.1
Level of debt service (millions of dollars) if Indonesia's official debt had				
Actual maturity structure	2,062.1	1,758.5	2,047.2	2,246.6
Mexican maturity structure	3,315.5	6,243.9	8,293.4	8,595.7
Brazilian maturity structure	3,548.0	4,521.3	5,246.4	5,610.6
Total official debt as percentage of GNP				
Indonesia	26.6	20.0	17.7	20.5
Mexico	28.2	25.0	27.0	46.1
Brazil	16.8	19.9	20.9	22.4
Total official and private debt as percentage of GNP				
Indonesia	36.3	27.9	25.4	29.4
Mexico	35.5	31.9	34.0	55.5
Brazil	26.2	28.9	30.2	33.9
Total official debt as percentage of exports				
Indonesia	116.3	67.4	63.7	87.1
Mexico	248.6	183.1	203.9	257.6
Brazil	236.8	207.1	204.5	256.4
Total official and private debt as percentage of exports				
Indonesia	158.8	94.1	91.2	124.6
Mexico	312.8	233.2	257.5	310.6
Brazil	369.4	300.7	296.2	387.6

a. Assuming that Indonesia's short-term debt-to-import ratio reflects normal trade financing.
Source: World Bank, *World Debt Tables* (various years).

enterprises had to be approved by the Central Bank and the Ministry of Finance. Indonesia's emphasis on sound management of its debt maturity structure can be seen in the ratios of short-term debt to imports for Indonesia, Mexico, and Brazil in table 7.4. During the 1978–82 period Indonesia's ratio never exceeded 20 percent, while Mexico's never fell below 40 percent and Brazil's never fell below 30 percent. Since the short-term interest rate was usually below the long-term rate, there was a constant temptation to opt for lower interest payments at the risk of future upward movement in the short rate. Indonesia's refusal (after the Pertamina experience) to do so was the reason for its low ratio of short-term debt to exports.

The proportions of Mexico's and Brazil's short-term debt attributable to official borrowing were estimated by assuming that Indonesia's short-term debt reflected normal trade financing. In 1981, on the eve of the debt crisis, 77 percent of Mexican short-term debt and 68 percent of Brazilian short-term debt had been incurred by the state. This made short-term loans 31 percent of Mexico's total official external debt and 19 percent of Brazil's.[8] If Indonesia had adopted the Mexican view on management of the maturity structure, its official debt service would have been 305 percent higher; if it had adopted Brazil's, debt service would have been 156 percent higher.

Impact of the Pertamina Crisis on Short-Term Macroeconomic Performance

Arndt (1982:7) reflected the conventional view on the impact of the Pertamina crisis on macroeconomic performance:

> however deplorable the waste involved in some of the vast Pertamina projects and purchases and the damage to Indonesia's international credit standing inflicted by the Pertamina crisis . . . there could hardly have been a more anti-inflationary use of the additional oil earnings than repayment of Pertamina's external debts. It partly explains why, after reaching a peak of 33 percent, the annual inflation rate, far from rising farther, was brought down to 14 percent in 1976 and to 8 percent in 1978.

Arndt's conclusion is based largely on the events that followed the Pertamina default. Indonesia's GDP growth rate in 1975 and 1976 was the lowest since 1968, while the inflation rate in both years was half the rate in 1974. This made it tempting to attribute the drop in aggregate demand to the across-the-board cancellation of Pertamina's numerous investments and the diversion of government investment funds to repay Pertamina's debts. Given this diagnosis, the conventional view is that the Pertamina crisis had salutary macroeconomic effects in the short run but had deleterious effects on long-run growth because of the cutback in government investment.

But the fact that the government assumed Pertamina's debts does not necessarily mean that there was a rechanneling of funds from investment programs to debt repayment. The government could have obtained new long-term loans to pay off a part of Pertamina debt and then obtained additional loans to expand its investment program to counteract the deflationary effects of reductions in Pertamina investments. Furthermore, the later reduction in government investment may have been a deliberate (and rational) response to the recovery of private investment.

Examination of the data (see table 7.5) shows that absorption contributed 8.3 percentage points to the 1975 growth rate, while the trade sector subtracted 3.3 percentage points from it. The chief reason why GDP growth slowed from 7.6 percent in 1974 to 5.0 percent in 1975 was not the fall in investment spending but the abrupt slowdown in private consumption growth. The drop in private consumption's contribution to GDP growth from 10.3 percentage points in 1974 to 2.7 percentage points in 1975 constituted a negative 7.6 percentage point shock to the GDP growth rate.

The fact that private consumption declined more than investment does not by itself disprove Arndt's view. The relative sizes of the changes in investment and consumption were in line with the predictions of simple multiplier analysis. An exogenous fall in investment is capable of generating a much bigger fall in consumption.

But even denying any exogeneity to the large fall in consumption, we see that the investment shock was only one-third the size of the export shock in 1975. Of the 2.6 percentage point drop in the aggregate growth rate, 1.8 percentage points were attributable to change in the export sector and only 0.5 percentage points to change in the investment sector. The negative 0.5 percentage point change in total investment was the result of a 0.3 percentage point rise in government investment and a 0.8 percentage point fall in private investment. This makes it difficult to believe that the Pertamina crisis had a negative effect on government investment. The 1975 increase in government investment was 29 percent, only marginally lower than the 31 percent increase in 1974.

Government investment spending increased by 31 percent in 1976. This does not suggest that the government was slowing the implementation of development projects. The increases in public investments in 1975 and 1976 (when private investment was falling) were likely to have been a conscious attempt at macroeconomic stabilization. This stabilization interpretation is corroborated by reductions in government investment in the following two years, when private investment rebounded.

Government investment contributed 2.1 percentage points to the 1975 growth rate and 2.8 percentage points to the 1976 rate. The contribution of private investment was 0.8 and –1.5 percentage points in those respective years. In the recovery phase, when private investment's contribution jumped to 1.2 percentage points in 1977 and 2.8 percentage points in 1978, the government's contributions were 2.2 and 0.7 percentage points. Government investment, in short, went up rather than down in the immediate aftermath of the Pertamina crisis.

Table 7.5 Aggregate Demand and Terms of Trade, 1970–78

Consumption and investment	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*
Expenditure level in constant 1973 prices, billions of rupiahs									
Private consumption	3,905	4,088	4,324	4,804	5,502	5,699	6,154	6,400	6,880
Government consumption	484	518	561	716	641	836	896	1,044	1,228
Gross domestic investment	715	867	1,032	1,208	1,440	1,650	1,749	2,027	2,333
Government investment	260	297	298	405	532	688	903	1,084	1,144
Private investment	455	570	734	803	908	962	846	943	1,189
Exports of goods and nonfactor services	834	943	1,143	1,356	1,445	1,410	1,650	1,806	1,824
Imports of goods and nonfactor services	756	871	993	1,331	1,759	1,964	2,293	2,395	2,698
GDP	5,182	5,545	6,067	6,753	7,269	7,631	8,156	8,882	9,567
Change from preceding year (percent)									
Private consumption	3.0	4.7	5.8	11.1	14.5	3.6	8.0	4.0	7.5
Government consumption	16.9	7.0	8.3	27.6	–10.5	30.4	7.2	16.5	17.6
Gross domestic investment	33.0	21.2	19.0	17.1	19.2	14.6	6.0	15.9	15.1
Government investment	108.6	14.3	0.4	35.9	31.3	29.2	31.3	20.1	5.4
Private investment	10.2	25.1	28.7	9.4	13.1	6.0	–12.1	11.4	26.2
Exports of goods and nonfactor services	11.8	13.1	21.2	18.6	6.6	–2.4	17.0	9.5	1.0
Imports of goods and nonfactor services	13.1	15.2	14.0	34.0	32.2	11.7	16.8	4.4	12.7
GDP	7.5	7.0	9.4	11.3	7.6	5.0	6.9	8.9	7.7

(table continues on next page.)

Table 7.5 (continued)

Consumption and investment	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*
Contribution of each component to GDP growth, in percentage points									
Private consumption	2.3	3.5	4.3	7.9	10.3	2.7	6.0	3.0	5.4
Government consumption	1.5	0.7	0.8	2.6	–1.1	2.7	0.8	1.8	2.1
Gross domestic investment	3.7	2.9	3.0	2.9	3.4	2.9	1.3	3.4	3.4
Government investment	2.8	0.7	0.0	1.8	1.9	2.1	2.8	2.2	0.7
Private investment	0.9	2.2	3.0	1.1	1.6	0.8	–1.5	1.2	2.8
Exports of goods and nonfactor services	1.8	2.1	3.6	3.5	1.3	–0.5	3.1	1.9	0.2
Imports of goods and nonfactor services	–1.8	–2.2	–2.2	–5.6	–6.3	–2.8	–4.3	–1.3	–3.4
Terms of trade									
Overall terms of trade index	73	80	85	100	160	144	143	155	155
Nonoil terms of trade I	0	0	0	100	94	79	99	111	111
Nonoil terms of trade II	78	73	76	100	84	64	82	97	92
Memorandum items									
Exports in current prices	429	530	754	1,354	3,105	2,851	3,430	4,466	4,935
Government budget deficit as percentage of GDP	2.6	2.0	1.9	1.7	1.3	2.7	3.4	2.5	2.0

Note: Indexes were derived as follows: overall terms of trade index, by dividing export price index by import price index; export (import) price index, by dividing exports (imports) in current prices by exports (imports) in 1973 prices; nonoil terms of trade I, as for overall terms of trade index but in terms of fiscal year; nonoil terms of trade II, from IMF raw agricultural materials price index divided by IMF export unit value index of industrial countries. The breakdown of gross domestic investment by government and private sector is from Kobayashi, Tampubolon, and Ezaki (1985). The government budget deficit is calculated as expenditure minus all debt service (including debt service transfers to Pertamina) minus total revenue. This construction is a proxy for fiscal stimulus.

Source: IMF, *International Financial Statistics* (various years); Bank Indonesia.

However, the stance of fiscal policy cannot be judged by the level of government investment expenditure alone. We also need to consider how tax revenues changed. On the more general issue of whether the fall in aggregate demand in 1975–76 was caused by tight fiscal policy (for example, tax increases), we suspect that it was not. The overall fiscal policy posture replicated the countercyclical path of development spending. The budget deficit jumped from 1.3 percent of GDP in 1974 to 2.7 percent in 1975 and to 3.4 percent in 1976 (memorandum item in table 7.5). It then declined with the recovery of the economy in 1977 and 1978.[9]

We now examine whether the Pertamina crisis lowered capital formation, as conventionally believed. Since Pertamina's projects were classified as private investment, it would be tempting to attribute the lackadaisical performance of private investment in 1975 and 1976 to the reduction in Pertamina's investment. But because these were years of depressed global economic activity, it is important to differentiate between the decline in investment in the exportable sector attributable to accelerator effects and the decline in general investment caused by the Pertamina cutbacks.[10] The evidence suggests that the accelerator effect from external demand is quite large. When the industrial countries were at the nadir of a recession in 1982, private fixed investment in Indonesia grew only 8 percent, compared with 20 percent in the 1980–81 period.

To quantify the amount of private investment decline attributable to the Pertamina cutbacks, we used the following investment equation estimated by Kobayashi, Tampubolon, and Ezaki (1985) from 1970–80 data.

$$\log(IPR) = \underset{(0.0)}{-0.6} + \underset{(3.8)}{2.35} * \log(GDPR(-1)) - \underset{(1.8)}{1.49} * \log(KR(-1))$$

$$+\underset{(1.6)}{0.13} * \log[(CRPMS - CRPMS(-1))/PGDP]$$

Adjusted $R^2 = 0.92$

Durbin-Watson statistic = 1.77

where

IPR	=	real gross domestic private capital formation
GDPR(-1)	=	real gross domestic product, lagged once
KR(-1)	=	real total capital stock, lagged once
CRPMS	=	amount of credit supply to private sector by monetary system
PGDP	=	GDP deflator.

Since this specification is "a variant of stock adjustment investment functions," with no explicit treatment of Pertamina's role, we treat the error terms in this equation for the 1975–78 period as indicators of the impact of Pertamina's cutbacks on private capital formation. The error term from the simulation is reported below in the form of the difference between the fitted value and the actual value, ex-

pressed as a percentage of the actual value. A positive number would support the proposition that the Pertamina reorganization caused private investment to fall:

Year	Investment shortfall (percentage of actual level)
1975	–5.72
1976	15.59
1977	6.68
1978	0.81

Given the dangers of drawing a structural interpretation from residual terms, it appears that 1976 is the only year in which Pertamina cutbacks undoubtedly reduced private investment. In other words, it does not appear that the Pertamina default in February 1975 caused a *sustained* fall in private investment.

The global recession in 1975 was so severe that it caused Indonesia's export earnings in nominal terms to fall (memorandum item in table 7.5). Real export earnings decreased 2.4 percent, and nonoil terms of trade plummeted at least 16 percent, to their lowest value in the entire 1959–89 period. As a result of negative external developments the export sector was directly responsible for a 1.8 percentage point decrease in the 1975 growth rate. To the extent that people believed that this sharp drop in the terms of trade portended a prolonged period of adverse terms of trade shock, they reduced their consumption—another direct negative effect on aggregate demand.[11] This addition to the multiplier effect which operates via consumption may be the reason why the decomposition shows consumption having such a negative effect on income growth. Anticipation of a prolonged negative terms of trade shock would also have reduced investment in the exportable industries.

Conclusion

The fact that public capital formation moved countercyclically is evidence against the conventional view that public capital formation was crippled by the need to finance Pertamina's external debts. It is not plausible to maintain that the slowdown of government investment in 1977 and 1978 was the result of servicing Pertamina's debts when government investment in both 1975 and 1976 grew about 30 percent, the same rate of increase as in 1974. The primary reason for the drop in aggregate demand in 1975 and 1976 was not the Pertamina crisis but depressed conditions in external markets.

Our simulation of the Kobayashi-Tampubolon-Ezaki investment equation found no evidence of a sustained drop in private capital formation. We attribute most of the weakness in private investment in 1975 and 1976 to the collapse in investment in the exportable sector caused by the negative terms of trade shock.

Chapter Eight

The Third Crisis: The Dutch Disease

Indonesia's exchange rate was pegged at 415 rupiahs to the U.S. dollar from August 1971 to October 1978. The strength in Indonesia's balance of payments throughout this period meant that the government could leave the exchange rate unchanged (see table 8.1). The largest current account deficit (3.6 percent) during the period occurred in 1975, when the rosy economic prospects induced by the oil boom caused both private and public spending to soar. The proportion of national income from current account receipts, which averaged 15 percent from 1970 to 1972, leaped to an average of 24 percent during 1973–78. There was no fear within the government of a balance of payments crisis. Nongold reserves, measured as the number of weeks reserves could sustain existing import levels, consistently exceeded the 4.8-weeks average of the 1967–69 period as well as the 12-weeks average of the 1970–72 period.[1]

Nonetheless, speculation about the possibility of a revaluation began to be heard in mid-1978. This speculation arose because of rapid depreciation of the U.S. dollar against the German mark and the Japanese yen. Some policymakers raised the question of whether the dollar's slump should be allowed to threaten

Table 8.1 Financial Conditions, 1971–78

Item	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*
Current account balance as percentage of GDP	–4.0	–3.0	–2.9	2.3	–3.6	–2.4	–0.1	–2.7
Current account receipts as percentage of GDP	14.8	17.2	20.7	29.1	23.1	23.6	23.9	22.0
Nongold reserves (millions of dollars)	185.7	572.3	804.4	1,489.6	584.3	1,496.7	2,509.0	2,626.8
Nongold reserves/imports (in weeks)	8.7	19.1	15.3	20.2	6.4	13.7	20.9	20.4

Source: IMF, *International Financial Statistics* (various years).

domestic price stability and erode the real price of oil (for example, Merdeka, May 5, 1978; and the *Far Eastern Economic Review*, July 21, 1978).

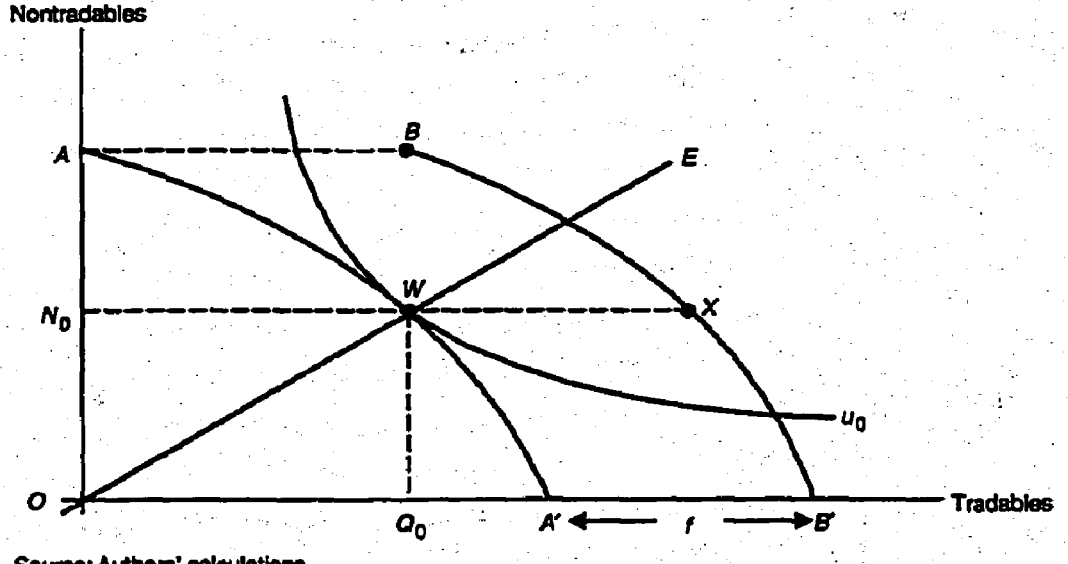
Hence, the devaluation of the rupiah by 50 percent in November 1978 was a surprise to most observers, including those who understood that devaluation would be necessary at some time in the future to boost nonoil exports.[2] The general expectation had been that devaluation would only be resorted to after most of the country's oil reserves had been drawn down. Devaluation was not thought to be likely because there were no signs of a deterioration in the balance of payments. Although the current account balance had climbed from 0.1 percent of GDP in 1977 to 2.7 percent of GDP in 1978, this was not seen as a cause for special concern since the deficit had been 2.4 percent in 1976 and 3.6 percent in 1975.

The Basic Theory of the Dutch Disease

In order to understand the arguments for the devaluation and the origin of the political pressures that led to devaluation, it is necessary first to understand the basic theory of the Dutch disease. We shall argue that the conventional analysis is inadequate because it ignores the intertemporal distortion that was generated by distribution of the oil revenue.

The curve *A–A'* in figure 8.1 represents Indonesia's production possibility frontier before the sharp rise of the oil sector.[3] By abstracting from growth and assuming that the economy is initially at a long-run equilibrium, the production possibility frontier also becomes the consumption possibility frontier of the economy—that is, the net saving of this constant population is zero. The slope of the curve is the ratio of the price of tradables to the price of nontradables. We assume

Figure 8.1 Effect of an Oil Boom on Production and Consumption



Source: Authors' calculations.

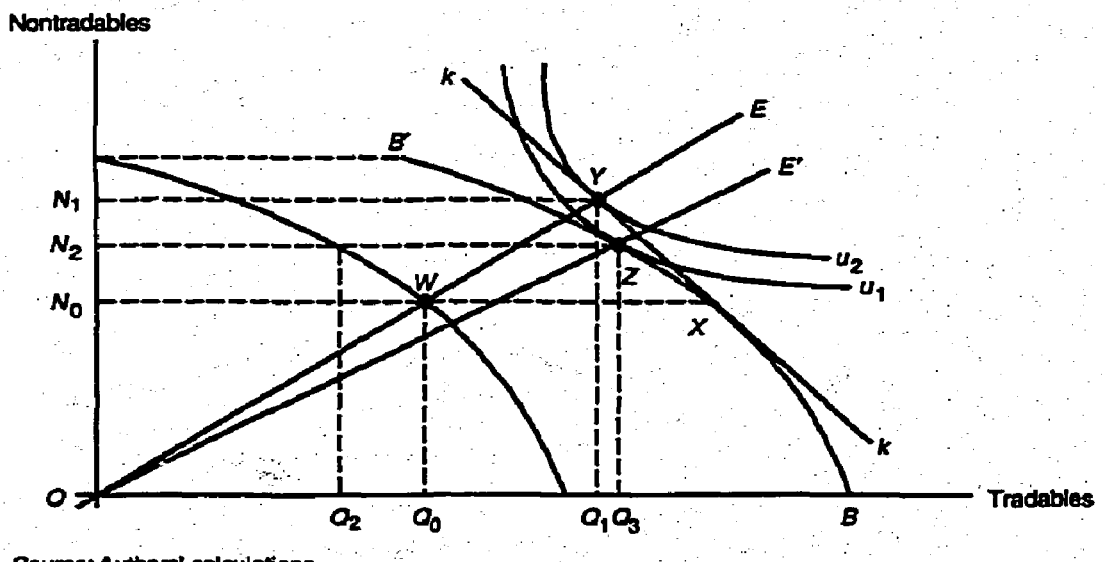
that the composition of aggregate demand is unaffected by the distribution of income between the public and private sectors. These assumptions generate the consumption bundle at point W—Q_0 units of tradables and N_0 units of nontradables. If the social indifference function is homothetic, the straight line OE is the income expansion path of the relative price given at W.[4]

Indonesia's oil industry is capital intensive, but most of the capital was supplied by foreign oil companies, and expansion of the industry drew little labor or capital away from the nonoil sectors. The growth of the oil industry and the first price shock can be modeled as oil exports bringing a net income equivalent to f units of tradables. This is represented in figure 8.2 by curve BB', which is a rightward shift of AA' by the amount f, making the production possibility frontier now ABB', with the length of AB equal to f. The new production possibility frontier has the same slope as the old one for a given value of nontradables. The slope at point X is the same as at point W.

Assuming that relative prices adjust with a lag, this means that at the time of the oil boom the output mix is denoted by point X, and the desired consumption mix is denoted by point Y. The results are an excess demand for nontradables, given by N_1–N_0, and an excess supply of tradables, Q_1–Q_0. Disequilibrium then causes the prices of nontradables to rise and the prices of tradables to fall. The lowering of the relative prices of tradables shifts the new output mix to the left of X and the new demand mix to the right of OY. The new equilibrium is at point Z with output consisting of Q_2 units of traditional tradables and N_2 units of nontradables. This shrinkage of traditional tradables (from Q_0 to Q_2), along with increased output of nontradables, is known as the Dutch disease.

The welfare implications of an oil boom are straightforward as long as the increase in income from oil exports, f, is permanent. The movement from W to Z is efficient, and the decline of the traditional tradable industries is not a cause for concern. The only way to keep the output of the traditional tradables at Q_0 is to

Figure 8.2 Effect of an Oil Boom on Production and Consumption



Source: Authors' calculations.

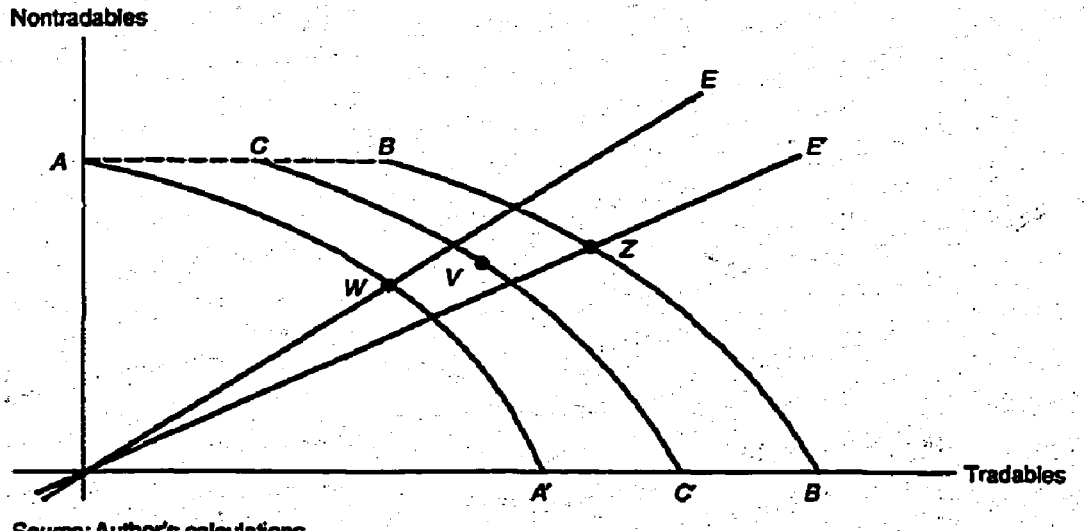
shift the consumption possibility frontier back to the old production possibility frontier by accumulating foreign reserves worth *f* every period. But this would be irrational. There would be no welfare gain from the greater prosperity because consumption would not change.[5]

The Dutch disease is a disease only if the unusual increase in income is temporary. The "disease" is the result of the adjustment costs incurred in the shift from *W* to *Z* during the boom and then back to *W* after the boom ends. The economics literature has so far focused only on these back-and-forth adjustment costs. The Dutch disease, however, produces another cost when the revenue from the boom goes to the government rather than to the private sector. This additional cost comes from intertemporal inefficiency in consumption.

Consumption theory holds that temporary increases in income result in less than equivalent increases in consumption because private consumers realize that the increase in income is temporary and hence spread the temporary income over the rest of their life spans. This means that the consumption possibility frontier is found between the old and the new production possibility frontiers (see figure 8.3). The costs incurred in changing the product mix mean that private consumers will further contract the consumption possibility frontier from *ABB'*. In general, the shorter the duration of the increase in income and the larger the adjustment costs, the closer the consumption possibility frontier will be to the original production possibility frontier. Figure 8.3 shows point *CC'* to be the efficient consumption possibility frontier and point *V* to be the sustainable equilibrium if the oil income had accrued to private agents.

In Indonesia, however, all oil income net of payments to the foreign oil companies and net of the (insignificant) payments to domestic labor goes to the government. It was natural for the various interest groups discussed in chapter 5 to argue for a consumption possibility frontier higher than *CC'* because no group could be assured that the future distribution of power (and hence income) would

Figure 8.3 Efficiency in the Case of a Temporary Resource Boom



Source: Author's calculations.

be to its advantage. As a result, Indonesia's absorption level was much closer to, if not actually at, *ABB'*.

The two costs imposed by the oil boom were consumption inefficiency caused by distortion of intertemporal allocation and the cost of adjusting to shifts in the product mix. These two costs are positively correlated. The farther away from *CC'* the actual consumption possibility frontier is, the larger the intertemporal inefficiency and the larger the adjustment cost.

The Transmission Mechanisms of the Oil Boom

The extent of the Dutch disease could have been reduced if the government had exercised greater control over the money stock. Intertemporal consumption and production efficiency both require that national (private and public) absorption during the oil boom be lower than the maximum level possible. Since the government was unwilling to reduce public absorption (fiscal policy), one alternative would have been to use monetary policy to lower private absorption.

The chief instrument of monetary control before April 1974 was the allocation of direct Central Bank credit to state and private enterprises. Since these credits were extended for a contractually fixed period of time, however, there was no way to reduce the money supply quickly. When the oil boom began and the government financed the ensuing increase in expenditure by converting the dollar earnings from oil exports into rupiahs at the fixed exchange rate, the domestic money stock exploded. Oil revenue in 1972 increased by 90 billion rupiahs (a 64 percent increase), and reserves grew 46 percent (see table 8.2).

The price of oil then increased sharply at the end of 1973, encouraging the government to further increase its spending. Reserves grew 57 percent in 1974, and the inflation rate for that year was 41 percent. The Central Bank responded to this situation in April 1974 by setting credit ceilings, but the ceilings did not cut the link between the reserve base and the money supply. Reserve money grew 33 percent in 1975, and M_1 grew 35 percent. M_1 growth slowed in 1977 and 1978, but this was probably because of the slowdown in oil revenue increases rather than the working of the credit ceilings.

The credit ceilings were ineffective because of their complexity. There were separate ceilings for each kind of credit, the ceilings in credit categories varied from bank to bank, and changes in the ceilings could be made only after each bank consulted with the government. This made it impossible for the Central Bank to reset the aggregate credit ceiling at short notice, since any attempt to do so was likely to confront some banks with problems that might lead to bankruptcy.

During times of low demand, the credit ceilings were operative by default; demand was lower than supply. But when demand exceeded the aggregate ceiling, the excess demand would be relieved by a rise in the interest rates, occasional relaxation of the ceilings, and credit from abroad.[6] Since the 1966 stabilization

Table 8.2 Monetary Indicators, 1969–86

Year	*Central Bank foreign assets as proportion of total assets*	*Change (billions of rupiahs)*		*Rate of growth*	
		Reserve money	M_1	*Reserve money*	M_1
1969	18.3	60.0	67.0	60.0	57.8
1970	21.3	47.0	67.0	29.4	36.6
1971	17.7	60.0	69.0	29.0	27.6
1972	38.9	122.0	155.0	45.7	48.6
1973	41.7	153.0	197.0	39.3	41.6
1974	49.0	308.0	271.0	56.8	40.4
1975	12.0	282.0	332.0	33.2	35.2
1976	22.7	248.0	327.0	21.9	25.7
1977	31.2	340.0	405.0	24.6	25.3
1978	32.3	165.0	482.0	9.6	24.0
1979	39.3	593.0	828.0	31.5	33.3
1980	46.1	897.0	1,695.0	36.2	51.1
1981	39.6	545.0	1,463.0	16.1	29.2
1982	28.4	187.0	646.0	4.8	10.0
1983	34.5	1,031.0	456.0	25.1	6.4
1984	39.0	563.0	1,005.0	11.0	13.3
1985	39.8	1,020.0	1,543.0	17.9	18.0
1986	32.1	1,449.0	1,507.0	21.6	14.9

Source: IMF, *International Financial Statistics* (various years).

program had removed controls on capital account transactions, large firms could obtain loans from international banks when domestic bank loans became hard to get. Conversion of this private external credit automatically increased the domestic money supply, but sterilization of these additional funds through open-market operations was not possible because of the absence of the necessary financial instruments. It is important to note that when the credit ceiling was binding, private capital inflows increased the money supply only by the amount of the increase in the monetary base. The money multiplier had a value of only one because the ceilings prevented the banks from expanding credit in line with the rise in deposits.

It is well known that if private agents regard domestic and foreign financial assets as imperfect substitutes for each other, domestic interest rates will not equal foreign interest rates even if there are no barriers to borrowing from abroad. In this case, the private capital flow is a positive function of the domestic interest rate and a negative function of the foreign interest rate. But even if private agents had regarded Indonesian and foreign financial assets as perfect substitutes, the flow of private capital into Indonesia in the 1970s would have been insufficient to bring about interest rate equalization. With credit ceilings in place, the domestic banks had no interest in borrowing cheaper funds from abroad. (Small and medium-size firms had no access to the international credit market.)

In short, a tight credit policy would have deflated the economy, even if perfect substitutability had existed, because of the inability of small businesses to obtain external credit. The Central Bank's reluctance to reset credit ceilings downward meant that private capital flows endogenized the money supply, but these flows were not large enough to equalize domestic and foreign interest rates.[7]

Other evidence of the ineffectiveness of the credit ceilings is the finding that Indonesian data for this period characterized a model which assumes a positive relationship between the money supply and the balance of payments (Nasution 1983). The government could have controlled the money supply more closely, but it chose not to do so.

The Link between Monetary Control and the Dutch Disease

This link can be formally represented by the following money supply equation:

$$(8.1) \qquad \frac{dm}{dt} = 1/M_0 \, [k+x+d]$$

where

m	=	log of money supply
M_0	=	the level of money supply at beginning of period
k	=	capital account position in the balance of payments with private capital flows responding positively (negatively) to increases in domestic interest rate r (foreign interest rate r^*), for example, $k\,(r, r^*)$
x	=	trade account balance (detailed in equation 8.4 below)
d	=	increase in money due to Central Bank action.

There is a limit to the use of d to offset the monetary consequences of the balance of payments position, given the finite stock of foreign reserves. The money supply, m, can be kept constant only as long as the sustained balance of payments disequilibrium is the result of surpluses and not deficits. Given the government's inability at that time to conduct open-market operations, reset credit ceilings quickly, or manipulate direct Central Bank credit in response to capital flows, d=0. The result is that the domestic money supply is endogenous.

The relation between the controllability of money supply and the Dutch disease can be analyzed by supplementing equation 8.1 with the following model:

(8.2)	Aggregate supply	y^s	=	$y_n + f$
(8.3)	Aggregate demand	y^d	=	$a\,(r, y_n) + g + x$
(8.4)	Trade account balance	x	=	$x_0 + x_1(e + p^* - p)$
(8.5)	Money market equilibrium	$m-p$	=	$b\,(r, y_n)$

Equation 8.2 is GDP by sector—y_n from the nonoil sector, and f from the oil sector. Since the oil sector employs very little labor, we assume that all labor was engaged in producing y_n. In light of the extreme flexibility of the Indonesian labor market, as evidenced by large swings in the real wage series, we take y_n to be exogenous. Aggregate demand (equation 8.3) is the sum of private absorption, government expenditure, and the trade balance. Private absorption, $a(r, y_n)$, is a function of the interest rate and nonoil income. Oil income does not affect private absorption directly because it is government income.

The first component of equation 8.4, x_0, is a convenient way to model both increases in (price-insensitive) government expenditure on imports ($dx_0 < 0$) and increases in oil exports ($dx_0 = df > 0$). The second component of equation 8.4 represents the response of the private sector to the relative prices of home goods and foreign goods. In the analytical exercises below, this second component of equation 8.4 represents the net export of nonoil goods. The term e is the nominal exchange rate (rupiahs per unit of foreign currency), p^* is the foreign price level, and p is the domestic price level, all expressed in log forms. The terms e and p^* are exogenous. The demand for money in equation 8.5 depends on y_n and not $y_n + f$ because oil is mined by foreign companies and exported. The bulk of the demand for the rupiah comes from transactions to produce y_n.

This one-good macroeconomic model cannot reproduce the structural details of sectoral resource allocation in the real model. The Dutch disease has to be interpreted as the shrinkage of the traditional export industries and the expansion of imports, that is, as a diminution of traditional net exports. The real exchange rate in this model is the national terms of trade rather than the sectoral terms of trade. This macroeconomic model highlights the role of fiscal and monetary policies in determining national absorption and the path of adjustment.[8]

The national terms of trade and sectoral terms of trade are obviously not identical. Which of these two is the better indicator of the real exchange rate is an unsettled issue. With the present professional predilection for viewing any one country as a small open economy, the sectoral terms of trade is the "modern" definition.[9] In this book we take the pragmatic stance of regarding the national and sectoral terms of trade as competing proxies and assume that increased production of tradables will always result in an improved trade balance.[10]

We will now put forward two propositions.

Proposition 1. If the government were to increase its spending by the amount of oil revenue, the ability (or willingness) to cut the link between the balance of payments position and the money supply would permit amelioration of the Dutch disease.

Either with the existence of domestic financial markets, (which makes open-market operations possible) or with the constant changing of credit ceilings, the money supply could have been kept constant.

$$(dr)_1 = -df/(a_r + x_1 b_r) > 0$$
$$(dp)_1 = b_1 df/(a_r + x_1 b_r) > 0$$

Shrinkage of net traditional exports $= x_1 df/(a_r + x_1 b_r)$.

When the balance of payments position influences the money supply,

$$\begin{aligned}(dm)_2 &= df/x_1\\ (dr)_2 &= 0\\ (dp)_2 &= df/x_1\end{aligned}$$

Since $(dp)_2 - (dp)_1 = a_r\, df/[x_1(a_r + x_1 b_r)] > 0$, the Dutch disease is more serious when the domestic money stock cannot be controlled.

If there is good control over the money stock, an aggressively contractionary policy can be used to completely offset the Dutch disease effects caused by the expanded public spending. To prevent the shrinkage of net traditional exports, the money supply can be varied to keep p constant. It can be easily shown that $dm = -(b_r/a_r)df$ will reduce private absorption by the amount of the increase in public absorption, df.

Proposition 2. Only if the money supply is endogenous will a nominal exchange rate devaluation not lead to a long-run real exchange rate depreciation.

When money supply is endogenous,

$$\begin{aligned}(dm)_3 &= (df + x_1 de)/x_1 > 0\\ (dr)_3 &= 0\\ (dp)_3 &= (df + x_1 de)/x_1 > 0\end{aligned}$$

therefore $d(e-p) = -df/x_1$. The net real exchange rate movement is the same as $de = 0$.

When money supply is held constant,

$$\begin{aligned}(dr)_4 &= -(df + x_1 de)/(a_r + x_1 b_r)\\ (dp)_4 &= b_r(df + x_1 de)/(a_r + x_1 b_r)\end{aligned}$$

Therefore if we set $de = b_r\, df/a_r$, *then* $d(e-p) = 0$; that is, the Dutch Disease is eliminated.

An objection may be raised to our suggested method of ameliorating the effects of the Dutch disease by crowding out private absorption. Since the crowding-out is through the interest rate mechanism, the decrease in private absorption would mainly take the form of a decline in private investment. In short, our suggested method would involve a tradeoff between maintaining the economic viability of the nonoil export sector and promoting economic growth.

However, in the case of Indonesia in the 1970s, such a tradeoff could have been avoided. This is because a large part of the credit was allocated by government directive rather than by the market mechanism. Since only about 30 percent of outstanding credit was investment credit, and since more than 90 percent of investment credit was extended by the state banks, the government could have directed the state banks to simultaneously increase the amount of investment credit (hence boosting private investment) and reduce the total amount of credit. In short,

the financial system of the 1970s would have allowed the government to channel all the direct negative effects of the credit crunch to private consumption spending. In chapter 9 we report a model simulation of this monetary policy action. We found that this type of credit tightening had only a small impact on the capital stock.

Documenting the Dutch Disease

Paauw (1977a and 1977b) gave one of the first warnings about the negative effects of the appreciation in Indonesia's exchange rate on traditional exports. Taking 1971 as the base year, he calculated the purchasing power parity exchange rate in 1976 to be 687 rupiahs per U.S. dollar. (The actual effective exchange rate was 382 rupiahs.)[11] This overvaluation of 80 percent far exceeded the overvaluations in Malaysia (9 percent), the Philippines (8 percent), and Thailand (6 percent). Compared with the currencies of its five largest trading partners, Indonesia's currency was overvalued by 57 percent in 1976.[12] The result was stagnation in the nonextractive export industries, the export volume of which was the same in 1976 as in 1971. Using input-output coefficients, Paauw estimated that the 3.7 percent decline in the export volume of the eleven biggest nonextractive export industries during the 1971–76 period had produced a loss of 244,000 jobs. Thanks to the creation of 184,000 new jobs by the extractive industries, however, the net job loss was only about 60,000.

Subsequent calculations by others suggest that Paauw's estimate of no export growth was an understatement, but his point about loss of trade competitiveness is well supported. Table 8.3 shows that the terms of trade turned against the traditional tradable industries. In table 8.3 the output price indices of several tradable sectors are normalized against the price of housing, a nontradable good. All series show a downward trend. In our opinion, the most reliable indicators of the relative price ratio of tradables to nontradables are the normalized wholesale price indices of imports and of nonoil exports.[13]

These downward movements alone do not necessarily imply that there was a reduction in the welfare of agents in the tradable sector, since higher productivity in the sector would have had the same effect. But we reject the productivity explanation because (as we will show) there was excess capacity in all the tradable industries just before the 1978 devaluation. Since there was no jump in the productivity of the tradable sector in 1973–78, this adverse movement in sectoral terms of trade translated directly into a profit squeeze. The pegged exchange rate fixed the rupiah prices of tradables, while the rupiah prices of nontradable inputs were free to rise with increases in the price level caused by increases in public expenditures.

Our conclusion is supported by three of the four real exchange rate indices in table 8.3. The reason why series (f) alone showed improvement in competitiveness in October 1978 was that the U.S. dollar dropped precipitously against the

Table 8.3 Indicators of Real Exchange Rate Movements, 1971–86

Item	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1986*
Real exchange rate as tradable/nontradable price ratio																
(a) Imports, nonpetroleum: wholesale prices[a]	75.0	82.2	91.6	100.0	87.2	74.5	66.3	65.3[b]	73.7	70.5	71.9	66.1	72.6[c]	69.2	68.3	66.2[d]
(b) Exports, nonpetroleum: wholesale prices	63.9	65.8	91.6	100.0	66.4	65.6	71.7	70.4[b]	93.3	93.8	100.6	90.7	117.8[c]	112.1	105.9	109.9[d]
(c) Agriculture: wholesale prices	63.9	74.0	88.0	100.0	93.6	93.6	97.8	97.5[b]	102.4	106.2	111.8	109.3	109.9[c]	108.0	105.7	107.0[d]
(d) Manufacturing: wholesale prices	73.6	79.5	97.6	100.0	85.6	80.3	76.1	76.9[b]	80.4	81.2	82.5	79.5	81.8[c]	79.1	79.0	80.5[d]
Real exchange rate as nominal exchange rate deflated by domestic and foreign general price level																
(e) Morgan Guaranty's competitiveness measure	114.1	127.1	120.3	100.0	87.3	74.8	74.2	79.6[b]	111.3	101.1	89.0	79.5	98.4[c]	91.8	92.7	109.7[d]

	1971	1972	1973	1974	1975	1976	1977	Oct. 1978	Nov. 1978	June 1979
(f) Vis-à-vis major trading partners	116.3	132.6	122.1	100.0	91.9	80.2	82.6	108.1	162.8	119.8
(g) Vis-à-vis ASEAN competitors	116.3	124.4	114.0	100.0	88.4	73.3	72.1	76.7	115.1	96.5
(h) Vis-à-vis the Rep. of Korea, Taiwan (China), and Singapore	114.9	117.2	106.9	100.0	88.5	75.9	73.6	79.3	119.5	103.4

Note: ASEAN, Association of Southeast Asian Nations.

a. Price series normalized by housing component in Jakarta CPI.

b. January through October (pre-devaluation).

c. April through December (post-devaluation).

d. January through August (pre-devaluation).

Source: Warr (1986); Garnaut (1979); and authors' estimates.

other major currencies that month. Since the values of series (a) through (e) are the averages of January to October 1978, they give a more balanced picture of relative prices. This can be seen in the small improvement of the real exchange rate in October against the currencies of the Association of Southeast Asian Nations (ASEAN) countries, and against those of the Republic of Korea, Taiwan (China), and Singapore. This was because those currencies were more or less pegged to the U.S. dollar. Although the depreciation of the dollar may have caused Indonesian manufactures to become more competitive against German and Japanese manufactures, they did not become much more competitive against ASEAN manufactures.

It must be admitted, however, that the effects of the Dutch disease on Indonesia's nonoil export sector were not obvious. Nonoil non-LNG exports, whether measured in physical units, in dollars, or in units of imports, showed steady growth throughout the 1972–78 period (see table 8.4). The 1975 dip in export earnings was a result of recession in the industrial countries rather than a fall in domestic production.

The disincentive faced by the nonoil export industries becomes apparent only when one measures the amount of local purchasing power that their exports were able to command. Even though the income from nonoil exports was paying for increasing amounts of foreign goods, the steady real appreciation of the exchange rate meant that the nonoil export industries were not earning more in terms of the market basket of goods typically consumed by Indonesians (rupiah value deflated

Table 8.4 Index of Nonoil, Non-LNG Exports, 1969–80
(1974 = 100)

Year	*Physical volume*	*Millions of dollars*	*Foreign purchasing power*	*Domestic purchasing power*
1969	0.0	28.6	52.2	51.6
1970	0.0	33.6	58.5	60.1
1971	73.9	36.0	59.4	66.9
1972	83.4	40.0	60.2	73.7
1973	96.3	73.2	91.1	103.2
1974	100.0	100.0	100.0	100.0
1975	99.6	82.6	74.2	69.5
1976	111.9	115.2	103.8	80.8
1977	121.0	159.7	133.0	100.9
1978	118.0	166.4	123.0	103.6
1979	160.0	253.7	162.4	184.6
1980	144.5	276.4	155.9	170.8

Note: Physical volume from deflating rupiah value series by nonoil export price index. Foreign purchasing power from deflating U.S. dollar value series by export unit value of industrial countries. Local purchasing power from deflating rupiah value series by Indonesian CPI.

Source: Central Bureau of Statistics; IMF, *International Financial Statistics* (various years).

by Indonesian CPI). The first three measures show that total export earnings in 1976 and 1977 reached unprecedented heights, whereas the fourth measure puts those earnings figures below that for 1973. In terms of foreign purchasing power, the nonoil export industries increased their revenues by 32 percentage points between 1973 and 1978. But measured as local purchasing power, their revenues did not change.

Another indicator of Dutch disease was Indonesia's export growth performance compared to those of Malaysia and Thailand, which exported similar products. The annual average growth rates of nonoil exports during the 1973–78 period for Indonesia, Malaysia, and Thailand were 16, 32, and 20 percent, respectively.

The Decision to Devalue

One explanation for the 1978 devaluation is that it was done in anticipation of an inevitable decline in oil export earnings as a result of resource depletion.[14] One analyst, for example, had concluded that on the basis of existing consumption and production rates, Indonesia would cease to be an oil-exporting country by 1992 (Wijarso 1977). In other words, the argument was that it was better to devalue before a balance of payments crisis occurred, thereby preventing the financial chaos attendant on a speculative outflow of domestic capital. Moreover, the argument went, a devaluation during such a crisis would have to be larger than one made in advance of the crisis in order to have any immediate beneficial effects, given lags in prices.

An alternative explanation for the devaluation emphasizes the economic difficulties and political tensions arising from the reallocation of resources produced by the overvalued exchange rate. As the rate appreciated, there were reports of increasing economic hardship in the tradable industries, particularly the labor-intensive agricultural export sector. This was worrisome because these labor-intensive industries were looked on as a way of soaking up increases in the labor force. Since the oil industry had minimal linkages to the rest of the economy, the steady movement of resources into the service (nontradable) industries was a threat to long-run growth.

The movement of resources out of the rural sector was hastened as nontariff protection was increasingly granted to import-competing industries in order to offset the profit squeeze caused by the overvalued rupiah. In 1974 Indonesia banned the import of assembled cars, and this was followed by quotas or bans on such industrial goods as newsprint and motorcycles. This increasing protectionism is clearly shown in table 8.5. The big jump in the protection of importables occurred mainly through increases in nontariff barriers.

Protectionism intensified after 1975. In December 1976 the government introduced four rules to discourage certain imports if existing domestic capacity was deemed sufficient to meet demand. Importers of these goods were declared

Table 8.5 Effective Rates of Protection in the Manufacturing Sector
(percent)

Type of tradable	*1971*	*1975*
All tradables	33	39.2
Exportables	–11	–6.4
Importables	65	97.6
Import-competing	66	108.6
Noncompeting	15	9.2

Source: Pitt (1981); World Bank (1981).

ineligible for bank financing and were required to pay 100 percent (rather than the usual 40 percent) on opening a letter of credit. Also required were payment of a 100 percent penalty guarantee and total prepayment of import duties. Estimates of the effective rates of protection for ten import-competing industries in 1971, 1975, and 1978 are shown in table 8.6. Of the ten industries, seven showed a higher level of protection in 1978 than in 1975.[15] The three that experienced a decline still had effective rates of protection exceeding 100 percent. This escalation of protectionism weakened the rural/urban terms of trade, in turn exacerbating political tension on the Outer Islands, which depended heavily on exports of agricultural products. The 1978 devaluation was therefore no surprise, despite the absence of a balance of payments crisis.[16]

Both interpretations given above could be correct. They do not contradict each other. It should be mentioned, however, that anticipatory devaluations are extremely rare events. Devaluations usually occur in the midst of a balance of

Table 8.6 Effective Rate of Protection for Ten Import-Competing Sectors, Selected Years

Sector	*1971*	*1975*	*1978*
Spinning	134	56	71
Weaving	—	192	117
Batik	–38	–35	–23
Knitting	—	331	403
Wearing apparel	197	110	124
Pulp, paper, and cardboard	67	46	50
Tires and tubes	—	4,315	1,415
Other rubber products	195	406	226
Cutlery, hand tools, and general hardware	77	36	85
Other fabricated metal products	50	66	76
Accumulators and dry batteries	193	116	112

Source: World Bank (1981).

payments problem or when one is imminent, but Indonesia had no such problem. Moreover, as Cooper (1971:3) noted, formal devaluation is not something that is undertaken lightly.

> Currency devaluation is one of the most dramatic—even traumatic—measures of economic policy that a government may undertake . . . Because of the associated trauma, which arises because so many economic adjustments to a discrete change in the exchange rate are crowded into a relatively short period, currency devaluation has come to be regarded as a measure of last resort, with countless partial substitutes adopted before devaluation is finally undertaken . . . The reluctance of officials arises in large measure from the [fact that a] devaluation will disturb an implicit social contract among different segments of society—or at least will jar some groups out of their acquiescence in the existing state of affairs, with its numerous implicit compromises—and officials are understandably anxious about . . . disturbing the social equilibrium.

Cooper also noted that a devaluation appeared to double the probability that a ruling group would be removed from power, and to triple the odds that a minister of finance would be ousted.[17] This explains why one of the first appraisals of the 1978 devaluation called it "a courageous decision" (Dick 1979). But in light of the corporatist nature of the Indonesian state, we would say that it would have been even more courageous (but foolishly so) if the government had chosen not to devalue in the face of worsening conditions in the strongholds of agrarian radicalism and secession.

The Efficacy of the Devaluation

The first thoughtful analyses of the 1978 devaluation, written before reliable data were available, showed that the degree to which the tradable sector was affected by the Dutch disease was underestimated (Dick 1979, and Booth and Tyabji 1979). Although most observers were aware of the decline in the relative prices of nonoil tradables, they also noted the upward trends in the dollar earnings and volume of nonoil exports. Neglect of the fact that export earnings, measured in terms of domestic purchasing power, had stagnated meant that they were unaware of excess capacity in the tradable sector, especially in the tree crop sector. The early analyses were generally skeptical about whether devaluation would boost nonoil exports, on the grounds that supply was inelastic. The improvement in Indonesia's payments was attributed to favorable exogenous movements in world prices.

The initial data seemed to support this skepticism. Garnaut (1979) attacked the November 1978 devaluation as "perverse" behavior that would inevitably fail

and extolled the "value of stable and credible exchange rate arrangements." We will use four of Garnaut's criticisms to organize our discussion of the efficacy of the devaluation.

Criticism 1. The rise in the value of agricultural exports after the devaluation was mainly attributable to unrelated world price increases, and only in manufactured exports did the devaluation cause expansion in export volume.

Assessment. This implied that the 36 percent increase in the volume of nonoil exports in 1979 reported in table 8.4 came entirely from manufactured exports. Table 8.7 examines this argument with the use of disaggregated data. (The data are from a different source and are available only in fiscal year format.) Except for tin in 1979–80, every nonoil export showed volume growth in 1978–79 and 1979–80. The rubber industry, which was the biggest employer of rural labor after rice, increased its export volume by 6 percent in 1978–79 and 11 percent in 1979–80. The "other agriculture" category, consisting largely of palm oil, tea, tobacco, and pepper, experienced the biggest expansion of agricultural export volume: 18 percent in 1978–79 and 28 percent in 1979–80. Since these were crops with long gestation periods (five to seven years in the case of rubber and palm oil), the gains in export volume after the devaluation were more likely to have been a result of the existence of excess capacity than of random productivity increases.

Additional support for the Dutch disease interpretation is garnered from the fact that the export volume increase occurred despite adverse changes in world relative prices. Most observers saw favorable changes in world relative prices because they were looking at U.S. dollar prices. But if the dollar price changes merely reflected the general inflation of this period and the depreciation of the dollar against the other major currencies, one could not claim that they reflected favorable shifts in the terms of trade. Normalizing the dollar prices of Indonesia's nonoil exports by the export unit value of the industrial countries (also measured in U.S. dollars), as is done in table 8.7, gives a better indication of exogenous world relative price movements. We see that coffee and "other agricultural" products, which showed the biggest export growth, actually suffered real price declines in 1978–79 and 1979–80. Export volume went up because the 50 percent devaluation caused the rupiah prices of these commodities to rise more than the domestic inflation rate, more than offsetting the adverse external relative price movement.

Criticism 2. It is not clear how much of the increase in the value of nonoil exports was a result of the devaluation because a "strong upward trend" in the value of nonoil exports had been seen just prior to the devaluation.

Assessment. We reject, for obvious reasons, any conclusions about upward trend if they were based on earnings denominated in nominal U.S. dollars. Although the real value of nonoil exports had been rising since 1975, it was not increasing to historically unprecedented levels. In terms of domestic purchasing power, it went from an index value of 69.5 in 1975 to 103.6 in 1978, but the index value had been 103.2 in 1973 and 100 in 1974. Furthermore, the rise in real nonoil export earnings immediately before the devaluation was attributable to price increases and not to volume increases. There was no upward trend in export volume

Table 8.7 Nonoil, Non-LNG Exports, 1974–84

Type of export	*1974–75*	*1975–76*	*1976–77*	*1977–78*	*1978–79*	*1979–80*	*1980–81*	*1981–82*	*1982–83*	*1983–84*
Export volume index (1974–75 = 100)										
Timber	100.0	68.2	102.0	96.4	113.8	123.7	79.1	47.7	36.1	34.4
Rubber	100.0	99.9	114.4	114.2	120.8	134.2	115.1	106.9	106.7	111.0
Coffee	100.0	136.6	183.2	208.1	244.7	329.2	301.9	213.0	232.9	255.3
Other agriculture	100.0	113.8	125.7	134.6	158.3	203.3	144.7	156.9	210.3	211.4
Tin	100.0	87.3	92.7	90.2	96.5	96.5	103.5	118.4	103.3	103.3
Other metals and minerals	100.0	87.8	127.0	98.0	99.3	150.7	194.6	215.5	258.8	370.9
Manufactures	100.0	111.4	149.2	171.5	214.5	238.9	266.3	353.9	451.8	792.7
Total nonoil exports	100.0	89.0	114.0	113.7	130.3	150.8	122.2	112.1	115.8	144.6
Rate of growth in export volume (percent)										
Timber	—	–31.8	49.5	–5.5	17.9	8.8	–36.0	–39.7	–24.2	–4.9
Rubber	—	–0.1	14.6	–0.2	5.8	11.0	–14.2	–7.1	–0.2	4.0
Coffee	—	36.6	34.1	13.6	17.6	34.5	–8.3	–29.4	9.3	9.6
Other agriculture	—	13.8	10.5	7.1	17.6	28.4	–28.8	8.4	34.1	0.5
Tin	—	–12.7	6.2	–2.6	6.9	0.0	7.3	14.4	–12.8	0.0
Other metals and minerals	—	–12.2	44.6	–22.9	1.4	51.7	29.1	10.8	20.1	43.3
Manufactures	—	11.4	34.0	14.9	25.1	11.4	11.5	32.9	27.7	75.5
All nonoil exports	—	–11.0	28.1	–0.2	14.6	15.7	–19.0	–8.3	3.3	24.9

(table continues on next page.)

Table 8.7 (continued)

Type of export	*1974–75*	*1975–76*	*1976–77*	*1977–78*	*1978–79*	*1979–80*	*1980–81*	*1981–82*	*1982–83*	*1983–84*
Price of export item expressed in exports of industrial countries (1974–75 = 100)										
Timber	100.0	116.1	128.1	132.0	118.2	181.3	201.2	156.1	158.5	158.3
Rubber	100.0	83.0	107.7	104.1	110.4	123.1	129.1	103.2	85.5	114.6
Coffee	100.0	82.7	178.4	272.4	165.6	150.8	124.3	106.8	107.3	138.0
Other agriculture	100.0	74.8	81.6	90.5	74.0	72.3	77.0	68.4	59.5	65.7
Tin	100.0	100.6	106.9	140.2	148.0	154.3	154.9	135.3	127.5	125.7
Other metals and minerals	100.0	79.8	76.4	71.7	64.0	71.6	73.9	69.2	65.9	68.0
Manufactures	100.0	105.0	104.7	104.1	107.9	104.7	104.2	103.2	104.7	104.7
Price of export item expressed in U.S. dollars (1974–75 = 100)										
Timber	100.0	125.6	141.0	159.0	161.5	284.6	343.6	256.4	251.3	243.6
Rubber	100.0	89.8	118.6	125.4	150.8	193.2	220.3	169.5	135.6	176.3
Coffee	100.0	89.5	196.5	328.1	226.3	236.8	212.3	175.4	170.2	212.3
Other agriculture	100.0	80.9	89.9	109.0	101.1	113.5	131.5	112.4	94.4	101.1
Tin	100.0	108.9	117.8	168.9	202.2	242.2	264.4	222.2	202.2	193.3
Other metals and minerals	100.0	86.4	84.1	86.4	87.5	112.5	126.1	113.6	104.5	104.5
Manufactures	100.0	113.6	115.3	125.4	147.5	164.4	178.0	169.5	166.1	161.0

Note: "Other agriculture" consists mainly of palm oil, tea, tobacco, and pepper.
Source: Calculated from World Bank data.

just prior to the devaluation. The volume index in table 8.7 reports 114 for both 1976–77 and 1977–78.

Criticism 3. The strong upward trend mentioned in criticism 2 came about because of a large depreciation in the Indonesian real exchange rate from 1976 and the decline of the competitiveness of labor-intensive industries located in Taiwan (China) and Korea for product cycle reasons. The favorable real exchange rate movement was partly the result of lower domestic inflation and partly the result of falling production costs.

Assessment. Since there was no upward trend in the volume of nonoil exports, the "large depreciation" that occurred prior to the devaluation has to be examined. The reported large depreciation since 1976 can be seen in only one of the three real exchange rate series given in Garnaut's article (and shown in table 8.3), and it is an irrelevant series. The real exchange rate values in October 1978 revealed that Indonesian goods were more competitive against goods from Germany or Japan, but not against goods from other countries in Asia. In fact, the October 1978 value of the real exchange rate shows a 20 percent loss in competitiveness against the Pacific Asian countries when 1974 (the year that the Dutch disease began to be evident) is used as the base year.

We have no basis for rejecting Garnaut's reasons (product cycle and the learning curve phenomenon applied to Indonesian labor) for the sharp depreciation of series (f) in table 8.3 between 1977 and October 1978. But, on the basis of all three of Garnaut's real exchange rate series, we wish to add a third reason. A large part of the depreciation occurred because of the big depreciation of the U.S. dollar (to which the currencies of Indonesia, the ASEAN countries, Taiwan (China), and Korea were pegged) against the Japanese yen and the German mark since mid-1976. At the end of the second quarter of 1976 the rate was 2.57 DM/dollar and 297 yen/dollar; and at the end of the third quarter of 1978, it was 1.94 DM/dollar and 189 yen/dollar.

Criticism 4. The inflation resulting from the devaluation would inevitably make any gain in competitiveness temporary. As most of the competitive gain had been wiped out within seven months of the devaluation, it was predicted to be completely eliminated by the end of 1980. This temporary competitive edge was "secured at the cost of a period of high inflation and political uncertainty."

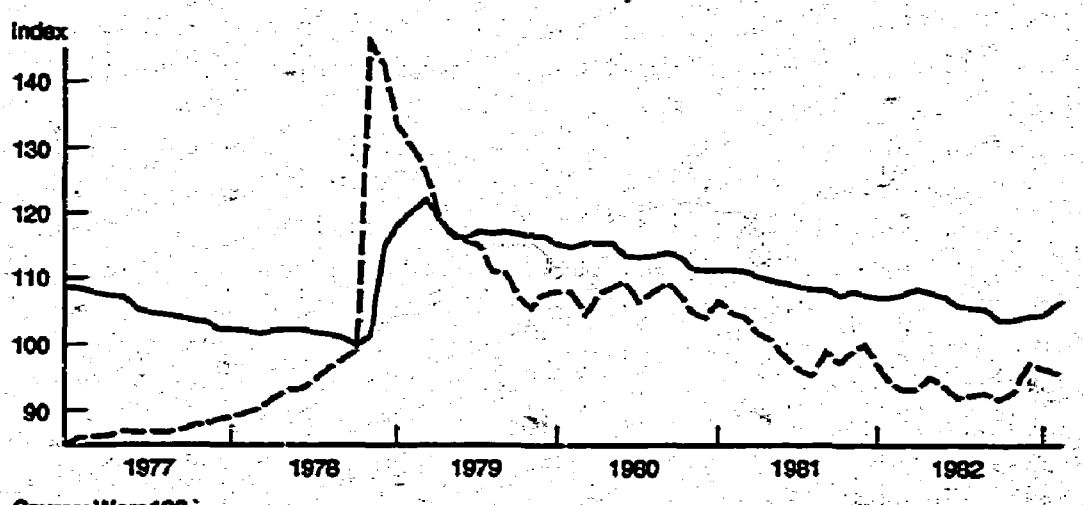
Assessment. In our analysis of the transmission mechanisms, we showed that a nominal devaluation would cause a temporary devaluation in Indonesia only if the government were unable to control the money supply effectively (assuming that contractionary fiscal policy could not be undertaken). If the credit ceilings had been replaced by open-market operations as the instrument of monetary control, the erosion in the real exchange rate devaluation would have been prevented. The duration of the effects of a nominal exchange rate devaluation cannot be discussed without reference to other macroeconomic policies and to the structural characteristics of the economy. There is nothing inevitable about the real exchange rate returning to its predevaluation value.

Warr (1984, 1986) made an important point on the issue of duration of a real exchange rate devaluation. He showed that the usual real exchange rate constructed by deflating the nominal exchange rate with the general price indexes of the countries concerned seriously misrepresented the movements of the ratio of tradable to nontradable prices if the "law of one price" did not hold at every point in time. He called the first measure the competitiveness index and the second measure the relative price index. The relative price index was the relevant measure of the incentive to produce tradables.

Figure 8.4 reports the movements of these two indexes before and after the November 1978 devaluation. The competitiveness index first overstates the speed and magnitude of the increase in the incentive to produce tradables and then greatly exaggerates the speed and magnitude of the decline in this incentive. The competitiveness index rose to 145 very shortly after the devaluation, and fell to 123 five months after the devaluation. By the end of 1982 the competitiveness index was back to the predevaluation level; the erosion process showed a half-life of only five months. The relative price index, by contrast, peaked at 123 five months after the devaluation, and the subsequent decay showed a half-life of twenty-five months.[18] The result was that by March 1983 the incentive to produce tradables was still 25 percent above the October 1978 level.

Garnaut was correct about the erosion of the real exchange rate devaluation, given the inability of the Indonesian Central Bank to quickly sterilize balance of payments surpluses. But the competitiveness measure he used overstated the speed at which the incentive to produce tradables diminished. The competitiveness measure was misleading because the prices of tradables did not leap up immediately after the devaluation. When these prices did rise in response to arbitrage activities, they caused the CPI to increase, giving the impression that the costs of domestic inputs were rising and thus reducing the incentive to produce tradables,

Figure 8.4 Aggregate Ratio of Prices of Tradables and of Nontradables and Competitiveness



Source: Warr 1984.

when in fact this increase in the CPI was widening the profit margin of the tradable goods industries.[19]

Our argument that the 1978 devaluation increased the volume of nonoil exports is supported by the formal econometric work of Kincaid (1984); Kobayashi, Tampubolon, and Ezaki (1985); and M. Pangestu (1986). They all found the coefficient of the real exchange rate variable to be statistically significant in their nonoil export volume equations or in the net nonoil trade equation. Kincaid reported a short-run elasticity of 0.6 and a long-run elasticity of 6.0, and Kobayashi and his colleagues reported an elasticity of 0.3. The low elasticity in the Kobayashi equation was likely to be the result of severe specification. Unlike Kincaid's variables, the Kobayashi variables were expressed in rates of change instead of levels, and they did not include any lagged variables.

In the simulation of her macroeconometric model, Pangestu found evidence of excess capacity in the tradable sector. The leap in the production levels of the tradable industries after devaluation was not accompanied by any noticeable fall in the production level of nontradables. The first big increase in the production of tradables in response to the devaluation came in 1979, about the time that Warr's relative price index (figure 8.4) reached its peak. The production effects grew larger over time. Pangestu concluded that without a devaluation the supply of tradables would have been 30 percent lower per quarter between the third quarter of 1980 and the fourth quarter of 1982.

Monetary Policy After the Devaluation

Since a devaluation ordinarily causes the tradable sector to expand at the expense of the nontradable sector, it is usually followed by transitional unemployment. Hence a case can be made for temporarily increasing the money supply after a devaluation to minimize unemployment until export growth resumes.

Such a policy, however, runs the risk of undermining the goal of the devaluation by causing a steep rise in inflation. Unless the government maintains the new real exchange rate, economic agents will be reluctant to invest in the tradable sector. So the first issue in assessing the appropriateness of postdevaluation monetary policy is how much credibility the private sector attached to the new policy objective of the government. The lower the credibility, the tighter the subsequent monetary policy ought to have been.

The second issue in assessing monetary policy is how fast to effect the structural transformation. Since the tradable sector could increase production only with a lag, a policy of minimal inflation would cause a sharp slump, but then the sharper the slump, the faster would be the resource shift from nontradable to tradable industries.

In the Indonesian case, there is a third issue. An active contractionary monetary policy after a devaluation to further squeeze the nontradable sector by

lowering domestic demand would squeeze the tradable sector through an unexpected channel. With total credit lower after the devaluation than before, the expansion of the tradable sector would be inhibited not by lower aggregate demand but by the lack of access to working capital. Most of the producers of traditional agricultural exports in Indonesia would not be able to avoid such a credit crunch by borrowing from abroad.

Table 8.8 shows monetary change in the 1972–83 period. M_1 grew 34 percent in 1979 and 43 percent in 1980, significantly above the rate of growth in 1978. While it is not possible, for the reasons given, to say whether the 1979 and 1980 money growth rates were excessive, the resulting rise in inflation (21 percent in 1979 and 19 percent in 1980) did not cause the increased incentive to produce tradables to disappear faster than occurred after the devaluations of other developing countries. Edwards (1985:163–64), after analyzing fifty-two devaluation episodes, concluded that

> in more than three-quarters of the cases, the real rate was significantly higher (that is, more competitive) two years after the crisis than the quarter before the crisis . . . [and] that in most cases the real quantity of money, defined both in a narrow and in a broad sense, increased during the years following the devaluation.

In 1981 Indonesia's real exchange rate series (see table 8.3) were still more competitive than prior to devaluation. Since the real increases in money reported in table 8.8 were normal, it is hard to fault Indonesian policymakers for such a typical outcome.

Even if the 1979–81 money growth rates were deemed to be excessive, the surge could have been unintentional. By the first quarter of 1980 the price of oil

Table 8.8 Monetary Changes, 1972–83
(percent)

Money definition	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*
Reserve money	38.9	37.0	49.1	42.1	26.2	28.7	5.5	32.1	34.9	19.5	12.3	12.5
M_1	33.5	50.6	39.6	37.7	29.4	29.3	17.8	33.7	42.5	33.0	23.5	5.5
M_2	44.9	47.0	48.6	38.1	33.1	25.8	19.4	32.8	46.7	30.5	24.5	19.1
Fiscal stimulus	1.9	1.7	1.3	2.7	3.4	2.5	2.0	1.9	1.4	1.3	1.2	2.0

Note: Many growth rates are calculated as averages of the quarterly rates. Fiscal stimulus is calculated by (a) converting fiscal year data into calendar year data; (b) subtracting total domestic revenue and total debt service payments from expenditure; and (c) expressing the result as a percentage of GDP.
Source: Department of Finance, Government of Indonesia.

was double the price in the first quarter of 1979. The net foreign asset position of Indonesia's Central Bank had also doubled. The rise in the money growth rate was more a result of the ineffectiveness of credit ceilings as instruments of monetary control than of the government's desire to minimize unemployment in the nontradable sector. It would be incorrect to conclude that the devaluation and the monetary accommodation were the biggest contributors to inflation in 1979 and 1980. The 150 percent rise in the price of oil between November 1978 and December 1980 pushed prices up from the supply side, and the resultant increase in M_1 pushed prices up from the demand side.[20]

The posture of fiscal policy seems consistent with the objective of exchange rate devaluation. Fiscal stimulus, measured as budget deficit minus total debt service expressed as a percentage of GDP, was substantially lower in 1980–81 (1.3 percent) than in 1978–79 (2 percent). Very soon after the 1978 devaluation, the government sought to further improve the competitiveness of the tradable sector by cutting tariffs on 966 categories of imported inputs and by rescinding the protectionist measures adopted in December 1976.

Cooper (1971) found that the price of imports tended to rise sharply for three to four months after devaluation and then to fall substantially. He warned against allowing this temporary price peak to be integrated into the domestic wage/price mechanism. The Indonesian experience is interesting on this score. There was an almost immediate 50 percent increase in the prices of many imported goods, and the prices of many importables rose significantly. The government responded with a price freeze on many consumer goods and ordered public enterprises not to increase their prices. Well-publicized "jawboning" led to price rollbacks by several large private firms. The price controls succeeded in holding down prices; the CPI climbed only 2.4 percent in November and 1.6 percent in December. In January 1979 the major controls were relaxed and the CPI surged 4.4 percent before declining to 1.9 percent in February and 2.3 percent in March. Judging by these price movements, it appears that the price controls might have reduced the temporary overshooting of prices reported by Cooper.

The only signs of real wage resistance occurred at foreign-owned firms and were short lived. The government—not opposed to wage increases but eager to moderate them—declared that the appropriate range of such increases was 10 to 15 percent. The head of the Indonesian labor movement had asked for wage increases in the 25 to 30 percent range.

The government's actions immediately after the 1978 devaluation were not always consistent with the goal of raising the level of nonoil exports. The government went ahead with a planned increase in the export tax on palm oil and imposed export quotas on twenty items, mostly agricultural products. But large jumps in export volume (see table 8.4) suggest that the quotas were ineffective. These increments in export volume also imply that the imposition of price controls did not disrupt the production of tradables. The main effect of the price controls on tradables was to encourage firms to sell more abroad at the higher external prices.

An Assessment of the 1978 Devaluation

In a way, the 1978 devaluation could not have come at a worse time, chiefly because inflationary pressures intensified in 1979. But it is clear that erosion of the tradable sector would have been greater if the second OPEC price shock had occurred without the prior devaluation. We argue in chapter 10 that the 1978 devaluation was important to long-term growth because it helped Indonesia avoid the debt crisis that engulfed Mexico. The export sector was able to earn enough foreign exchange during the early 1980s to service Indonesia's external debts. Even though the average 1980–81 debt service/GNP ratios for Indonesia and Mexico differed by less than 8 percentage points, the debt service-to-export ratio (DSXR) for Mexico was more than 78 percentage points greater than that for Indonesia.[21]

Chapter Nine

The Fourth Crisis: Negative External Shocks in the 1980s

The oil price increase of 1979, and high prices for its other export commodities, gave Indonesia a temporary shield against the world recession that began in 1980. While world GDP growth dropped from 3 percent in 1979 to 2 percent in 1980 and 1981, Indonesia's GDP rose from 6 percent in 1979 to 8 percent in 1980 and 7 percent in 1981. When the world slump hit Indonesia in 1982, its growth rate fell to –0.3 percent, and the current account deficit rose from 1 percent of GDP to 6 percent (see tables A.1 and A.6).

The rise in the current account deficit was, in part, a result of higher borrowing rates. But most of Indonesia's official external debts were medium-term and long-term debts with fixed interest rates, and the interest rate impact was relatively minor. Changes in the terms of trade and the interest rate together, however, raised the debt service-to-export ratio from 8.2 percent in 1981 to 14.7 percent in 1984.

When the Japanese yen started appreciating against the U.S. dollar from 1985 onward, Indonesia's external (public) debt service then jumped from $3.3 billion in 1984 to $4.4 billion in 1986 because over 40 percent of the external debt was denominated in yen. This change, together with the fall in the oil price in 1986, caused the DSXR to soar to 29 percent. The external debt situation had become serious, although not critical.

The biggest shocks in the 1983–88 period occurred after 1985. The effects of the interest rate and exchange rate shocks were small compared with the sharp drop in the price of oil in 1986 (Ahmed 1989). Average values for the period, expressed in terms of GNP, were 0.1 percent for the change in interest rates, 0.3 percent for the change in the exchange rate, and 8.9 percent for the fall in the oil price. The plunge in the oil price cost Indonesia almost 16 percent of GNP in 1986.

Invoking Efficiency on the Slippery Slope

When external shocks widened the Indonesian current account deficit enormously in 1982 and 1983 (see table 9.1), Indonesia took several steps to avert a possible balance of payments crisis. It slashed public investment programs, tightened monetary policy, devalued the rupiah by 38 percent in March 1983, imposed import restrictions, and introduced some export-promoting measures. Resource mobilization was also stressed as a way to reduce balance of payments pressure. The financial system was deregulated in order to narrow the gap between savings and investment and discourage capital flight. The tax system was reorganized to raise more revenue.

Table 9.1 Changes in Government Revenue and Expenditure, 1980–87
(billions of 1980 rupiahs)

				Percentage change		
	Fiscal 1980–84	*Fiscal 1984–87*	*Fiscal 1980–87*	*Fiscal 1980–84*	*Fiscal 1984–87*	*Fiscal 1980–87*
The change in total revenue and expenditure						
GDP	8,414.2	5,988.3	14,402.5	17.2	10.4	29.4
Total state revenue	169.1	741.0	910.1	1.7	7.1	8.9
Total expenditure	951.2	1,765.3	2,716.4	8.1	13.9	23.2
Debt service	1,029.9	2,577.9	3,607.8	131.2	142.1	459.7
Current expenditure	–397.8	287.0	–110.8	–6.2	4.8	–1.7
Capital expenditure	319.0	–1,099.6	–780.6	7.0	–22.5	–17.1
Components of current expenditure						
Education and health	–139.7	19.3	–120.4	–16.9	2.8	–14.5
Other wages and salaries	364.8	655.1	1,019.9	13.9	21.9	38.8
Other goods and services	175.1	–237.1	–62.0	13.7	–16.3	–4.8
Subsidies	–777.9	–189.4	–967.3	–49.0	–23.4	–60.9
Other	–20.1	39.1	19.0	–48.3	182.1	45.8
Components of capital expenditure						
Transfer to private sector	–198.2	–72.8	–270.9	–50.9	–38.1	–69.7
Investment	517.2	–1,026.8	–509.7	12.4	–21.9	–12.2
Agriculture	–11.8	–23.6	–35.4	–2.2	–4.4	–6.5
Industry and mining	48.4	–280.3	–231.9	11.7	–60.6	–56.0
Electric power	138.8	23.8	162.6	38.2	4.7	44.7
Transport and tourism	129.4	–115.7	13.7	19.7	–14.7	2.1
Education	193.8	–146.1	47.6	39.9	–21.5	9.8
Health	–7.5	–67.3	–74.7	–4.1	–38.1	–40.6
Housing and water supply	–37.6	91.4	53.7	–23.3	73.9	33.3
General public services	–60.8	–157.5	–218.3	–18.0	–56.8	–64.5
Other programs	124.5	–350.6	–226.1	12.2	–30.6	–22.1

Source: Thorbecke (1991).

When the price of oil plunged in 1986 from $28 per barrel in January to less than $10 per barrel in August, the government responded with additional adjustment measures. The rupiah was devalued by 45 percent, the development of a domestic capital market was speeded up, and three policy changes were made. The first was to abandon the quantitative restrictions (QRs) on imports to improve the balance of payments and put greater emphasis on export promotion. The second was to further reduce public investment, which dropped from 10.2 percent of GDP in 1984 to 8.5 percent in 1986 and 7.9 percent in 1987. The third was to allow a larger degree of foreign portfolio and direct investment in Indonesia.

The chief difference between the reforms of 1983–85 and those of 1986–90 was in their approach to trade. The wide use of import restrictions (QRs) constituted a negative supply-side factor because many of them were placed on imported intermediate inputs. Since many of these intermediate inputs were used intensively by the tradable sector, the QRs were indirectly promoting the production of nontradables, hence undermining the goal of reducing the trade deficit. The first serious reversal of this discrimination against the tradable sector began with a May 1986 decision to allow exporters to purchase inputs at world prices. The QR system was then drastically reduced, notably by the October 1986 and November 1988 trade reforms.

Reducing State Expenditures to Cope with Revenue Shortfall

We have chosen to focus on the expenditure patterns in the fiscal periods 1980–84, 1984–87, and 1980–87 in order to deduce expenditure priorities during times of revenue boom and revenue shortage. Fiscal 1980 was the year immediately after the second OPEC price increase, and fiscal 1984 and 1987 were the years immediately after each phase of the oil price collapse.

The salient point about the 1 billion rupiah increase in total expenditures between 1980 and 1984 was that it came entirely from increased debt service payments, which went up by 131 percent (see table 9.1). Current expenditure during the 1980–84 period was cut by 0.4 billion rupiahs, but capital expenditure was increased by 0.3 billion rupiahs. The latter fact suggests that the instinctive response of the government was to keep economic growth on track by continuing to make infrastructure investments. Since revenue had increased by less than 0.2 billion rupiahs, this continuation of infrastructure investment revealed a decision to pay for the increase in external debt service by borrowing more from abroad.

The external debt situation worsened drastically between 1984 and 1987, in large part because of the appreciation of the yen and because debt service in the 1984–87 period was 2.5 billion rupiahs (or 142 percent) higher than in 1980–84. The clear need for more conservative external debt management meant that the government could no longer maintain investment spending through foreign borrowing. Capital expenditure in the latter period was 1.1 billion rupiahs (23

percent) lower, with only two types of investment projects (electric power, and housing and water supply) receiving increased funding.

Some observers have claimed that the budget "cutbacks [in the 1980s] were done selectively to moderate the effect on the poor" (World Bank 1990:19). The most comprehensive evidence in support of this claim was presented by Thorbecke (1991), who computed the ratio of actual expenditure in each category to the planned expenditure announced in the five-year plans. He found that, compared to the ratio for total current expenditure, the ratio for current expenditure on education and health was higher in 1984 (0.9 versus 0.8) and equal in 1987 (0.7) (see table A. 27). Furthermore, compared with the ratio for total capital expenditure, the ratio for investment in agriculture was higher in both 1984 and 1987 (1.3 versus 0.9, and 0.8 versus 0.5, respectively). Thorbecke concluded that the Indonesian government had made special efforts to shelter vulnerable groups from large cuts in discretionary expenditure.

We agree with Thorbecke's conclusion, but we want to add that, by his criterion, the government was even more adamant about increasing the pay of personnel not in the education and health sector, and about maintaining investment in state-owned enterprises (SOEs), electric power, and transportation. The ratios for these expenditure categories were much larger.

Poverty was an important concern, but it was by no means the dominating concern (see table A. 27). The fact that the total 1987 funding for the three most significant programs targeted at rural poverty (Inpres transfers to Kabupaten and villages, sectoral Inpres expenditure, and fertilizer subsidies) was the same as in 1980 cannot be seen as evidence of an antipoverty bias because it accounted for only 7 percent of the total budget.

The combined evidence suggests that the maintenance of infrastructure investment and the improvement of civil service pay were even more important priorities. One could argue that from a longer-run perspective, infrastructure investment, by hastening economic growth, may be a more effective antipoverty program than any of those identified by Thorbecke or by us.

Consequences of Financial Repression

The most significant characteristic of the Indonesian financial system is the overwhelming dominance of the state-owned banks.[1] Throughout the 1970s the five state commercial banks and the state development bank (Bapindo) accounted for approximately 80 percent of the total assets, total deposits, and total loans of the deposit money banks. These six banks dwarfed their private sector and foreign bank competitors in every category of credit. In December 1982 they supplied 72 percent of the working capital lent by the entire banking system, 95 percent of the investment capital, and 57 percent of the consumption loans. The main reason for the strong position of the state banks was that they were the instruments through

which Bank Indonesia disbursed credit to targeted groups. They received "liquidity credits" from the Central Bank at very low rates of interest and re-lent them at higher interest rates set by the Central Bank.

In addition to this guaranteed profit margin for being the disbursement agents of Central Bank credit, the state banks were designated as the only financial institutions in which state enterprises could deposit their working balances. The dominant position of the state banks was further entrenched by a policy of favoring state banks in applications for establishing new branches.

The allocation of direct Central Bank credit in the late 1970s and early 1980s was strongly influenced by political concern about agrarian radicalism and regionalism. The proportion of that credit directed to the agricultural sector in 1979 (25 percent) was greater than that directed to the manufacturing sector (8 percent). The sum of manufacturing credits and investment credits equaled agricultural sector credits only in the 1980s. Throughout the second half of the 1970s, the Central Bank favored only the oil sector above the agricultural sector in its credit allocation.

To ensure the rapid growth of targeted activities, the lending rates of the state commercial banks were always set well below those of the domestic private banks. Some 93 percent of the credit extended by the state commercial banks was at or below an interest rate of 13.5 percent, while only 9 percent of domestic private bank credit and 3 percent of foreign bank credit were at or below that rate. Only 0.5 percent of state bank loans carried interest rates above 21 percent, whereas 79 percent of private domestic bank loans and 66 percent of foreign bank loans did. The real interest rate on loans to the BIMAS and INMAS food production programs averaged –5.5 percent from mid-1972 to the end of 1978, while the real interest rate for nonpriority borrowing averaged 5.3 percent.

State bank loans were not only extended at lower rates, they were also consciously extended to borrowers who were deemed credit risks by normal appraisal procedures. The rationale was that

> [the state] banks should be agents of development. What was meant was that sometimes these State banks, because of the role assigned by the Government and the expectations of the business community, had to be more pioneering than a normal bank would be: that they had to take more risks than a normal bank would be willing to take.[2]

The combination of four factors—a guaranteed income to the state banks for their disbursement function, the imposition of entry barriers to protect the dominant position of the state banks, the subsidized interest loans, and the directive that normal risk appraisal procedures be waived—produced a chaotic and inefficient financial system. The state banks were not interested in traditional banking activities—mobilizing savings, making loans (least of all, sound ones), or collecting repayments.

The credits extended to the food production sector were virtually grants, given the high default rate. The 1980–81 default rate on BIMAS loans was 60 percent

for the rice program and 82 percent for the secondary crops program. The operation of the BIMAS and INMAS programs actually promoted default. The World Bank (1982:54–55) reported that

> The [BIMAS] program provides no incentive to repay because the repayment record of an individual farmer does not affect either the amount or the terms under which he can borrow. The only reward for repayment is that he can borrow the same amount again and at the same terms . . . The readiness of the government to reschedule repayments or write off debts has succeeded in giving the justifiable impression to farmers that sooner or later unrepaid loans will be granted a moratorium. This has been the foremost reason for the high rate of defaults. The approach of being conciliatory towards defaulters and the willingness to reschedule loans or give moratoria several times results in the borrower treating the loans under the BIMAS program as government grants rather than as bank loans . . . Moratory measures of one form or another have been announced for almost every year between 1970 and 1977.

An estimate in 1978 put 30 percent of the outstanding loans at some state banks as either overdue or uncollectible (the *Far Eastern Economic Review*, August 18, 1978). This was not surprising, given that the chief shareholder was not putting pressure on the state banks to maximize profits. In the lax atmosphere of oil-generated wealth, the state banks (unlike the private banks) seldom loaned up to their prescribed ceilings. There were three reasons for this.

The first was that even though loan demand was high, the state banks were reluctant to lend to small customers—such operations were cumbersome, and profit per customer was low. The second was the inability of the state banks' officers to select projects that were both economically and politically acceptable. Many loan programs were restricted to indigenous Indonesians. The third was that bank officers often demanded side payments from prospective borrowers that made the seemingly subsidized loans less attractive than loans from private and offshore banks. It has been suggested (Nasution 1983) that graft was sometimes as much as 15 percent of the size of the loan.[3]

Despite the favored position of the state banks, they were not profitable. The chief causes were mismanagement and high default rates. The World Bank (1981) estimated that in 1976 the state banks had a zero rate of return to capital. Bank Bumi Daya, the primary bank for large estates, had to be bailed out by the government in 1977 after suffering big losses. Several of the managing directors were later tried for corruption.

In an attempt to increase the profitability of the state banks, in 1977 the Central Bank decreased the reserve requirement ratio from 30 to 15 percent. This measure, based on the experience of developed countries, would have succeeded had it not been for the fact that the domestic banking system was subjected to credit

ceilings. The system already had chronic excess reserves. The only income from these funds came from the interest earned by depositing some of the reserves in offshore banks (and later, from the interest which the Central Bank started paying on excess reserves in January 1978 to deter capital outflows).

The 1983 Financial Market Reforms

When the price of oil started falling in 1982, the Central Bank sought to reduce domestic absorption by reducing the flow of liquidity credits to the state banks. This action decreased the profits of the state banks in two ways. First, it cut into the guaranteed profit margin for the disbursement of targeted credit. This was a large loss because "prior to the August 1982 regulation, less than 1 percent of state bank credit was not refinanced by liquidity credits" (World Bank 1983). Second, the deposit and lending rates of the state banks were controlled, while those of private banks were not. The private banks took advantage of the liquidity squeeze by raising their deposit rates, which produced a large transfer of funds from the state banks to private banks.

In March 1983 the government responded to the plight of the state banks by decontrolling interest rates on deposit certificates of less than six months. But the financial problems of the banking system intensified, leaving the government only two options—either subsidize the state banks or restructure the industry to make the banks self-supporting. The government could not afford the former, and furthermore, the threat of a balance of payments crisis argued strongly for a greater effort to mobilize savings. The fading of the prosperity fostered by oil revenue emphasized the importance of encouraging economic growth through efficient allocation of investment funds.

The outcome was a sweeping reform package in June 1983. The credit ceilings were abolished, deposit and lending rates were deregulated, and the number of programs eligible for direct Central Bank credits was cut. Total excess reserves as a percentage of current rupiah liabilities averaged 10 percent in 1983–86, compared with 18 percent in 1978–82. At the same time a significant increase in nominal interest rates substantially raised real interest rates, encouraging saving.

The reforms necessary for the Central Bank to exercise better control over the money supply came in February 1984. The Central Bank started weekly auctions of its own debt certificates, Sertifikat Bank Indonesia (SBI), and opened a discount window to allow financial institutions to borrow during temporary shortfalls in reserves. Borrowing at the discount window was limited to 5 percent of deposits. The Central Bank subsequently ended interest payments on excess reserves to encourage the banks to use the reserves to buy SBIs.

But the introduction of the certificates was insufficient to control bank reserves. In September and October 1984 there were massive withdrawals of rupiah deposits from commercial banks on the expectation that there would be a devalu-

ation to cope with the deteriorating balance of payments. The capital outflow was so large that the loss of reserves from the commercial banks exceeded the amount of credit that could be liquidated immediately. Since the amount of reserves needed to meet the legal reserve requirement exceeded the legal limit on discount window borrowing, the interbank interest rate soared. In the absence of government intervention, equilibrium would be restored only when the new domestic interest rate was equal to or greater than the sum of the foreign interest rate and the amount of expected depreciation. At this rate of interest, there would be a capital inflow that would increase the reserves of the banking system and so enable the banks to meet their reserve requirements.

When the interbank interest rate reached 80 percent (on an annual basis) on September 7, the government decided against allowing the reserve requirement to be restored by the working of the interest rate mechanism, fearing that too many firms would not be able to cope with the temporary high cost of working capital and would be forced into bankruptcy. The Central Bank opened a special credit facility to pump reserves into the financial system, and the interbank interest rate fell.

Expansion of liquidity at a time of capital flight will, in general, not be enough to stabilize interest rates. We suspect that it worked in Indonesia in September 1984 only because private agents were persuaded by the government's argument that capital flight was not justified by fundamentals.[4] If these private agents had not been convinced by other signals that the government was serious about fighting inflation, this increase in bank reserves would have worsened matters.

The expansionary monetary policy would have been interpreted as a desire to maintain the high domestic absorption that made the current value of the exchange rate incompatible with balance of payments equilibrium. Such an interpretation would have magnified capital flight and caused domestic interest rates to accelerate upward. The government therefore chose not to replicate this "easy money" response when capital flight again occurred in June 1987 and February 1991. Instead, it engineered abrupt contractions of the money supply to drive interest rates even higher in order to halt the capital flight.

The fact that a special credit facility had to be established in 1984 to increase the amount of reserves in the banking system, revealed that the Central Bank still did not have an institutionalized procedure to quickly control the money supply. The amount of outstanding Central Bank-issued debt certificates was too small for the Central Bank to be able to increase reserves significantly. The October 1984 experience convinced Bank Indonesia that it should establish a money market facility whereby it could buy and sell commercial bills held by the commercial banks, giving it another instrument to control the amount of reserves. Accordingly, a new money market instrument called SBPU (Surat Berharga Pasar Uang) was created in February 1985.

An SBPU is essentially a bankers' acceptance. Indonesia created three types: promissory notes issued by eligible financial institutions; promissory notes issued by customers of eligible financial institutions when borrowing from them; and

bills of exchange issued by third parties and endorsed by eligible financial institutions. The maturity of SBPUs was initially set at one to three months and later at six months. In the end, however, 98 percent of the SBPUs were in the form of promissory notes with maturity dates of one to fourteen days.

The 1988–90 Financial Reform Packages

Other financial reforms were presented in October 1988, December 1988, and March 1989, with a common objective of increasing bank competition. The entry of new private banks was permitted, the setting up of branches in other cities by domestic private and foreign banks was no longer delayed by administrative devices, state enterprises were allowed to deposit up to 50 percent of their money in private financial institutions, and nonbank financial institutions were allowed to issue certificates of deposit.

The mobilization of savings and the promotion of investment were enhanced by making it easier for firms to be listed on the Jakarta Stock Exchange; stopping heavy-handed interventions by PT Danareksa to stabilize share prices; establishing an over-the-counter equity market for small firms; simplifying the entry requirements for insurance, brokerage, venture capital, and consumer finance activities; and granting the private sector the right to operate stock exchanges. The government also deepened the market for monetary instruments by increasing the maturities on these instruments and developing a secondary market for them. These last named measures are necessary if market-oriented forms of monetary control are to be effective.

In January 1990 the coverage of the liquidity credit system was sharply decreased, and lending and rediscount rates were brought closer to market rates. Liquidity credits were to be available only to farmers for working capital; to cooperatives for food purchases; to the national rice agency for stabilizing food prices; and to development banks, nonbank financial institutions, and estates for investment credits. To ease the reduction of liquidity credits to small enterprises, the banks were ordered to allocate 20 percent of their loan portfolios to such enterprises.

Assessing the Post–1982 Financial Reform Packages

The SBI and SBPU still did not provide sufficient control over the monetary aggregates because the markets for them were too shallow. This was revealed by the way that the money supply was contracted in response to speculative runs on the rupiah in 1987 and 1991.

Capital flight began in the second quarter of 1987, when a higher-than-expected current account deficit was reported. In June, the minister of planning ordered state-owned enterprises to withdraw 1.3 trillion rupiahs from the state banks and place the funds in Central Bank securities. This action, together with the sale of 800 billion rupiahs of open-market instruments to banks, sharply reduced bank liquidity and caused the interbank rate to rise to 46 percent in early July. The liquidity shortage then forced banks to sell foreign assets to meet their rupiah reserve requirements, and other domestic corporations soon began repatriating capital to meet their current operating needs. The severe credit squeeze convinced private agents that the government was prepared to ensure the viability of the existing exchange rate, and speculation against the rupiah came to an end.[5]

The methods used to end capital flight in 1984 and in 1987 could not have been more different. In 1984 the supply of credit was increased; in 1987 it was decreased. In our opinion, both methods succeeded because the overall policy posture and market developments convinced agents that the existing value of the exchange rate was compatible with balance of payments equilibrium. Interest rates returned to normal levels only because agents correctly anticipated improvements in the current account position and the inflation rate. The current account deficit dropped from $6.4 billion in 1983 to $2.0 billion in 1984, and from $4.1 billion in 1986 to $2.3 billion in 1987. The inflation rate dropped from 12 percent in 1983 to 9.1 percent in 1984, and from 9.2 percent in 1986 and 1987 to 5.6 percent in 1988.

There is no doubt that open-market operations are needed for better economic management, since they allow the government to have greater control over interest rates, whereas the nonmarket method of ordering state enterprises to withdraw specific amounts from the commercial banking system can lead to an interest rate above a critical level that may threaten the stability of the economy. Only the use of the market-based method can guarantee that the interest rate will not overshoot and inadvertently cause a stock market crash.

The cutback of liquidity credits has made the development of an efficient capital market a necessity. The private banks have never been important sources of long-term credit and are unlikely to become so in the near future. The immediate impact of the financial deregulation has been in fact to reduce the amount of long-term credit. The banks are still unsure how to deal with the resulting volatility of sources and cost of funds, and they have reacted by increasing the share of short-term assets in their portfolios.

Although there are still serious imperfections in the financial system, it is clear that the financial deregulation measures enacted since March 1983 have brought great changes. The financial system is now more competitive, provides a more extensive range of services, and is more creative in the development of new financial instruments. The large amount of financial deepening since 1983 is well captured by the behavior of the ratio of quasi-money to GDP (an indicator of financial market sophistication). The ratio rose from 1.8 percent in 1969 to 4.9 percent in 1972, 6.3 percent in 1982, and 23.2 percent in 1989. The 17 percentage point

leap in the indicator between 1982 and 1989 was unprecedented and was indicative of the range of new financial instruments.

It should be stressed, however, that the removal of government regulations is not enough to bring vibrant financial markets into existence. Deregulation has not been accompanied by better supervision of financial institutions, thus rendering the financial system more susceptible to collapse. Revelations of a foreign exchange market loss of $420 million at Bank Duta through off-balance sheet transactions from 1989 to 1990 provided a warning of what can go wrong when optimism prevails over caution.[6]

Mobilizing Public Resources

The Indonesian tax system was ripe for the fundamental reforms introduced in three steps in the mid-1980s—an income tax overhaul in December 1983, a new value added tax in April 1985, and a consolidated property tax in January 1986. The collection of taxes prior to these reforms had little relation to the tax laws and a shortage of competent personnel made enforcement of the highly complicated tax code impossible. The result was "that the tax revenue targets published in the budgets determined the amounts which administrators felt obliged to collect" (Booth and McCawley 1981). Since the amount of tax paid was nearly always a negotiated outcome, annual changes in revenues bore little relation to marginal tax rates.

The most striking feature of the tax system before December 1983 was the dependence of the central government on oil tax revenue. Oil revenue as a share of total federal revenue rose from 26 percent in 1969–70 to 55 percent in 1974–75 and peaked at 71 percent in 1981–82. The risks inherent in such a narrow tax base were demonstrated in 1982, when the global recession caused oil prices to collapse. Oil revenue, expressed in 1980 prices, fell from 7.8 billion rupiahs in 1981–82 to 6.9 billion rupiahs in 1982–83, causing real total revenue to fall for the first time since 1966. The continued real revenue decline in succeeding years wreaked havoc with the financing of government expenditure.

Greater internal resource mobilization was necessary to compensate for the revenue shortfall, and it was clear that more revenue could be extracted from the nonpetroleum sector through better enforcement. Only 60 percent of the taxpayers who filed returns in 1979–80 did so the following year. Furthermore, nonoil revenue normalized by GDP fell from an average of 8 percent in 1969–71 to an average of 6 percent in 1980–82.

The weak tax system can be attributed to the oil booms. Indonesia's substantial oil reserves allowed it easy access to foreign credit, and this obviated the need for the unpopular measures of making tax collection broader and more effective. The "undertaxation" of the nonoil sector can be seen by comparing Indonesia's tax efforts with those of similar countries (see table 9.2). Only Nigeria had a weaker

Table 9.2 Comparison of the Tax Effort between Indonesia and other Countries

Country	*Year*	*GNP per capita*	*Nonoil taxes as percentage of nonoil GDP*
Oil exporters			
Indonesia	1980	370	8.6
Nigeria	1978	670	6.9
Mexico	1979	1,640	13.3
Algeria	1979	1,590	26.2
Oil importers			
Thailand	1979	590	12.3
Philippines	1979	600	11.5
Pakistan	1979	260	12.2
India	1979	190	12.0
Sri Lanka	1979	230	21.3

Source: World Bank data.

tax effort. Pakistan, India, and Sri Lanka had lower per capita income than Indonesia but higher ratios of nonoil tax to GDP.

The Tax Reforms

In December 1983 the government announced a drastic revision of the personal and corporate income tax codes that would take effect in January 1984. The complicated and steeply progressive income tax structure was simplified to three rates—15, 25, and 35 percent—which applied to both personal and corporate taxpayers. To make enforcement easier, the cutoff point for taxable income was doubled, leaving only 10 to 15 percent of the population subject to income tax. Withholding by employers was instituted to collect personal income taxes. Corporations were required to withhold 15 percent of interest, rents, royalties, and dividends to domestic residents and 20 percent of such payments to foreigners. The time-consuming practice of collecting corporate taxes by negotiating individually with firms was replaced by self-assessments that were subject to audit. A commitment to efficiency was emphasized by specifying time limits for payment of tax refunds and for government responses in tax appeal cases.

In April 1985 the sales tax (which had seven different categories) was replaced by a single value added tax (VAT) of 10 percent. (There was an additional tax of 10 to 20 percent on luxury goods.) The value added tax was much more broadly based than the old sales taxes. In January 1986 a new property tax law was

Table 9.3 Government Revenue before and after Tax Reform

Composition of revenue	*Prereform 1974–75 to 1983–84*	*Postreform 1984–85 to 1986–87*
Percentage of GDP		
Nonoil tax revenue	6.0	8.2
Income tax revenue	2.6	2.9
Consumption tax revenue	2.2	4.0
External trade tax revenue	0.9	1.1
Real growth (percent per year)		
Nonoil tax revenue[a]	5.9	16.7
Income tax revenue	8.8	9.0
Consumption tax revenue	6.5	29.4
External trade tax revenue	–1.2	10.0
Tax buoyancy		
Nonoil taxes[b]	0.9	2.1
Income tax	1.1	1.4
Consumption tax	1.0	3.3
External trade tax	0.6	1.5

a. Tax revenue deflated by consumer price index.
b. Nonoil GDP as tax base.
Source: World Bank data.

introduced which consolidated the old land tax with six other property taxes into a single tax rate of 0.5 percent. The taxable amount was a proportion of the market value of the land and structures.

The revenue-raising ability of the new tax system was impressive. Real nonoil income tax revenue (in 1980 prices) rose from 1.3 trillion rupiahs in fiscal 1983 to 1.7 trillion rupiahs in fiscal 1986, and the value added tax boosted revenue from domestic consumption by 94 percent in the first year of its introduction. The revenue impact of the tax reform is summarized in table 9.3. Nonoil taxes went from 6 percent of GDP before the reforms to 8.2 percent after the reforms. The biggest revenue increase came from the value added tax, which accounted for 82 percent of the rise in the ratio of nonoil tax to GDP. The sensitivity of nonoil tax revenues to the growth of nonoil economic activity was also greatly enhanced; tax buoyancy (the elasticity of tax revenue to income) rose from 0.9 to 2.1.

A Serious Remaining Problem in Public Resource Mobilization

The reforms in the mid-1980s produced an impressive increase in the size of the tax base. The tax register showed 643,000 (self-assessing) personal income tax-

payers and 157,600 corporate taxpayers in 1986, compared with 327,500 (self-assessing) personal income taxpayers and 83,600 corporate taxpayers in 1983. The number of registered VAT payers rose from 25,100 in 1985 to 75,900 in 1987 and to 149,900 in 1990. These numbers, however, overstate the success of base-broadening. The rate of compliance remained appallingly low. The proportion of those subject to taxes who filed returns in 1989 was 72 percent for the personal income tax, 60 percent for the corporate income tax, and 43 percent for the VAT.

The World Bank estimated that the actual amount of tax revenue collected in fiscal 1985 was only 50 percent of the total tax revenue due the government. The procedural reforms and simpler tax code reduced the administrative burden and the incentive to cheat, but the biggest problem of the tax system still remained—a shortage of trained personnel.

Management of the Exchange Rate

Management of the exchange rate after the 1978 devaluation was much more flexible, and the rupiah glided gradually downward to compensate for the higher inflation in Indonesia. But in November 1979 the second oil shock unleashed external and internal forces that led to a 38 percent devaluation in March 1983. Because of the primitive state of domestic financial markets, conversion of the dollar-denominated oil revenue into rupiah expenditures led to an explosion of the money supply. As in the aftermath of the first oil shock, Bank Indonesia temporarily lost control of the money supply. Reserve money grew by 28 percent in 1979 and 40 percent in 1980. As a result, the expected one-time price level increase brought about by the November 1978 devaluation was given new momentum, and the inflation rate rose to 18.5 percent in 1979 and 12.2 percent in 1980. The import price index (normalized by housing cost) went from 74 to 66 in the 1979–82 period, while the Morgan Guaranty competitiveness index declined from 111 to 80; these were falls of 10 and 20 percent, respectively (see table 8.3).

High inflation and low growth in the developed countries weakened the balance of payments. The volume and real domestic value of nonoil exports in 1982 were only half of their 1979 levels and the current account deficit was a record 6 percent of GDP, with reserves falling to ten weeks of imports. The grim balance of payments picture was the reason for the 38 percent devaluation in March 1983. That the economy had grown only 2.2 percent in 1982 was an added incentive to devalue.

The government supported the 1983 exchange rate devaluation with conservative macroeconomic policies. Fiscal policy was tightened through postponement of numerous capital-intensive (hence, import-intensive) projects, bringing the government budget deficit down from 13 billion rupiahs in 1982 to 10 billion rupiahs in 1983 and 0.5 billion rupiahs in 1984. Meanwhile, conservative macroeconomic policies succeeded in keeping inflation to slightly above 10 percent in 1983 and 1984.

The 1983 devaluation restored the tradable-to-nontradable price ratio to the level produced by the November 1978 devaluation. Exports expanded 26 percent in physical volume and 58 percent in local purchasing power. The reason why 1983 nonoil export levels (in real terms) were significantly lower than the 1979 levels, even though the value of the real exchange rate was the same in both instances, was that foreign demand was much lower in 1983 than in 1979. The real GDP of industrial countries grew only 2.7 percent in 1983, compared with 3.4 percent in 1979, but the increase in Indonesia's nonoil exports was nonetheless large enough to shrink the current account deficit to 2.2 percent of GDP in 1984.

Manufacturing exports grew especially rapidly—from $850 million in fiscal 1982 to $1,480 million in fiscal 1983 and $2,166 million in fiscal 1984. This indicated that export-oriented industrialization could be successful when favorable relative prices were maintained through appropriate exchange rate and trade policies.

The September 1986 Devaluation

The world economy showed no signs of returning to sustained economic growth after the deep 1982 recession. For Indonesia this translated into uncharacteristically low oil and commodity prices—the average oil price in fiscal 1985 was $25 per barrel; in fiscal 1986 it fell to $13 per barrel.[7] The nonoil terms of trade also turned harshly against Indonesia. The value of nonoil exports fell 5 percent in terms of foreign purchasing power, even though nonoil exports increased by 10 percent in physical volume. Despite the adoption of stringent macroeconomic policies and a steady floating down of the exchange rate from 970 rupiahs per dollar early in 1983 to 1,131 rupiahs per dollar in mid-1986, the current account deficit doubled to 5.2 percent of GDP in 1986.

Added to the balance of payments problems in 1986 was the quickening of the rise in the external public (medium- and long-term) debt service ratio after 1984. The 1986 debt service ratio stood at 29 percent, the same level as the Mexican debt service ratio in 1981. The primary factors behind this drastic rise were the export collapse, which decreased the denominator, and "uncontrollable" increased debt payments, which increased the numerator. The increased debt service payments were termed "uncontrollable" because less than 30 percent of Indonesia's external debt was denominated in U.S. dollars, and the drastic drop of the dollar against other currencies accounted for more than 70 percent of the $1.1 billion increase in annual debt service over the 1984–86 period.

The worsening of the trade balance, the large national debt, and a slowing of domestic economic activity made the September 1986 devaluation of 45 percent the single most effective step Indonesia could have taken to improve its capacity to earn foreign exchange and stimulate its economy.

Was Revenue Enhancement the Motivation for Devaluation?

We have argued that the 1978, 1983, and 1986 devaluations were attempts to promote the nonoil tradable sector, either for political reasons (the 1978 devaluation) or out of concern about the balance of payments (the 1983 and 1986 devaluations). The possibility of a different motivation was suggested by Arndt (1983:3) who, in discussing the 1983 devaluation, pointed out that

> In Indonesia's circumstances, where a considerable part of the country's export earnings accrue directly to the government, a devaluation operates in effect as a tax, the easiest and in the short run the most effective tax instrument at the government's disposal.

It is important to stress that Arndt was referring to the direct revenue increase coming from revaluation of oil taxes at a new exchange rate and not the indirect revenue increases which usually appear in the medium run as the results of the higher income and exports induced by devaluation.[8]

A belief in the primacy of the revenue enhancement factor may explain why many economists reacted negatively to the 1986 devaluation. For example, two of the three nonofficial observers interviewed by the *Jakarta Post* on the day of the event "considered the devaluation as a drastic action to save the budget." The first observer questioned "whether the government [had] studied thoroughly other options short of the drastic monetary measure," and the second viewed the government as tending "to come up with surprises without considering their impact on the business world."[9] The 1986 devaluation differed from the earlier devaluations in that many commentators expressed not only the usual pessimism about the ability of devaluation to boost exports but also outrage over this method of raising taxes.

The observation that the rupiah value of oil taxes increases at the time of a devaluation is correct. However, Indonesia also has substantial routine expenditures denominated in foreign currency, notably external debt service payments. The claim that a devaluation will ease budgetary pressures is correct only if the oil tax revenues exceed debt service; otherwise, the reverse is true.[10] Table A. 28 shows that the budget deficit was reduced by the 1978 and 1983 devaluations but was widened by the 1986 devaluation. If we rule out technocratic incompetence, the 1986 devaluation could not have been motivated by revenue enhancement considerations.

Although the net revenue effects were positive in the 1978 and 1983 cases, we see them more as side effects than as motivating variables. This is because we reject the implicit view of the Indonesian state that lies behind the revenue enhancement argument: that of an avaricious state constantly appropriating resources by "nonvisible" means. Our discussion of the political economy factors in chapter 4 leads us to conclude that these factors would constrain the state from doing so even if it really wished.

The Proliferation of Import Licensing, 1982–85

When export earnings stagnated in late 1981, an unusual "New Trade Policy" package was passed in January 1982, inspired by the Eastern European practice of countertrade (counterpurchase). This new rule required foreign and joint venture firms that were bidding for government-sponsored construction and procurement contracts in excess of 500 million rupiahs ($720,000) to guarantee purchases of nonoil exports from Indonesia equivalent in value to the imported material needed to fulfill the contract (Dick 1982). Countertrade, however, failed to reduce the trade deficit and may have caused Indonesia to export at less than international prices and to pay for imports at prices higher than the international price. Under this program, for example, Indonesia bartered rubber for fertilizer from Singapore and railcars from Romania. Since Singapore had no fertilizer plant, it must have bought the fertilizer from a third country and charged a price that included its own purchase costs as well as a premium. Since Romania bought more rubber than it needed, it sold the excess to a third party at the world price, implying that it had obtained the rubber at a discount from Indonesia.[11]

The government also sought to improve the trade balance directly in 1982 by rapidly expanding the list of import items subject to quotas. By 1985 quantitative restrictions (QRs) were the dominant form of protection in Indonesia. Of the 5,229 items imported in 1985, 1,484 required import licenses and 296 were under quotas. The import licenses were usually given to no more than two or three traders or to the few firms producing the competing goods domestically; this method of issuance effectively conferred monopoly status on the recipient of a license. The quotas ranged from zero to a quantity specified by a bureaucrat at the time the import application was submitted. License restrictions covered 30 percent of total import value. The activities protected by import licenses accounted for 32 percent of total domestic value added (excluding construction and services).[12] If the petroleum sector, which required no protection, is excluded, the coverage was 53 percent of total domestic value added.

Although the technicians at the Ministry of Trade controlled the use of quantitative restrictions, the technocrats at the Ministry of Finance controlled tariffs. And just when QR protection was reaching its peak, the technocrats implemented an across-the-board cut in tariffs that brought the weighted average tariff rate down from 22 to 13 percent. This was an irrelevant exercise, however, since many imports were already subject to import licensing.

The most effective trade-liberalizing measure in the 1983–85 period may have been the presidential order issued in April 1985 that placed virtually the entire customs service on leave. The Société Général de Surveillance (SGS), a Swiss firm, was given the contract to inspect exports to Indonesia at ports of departure. Since the arbitrary barriers and delays imposed by Indonesia's customs service for rent-seeking purposes were legendary, this change considerably expedited the movement of goods.

The types of goods under QRs were diverse—ranging from raw materials to consumption goods—and included cold-rolled steel sheets, key chemicals for making plastics, and tin plate. It is clear that protectionism was not always extended for infant industry reasons; for example, there was no domestic producer of cold-rolled steel. In the case of plastic inputs (there was only one domestic producer), the monopoly importer imposed an "administrative fee" for each raw material which amounted to about 18 percent of its value, resulting in a 30 to 40 percent rise in cost to end-users.[13]

The implications of these microeconomic distortions for exchange rate management were profound and make it invalid to draw conclusions based on movements of macroeconomic proxies for the tradable-to-nontradable price ratio, as we did in analyzing the Dutch disease in chapter 8.[14] This view follows from our judgment that the imported inputs covered by QRs after 1982 constituted a minor part of the cost of producing nontradables. The rise in the prices of these particular inputs caused only small increases in the prices of nontradables. The prices of tradables were set by international competition, while the prices of nontradables (which are generally labor-intensive) were set by the domestic cost structure, whose level was determined primarily by domestic wages on the supply side and by domestic macroeconomic conditions on the demand side. Hence, the introduction of a quota on an imported input reduced the profitability of the tradable sector without any near proportional change in the proxies for the tradable-to-nontradable price ratio.

The fact that in table 8.3 the two proxies for the tradable-to-nontradable price ratio in predevaluation 1986 were at least as favorable as in postdevaluation 1979 does not imply that the production incentive (measured in terms of local purchasing power) had not worsened if we abstract from demand conditions. Our point is that the introduction of QRs on the imported inputs of the tradables sector transferred part of the profits received by the producers of tradables to holders of the input quota. Quantitative restrictions on inputs and real exchange rate appreciation are similar in this case—they both cause a profit squeeze in the tradables sector.

The economic effects of a QR can be modeled by the addition of another cost (or, rent) to the production costs of the good. This rent imposes a potential check on the usefulness of devaluation as a means of restoring international competitiveness. This is because the effectiveness of devaluation in boosting the production of tradables depends on its ability to raise the domestic output price without a corresponding rise in the domestic costs of nontraded domestic inputs. As a first approximation, a devaluation works by increasing the real profits of the tradable sector by cutting the real wage (which is easier to achieve if austere macroeconomic policies are undertaken simultaneously).

We can think of the QR-introduced rent as a payment for a nontradable input service. Since there is no competitive determination of this rent, its level is at the discretion of the monopoly import license holder. How the license holder reacts to a devaluation determines the effectiveness of the devaluation in boosting production of tradables. If the license holder keeps the rent constant either in nominal

terms or in local purchasing power, production of tradables will increase as long as the costs of other nontraded inputs fall in terms of local purchasing power. However, if the license holder increases the rent so that the loss of the other nontraded inputs is entirely transferred to him or her, the production level will remain unchanged.

As a practical matter, it is reasonable to assume that the license holder is not able to collect all the "released payments" and that hence devaluation will in most cases increase the output of tradables. This means that a devaluation in the presence of QRs will have to be larger than one undertaken in their absence in order to achieve the same output response. We can say that the August 1986 real exchange rate was overvalued in the sense that the introduction of QRs caused a drop in the supply of nonoil exportables which would have been offset by devaluation.

Therefore, although the Morgan Guaranty competitiveness index in predevaluation 1986 showed almost the same value as in postdevaluation 1979 (110 versus 111), it did not indicate that the August 1986 exchange rate was not overvalued. In order to have the 1986 nonoil export supply schedule in the same position within the familiar Marshallian price-quantity space as in 1979, a devaluation was clearly warranted in light of the shrunken gap between output and input prices.[15] It is an empirical question as to how much the additional nonoil export earnings would have been in the absence of QRs, especially in comparison with the fall in oil export earnings. Given the external circumstances, enlargement of the current account deficit in 1986 was inevitable, but its jump from 2 to 5 percent of GDP might not have been inevitable.

Trade-Liberalizing Measures, 1986–90

The rent-seeking motives behind the QRs and their deleterious consequences on nonoil, non-LNG exports had become so clear by 1986 that their supposed use for balance of payments reasons became indefensible. In May 1986 the government instituted a duty exempt/duty drawback mechanism for inputs imported by exporters to offset the antiexport bias of the trade regime. When it appeared that this action might not be adequate, the government devalued the rupiah by 45 percent in September 1986.

A trade deregulation package was introduced in October 1986, followed by a series of liberalizing measures. Some 544 items were exempted from the import license requirement, restrictions on certain exports were lifted, and access to the May 6 incentives was eased. By the end of 1987 the proportion of CCCN items covered by import licensing had fallen to 22 percent from 32 percent in mid-1976. But the change in the proportion of total domestic production covered was negligible—from 41 to 38 percent. To many, the allegations that family members of high state officials were holders of important import licenses suggested that the technocrats had bumped up against an absolute political constraint.

Table 9.4 Trade Liberalization, 1986–89

Coverage of import licensing	*Mid-1986*	*End of 1987*	*End of 1988*
Percent of CCCN items	31.5	21.7	16.3
Percent of import value	42.9	25.2	20.8
Percent of total domestic production	41.4	37.6	28.9
Sectoral tariffs	*Pre-1985*	*1985*	*1989*
Weighted average tariff rate			
Agriculture	—	2.9	4.2
Mining	—	1.0	1.0
Manufacturing	—	13.8	15.4
Overall	22.0	13.0	14.5
Index of dispersion			
Agriculture	—	69.1	69.3
Mining	—	87.6	89.7
Manufacturing	—	106.6	82.9
Overall	61.5	104.8	84.4

Source: World Bank data.

Amid an atmosphere of pessimism, a sweeping trade deregulation package was unveiled in November 1988. The licenses on many "big-ticket" import items were revoked. The outcome was that at the end of 1988 the proportion of CCCN items covered was reduced to 16 percent and the proportion of domestic production covered to 29 percent. Revision of the tariff schedule followed in January 1989, the aim being to render protection more uniform—that is, to reduce the dispersion of tariff rates while leaving the average tariff rate unchanged. (The effects of this tariff revision are summarized in table 9.4.) The agricultural and mining sectors were relatively unaffected. The main change was that the index of tariff dispersion for the manufacturing sector decreased from 107 to 83.

Another trade liberalization package was indroduced in May 1991. Import licensing restrictions on about 335 products (including fertilizer, machinery, and electronic products) were removed, lowering the proportion of domestic production covered by NTBs to 25 percent. There was also an across-the-board reduction in most nominal tariffs to accompany the announcement that Indonesia intended to move toward a tariff ceiling of 40 percent.

Table 9.5 Change in Employment, 1971–88
(thousands of persons)

Period	*Agricultural*	*Manufacturing*	*Total*
1971–75	–171	76	297
1975–80	–151	465	909
1980–85	–384	1,684	1,785
1985–88	341	5,380	—

Source: Azis (1989).

The Economic Response to the Devaluations and Trade Deregulation

Indonesia's 5.7 percent output growth in 1988 is unimpressive by the standard set between 1968 and 1981, but it confirmed the sustained nature of the recovery that began in 1986. The bright spot was that the right structural changes were happening. The nonoil, non-LNG manufacturing sector grew 7 percent in 1987 and 9 percent in 1988 after averaging a sluggish annual 4 percent growth rate in 1981–86.

The response of the nonoil, non-LNG export sector was more noteworthy. The value of nonoil, non-LNG exports rose from $3.9 billion in 1982–83 to $5.4 billion in 1983–84 after the 1983 devaluation; to $6.7 billion in 1986–87 after the 1986 devaluation and the first two trade reform packages; and to $14.3 billion in 1989–90 after the major trade liberalization in November 1988. The success of these policies in promoting nonoil, non-LNG exports can also be seen in the rise of exports as a proportion of GDP: 4.2 percent in 1982–83, 7.7 percent in 1983–84, 9.4 percent in 1986–87, and 15.9 percent in 1989–90.

Tracking the changes in the input-output coefficients of the Indonesian economy, Azis (1989) has shown that the surge in manufactured exports has been good for employment (see table 9.5). The deregulation packages and the devaluations appeared to have greatly increased the labor intensity of exports. Each additional million rupiahs of manufactured exports (at 1980 prices) required an additional input of 0.2 person in 1975 compared with 1970, 0.5 person in 1980 compared with 1975, 0.6 person in 1985 compared with 1980, and 1.6 persons in 1988 compared with 1985. The big increase in the labor-intensiveness of production in the 1985–88 period may be the primary reason for the rise in the real wage reported in chapter 10.

Chapter Ten

The Impact of Macroeconomic Policies on Growth

The standard IS-LM macroeconomic apparatus shows that even when involuntary unemployment exists, an increase in government expenditure will raise the real interest rate and thus lower spending on private investment.

Lesson 1. The total capital stock is more likely to be reduced if public expenditure takes the form of public consumption rather than public investment.

Although evidence on the nature of the relationship between public and private investment is mixed (see, for example, the contradictory conclusions in Aschauer, 1987 and 1988), it seems reasonable to believe that crowding-out will occur when public and private investments are substitutes, and crowding-in when they are complements.

Lesson 2. Investments in state enterprises are more likely to crowd out private investments than are investments in infrastructure.

Aggressive Macroeconomic Policies and Growth

The Closed-Economy Case. The accelerator model of investment holds that there is a unique desired capital stock for each output level. This model implies that aggressive macroeconomic policies which show less tolerance for output deviations below trend than for output deviations above trend are favorable to growth. The consequence of this asymmetrical macroeconomic policy posture is the creation of an inflationary tendency within the economy. The notion that capital deepening is enhanced by inflation has been formalized in a celebrated article by Tobin (1965). By assuming that money and equity were competing assets for the storage of wealth, he showed that a higher inflation rate would increase the proportion of savings that would go to capital formation. Thus, the best monetary policy for growth is an inflationary one.

However, Tobin's result is not a robust one. Sidrauski (1967) has shown that the money growth rate has no effect on the growth path if savings behavior is not characterized by an invariant savings rate but is the outcome of intertemporal optimization. Friedman (1977) has argued that if the tax system was not indexed for inflation, then the resulting efficiency losses would actually reduce output.[1]

Lesson 3. What is important for growth is the division of output between consumption and saving, but there is no clear answer in the closed-economy case of how expansionary macroeconomic policies affect this division.

The Open-Economy Case. If we take the fixed exchange rate regime of an open economy as given, we have a serious objection to the asymmetrical use of aggressive macroeconomic policies to spur growth; inflation resulting from the asymmetrical macroeconomic policies shrinks the size of the tradable goods sector. Since the output prices of this sector are kept fixed by external competition and the exchange rate, its profit margin is squeezed as domestic input prices rise with inflation. The resulting switch in output composition away from tradables toward nontradables makes the country vulnerable to a balance of payments crisis whenever a negative external shock continues for a protracted period.

The welfare costs of balance of payments crises are considerable. The necessary adjustment usually involves the generation of unemployment in the nontradable sector, in order to hasten the resource shift to the tradable sector, and massive cutbacks in public investment. The sectoral transfer of resources is often hampered, however, because new investments are needed in the tradable sector but new external loans are usually unavailable during a balance of payments crisis.

Lesson 4. Aggressive macroeconomic policies should be avoided in an open economy with a fixed exchange rate regime because such policies hurt growth though the balance of payments crises generated by the shrinking of the tradable sector.

The Relevant Questions for Indonesia

The above review yields two conclusions. First, the traditional view that how income is apportioned between savings and consumption is fundamental in determining growth is adequate only for a closed economy. Second, in an open economy that maintains a fixed exchange rate and experiences external shocks almost as frequently as internal ones, the division of output between tradables and nontradables is pivotal in determining whether sustained growth is possible. In a world with imperfect international and domestic financial markets, the savings rate in an open economy is still the fundamental determinant of the trend growth path.[2] But the extent to which a country can weather external shocks will determine how fast it will return to its growth path.

We therefore pay particular attention to the following two questions in analyzing Indonesia's growth: How successful have Indonesian macroeconomic policies been in raising the trend growth path? How successful have Indonesian

macroeconomic policies been in minimizing the effect of negative foreign shocks on growth?

The Indonesian Growth Record

We can identify four economic subperiods in Indonesia during 1960–90: the period of the guided economy, 1960–66; the stabilization and rehabilitation period, 1967–72; the period of oil-fueled growth spurt, 1973–81; and the period of external shocks, 1982–90.[3] The salient features of the four periods are shown in table 10.1.

Both the savings and the investment rates increased over time. Each rate increased by more than 21 percentage points between 1960–66 and 1982–89. The surge in the domestic investment rate in the 1982–89 period was caused by a tremendous increase in private investment, from 17 percent of GDP in 1982–86 to 24 percent in 1987–89. The government, however, reduced public investment quite sharply after 1985 in response to the revenue shortfall created by the oil price decline. Public investment averaged 11 percent of GDP in 1982–85, compared with 8 percent in 1986–89.

The upshot of these opposite trends in private and public investment spending was that the capital stock expanded only 8 percent annually during 1982–88, compared with 11 percent annually during 1973–81. In the growth accounting exercise shown in table 10.2, we find that this decline in capital formation was the most important reason for the slowdown in the growth rate of the nonoil sector.[4] The investment cuts accounted for 1.7 percentage points of the 3.4 percentage-point drop in the nonoil GDP growth rate.

Everything appears to have conspired to lower the growth rate in the 1982–88 period. Even the contribution of labor fell. Total factor productivity (TFP) plunged and took 1.6 percentage points off the nonoil growth rate. The collapse of TFP need not be troubling because it could merely indicate cyclical factors. What

Table 10.1 Characteristics of Four Specified Periods

Period	*National savings rate (percentage of GDP)*	*Domestic investment rate (percentage of GDP)*	*Factor income paid abroad (percentage of GDP)*	*Real GDP growth (percent)*
1960–66	4.7	7.9	1.1	2.0
1967–72	6.6	12.8	1.8	7.2
1973–81	22.8	22.3	3.8	7.7
1982–89	26.4	29.6	4.4	4.0

Source: Authors' calculations.

Table 10.2 Decomposition of Growth in Nonoil GDP, 1973–88

Item	*1973–81*	*1982–88*
Growth rate of nonoil GDP (percent)	8.0	4.6
Contribution (percentage points)		
Labor	1.4	1.3
Capital	5.7	4.0
Total factor productivity	0.9	–0.7
Growth rate (percent)		
Labor	3.0	2.8
Capital	11.0	7.5

Source: Authors' calculations.

is of concern was that TFP contributed so little to growth during the 1973–81 boom period. The 11 percent contribution of TFP to growth was low because it was usual for TFP to account for nearly 50 percent of the growth rate.[5] The low TFP value suggests that gross inefficiency existed in the Indonesian economy.

Depressed oil prices were not the only negative external shock in the 1980s. Indonesia was also paying a larger proportion of its output for debt servicing because of high real interest rates and the strong yen (which denominates a large part of Indonesia's external debt). Interest payments on the external debt were almost 5 percent of GDP in 1987–89, compared with 3.8 percent in 1973–81. However, unlike Mexico and Nigeria (both also populous oil-exporting countries), Indonesia did not have to reschedule its external debts when the external shocks hit. This suggests that Indonesia did something right prior to the occurrence of the external shocks. To anticipate the discussion below, we suggest that dirigiste microeconomic policies created large inefficiencies (low TFP), which resulted in a lower growth rate, but that responsible management of the budget and the exchange rate imparted to the economy a high degree of resilience to external shocks.

Sectoral Performance

The sectoral composition of growth is summarized in table 10.3 and elaborated in table A. 29. The agricultural sector grew steadily and impressively after 1967, expanding about 4 percent every year during 1967–81. The average for low-income countries in 1965–80 was 2.7 percent, and for lower-middle-income countries 3.3 percent. Agricultural growth was concentrated in rice cultivation. Indonesia changed from being the world's biggest rice importer in 1970 to being practically self-sufficient in rice in 1985.

Table 10.3 Sectoral Contributions to Growth of GDP
(percent)

Sector	Share of GDP		Annual growth rates		Contribution to growth	
	1973	1981	1967–73	1973–81	1967–73	1973–81
Agriculture	40.1	23.4	4.1	3.6	2.23	1.23
Mining	12.3	22.6	18.1	3.2	1.01	0.37
Manufacturing	9.6	12.1	9.6	14.2	0.79	1.72
Utilities	0.5	0.5	10.9	14.5	0.05	0.08
Construction	3.9	6.0	24.2	13.5	0.58	0.66
Trade	16.6	15.3	11.7	7.8	2.01	1.29
Transportation	3.8	4.1	10.8	12.9	0.33	0.60
Finance	1.2	2.7	28.5	13.7	0.34	0.21
Dwellings	2.1	2.6	7.2	12.2	0.13	0.32
Public administration	6.0	7.2	4.9	13.0	0.30	0.95
Other services	3.9	3.6	2.3	2.4	0.13	0.08
Total	100.0	100.1	7.9	7.5	7.90	7.51

Source: Authors' calculations.

This solid performance in the agricultural sector can be attributed to macroeconomic policy in considerable degree, specifically the relaxation of constraints on the informal financial sector, the subsidized credit programs, the Inpres subventions to local governments, and government investments in irrigation and rural infrastructure (Glassburner 1985). Moreover, the liberalized foreign exchange and trade regimes encouraged investment by farmers by expanding the opportunities for agricultural trade. We should note that the use of a large part of the oil revenue to expand the agricultural sector contributed to the blunting of the Dutch disease.

Manufacturing started to be an engine of growth in the 1973–81 period. Both the public and private sectors responded to the rapid rise in demand and the ready availability of financial capital, and the domestic oil and gas industries were integrated with refining. Unfortunately, much of the manufacturing growth in 1973–81 was purchased at the price of protectionism and monopoly privileges. The real flowering of the manufacturing sector came in the 1980s, following the two devaluations and the deregulation of the economy. The nonoil, non-LNG manufacturing sector was the impetus behind growth in the 1983–89 period, accounting for 25 percent of output growth. The value of nonoil, non-LNG manufactured output in 1989 was 15.2 percent of GDP, making this sector almost as important as the energy sector.

The contribution of the trade sector rivaled that of agriculture, largely for the same reasons—the rehabilitation and improvement of the infrastructure and the availability of commercial capital. The trade sector, however, did not have comparable subsidies for inputs nor the direct support in research and extension made available to agricultural producers.

Finally, the large expansion of the public sector after 1973 gave the appearance of a sizable contribution to real growth. It should be borne in mind, however, that public administration resources were evaluated in GDP accounting at cost. This means that increases in the wages of government employees automatically raised GDP commensurately, whatever the increased contribution of the government apparatus.

The Growth Implications of the 1966 Stabilization Program

The 1966 program laid the foundation for economic growth in the 1970s and 1980s. It raised the trend national savings rate by 2 percentage points and the trend domestic investment rate by 5 percentage points. The renewed public investment expenditure was more likely to have crowded-in, rather than crowded-out, private investment because it was mainly investment in infrastructure. Private investment was also helped by changes in incentives that encouraged output expansion. The shift of the agricultural sector away from subsistence farming (induced by the overvalued exchange rate) increased the size of the tradable sector tremendously. The 1967–72 rehabilitation of the economy boosted the annual growth rate 5 percentage points above the 1960–66 period.

These achievements were partly the result of the replacement of the inflationary and dirigiste economic policies of Soekarno with a more orthodox development strategy and partly the result of the growth of the oil sector. The success of the 1966 program established the credentials of the technocrats as competent economic managers and their presence at the highest level of policymaking offered opportunities to moderate the proliferation of economically inefficient but politically expedient projects.

The Soekarno years clearly impressed three principles on the institutional memory. These principles, when violated, would generate economic, and consequently social, instability. The first principle learned was the need to maintain a competitive exchange rate. An overvalued exchange rate would worsen the external balance directly through lower exports and higher imports and worsen the budget position directly through lower export taxes. Perhaps even more important was that an overvalued exchange rate reduced the economic welfare of the Outer Islands and hence encouraged regional discontent.

The second principle was the avoidance of printing money to finance budget deficits. Any expenditure exceeding the amount of domestic revenue collected was allowed only if it could be funded by foreign credit. Although this "balanced" budget principle did not put an effective limit on government spending in the 1970s, when foreign credit was easily available, it did enforce austerity when there was a foreign credit crunch in the 1980s. It was the austerity argument that enabled the technocrats to overcome entrenched interests and introduce financial deregu-

lation as part of the structural adjustment package.[6] The absence of the inflation tax also made the maintenance of a competitive exchange rate easier.

The third principle was that market-oriented measures are more efficient than controls in achieving most objectives. The 1966–70 experience of exchange rate unification, trade deregulation, and price decontrol confirmed the veracity of this principle. This third principle, however, has been the one that the New Order government has found the most difficult to implement because of the large rents generated through its violation and a lingering distaste for "free-fight capitalism." Many members of the Indonesian elite, while conceding the efficiency of market-oriented measures, questioned the fairness of the outcome. This adverse judgment of the market principle, coupled with rent-seeking motives, explains the creeping-back of quantitative restrictions after the 1974 Malari riots and their metastasis in the 1982–85 period, as well as the prolonged use of credit ceilings to control the money supply. But when times were difficult and efficiency was important, this third principle was embraced.

In sum, the ensconcing of the technocrats in influential positions and their recognition of these three principles were the most valuable lasting influences of the 1966 program.[7] Without them, it is likely that Indonesia would have suffered an external debt crisis in the 1980s and fallen into economic stagnation.

The Growth Implications of the Pertamina Affair and the 1978 Devaluation

The Pertamina embarrassment was a major setback to the military advisers who favored the nationalist *zaibatsu* approach to economic management. Pertamina was divested of its nonoil activities and was placed under the control of army officers who had worked closely with the technocrats at the Ministry of Finance. Furthermore, the technocrats were granted control over all external borrowing by state enterprises. Through the technocrats' adroit use of externally imposed constraints (that is, the IMF borrowing ceilings), large-scale, import-substituting industrialization (ISI) was contained, and a relatively orthodox economic program, with an emphasis on agricultural development, remained in place.[8]

The Pertamina crisis was favorable to long-term growth in another way. It made the government extremely risk-averse in its external borrowing. Indonesia avoided short-term external financing of its development projects, preferring fixed-rate over variable-rate loans. Table 10.4 reveals that management of the structure of external debt was more conservative in Indonesia than in Mexico or Brazil. In 1980 only 13 percent of Indonesia's external debt was short term, compared with 19 percent for Brazil and 28 percent for Mexico, and only 16 percent of Indonesia's external public long-term debt had variable rates, compared with 61 percent for Brazil and 72 percent for Mexico. This conservative management of the debt structure sheltered Indonesia's long-term growth from the high interest rate shocks of the 1980s.

Table 10.4 Debt Characteristics of Mexico, Brazil, and Indonesia, 1978–85
(percent)

Item	*1978*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*
All short-term and long-term debt service as share of GNP							
Mexico	12.0	14.1	15.5	24.8	17.4	13.9	11.8
Brazil	7.5	11.0	11.6	12.8	13.0	11.0	10.2
Indonesia	9.3	7.5	7.3	9.2	10.7	11.1	13.0
All short-term and long-term debt service as share of exports							
Mexico	105.8	103.6	117.1	138.9	80.8	69.0	66.5
Brazil	106.5	114.5	113.6	146.0	104.5	72.1	72.6
Indonesia	40.8	25.1	26.1	39.0	41.7	43.3	51.6
Public and private long-term debt service as share of exports							
Mexico	62.4	38.0	35.0	44.6	45.4	49.2	48.2
Brazil	57.6	56.4	56.8	71.7	46.2	34.1	34.9
Indonesia	25.0	12.7	12.9	16.5	18.4	19.0	25.2
Proportion of debt that is short term							
Mexico	14.0	28.3	32.1	30.5	11.1	6.8	5.8
Brazil	13.2	19.3	19.2	19.3	14.9	11.6	10.8
Indonesia	9.9	13.3	14.4	18.1	15.6	16.8	14.8
Proportion of publicly guaranteed long-term debt with variable rate							
Mexico	59.5	71.5	75.4	76.7	82.7	83.6	80.1
Brazil	56.8	61.0	67.1	69.3	70.1	73.1	71.5
Indonesia	15.0	16.2	17.8	20.0	22.8	23.7	21.7
Effective interest rate for all long-term debt							
Mexico	23.4	22.8	20.1	20.8	15.9	18.0	16.1
Brazil	18.0	23.3	23.7	23.0	13.9	11.7	11.2
Indonesia	17.5	15.5	16.6	16.1	14.6	15.8	16.6
Memorandum items							
Export-to-GNP ratio							
Mexico	11.3	13.7	13.2	17.9	21.5	20.1	17.8
Brazil	7.1	9.6	10.2	8.7	12.4	15.3	14.0
Indonesia	22.8	29.7	27.9	23.6	25.8	25.7	25.1
One-year LIBOR for dollar deposits	9.3	13.4	16.1	13.7	10.2	11.8	9.1

Note: Effective interest rate calculated by ratio of debt service to debt.
Source: World Bank, *World Debt Tables* (various years).

Even more important, however, was Indonesia's ability to earn foreign exchange. In the short and medium run, when resources could not be easily reallocated between the tradable and nontradable sectors, the level of domestic output was not a good indicator of the amount of foreign exchange that a country could earn. The output level only showed maximum long-run foreign exchange earning potential. With limited sectoral mobility, the larger the tradable sector in an economy the greater was its ability to generate foreign exchange at short notice by reducing imports and increasing exports.

The relative size of the tradable and nontradable sectors was determined not only by the resource endowment but also by past economic policies toward the tradable sector, which was why the 50 percent devaluation undertaken in 1978 was important. The tradable sector would certainly have been smaller if there had been no devaluation in 1978. Because of that devaluation, the export sector was able to earn enough foreign exchange during the early 1980s to service Indonesia's external debts. Even though the average 1980–81 debt service-to-GNP ratios for Indonesia and Mexico differed by less than 8 percentage points, the debt service-to-export ratio (DSXR) for Mexico was more than 78 percentage points greater than that for Indonesia.[9]

Woo (1992) has identified three factors as responsible for Indonesia's lower ratio: concessionary loans, prudent management of the maturity structure, and high export orientation. The first factor was that a high proportion of Indonesia's external debt was borrowed at fixed concessionary rates from the Inter-Governmental Group for Indonesia (IGGI), which was why the effective interest rate on Indonesia's long-run debt averaged 16 percent against the 20 percent paid by Mexico. Another effect of IGGI borrowing was that only about one-third of Indonesia's debt was denominated in dollars, compared with 90 percent for Mexico. This meant that the big appreciation of the dollar during 1979 to 1982 did not raise the effective interest rate for Indonesia as much as it did for Mexico.

The second factor in the favorable debt outcome in Indonesia was prudent management of the maturity structure as a result of the 1975 Pertamina crisis. The third factor was the high degree of export orientation in Indonesia. The average 1980–82 export-to-GNP ratio was 27 percent for Indonesia but only 14 percent for Mexico. Political considerations no doubt helped to maintain the observed export orientation.

The decomposition in Woo (1992) identified export orientation as the most decisive factor in keeping Indonesia's total debt service-to-export ratio so low, compared with that of Mexico. Export orientation explained 31 points of the 54 percentage-point difference (accounting for 57 percent of the gap). The Pertamina legacy was of moderate importance, contributing 18 percentage points (accounting for almost a third of the gap). Concessionary interest rates and the currency composition of the debt played only a minor role in reducing the debt-service ratio, less than 6 percentage points. This last finding is surprising, because most bankers, government economists, and academic observers have attributed the favorable debt outcome to the fact that a significant portion of the external public

debt (37 percent) consisted of long-term concessionary loans from foreign governments and international agencies.

The conclusion which emerges from our analysis is that the Pertamina affair and the 1978 devaluation were major reasons for Indonesia's continued growth in the 1980s. Although the Pertamina affair did not lead to total elimination of dirigiste strategy, it did stop Indonesia from adopting an even stronger form of import-substituting industrialization. The 1978 devaluation increased the resilience of the economy to negative balance of payments shocks by keeping the traditional export sector alive.

The contribution to growth of the policies undertaken in response to the Pertamina crisis and the Dutch disease was revealed when the price of oil started falling in 1982. The earlier policies imparted a resilience to the economy that allowed Indonesia to enjoy higher growth up to 1984 than did most other oil-exporting developing countries (see table 10.5).

The Growth Implications of the Structural Adjustment Program of the 1980s

Earlier, we showed that investment cuts accounted for 1.7 percentage points of the 3.4 percentage point drop in the nonoil GDP growth rate from the 1970s to the 1980s. Table 10.6 shows that public investment fell at an annual average rate of 2 percent during 1981–88 and that private investment grew at the weak rate of 0.7 percent. Although fiscal austerity to ensure financial stability is a prerequisite for successful economic restructuring, the data suggest that the tradeoff between financial stability (viable long-term growth) and short-run growth performance could have been improved. If public consumption had been kept constant rather than allowed to expand 2 percent annually over the 1981–88 period, the cuts in public investment could have been kept smaller. Such an expenditure switch

Table 10.5 Nonmining Sector Growth Trends in Oil-Exporting Developing Countries, 1967–84
(average annual percentage change)

Country	*1967–72*	*1972–81*	*1981–84*
Indonesia	8.5	8.2	4.8
Algeria	9.5	8.6	7.0
Ecuador	4.7	7.6	–1.0
Nigeria	9.2	5.3	–5.6
Trinidad and Tobago	5.3	5.4	–2.9
Venezuela	6.5	5.1	–2.0

Source: World Bank data.

Table 10.6 Economic Performance, 1973–88
(average annual percentage change)

Aggregate indicators	*1973–81*	*1981–88*	*1987*	*1988*
GDP	7.5	3.3	3.9	4.7
Nonoil GDP	8.0	4.3	4.6	5.6
Agriculture	3.4	2.9	1.8	3.8
Manufacturing	14.1	5.2	7.1	9.0
Services	10.0	5.0	5.6	5.6
Consumption	8.2	3.3	2.2	4.0
Public	10.1	2.2	–3.7	1.5
Private	7.8	3.4	3.3	4.4
Investment	11.7	–0.5	1.9	7.0
Public	11.0	–2.0	–1.7	6.3
Private	12.3	0.7	4.9	7.6
Per capita GDP	5.2	1.3	1.9	2.7
Per capita private consumption	5.5	1.4	1.3	2.4

	1973–81	*1982–85*	*1986–88*
Rate of return on investment	31.4	13.1	21.8
Incremental capital-to-output ratio (ICOR)	2.8	7.8	5.2
Contribution of factors			
Labor	1.4	1.3	1.3
Capital	5.7	5.2	2.8
TFP	0.9	–2.5	1.0
Rate of growth			
Labor	3.0	2.8	2.8
Capital	10.7	9.8	5.2

Source: World Bank (1989).

would have moderated the fall in gross domestic capital formation from 30 percent of GDP in 1981 to 23 percent in 1986.

The deregulation measures of the 1980s confirm the point made earlier that the market principle was invoked only under economic duress. Given the extraordinarily low contribution of total factor productivity to nonoil growth (0.9 percentage points in 1973–81, when the growth rate was 8 percent), there were gross inefficiencies to be eliminated. The efficiency indicators in table 10.6 support the view that deregulation rendered the economy more efficient. Total factor productivity (TFP) increased from an average –2.5 percent in 1982–85 to 1 percent in 1986–88, and the rate of return on investment rose from 13 to 22 percent. The incremental capital-to-output ratio (ICOR) fell from 7.8 in the first period to 5.2 in the second period.

Since it takes time for factor reallocation, a structural adjustment program is unlikely to overcome the negative consequences of an external shock in the

short run. It is therefore remarkable that Indonesia had only one year with negative GDP growth (1982) between 1966 and 1990 and that GDP growth in every year after 1982 exceeded the annual population growth rate of 2.2 percent. What is even more remarkable is that the poverty rate continued to decline throughout the 1980–87 period of structural adjustment (see table 10.7). The urban poverty rate went from 29 percent in 1980 to 23 percent in 1984 and to 20 percent in 1987, while the rural poverty rate went from 28 to 21 percent and then to 16 percent. Economic conditions improved so much in rural areas during this structural adjustment period that the number of rural poor fell by 12 million. The reduction in the incidence of poverty was a general phenomenon throughout the country; the Java-Bali poverty rate fell from 24 percent in 1984 to 19 percent in 1987, and the poverty rate for the Outer Islands fell from 17 to 15 percent. This improvement of the poverty rate is corroborated by the distribution of expenditure: the poorest 20 percent accounted for 6.9 percent of total expenditure in 1970, 7.7 percent in 1980, and 9.2 percent in 1987 (see

Table 10.7 Incidence of Poverty

Item	*Urban*	*Rural*	*Total*
Poor as share of population			
1980	29.0	28.4	28.6
1984	23.1	21.2	21.6
1987	20.1	16.4	17.4
Number of poor (millions)			
1980	9.5	32.8	42.3
1984	9.3	25.7	35.0
1987	9.7	20.3	30.0
By region (percent)			
1984			
Java and Bali	25.0	23.6	24.0
Outer Islands	13.4	16.6	16.9
Western[a]	14.0	9.6	10.5
Eastern[b]	30.3	29.7	29.8
1987			
Java and Bali	21.0	17.8	18.8
Outer Islands	17.6	14.0	14.8
Western[a]	13.7	8.3	9.5
Eastern[b]	28.4	24.2	24.9

Note: Estimates based on official poverty line.

a. Includes provinces in Sumatra and Kalimantan.

b. Includes the islands of Sulawesi, East Nusa Tenggara, West Nusa Tenggara, East Timor, Maluku, and Irian Jaya.

Source: World Bank (1990 and 1991).

Table 10.8 Expenditure by Income Decile, Selected Years

Decile	*1970*	*1980*	*1987*
Lowest	2.83	3.28	3.72
Second	4.11	4.44	5.48
Third	5.46	5.40	5.67
Fourth	6.29	6.43	6.00
Fifth	7.34	7.63	7.82
Sixth	8.71	8.32	7.82
Seventh	10.07	9.91	10.88
Eighth	12.24	12.32	10.95
Ninth	15.47	14.44	14.61
Tenth	27.47	27.83	27.04
Gini coefficient	0.35	0.34	0.32

Source: Central Bureau of Statistics.

table 10.8). The respective values of the Gini coefficient were 0.35, 0.34, and 0.32.

Ravallion and Huppi (1991) computed three alternative measures for the poverty rate in 1984 and 1987 from the SUSENAS (National Socioeconomic Surveys) data used in creating the official poverty rates reported in table 10.7. All three of their alternative measures replicated the remarkable drop in the official poverty rate. Their head-count index showed that the size of the poverty group shrank from 33 percent of the population in 1984 to 22 percent in 1987.

Recently released 1990 SUSENAS data showed a further decline in the number of poor and the poverty rates in rural and urban areas from 1987 to 1990. This is extraordinary, since we know that the government decreased capital expenditure after 1986 instead of maintaining it as was done after 1983. The official poverty rate for 1990, however, cannot be accepted uncritically. Azis (1992) computed four alternative measures of the poverty rate and found that they all went up in the 1987–90 period (see table 10.9).

Table 10.9 Number and Percentage of Indonesians below Poverty Line
(millions)

Method	*1984*		*1987*		*1990*	
	Number	*Percentage*	*Number*	*Percentage*	*Number*	*Percentage*
Official figures	35.0	21.6	30.0	17.4	27.2	15.1
Azis B1 method	56.8	36.3	37.1	22.1	41.1	23.3
Azis B4 method	49.4	31.6	34.0	20.3	39.1	22.1
Azis C1 method	40.9	26.1	22.1	13.2	24.0	13.6
Azis C4 method	37.0	23.6	19.7	11.8	23.0	13.0

Source: Azis (1992).

The official poverty rate declined by 2.3 percentage points in the 1987–90 period, but Azis's measures show increases ranging from 0.4 to 1.8 percentage points. But even if Azis's worst-case scenario were true—that is, even if the official poverty rate in 1990 was actually 1.8 percentage points higher than in 1987—it was still lower than the 1984 poverty rate. All four of Azis's measures show a decline in the poverty rate between 1984 and 1990. Given the severity of the external shocks and the extent of fiscal restraint, a decline of 9 (assuming 1990 poverty rate same as 1987) to 14 percentage points in the official poverty rate between 1980 and 1990 is a remarkable achievement.

We attribute this salutary reduction in poverty to the rural development programs implemented in the 1970s and to some of the policies adopted since 1982 that shifted the economy to a more labor-intensive form of growth and thus boosted the earnings of unskilled labor. The reason for the dramatic drop in rural poverty was that during most of the adjustment period the government spared rural-oriented investment programs from the kinds of cuts experienced by other categories of development spending. The programs targeted at the poor, in general, were cut less. We consider the continued improvement of the rural standard of living to be an important prerequisite for future growth. Given the political constraints on policy imposed by Java's peasants and Outer Island agricultural interests, no structural adjustment program could be carried to completion if it caused prolonged hardship for these two groups.

Assessing Fiscal and Monetary Policy during the Oil Boom

In the preceding section we concluded that Indonesia continued to grow in the 1980s because it did not allow its nonoil tradable sector to be weakened during the oil-boom years. Given the important role of the output mix, we focus here on how fiscal and monetary policies affected the composition of production.

Fiscal Policy

To see how the oil windfalls affected the demand structure of the economy, we use a decomposition based on Gelb (1988). We start with this definition of GDP

$$(10.1) \quad Y + Z = C + I + R$$

where

Y	=	nonmining GDP
Z	=	mining GDP
C	=	consumption
I	=	investment
R	=	balance of trade in merchandise and in nonfactor services.

Normalizing equation 10.1 by nonmining GDP, we get

(10.2) $1+z=c+i+r.$

Using equation 10.2, we define

(10.3) $Dz=Dc+Di+Dr$

where

Dx = $(p^1_x x^1 - p^0_x x^0)$
x^1 = quantity of x after OPEC windfall
x^0 = quantity of x if OPEC windfall had not occurred (counterfactual)
p^1_x = *price of* x after OPEC windfall, expressed in terms of nonmining GDP
p^0_x = price of x if OPEC windfall had not occurred, expressed in terms of nonmining GDP (counterfactual).

In short, Dx is the difference between the actual value of x and the counterfactual value of x in the absence of the OPEC shock. The assumptions behind the generation of x are

(1) z^0, p^0_x *and* r^0 are fixed at the base period (1970–72) value.
(2) Although $c+i$ are fixed by assumption (1), c^0 and i^0 are allowed to vary over time as projected by Chenery and Syrquin (1975).

Since the oil sector was under the control of the government, Dz represents the government revenue windfall and the terms on the right-hand side of equation 10.3 are the uses to which the windfall was put. The sign of Dr indicates whether the government was using the windfall to reduce ($Dr>0$) or increase ($Dr<0$), its external borrowing relative to "natural" evolution.

Table 10.10 shows the size of the variables in equation 10.3 for four large (population greater than 10 million) oil-exporting but capital-deficit countries. Because Nigeria is the country most like Indonesia in terms of GNP per capita and population, the comparison between these two is particularly instructive.

In response to the 1974–78 windfall, Indonesia reduced its reliance on external borrowing by 5.3 percent of nonmining GDP, compared with 2.8 percent for Nigeria. This is surprising, since Indonesia was both the largest and the poorest of the four countries described in table 10.10, and hence had the highest capacity to absorb resources. This conservative strategy of using one-third of the windfall to cut dependence on foreign funds may reflect the institutional memory of the Soekarno debt crisis of 1965–66 and the Pertamina crisis of 1975. It is particularly striking in light of the heady projections of the period about the future course of

Table 10.10 Oil Windfalls and Their Uses, 1974–81
(percentage of nonmining GDP)

Distribution	*Algeria*	*Indonesia*	*Nigeria*	*Venezuela*
The first windfall, 1974–78				
Domestic oil windfall	27.1	15.9	22.8	10.8
Trade and nonfactor services	–4.3	5.3	2.8	–1.0
Private consumption	3.6	2.1	2.9	1.9
Public consumption	1.4	2.4	4.2	1.6
Private investment	—	–1.7	–6.6	3.3
Public investment	26.4	7.9	19.5	4.9
The second windfall, 1979–81				
Domestic oil windfall	29.7	22.7	21.9	8.7
Trade and nonfactor services	8.9	9.6	0.1	1.1
Private consumption	4.6	1.2	4.1	9.4
Public consumption	3.2	3.7	5.6	0.7
Total investment	12.9	8.1	12.1	–2.5
Memorandum items				
GNP per capita, 1979 (dollars)	1,770	370	910	3,440
Population, 1979 (millions)	18.3	143.9	82.6	14.4

Source: Gelb (1988).

oil prices. Both Algeria and Venezuela took advantage of the bankers' optimism about their future to increase their external borrowing.

In absolute terms, the increases in public expenditure (for example, public consumption plus public investment) for Indonesia and Nigeria (10.3 and 23.7 percent, respectively) were large compared with the increase of 6.5 percent for Venezuela. The fall in private investment in Indonesia and Nigeria may have been due to crowding-out, but this could not be confirmed.

Indonesia adopted the same conservative approach to external debt management during the second oil price windfall. It diverted 42 percent of the windfall to reduce external borrowing, compared with 0.5 percent for Nigeria, 13 percent for Venezuela, and 30 percent for Algeria. The rise in public consumption was comparatively high, but it was still much lower than Nigeria's.

Since the severity of the Dutch disease depends on the increase in absorption, Indonesia's conservative external borrowing suggests that its case of Dutch disease was much milder than those of Algeria, Nigeria, and Venezuela. Gelb (1988) notes that

> [more] than any other exporter, Indonesia directed a high proportion of its development spending to rural areas for irrigation works, roads, schools and other small-scale infrastructural improvements.

Table 10.11 Sectoral Distribution of Public Investment
(percent)

Country	Industry	Hydro-carbons	Agriculture and fisheries	Economic infra-structure[a]	Social infra-structure[b]	Admini-stration and defense	Other
Algeria							
1970–73	53.2	25.0	8.5	9.5	21.7	7.1	—
1974–77	53.5	25.9	5.5	10.3	25.3	5.4	—
1978–79	56.5	26.9	3.3	8.9	26.5	4.8	—
1980–84	38.6	15.7	6.0	13.6	36.2	5.6	—
Indonesia							
1969–72	7.6	3.3	22.4	46.2	12.5	2.1	8.9
1974–78	19.2	8.8	12.8	42.8	15.4	6.7	3.1
1979–81	17.0	8.6	10.0	31.7	22.5	12.2	5.7
1982–84	17.4	14.7	8.5	32.0	24.7	6.7	10.6
Nigeria							
1970–74	10.5	4.7	12.9	33.3	27.9	14.5	0.9
1975–80	13.7	5.0	7.2	37.5	24.3	17.3	—
1981–85	18.8	7.7	12.6	26.0	33.7	8.8	—
Venezuela							
1970–74	22.5	6.3	8.1	32.1	29.2	—	8.0
1976–80	41.3	20.6	7.4	36.6	14.7	—	—
1981–85	31.8	24.9	6.4	31.2	28.5	—	2.1

a. Transportation and communications.
b. Education, housing, and health.
Source: Gelb (1988).

That meant that incentives for the production of traditional export industries were enhanced in the case of Indonesia. Table 10.11 shows that the agricultural and fisheries sector received 12.8 percent of Indonesian public investment during 1974–78, 7.4 percent of Venezuelan public investment during 1976–80, 7.2 percent of Nigerian public investment during 1975–80, and 5.5 percent of Algerian public investment during 1974–77. It is reasonable to conclude that fiscal policy in Indonesia during this period tilted domestic production toward the production of nontradables to a much smaller extent than did fiscal policies in Algeria, Nigeria, or Venezuela.

Monetary Policy

Although Indonesia's fiscal policy was more conservative (relative to trend) than those of Algeria, Nigeria, and Venezuela, this was not true of its monetary policy.

Table 10.12 Money Growth and Inflation in Four Oil-Exporting Countries, 1971–80

Item	*Algeria*	*Indonesia*	*Nigeria*	*Venezuela*
Money growth rate (M_2, percent)				
1971	6.4	43.1	21.9	11.0
1972	24.6	47.8	10.5	20.9
1973	24.3	45.1	20.1	20.4
1974	17.6	48.9	47.1	27.2
1975	27.9	37.5	75.3	44.7
1976	23.8	33.8	48.9	33.3
1977	30.2	24.9	35.5	30.0
1978	24.2	17.5	15.1	17.6
1979	17.9	29.4	18.6	9.4
1980	20.2	46.5	30.8	12.4
Average 1973–80	23.3	35.5	36.4	24.4
Inflation rate (CPI, percent)				
1971	2.6	4.4	16.1	3.2
1972	3.7	6.4	2.7	2.8
1973	6.2	31.0	5.7	4.1
1974	4.7	40.6	12.5	8.3
1975	9.0	19.1	33.6	10.3
1976	8.9	19.8	22.0	7.6
1977	12.1	11.0	21.4	7.8
1978	17.2	8.1	21.7	7.1
1979	11.5	20.6	11.7	12.4
1980	9.5	18.5	10.0	21.5
Average 1973–80	9.9	21.1	17.3	9.9

Source: IMF, *International Financial Statistics* (various years).

Indonesia's money supply, like that of Nigeria, grew at an annual average rate of about 36 percent between 1973 and 1980. Those of Algeria and Venezuela grew about 24 percent in the same period (see table 10.12). The resulting average annual inflation rates were 21 percent for Indonesia, 17 percent for Nigeria, and 10 percent for Algeria and Venezuela.

If credit had been kept constant in the face of increased government spending, the fall in private absorption might not have taken the form of lower private investment spending. Since more than 90 percent of all investment credit was extended by state banks, the government could have directed the banks to increase the amount of investment credit (hence boosting private investment) while reducing the total amount of credit. In short, the financial system of the 1970s would

have allowed the government to channel all the direct negative effects of the credit crunch to private consumption spending.

We now investigate how monetary policy affected the production mix between tradable and nontradable goods.[10] We do this by considering the counterfactual scenario of an annual 20 percent money growth rule over the 1973–80 period with the effects of (nominal) credit availability on investment kept the same in the counterfactual case as in the actual case.[11] The counterfactual analysis is conducted using a macroeconometric model of Indonesia estimated by economists at the National Planning Body (Bappenas). (The Kubayashi, Tampubolon, and Ezaki (1985) model is described in the appendix.)

Item (a) in column II of table 10.13 shows that if a 20 percent money growth rule had been implemented, the price level in 1980 would have been less than half its actual value; lower inflation would have boosted exports and discouraged imports. Throughout the 1975–79 period, real nonoil, non-LNG exports would have been at least 12 percent higher each year, with the counterfactual figure in 1980 being 21 percent higher. Real imports would have been 26 percent lower in the 1975–80 period.

Would Indonesia have been better off if it had maintained a tight monetary policy with no subsequent devaluation? Column III of table 10.13 shows that the volume and dollar earnings of nonoil, non-LNG exports under such a "tight money, no devaluation" scenario would have been higher than the actual levels in the 1978–80 period. The additional nonoil, non-LNG exports of the 1973–80 period would have enlarged the foreign exchange reserves by $3,037 million, or 56 percent of Indonesia's nongold reserves in 1980. Counterfactual real imports in 1978–80 would still have been lower than the actual level achieved through devaluation.

What would have been the cost of strengthening the trade sector through tight monetary policy? Specifically, how much would growth have been stunted? Table 10.14 suggests that the economic costs would have been small. Annual real GDP would have been only half a percent lower, and the number of unemployed (but not the unemployment rate) would have increased by about 1 percent. Because of the maintenance of investment credit availability, the reduced absorption caused by the 20 percent money growth rule would have resulted from the fall in private consumption. For example, in 1976 the counterfactual private consumption was 340 billion rupiahs (1973 prices) lower, while counterfactual private investment was only 20 billion rupiahs (1973 prices) lower. (Real public consumption and real public investment are assumed exogenous in the model.) The total real capital stock in 1980 would at most have been 0.8 percent lower than the actual value.

Tables 10.13 and 10.14 show that the loose monetary policy during the oil boom hurt the tradable sector. The 1978 devaluation was a much-needed move. Table 10.14 reveals that the costs of using devaluation to strengthen the tradable sector were a 6 percent drop in real private consumption and a 0.4 percent drop in real private investment.

Table 10.13 The Effects of a 20 Percent Money Growth Rule on the Trade Sector, 1973–80

Year	Baseline[a] (I)	Tight money[b] (II)	Tight money with no devaluation[c] (III)	Effect of tight money[d] (IV)	Effect of tight money and no 1978 devaluation[d] (V)
(a) GDP deflator					
1973	100.0	83.1	83.1	–16.9	–16.9
1974	120.3	83.3	83.3	–30.8	–30.8
1975	135.2	85.7	85.7	–36.6	–36.6
1976	152.6	90.3	90.3	–40.9	–40.9
1977	159.9	99.5	99.5	–37.8	–37.8
1978	168.4	106.6	106.1	–36.7	–37.0
1979	198.2	113.7	110.2	–42.6	–44.4
1980	257.3	123.8	117.0	–51.9	–54.5
(b) Real nonoil, non-LNG exports					
1973	651.3	684.9	684.9	5.2	5.2
1974	721.6	793.1	793.1	9.9	9.9
1975	719.8	809.7	793.1	12.5	12.5
1976	767.6	881.2	881.2	14.8	14.8
1977	849.7	961.5	961.5	13.2	13.2
1978	871.8	983.7	968.1	12.8	11.0
1979	1,022.9	1,183.2	1,068.8	15.7	4.5
1980	972.3	1,180.4	1,071.8	21.4	10.2
(c) Nonoil, non-LNG exports in millions of dollars					
1973	1,569.4	1,650.3	1,650.3	5.2	5.2
1974	2,333.3	2,564.5	2,564.5	9.9	9.9
1975	2,105.5	2,368.4	2,368.4	12.5	12.5
1976	2,739.3	3,144.6	3,144.6	14.8	14.8
1977	4,022.5	4,551.8	4,551.8	13.2	13.2
1978	4,114.2	4,642.1	4,568.4	12.8	11.0
1979	7,007.7	8,105.7	7,321.9	15.7	4.5
1980	7,418.6	9,006.2	8,177.4	21.4	10.2
(d) Real imports					
1973	1,268.6	1,095.5	1,095.5	–13.6	–13.6
1974	1,352.6	1,032.3	1,032.3	–23.7	–23.7
1975	1,382.2	1,036.6	1,036.6	–25.0	–25.0
1976	1,675.0	1,270.8	1,270.8	–24.1	–24.1
1977	4,022.5	1,596.3	1,596.3	–60.3	–60.3
1978	2,346.0	1,911.6	1,963.8	–18.5	–16.3
1979	2,566.7	2,071.7	2,416.7	–19.3	–5.8
1980	3,331.3	2,628.0	3,003.3	–21.1	–9.8

a. Actual money growth and actual exchange rate.
b. Tight money growth and actual exchange rate.
c. Tight money growth and exchange rate set at 415 for 1978–80.
d. Percentage of baseline.
Source: Authors' calculations.

Table 10.14 The Costs of a 20 Percent Money Growth Rule

Year	Baseline[a] (I)	Tight money[b] (II)	Tight money with no devaluation[c] (III)	Effect of tight money[d] (IV)	Effect of tight money and no 1978 devaluation[d] (V)
Real GDP (1973 prices)					
1973	6,464.3	6,464.3	6,464.3	0.0	0.0
1974	6,941.6	6,912.2	6,912.2	–0.4	–0.4
1975	7,456.6	7,420.3	7,420.3	–0.5	–0.5
1976	8,031.3	8,002.2	8,002.2	–0.4	–0.4
1977	8,724.1	8,689.4	8,689.4	–0.4	–0.4
1978	9,497.9	9,471.1	9,471.1	–0.3	–0.3
1979	10,362.0	10,320.0	10,320.0	–0.4	–0.4
1980	11,276.0	11,234.0	11,236.0	–0.4	–0.4
Number of unemployed					
1973	1,103.5	1,103.5	1,103.5	0.0	0.0
1974	1,145.9	1,155.8	1,155.8	0.9	0.9
1975	1,166.2	1,178.4	1,178.4	1.0	1.0
1976	1,161.9	1,171.7	1,171.7	0.8	0.8
1977	1,131.0	1,142.6	1,142.6	1.0	1.0
1978	1,078.9	1,088.0	1,088.0	0.8	0.8
1979	999.4	1,013.6	1,013.6	1.4	1.4
1980	913.7	927.7	927.1	1.5	1.5
Real private consumption					
1973	4,437.3	4,343.9	4,343.9	–2.1	–2.1
1974	4,839.3	4,438.2	4,438.2	–8.3	–8.3
1975	5,078.4	4,571.1	4,571.1	–10.0	–10.0
1976	5,413.2	4,877.1	4,877.1	–9.9	–9.9
1977	5,689.0	5,110.5	5,110.5	–10.2	–10.2
1978	6,444.4	5,915.8	5,982.9	–8.2	–7.2
1979	7,178.9	6,462.7	6,916.2	–10.0	–3.7
1980	7,994.6	7,095.5	7,569.5	–11.2	–5.3
Real private investment					
1973	828.7	713.1	713.1	–13.9	–13.9
1974	821.7	795.2	795.2	–3.2	–3.2
1975	852.3	879.2	879.2	3.2	3.2
1976	987.9	966.5	966.5	–2.2	–2.2
1977	1,023.4	1,051.4	1,051.4	2.7	2.7
1978	1,213.8	1,156.9	1,157.5	–4.7	–4.6
1979	1,283.8	1,285.2	1,290.5	0.1	0.5
1980	1,506.6	1,427.9	1,437.9	–5.2	–4.6
Real capital stock					
1973	16,893.0	16,777.0	16,777.0	–0.7	–0.7
1974	17,792.0	17,653.0	17,653.0	–0.8	–0.8
1975	18,845.0	18,735.0	18,735.0	–0.6	–0.6
1976	20,212.0	20,083.0	20,083.0	–0.6	–0.6
1977	21,753.0	21,654.0	21,654.0	–0.5	–0.5
1978	23,494.0	23,340.0	23,341.0	–0.7	–0.7
1979	25,251.0	25,103.0	25,108.0	–0.6	–0.6
1980	27,587.0	27,363.0	27,378.0	–0.8	–0.8

a. Actual money growth and actual exchange rate.
b. Tight money growth and actual exchange rate.
c. Tight money growth and exchange rate set at 415 for 1978–80.
d. Percentage of baseline.
Source: Authors' calculations.

The tradeoff revealed by the tables is expected in theory. A loose money-cum-devaluation strategy yields higher output, consumption, and investment, while tight money strategy yields lower inflation and lower current account deficits. Simulations of a computable general equilibrium (CGE) model calibrated on 1983–88 data by Thorbecke (1991) confirmed the existence of this tradeoff for Indonesia.[12]

Prospects: Indonesia at the Crossroad

The deleterious effects of Indonesia's monetary policy on its traditional tradable sector were eased by its fiscal and exchange-rate policies. The result was that the traditional export industries in Indonesia survived the oil boom better than those in Algeria, Nigeria, or Venezuela. When the external shocks hit in 1982–83, Indonesia's agricultural output index was 127, compared with 109 for 1974–78, while the change elsewhere was 3 index points lower in Venezuela, 7 points lower in Nigeria, and 19 points lower in Algeria (see table 10.15).

Table 10.15 Agricultural Output Per Capita, 1974–83

Country	*1974–78*	*1979–81*	*1982–83*
Algeria	89	83	70
Indonesia	109	123	127
Nigeria	91	91	84
Venezuela	104	102	101

Source: Gelb (1988).

Our conclusion that the overall effect of macroeconomic policies on the production mix in Indonesia was atypical for an oil-exporting country can also be seen by comparing Indonesia and Mexico. The Indonesian oil boom started in 1972, while the Mexican boom only began in 1977. Since Indonesia suffered five more years of the Dutch disease, one would expect the ratio of Mexican to Indonesian nonoil, non-LNG exports to have increased from 1971 to 1980. The opposite happened; the ratio went from 1.9 in 1971 to 0.93 in 1980 (see table 10.16). The consequence of maintaining a diverse bundle of exports was that the external shocks of the 1980s did not drag Indonesia as far off its growth path as they dragged Algeria, Mexico, Nigeria, and Venezuela off theirs.

Our finding of beneficial effects from the offsetting of antiexport bias is not a new one. Multicountry studies published by Little, Scott, and Scitovsky (1970); Krueger (1978); and Balassa (1982) have already arrived at this conclusion. They found that the countries which developed successfully were those that kept the relative price ratios among domestically produced tradable goods close to interna-

Table 10.16 Indonesian and Mexican Exports, 1971–80

Year	*Mexico*	*Indonesia*
Nonoil, non-LNG exports (millions of dollars)		
1971	1,377.7	721.6
1972	1,695.3	864.6
1973	2,116.1	1,602.1
1974	2,874.8	2,214.9
1975	2,546.6	1,791.7
1976	2,921.1	2,542.4
1977	3,687.1	3,474.5
1978	4,446.5	3,657.8
1979	5,401.5	5,426.3
1980	5,760.6	6,167.3
Nonoil, non-LNG exports (percentage of GDP)		
1971	3.5	7.7
1972	3.8	7.9
1973	3.8	9.8
1974	4.0	8.6
1975	2.9	5.9
1976	3.3	6.8
1977	4.5	7.6
1978	4.3	7.1
1979	4.0	10.6
1980	3.1	8.5
Net oil and LNG exports (millions of dollars)		
1971	-62.9	451.4
1972	-105.7	874.5
1973	-253.8	1,567.6
1974	-278.5	5,028.3
1975	137.8	5,085.0
1976	226.9	5,576.2
1977	760.6	6,646.1
1978	1,569.9	7,405.7
1979	3,637.6	9,369.6
1980	10,013.6	13,996.9

Source: United Nations data.

tional relative price ratios. The similarity in relative price ratios was not due to open trade policies but to the tariffs-cum-export subsidies imposed by the state. The tariffs and export subsidies were applied to nearly all goods more or less equally, and targeting of specific products was seldom performed. In short, the successful countries were those that intervened to promote the production of tradables in a market-compatible manner. Market-compatible means that the govern-

ment allowed market forces (that is, international prices) to determine the composition of the tradables produced.

The link that Balassa found between growth of the tradable sector and high income growth in Korea, Singapore, and Taiwan (China) is still open to question.[13] Woo (1990) has suggested that the growth effects of these market-compatible interventionist policies arise from putting these countries in an advantageous position in the international product cycle. By making conditions favorable to the production of tradables, domestic entrepreneurs were willing to risk investing in simplifying the production techniques of new products developed in the technologically advanced countries. With simplified techniques, the less-educated but lower-cost labor in Korea, Singapore, and Taiwan (China) was then able to produce these new products. These private efforts to hasten the product cycle ensured increasingly higher value added products in the countries practicing market-compatible trade policies.

This discussion leads us to suggest that the microeconomic rationalization that was started in 1983 needs to be supported by a specific macroeconomic policy measure. The lowering of trade barriers has reduced the antiexport bias within the economy. To equalize the price ratio of domestically produced tradable goods at the producer level to the international price ratio would require the introduction of general export subsidies. In the case of Indonesia, such a generalized tariffs-cum-subsidies scheme would be an administrative impossibility, given the low skill level. The easier way to promote the production of tradables in a market-compatible fashion would be to replace the tariff system with a uniform low tariff rate and then devalue the real exchange rate. The fact that the 1983 and 1986 devaluations and the trade reforms created a wide variety of new manufactured exports is proof of the soundness of this method of market-based industrialization.

The program of market-based industrialization appears to have put Indonesia on a new growth path. The new engine of growth is labor-intensive manufacturing

Table 10.17 Industrial Output, Exports, and Imports, by Factor Intensity, 1977 and 1988
(percent)

	Output		*Exports*		*Imports*	
Sector	*1977*	*1988*	*1977*	*1988*	*1977*	*1988*
Resource-based	59.2	54.0	89.5	63.1	27.2	14.2
Agriculture	46.2	30.1	67.3	15.6	20.5	6.4
Timber products	4.6	16.0	4.8	32.5	2.2	3.7
Minerals	8.4	7.9	17.4	15.0	4.5	4.1
Unskilled labor	22.9	26.2	1.8	22.9	9.6	10.7
Technology	6.9	10.7	4.3	6.8	28.6	40.5
Skilled labor	11.0	9.0	4.5	7.2	34.5	34.6

Source: World Bank (1991).

activities. Table 10.17 compares the factor intensity of Indonesia's industrial output, exports, and imports in 1977 and 1988. It shows that in every case unskilled labor was used more intensively in production in 1988 than in 1977. The change was most dramatic in exports. Unskilled labor accounted for 23 percent of the inputs used in producing the 1988 exports, compared with the 2 percent used in the 1977 exports, while resource-intensity dropped from 90 to 63 percent. This shift had its parallels in the shift at the aggregate level to a point where the manufacturing sector in 1989 almost equaled the agricultural sector in size; and in the leap in nonoil, non-LNG exports from 4.7 percent of GDP in fiscal 1981, to 7.7 percent in fiscal 1985, and to 15.5 percent in fiscal 1990.

The result of this switch to a more labor-intensive economy was that the real wages of unskilled workers rose over the period of external shocks (table 10.18). Agricultural wages rose an annual average of 2.3 percent between 1983 and 1990, and industrial wages rose 3.4 percent. These wage increases might have been the primary reason for the decline in poverty and the improvement in expenditure distribution. These wages had fallen after the 1986 shock, but they started going up in 1988 when the nonoil, non-LNG manufacturing sector started to expand rapidly.

Table 10.18 Trends in Real Wages, 1983–90
(index numbers, 1983=100)

	1983	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990[a]*	*1983–90[b]*
Agriculture	100.0	105.4	115.9	117.1	115.9	112.9	114.9	117.0	2.3
West Java	100.0	105.7	112.4	114.9	115.9	113.1	115.8	117.6	2.3
Central Java	100.0	102.0	113.5	115.4	115.1	111.3	112.9	115.1	2.0
Yogyakarta	100.0	99.9	115.3	128.6	125.5	122.8	128.0	129.7	3.8
East Java	100.0	108.4	121.2	119.5	115.6	113.3	114.6	116.8	2.2
Industry	100.0	105.2	115.2	120.4	120.3	118.7	122.4	—	3.4

a. Estimated.
b. Average growth rate (percent a year).
Source: World Bank (1991).

Chapter Eleven

Summary and Conclusions

Indonesia was in economic chaos when Soeharto assumed executive power in March 1966. Per capita income had declined steadily over the 1960–65 period, and the annual inflation rate had exceeded 100 percent since 1961. The central plank of the stabilization component of the October 1966 program was an unequivocal commitment to end the printing of money to finance government budget deficits. The goal of the rehabilitation component was to allow market forces a greater role in resource allocation. The most arresting feature of the stabilization experience was the behavior of money holdings. Shifts in the velocity of money suggest that it took two years of balanced macroeconomic policies, market-oriented microeconomic policies, and large foreign aid inflows before private agents were convinced that a permanent shift had occurred in the policy regime. This meant that the low output loss associated with the subduing of inflation came primarily from the flexibility of Indonesia's labor market and from the debt relief and foreign aid granted by the international community.[1] The "announcement effects" of the stabilization program were of secondary importance in keeping the cost of deflation low.

We concluded in chapter 10 that the successful resolution of the first crisis helped long-run growth not only by restoring macroeconomic balance but also by ensconcing a team of capable economists in key positions. This produced an institutional memory which understood that prolonged high budget deficits would lead to macroeconomic instability, that direct controls were generally inefficient and ineffective, and that a misaligned real exchange rate had widespread deleterious effects. The stabilization experience showed that it was not only good politics but also good economics to respect the economic interests of the Outer Islands and the agricultural sector. It was good politics because of the history of secessions and agrarian radicalism, and it was good economics because both were major earners of foreign exchange. We would venture the opinion that there has been greater political and economic stability under the New Order regime because Soeharto, unlike his predecessor, has not repeatedly violated the economic interests of these two groups.

The important point to note concerning the development of the oil sector is that oil mining was a state-controlled activity and a low labor-intensity one. All oil income went to the public and not the private sector. The government was awash with oil revenue in the mid-1970s, and the result was an explosion in public spending. Real expenditure of the central government, in 1975 prices, leaped from 1.1 billion rupiahs in 1970 to 2.5 billion rupiahs in 1975. These expenditure figures equalled 13 and 20 percent of GDP, respectively. It was this fast acquisition of enormous purchasing power by the state that contained the seeds of the second and third economic crises.

The second crisis episode (the Pertamina affair) consisted of two crises, the major crisis being the rise of Pertamina as an independently financed development agency and the minor crisis being the external debt default by Pertamina in 1975. Our conclusion was that the resolution of the minor crisis also resolved the major crisis by ending an economically inefficient but politically expedient development program. The Pertamina crisis prevented the advocates of a more dirigiste program from claiming the dominant role in policymaking. Although dirigiste sentiments remained strong, the dirigiste program of large-scale import-substituting industrialization was blunted. Since the Ministry of Finance was given total control over foreign borrowing by state-owned enterprises in the aftermath of the Pertamina crisis, Indonesia entered the 1980s with a smaller external debt than if the 1975 crisis had not occurred.

The third crisis was the Dutch disease, which caused a profit squeeze in the nonoil tradable sector. The profit squeeze was more severe in the nonoil exportable sector because parts of the importable sector successfully lobbied for protection. The nonoil tradable sector was in distress but, thanks to the large oil export earnings, the balance of payments still showed substantial surpluses.

In chapter 5 we identified an important political constituency (consisting of Javanese peasants and Outer Island residents) that was opposed to the maintenance of an overvalued exchange rate. The potency of change in the exchange rate in effecting economywide resource reallocation and income redistribution during the 1966 economic rehabilitation program helped to strengthen the argument for a devaluation whenever the balance of payments situation demanded it. In chapter 8 we demonstrated that these factors imposed an asymmetry in the policy response to changes in the balance of payments. It made good economic sense to devalue the real exchange rate when a balance of payments deficit occurred, but because of the existence of this important constituency, it made good political sense not to allow the real exchange rate to revalue when a surplus appeared.

It would appear that this upward rigidity of the exchange rate decreased economic efficiency, since it deprived the economy of an important mechanism for adjusting to new circumstances. In the case of Indonesia it turned out that this politically imposed asymmetry generated a second-best response to the Dutch disease. The best response would have been for the government to save the bulk of the temporary increase in income, but this policy was untenable given the need to accommodate rent-seeking demands. The second-best response to the distress of

the agricultural sector came in November 1978, when the government devalued the rupiah by 50 percent even though the stock of nongold reserves was at a historic high.

Our simulation of a macroeconomic model to assess the conduct of fiscal and monetary policies in the 1973–80 period revealed that the 1978 devaluation was a much-needed response to the Dutch disease. The devaluation kept enough of the exportable sector alive and able to earn enough foreign exchange to service external debt when the price of oil collapsed after 1981. Our decomposition of the debt-service-to-export ratio supports this conclusion. The moderate export orientation of the Indonesian economy was more important than the prudent borrowing policy in averting a debt crisis in the early 1980s.

The fourth crisis had two acts: a steep decline in oil prices in 1983, and an even steeper decline in 1986. The structural adjustment packages enacted since 1983 appear to be succeeding in replacing oil with nonoil, non-LNG manufacturing as the engine of growth. Nonoil and non-LNG exports, measured as a percentage of GDP, grew from 4.2 percent in fiscal 1982 to 9.4 percent in fiscal 1986 and 15.9 percent in fiscal 1989. Income distribution should improve, since a market-based industrialization will take advantage of Indonesia's resource endowment and be labor-intensive in nature. This may be the primary reason why the labor intensity of industrial output in 1988 was higher than in 1977, and why the real wage has been rising since 1988.

In our analysis of these crisis episodes, we found four themes that explain Indonesia's impressive growth.

Relatively orthodox macroeconomic policies. Inflation control was taken very seriously—so seriously that the New Order government which took power in 1966 was committed to never monetizing its budget deficits. When external revenue shocks occurred, the government nearly always opted for keeping the budget deficit under control by reducing expenditure rather than by borrowing more from abroad.

Active exchange rate management. Concern about potential balance of payments difficulties made the government quick to undertake currency devaluations. The nominal exchange rate was devalued by 50 percent in 1978 to offset the expansionary macroeconomic policies of the 1973–77 period, even though there were no signs of an imminent balance of payments crisis. The government also devalued quickly whenever unfavorable external conditions appeared.

Prudent management of publicly guaranteed external debt. From the very beginning of the New Order government, the economic leadership paid particular attention to the accumulation of publicly guaranteed external debt. We saw that Pertamina's external debt crisis in 1975 was triggered by actions taken by the Ministry of Finance to curb Pertamina's borrowing. In the aftermath of the Pertamina crisis, state-owned enterprises (SOEs) could borrow from the international credit market only after receiving approval from the Central Bank and the Ministry of Finance. In 1991 a committee was set up at the highest ministerial level to tighten control on external borrowing by SOEs. The committee approved three projects

that required $1.5 billion in foreign exchange funding and postponed four projects that required $9.3 billion in foreign exchange funding. The postponement occurred despite skepticism based on the political connections of the domestic private firms that were co-investors in these projects.

Willingness to implement bold measures and comprehensive market-oriented reforms. This willingness was first revealed in the stabilization and rehabilitation program of 1966. In 1983, when increased economic efficiency was crucial to reducing macroeconomic imbalances, the government devalued the exchange rate, liberalized the tightly regulated financial system, and overhauled the complex tax system.

Policy Mistakes

Indonesia also made certain policy mistakes during the study period. Those that remained uncorrected for a significant length of time were

Lax controls on SOEs. This was particularly true before 1975, when the government had no idea of the actual amount of oil revenue collected on its behalf by Pertamina. The financial discretion given to Pertamina enabled it to embark on a wide range of investment activities that effectively made it a second development agency. Lax supervision of the state-owned commercial banks in the 1970s also resulted in much mismanagement. Despite the dominant and favored position of the state banks, according to World Bank estimates they had a zero rate of return to capital in 1976.

The use of credit ceilings to control the money supply in the 1974–83 period. Because of administrative difficulties in setting a credit ceiling for each bank, Bank Indonesia changed the ceilings only once a year. This nonaggressive management of credit ceilings meant that the money stock fluctuated with changes in capital flows (or more precisely, with changes in the balance of payments position). The ineffectiveness of the credit ceilings in restraining monetary growth meant that the equilibrium price level was not lowered by the use of credit ceilings. The Indonesian government erred in not developing more effective instruments of monetary control.

The use of selective credit allocation in the 1974–83 period. With the inflow of oil revenue, Indonesia created subsidized loan programs to increase the number of indigenous (non-Chinese Indonesian) entrepreneurs and to accelerate industrialization. The state-owned banks were charged with implementing these loan programs, even though they lacked the expertise to evaluate the economic merits of investment projects. The results were not only many cases of bad loans but also a bias toward lending to SOEs because they were deemed to be less risky.

The use of import quotas to improve the trade account balance in 1982. This action strengthened the case of the infant industry advocates and the rent-seekers. The result was a flood of quantitative restrictions (QRs). Since a significant number

of restrictions were imposed on imported intermediate inputs, the effect was a policy-effected supply-side shortage, reducing output and raising prices. Furthermore, because many of these intermediate inputs were used intensively by the tradable sector, the restrictions undermined their original purpose of reducing the trade deficit.

Corrective Actions

When the government reacted to these mistakes, it did so in line with what we have described as a willingness to undertake bold and comprehensive measures. More stringent financial controls were imposed on many SOEs, and subsidies to the firms were reduced by allowing them to price their products closer to international levels. Bank Indonesia has been taking the first steps toward eventual control of the money stock through open-market means, and most of the subsidized selective credit programs have been eliminated in stages since 1983. On the trade front, since 1986 the government has been first replacing the quantitative restrictions with tariffs and then reducing the tariffs. All of these actions in the 1980s also follow the theme of relatively orthodox economic policies.

Our conclusion is that Indonesian macroeconomic management has been a success on the whole. Indonesia did not experience an external debt crisis as Mexico and Nigeria did. Growth was lower in the 1980s, but it was still positive, with investment increasing as a proportion of total expenditure (from 24 percent of GDP in 1980 to 35 percent in 1990). The two most impressive features of Indonesia's structural adjustment in the 1980s were these.

The poorest segment of the population continued to experience a rise in income, and the distribution of income continued to improve. The consumption share of the bottom 20 percent of the population went from 6.9 percent in 1970 to 7.7 percent in 1980 and 9.2 percent in 1987. The Gini coefficient for the distribution of consumption was 0.35 in 1970, 0.34 in 1980, and 0.32 in 1987. These figures on consumption were consistent with a drop in the number of people below the official poverty line (54 million in 1976, 42 million in 1980, and 30 million in 1987) and a rise in the real wage (with the 1983 value set at 100, the agricultural real wage was 117 in 1990 and the industrial real wage was 122 in 1989).

A dramatic surge of the nonoil, non-LNG manufacturing sector. The sector's share of output went from 10.4 percent of GDP in 1980 to 15.2 percent in 1989. Nonoil, non-LNG manufactured exports leaped from $0.3 billion in fiscal 1981 to $6 billion in fiscal 1989. There is no question that this rise in nonoil, non-LNG manufactured exports warded off the need to reduce imports to match the fall in oil and LNG exports, which went from $9.7 billion in fiscal 1981 to $4.0 billion in fiscal 1989. (Agricultural exports went from $2.9 billion to $7.0 billion in the same period.)

We want to reiterate our judgment that the successful avoidance of a debt crisis, the reduction of poverty in the years of austere fiscal policy, and the rapid growth of the nonoil, non-LNG manufacturing sector should be attributed not only to the timely adoption of adjustment measures but also to the relatively prudent fiscal, external debt, and exchange-rate policies of the 1970s. The absence of existing macroeconomic imbalances at the time of negative external shocks in the 1980s meant that the adjustment measures did not have to be so draconian as to contract output in order to greatly reduce imports and to hasten resource reallocation. The pre-1983 emphasis on agricultural development was maintained during the adjustment period, and the result was a continued reduction in the incidence of poverty.

Enhanced Economic Management

To be analytically complete, we must add that there were features about the Indonesian economy that enhanced economic management. These were

The flexibility of the Indonesian labor market. Real wages could adjust downward to absorb decreases in aggregate demand and preserve employment. There was great mobility between rural and urban areas because the skill requirements for most jobs were low. The result was that the distribution of output across economic sectors could be changed without much open and prolonged unemployment.

The geographic openness of this country of 13,000 islands and its proximity to Singapore, an international financial sector. Capital controls could not be made to work effectively in such a setting, and this was the main reason why Indonesia has maintained an open capital account policy since 1967. The implication of this financial openness was that unless the exchange rate was kept at a level that was deemed compatible with external equilibrium, heavy capital outflows would occur. Financial openness was one of the reasons why Indonesia did not refrain from devaluing the rupiah immediately when changes in external conditions necessitated it.

The political necessity to push agricultural development. Indonesia before 1966 had the largest Communist party outside of the Communist bloc, and most of the party's members were peasants. The economies of the Outer Islands were heavily dependent on earnings from agricultural exports. So, a development strategy that had agricultural development as an important component would defuse rural and regional unrest. The fortuitous fallout of this political necessity to push agricultural development was that the competitive real exchange rate benefited the entire tradable sector, to which the nonoil, non-LNG manufacturing industries belonged.

The presence of an able economic team that was experienced in crisis management and also had the trust of the president. The economic team that designed and implemented the rehabilitation and stabilization program in 1966 was still very influential in policymaking in 1990. Their proven record of successful economic

management had earned them the support of the president and thus partially insulated them from pressures from advocates of less-orthodox economic policies.

Four General Theoretical Issues

Our study raises four general theoretical issues that are of concern to the field of economics. The first issue is the applicability of the literature on the optimal sequencing of economic reforms. The conventional sequence is, first, the liberalization of current account transactions (that is, liberalization of the goods market), then the liberalization of the domestic financial system, and, finally, the liberalization of capital account transactions. But Indonesia implemented its reforms in the reverse sequence (capital account liberalization in 1967, domestic financial market liberalization in 1983, and current account liberalization in 1986), and it is not clear that this affected economic performance negatively. Our conclusion is that the open capital account policy had the desired effect of ensuring that the government had to maintain a competitive real exchange rate.

The second issue is whether, as Indonesia's experience suggests, the speed at which expectations are changed depends on the variable in question. The slow deceleration in the velocity of money in 1967 and 1968 on the implementation of the 1966 stabilization program shows that expectations of inflation changed quite sluggishly. In short, the country's willingness to believe that the government was able to control inflation had to be earned rather than assumed. Expectations about future exchange rate movements, however, have been surprisingly accurate. The quick return of interest rates to normal levels after the monetary interventions in 1984 and 1987 suggest that agents were able to correctly anticipate improvement of the current account and the inflation rate in 1985 and 1988. The good understanding that Indonesian agents have of exchange rate determination may reflect a necessity born of experience with the devaluations of 1978, 1983, and 1986.

The third issue concerns the contribution of expectations to the attainment of policy goals. This issue follows from the assumption that the expectation-formation process may differ according to the variable in question. The 1966 stabilization episode suggests that expectations do generate forces which reinforce corrective economic policies, as suggested by the "radical stabilization" branch of the rational-expectations literature, but that these forces are generated only after a lag.[2] This means that macroeconomic policies that seek to end inflation very quickly in a country in which nominal wages are set on the basis of expected inflation will inevitably incur large output costs, even if the macroeconomic policies are credibly announced and enforced.

The lesson from the capital flight episodes is that any attempt to maintain an exchange rate which is incompatible with balance of payments equilibrium will generate high interest rates until a devaluation is undertaken or until monetary and

fiscal contraction have made the existing exchange rate compatible with balance of payments equilibrium.

On the contribution of expectations to the attainment of policy goals in general, Indonesia's experience suggests that expectations do not create perverse outcomes independently; they only exemplify perverse policies. Of course, the experience of Indonesia does not show that perverse expectations are nonexistent; it only suggests that they are rare.[3]

The fourth theoretical issue raised by our study concerns the modeling of the economic policymaking process. We found many instances in which the selection of development strategy (agricultural versus industrial emphasis), the choice of policy instrument (credit ceilings versus the development of open-market operations capability), and the timing of a policy action (devalue now rather than devalue later) depended heavily on political considerations. We believe that economists should pay more attention to understanding political constraints because this would not only mean more realistic policy recommendations in the short run but would also raise the possibility in the long run of introducing institutional features that could change the political incentive structure to make it more supportive of economic growth. In short, we should progress from attributing a successful outcome to the willingness of the government to implement decisive and comprehensive reforms to understanding the circumstances that allow a government to have the political capacity to undertake measures that "step on many influential toes."

Notes

Chapter 1

1. Contrary to the official data on poverty in 1990, a preliminary reassessment has suggested that poverty may have increased between 1987 and 1990 (see table 10.9). Nonetheless, the reassessment also states that the 1990 poverty level was definitely below the level in 1984.

Chapter 2

1. A more detailed examination of labor market issues can be found in Jones (1981).
2. *Business Week*, 11 November 1991.
3. The 27 provincial and 368 municipal and local governments also own a wide range of companies.
4. Pertamina's production of crude petroleum and petroleum products is small compared with that of foreign oil companies.
5. The term "Financial Note" greatly understates the size and comprehensiveness of this document.

Chapter 3

1. To be more accurate, this was the first *declared* military adventure. Soekarno had been funding guerilla activities for four years prior to the invasion.
2. Djuanda's cabinet was commonly referred to as the "business cabinet," but use of the word "business" here is not meant to imply a pro-business posture.
3. This ban was revoked in December 1966.
4. The most well known are the Istiqlal Mosque (the world's largest mosque), the solid gold flame on top of the National Monument, and the gigantic West Irian statue of a man breaking free from his chains.
5. *Berdikari* is an abbreviation of *berdiri di-atas kaki sendiri*, which means "standing on one's own feet."

Chapter 4

1. This figure is calculated from the real GDP series measured at 1973 prices.
2. The SGS inspects imports at the country of origin.

Chapter 5

1. For a review of the competing models of the Indonesian state, see Woo (1991b). The implications of our theoretical model of the Indonesian state for the pattern of government expenditure are subjected to econometric testing in Woo and Kristov (1991).
2. GOLKAR is an abbreviation for *Golongan Karya*, which means functional groups. For an authoritative study on GOLKAR, see Reeve (1985).
3. See Liddle (1988). Although the existing campaign rules may work to the advantage of the incumbent, there have been few challenges to the integrity of the voting process.
4. We recognize that our discussion in the preceding paragraph makes our hypothesis of an implicit corporatist state almost observationally equivalent to the competing hypothesis of a benevolent dictator. In short, the reaction function we have identified can be interpreted as the result of the activity of a ruler who is maximizing the longevity of his administration subject to the political limits imposed by the different constituencies, or as the result of the activity of a thoroughly benevolent ruler who has internalized the demands of the different groups and is maximizing this social welfare function subject to the technical limits of policy instruments. We hold the first interpretation to be more plausible. Recent revelations of how members of the presidential family have been enriching themselves through monopoly licenses and state contracts tend to support the self-interest rather than the social interest paradigm.
5. This figure is not strictly accurate, since multiple official exchange rates still existed at that time.
6. Kartodirdjo (1972:72) found "so many instances of millenarian agrarian uprisings that we can speak of a tradition of revolt."
7. This is the official casualty figure. Some unofficial reports put the number much higher of those killed in 1965–66 following the abortive coup. See McDonald (1980) and Ransom (1975).
8. Suggested by William Liddle and David Dapice in private communications.
9. Pangestu and Palmer (1969, preface) wrote: "Unless the limited, indigenous managerial resources at present available to the public sector are concentrated in large corporations, the Chinese Indonesian community will merely acquire the dominating influence over former overseas firms and thereby strengthen its hold on the economy... The establishment of a public, or semi-public, sector in which Indonesians can become experienced managers, assisted by government contracts and credit schemes, is an obvious way of developing a nucleus of competent managers."
10. *Dwifungsi*, a transliteration of "dual function," refers to the army's dual role in defense and economic development. Crouch (1978) cites official statements in 1969 and 1970 that the armed forces budget covered only 30 to 50 percent of expenses, suggesting that the rest were covered by economic enterprises controlled by the army.
11. For example, he maintains a working farm for recreational purposes. See Roeder (1970).
12. Because of their influential foreign constituency, their lack of ideological aversion to foreign investment, and the fact that several of them had received degrees from the University of California, the technocrats have often been called the "Berkeley Mafia." They include Widjojo Nitisastro (Ph.D. 1961), Ali Wardhana (Ph.D. 1962), Saleh Afiff (MBA 1961), Johannes Sumarlin (MA 1960), and Emil Salim (Ph.D. 1964). See Irons (1992).

Chapter 6

1. This can be seen by the slowdown in the amount of new medium- and long-term credit received: $750 million in 1962, $10 million in 1963, $310 million in 1964, and $211 million in 1965. Data are based on table 29 in Mangkusuwondo (1974).
2. See Arndt (1966).
3. The level of tariff protection was still high even after the abolition of the import licensing system in October 1966.
4. The Bonus Ekspor (BE) percentage for major exports was 10 when the BE system was introduced in February 1966.

5. The effective exchange rate reported in table A.5 includes the incentive effects of this checkprice/overprice mechanism.
6. An exception is Pitt (1991).
7. This is equivalent to making the mistake of taking the rate of real money growth during inflationary periods as the measure of credit availability.
8. We thus disagree with Sundrum (1973), who saw no link between the expected inflation rate and the stance of monetary policy. He only acknowledged a link between the actual inflation rate and the actual money growth rate.
9. Sundrum (1973:81) gave a different explanation: "[It] seems reasonable to infer from impressionistic evidence that since 1969, long-term trends of monetization and structural change, other than short-term changes in price expectations, have been primarily responsible [for the decline in velocity]." Sundrum's conclusion followed from his neglect of a link between the expected inflation rate and the monetary regime.

Chapter 7

1. One could argue that it was a solvency crisis under the old management and was transformed, in the eyes of the financial market, into a liquidity crisis the moment Pertamina was turned over to competent hands.
2. According to Glassburner (1976), the power installation at the Krakatau Steel Mill cost three times more than a similar installation in Taiwan (China).
3. This view is developed in J. Pangestu (1973).
4. For details, see Robison (1986).
5. The chaotic state of Pertamina's financial records was suggested by the report of an international banker who saw a Pertamina filing cabinet stuffed with promissory notes which had been casually thrown in (see Lipsky 1978).
6. Quoted in Robison (1986), pp. 237–38.
7. These figures are only guesses because the same item from the three official sources—the balance of payments, the government debt record, and the government budget—sometimes shows large discrepancies.
8. Dale and Mattione (1983), using data from the Bank of International Settlements, show a switch by Mexico to short-term financing in the early 1980s.
9. There are no estimates of what is considered to be a more satisfactory indicator of the stance of fiscal policy, the full-employment budget deficit.
10. The accelerator model of investment states that the investment level is determined by present and lagged changes in the volume of sales.
11. This terms of trade effect on consumption is opposite to that argued by Laursen and Metzler (1950). The general invalidity of the Laursen-Metzler effect within an optimizing intertemporal framework is shown in Obstfeld (1982a). See also Obstfeld (1982b) and Sachs (1982).

Chapter 8

1. The low 6.4-week figure for 1975 was not because of a sharp drop in exports or a big increase in imports; it was because of the transitional financing of Pertamina's debts while negotiations were under way to convert Pertamina's short-term debts to long-term debts.
2. An example is Arndt (1978).
3. We owe this expository device to McCawley (1980) and Corden and Warr (1981). The notable contributions to the booming sector literature are Corden and Neary (1982) and Corden (1984).
4. If we assume that nontradables refers to luxury goods, the consumption of which increases disproportionately with a rise in income, then *OE* would be a curve with an increasing slope.

5. If f goes to the government, another way to keep the product mix at W is to spend the new revenue on tradables, but our assumption that the government mimics private expenditure in order to maximize consumer welfare rules out this possibility.
6. The deposit and lending rates of the state banks were controlled by the government, and those of private and foreign banks were not. The state banking system dwarfed its competitors in both business volume and number of branches.
7. Balino and Sundarajan (1986) also concluded that structural features segmented the domestic financial market from the foreign ones. One rigorous way to decide the degree of endogeneity in the money supply is to investigate whether capital flows have systematically offset changes in the volume of domestically created credits—that is, to estimate the offset coefficient. Fry (1988) has done this, but his evidence is only suggestive because he grouped Indonesia with the Republic of Korea, Malaysia, the Philippines, and Thailand in the estimation. He found the offset coefficient of the group to be 0.6, a sign that the credit ceilings did not fully shelter the money supply from capital flows. A zero value connotes total control over the money stock and a unity value connotes complete lack of control. In a fixed exchange rate setting, a nonunity value also means that domestic financial assets are not regarded as perfect substitutes for foreign financial assets.
8. For dynamic analysis, the additional assumptions are that $dp/dt = c\,[y^d - y^s]$ and that equation 8.5 always holds.
9. Harberger (1986) argued that the national terms of trade (with p being the consumer price index and p^* the index of the world price of tradables) is the best practical proxy for the most theoretically satisfying definition of the real exchange rate. By Harberger's criterion, the best real exchange rate is the one which would most closely "replicate simple textbook cases of exchange rate determination" in the face of different types of real and nominal shocks. Harberger found the sectoral terms of trade to be the most misleading of the six real exchange rate definitions he worked with.
10. In Woo (1991a), the author shows that these two definitions of the terms of trade have a one-to-one relationship under the modern definition, which assumes the law of one price.
11. The actual rate is the market exchange rate adjusted by export taxes and subsidies.
12. We calculated the average by applying the 1978 weights in table 7 of Garnaut (1979) to Paauw's figures.
13. These are the reasons for this. (a) Beginning in 1974, quantitative restrictions were placed on some imports to protect domestic industries hurt by the real appreciation and to promote import-substitution. Goods sheltered by quantitative restrictions are effectively nontradables from the analytical viewpoint. This is because imports cannot enter regardless of the spread between domestic and international prices. With a given quota, prices of the domestically produced substitutes are insulated from international price movements and move only in response to changes in domestic demand and cost conditions. (b) Rice accounts for a very large portion of domestic agricultural output, and its price has been deliberately set to increase slightly more than consumer price index (CPI) movements in order to promote the goal of self-sufficiency in rice. Prices of a number of other food crops such as corn, soybeans, and sugar are also protected from external competition. This means that tree crops constitute the main tradable component of the agricultural sector.
14. An exponent of this view is Kincaid (1984).
15. The effective rates of protection for 1980 reported in table 1.7 of M. Pangestu and Boediono (1986) differ from ours. M. Pangestu and Boediono used only the tariff schedule and did not attempt to incorporate protection from nontariff barriers.
16. Corden (1982) aptly labels the use of the exchange rate to protect the tradable sector for reasons unrelated to balance of payments considerations as "exchange rate protection."
17. Conolly and Taylor (1976) and Denoon (1986) are also comparative studies of devaluation experiences. The Indonesia case in Denoon's book is actually the unification of exchange rates at the free market value in April 1970. The bulk of the transactions in 1970 were conducted at the free market rate, and the "devaluation" did not cause the free market rate to change.
18. The relative price index had a lower maximum value than the competitiveness index because the price level of nontradables was higher five months after the devaluation than in the first week afterward.

19. Warr (1984) provides a numerical illustration of this.
20. It is hard to claim that the conduct of monetary policy after the second OPEC price shock was more satisfactory than after the first shock. The money growth rates were lower and the duration of the high rates shorter after the second shock, but that price rise only doubled the price of oil, whereas the first shock quadrupled it.
21. The DSXR would show a much bigger difference if the debt service were normalized by nonoil exports instead.

Chapter 9

1. For a detailed assessment of how the financially repressed financial system affected resource allocation during the 1974–83 period, see Woo (1991c). He found that the bulk of bank credits went to SOEs.
2. See the *Far Eastern Economic Review*, 18 August 1978:18; statement by the governor of the Central Bank.
3. See page 106 in Nasution (1983); the *Far Eastern Economic Review*, 18 August 1978, gave an estimate of 10 percent.
4. We thus disagree with Booth (1984) who wrote: "If the problem of high interest rates is seen essentially in terms of supply and demand, then the solution is to increase the supply of funds." Booth (1984) also attributed a significant part of the liquidity shortage to the contractionary fiscal policy. We would argue that in the absence of a contractionary fiscal policy, agents in the foreign exchange market would have considered the expansion of bank reserves i lationary and accelerated capital outflow, thus further raising domestic interest rates.
5. For an excellent discussion of the February 1991 speculative attack on the exchange rate, see Parker (1991).
6. On Bank Duta's loss, see the *Asian Wall Street Journal Weekly*, 8 October 1990, and the *Far Eastern Economic Review*, 20 September 1990.
7. Even after taking into account the fall in import prices, the real price of oil measured in terms of foreign purchasing power fell 40 percent in fiscal 1986.
8. These indirect revenues can appear immediately if an overvalued official rate has prompted substantial smuggling. A devaluation reduces the incentive to smuggle and thus raises export taxes.
9. *Jakarta Post*, 13 September 1986.
10. This point is also made by Frans Seda (*Kompas*, 13 September 1986), Mohammed Sadli (*Kompas*, 30 September 1986), and Anne Booth (1986).
11. See Nasution (1989).
12. This is not the total level of protection, since this figure does not take into account activities protected by quotas or tariffs.
13. See the *Asian Wall Street Journal Weekly*, 24 November 1986, and 1 December 1986.
14. In this section we confine our attention to the consequences of quotas on the supply of exportables within a static setting. For an excellent discussion of the impact of protection on growth, see Corden (1972).
15. We are abstracting from natural growth considerations here to make this point within a static context.

Chapter 10

1. The empirical record does not support Friedman's hypothesis. Bruno and Sachs (1985) show that such a relationship did not exist when one looks at the collective experience of the Organization for Economic Cooperation and Development (OECD) countries over the postwar period.

2. A rise in the savings rate affects only the trend growth path and not the trend growth rate. The latter is affected only if the savings rate is somehow affects the rate of technological innovation.
3. The use of 1973 as the beginning of the oil-led growth period comes more from a statistical break in GDP and its correspondence with the OPEC price increase than from a strict analytical definition. Real GDP (in 1960 prices) grew 7 percent every year from 1970 to 1972 and jumped to 8 percent in 1973. However, the break in the oil output data occurred earlier. High inflation ended in 1970. The analytical difficulty lies in allocating 1971 and 1972.
4. The growth accounting exercise was computed using weights inferred from World Bank (1989).
5. See, for example, Denison (1967) and Ho (1978).
6. The argument was that Indonesia could no longer afford the subsidies of the liquidity credit program.
7. The applicability of these principles is not unique to Indonesia's circumstances. Taiwan (China) independently enshrined these principles after its own experience with hyperinflation in the early 1950s. See Tsiang (1980).
8. A forceful statement of the case against market intervention as a growth strategy is Lal (1985). Corden (1972) gives a balanced survey of the arguments on this issue. World Bank (1983) presents evidence showing a general negative correlation between growth and market distortion.
9. The ratios would have shown a much bigger difference if the debt service had been normalized by nonoil exports. For a longer exposition, see Woo and Nasution (1989).
10. The analysis here draws upon Woo (forthcoming).
11. The imposition of this requirement does not mean that the counterfactual level of investment would equal the actual level. Private investment spending depended on other variables besides the amount of allocated credit (see equation R.12 in the appendix).
12. The CGE simulations revealed that a tight money policy would have increased the income shares of the agricultural population and the high-income rural nonagricultural population at the expense of the low-income rural nonagricultural population and the urban population. However, a tight money policy would have meant lower total income, with the magnitude depending on the degree of monetary tightness.
13. For a recent theoretical exploration of this link, see Grossman and Helpman (1991). For a recent survey of the empirical literature, see Roberts and Tybout (1991). See also Rajapatirana (1987).

Chapter 11

1. There was, in fact, no short-run tradeoff between the inflation rate and the output level; there was only a small tradeoff between the inflation rate and the output growth rate.
2. The help in this case was the fall in the velocity of money.
3. The classic statement on the nonexistence of perverse (destabilizing) expectations is Friedman (1953). Friedman's hypothesis is empirically disputed in Woo (1987). However, we did find that destablizing expectations occurred only infrequently.

Appendix

Macroeconomic Model Used to Generate Counterfactual Scenarios

(Model is from Kobayashi, Tampubolon, and Ezaki 1985)

Notation

Variables in the Real Sector

Exogenons variables are identified by the superscript *a*. Variables endogenized in the monetary sector are identified by the superscript *b*.

C	Nominal consumption expenditure
CG	Nominal government consumption expenditure
CGR	Real government consumption expenditure[a]
CP	Nominal private consumption expenditure
CPR	Real private consumption expenditure
CR	Real consumption expenditure
CRPMS	Amount of credit supply to private sector by monetary system[b]
DEP	Nominal depreciation
DEPR	Real depreciation
EMP	Total employment
GDP	Nominal gross domestic product
GDPR	Real gross domestic product
$GDPRC_p$	Real desired aggregate demand
GNP	Nominal gross national product
GNPR	Real gross national product
I	Nominal gross domestic government fixed capital formation
IGR	Real gross domestic government fixed capital formation[a]
IPR	Real gross domestic private fixed capital formation

IR	Real gross domestic fixed capital formation
KR	Real total capital stock
LABF	Total labor force
M	Nominal total import
MC	Nominal imports of consumption goods
MCR	Real imports of consumption goods
MI	Nominal imports of investment goods
MIR	Real imports of investment goods
MR	Real total imports
MRM	Nominal imports of raw materials and intermediate goods
MRMR	Real imports of raw materials and intermediate goods
MSD	Nominal statistical discrepancy for import sector
MSDR	Real statistical discrepancy for import sector
N	Population[a]
NFTA	Nominal net factor income from abroad[a]
NFTAR	Real net factor income from abroad[a]
NNP	Nominal net national product
NNPR	Real net national product
PC	Consumption deflator
PCG	Government consumption deflator
PCP	Private consumption deflator
PCPI	Consumer price index
PDROL	Price of refined oil for domestic consumption[a]
PGDP	*GDP* deflator
PI	Capital formation deflator
PM	Import deflator
PMC	Import deflator for consumption goods
PMC $	Dollar price index for consumption good imports[a]
PMI	Import deflator for investment goods
PMI $	Dollar price index for investment good imports[a]
PMRM	Import deflator for raw materials and intermediate goods
PMRM $	Dollar price index for raw materials and intermediate good imports[a]
PMSD	Import deflator for services and statistical discrepancy[a]
PX	Export deflator
PXGAS	Price index of LNG exports in dollars[a]
PXNOS	Price index of nonoil and non-LNG exports in dollars[a]
PXOIL	Price of crude oil exports in dollars per barrel[a]
QDOIL	Quantity of crude oil for domestic consumption in millions of barrels
QDROL	Quantity of refined oil for domestic consumption in millions of liters
QMOIL	Quantity of crude oil imports in millions of barrels[a]
QMROL	Quantity of refined oil imports in millions of barrels[a]
QOIL	Quantity of oil production[a]
QXOIL	Quantity of crude oil exports in millions of barrels
QXOSD	Statistical discrepancy for the quantity of oil exports

RFEX	Rate of foreign exchange[a]
SMB	Nominal supply of broad money[b]
TI	Nominal indirect tax[a]
TIME	Time trend
TIR	Real indirect tax
UNEM	Unemployment
X	Nominal total exports
XGAS	Nominal value of LNG exports in billions of rupiahs
XGAS $	Nominal value of LNG exports in dollars[a]
XGASR	Real LNG exports in billions of rupiahs
XNOS	Nominal value of nonoil and non-LNG exports in billions of rupiahs
XNOS $	Nominal value of nonoil and non-LNG exports in millions of dollars
XNOSR	Real nonoil and non-LNG exports in billions of rupiahs
XOIL	Nominal value of crude oil exports in billions of rupiahs
XOIL $	Nominal value of crude oil exports in millions of dollars
XOILR	Real oil exports in billions of rupiahs
XR	Total real exports in billions of rupiahs
XSD	Nominal value of statistical discrepancy in exports in billions of rupiahs[a]
XSDR	Real statistical discrepancy in exports in billions of rupiahs[a]

Variables in the Monetary Sector

... *MA*	..., Monetary authorities
... *MB*	..., Deposit money banks
... *MS*	..., Monetary system
BMAMB	Borrowings from Bank Indonesia by *MB*[a]
BMBSD	Statistical discrepancy between *CMBMA* and *BMAMB*[a]
BOP	Balance of payments (overall balance)
BOPSD	Statistical discrepancy in balance of payments[a]
CAP	Net capital inflow[a]
CMBMA	Claims on *MB* by *MA*
COR	Currency outside banks and government, *MA*
CRCMA	Net claims on government by *MA*[a]
CRCMB	Net claims on government by *MB*[a]
CRGMS	Net claims on government by *MS*
CROMA	Net claims on official entities and public enterprises by *MA*[a]
CROMB	Net claims on official entities and public enterprises by *MB*[a]
CROMS	Net claims on official entities and public enterprises by *MS*
CRPMA	Net claims on private sector by *MA*[a]
CRPMB	Net claims on private sector by *MB*
CRPMS	Net claims on private sector by *MS*
DD	Demand deposits at *MB*
DDPMA	Private sector demand deposits at *MA*[a]

FCD	Foreign currency deposits at *MB*[a]
FODMA	Foreign currency and other deposits at *MA*[a]
MMB	Money multiplier, broad, *MS*
MFAMA	Net foreign assets in *MA*
NFAMB	Net foreign assets in *MB*
NFAMS	Net foreign assets in *MS*
NOIMA	Net other items in *MA*[a]
NOIMB	Net other items in *MB*[a]
NOIMS	Net other items in *MS*
RIDCR	Rate of interest on domestic credits[a]
RIF	Foreign rate of interest[a]
RITSD	Rate of interest on time and savings deposits[a]
RM	Reserve money, *MA*
RMB	Reserves, *MB*
RMBSD	Statistical discrepancy between *RMO* and *RHB*[a]
RMO	Reserve money other than *FODMA MA*
RRMB	Required reserves, *MB*
RRR	Required reserve ratio, *MB*[a]
SMB	Supply of money, broad, *MS*
TSD	Time and savings deposits at *MB*

System of Equations

Real Sector

The estimate method is *OLS*. Figures in parentheses are *t*-ratios. The last line for each of the estimated equations indicates, from left to right, the coefficient of determination adjusted by degree of freedom, the standard deviation of dependent variable, the Durbin-Watson ratio, and the estimation period.

(R.1) $\log(GDPR) - 0.6 * \log(KR[1]) - 0.022 * TIME = -3.3823 + 0.5923 * \log(EMP)$

(3.38) (6.38)

0.7991/0.03042/0.5698 1970–80

(R.2) $GNPR = GDPR + NFIAR$

(R.3) $NNPR = GNPR - DEPR - TIR$

(R.4) $EMP = 2{,}705.8031 + 0.3363 * GDPR + 0.8700 * LABF$

(3.14) (4.20) (29.01)

0.9999/43/3,222/2.1348 1970–80

(R.5) $LABF = -4{,}127.9864 + 0.2341 * N + 0.4679 * LABF[1]$
(1.39) (2.20) (1.98)
0.9966/287.3927/1.3266 1970–80

(R.6) $UNEM = LABF - EMP$

(R.7) $KR = KR[1] + IR - DEPR$

(R.8) $DEPR = -418.4221 + 960.3380 * GDPR / KR[1] + 0.02828 * KR[1]$
(44.51) (33.43) (121.81)
0.9997/1.8479/2.2895 1970–80

(R.9) $CR = CPR + CGR$

(R.10) $CPR = GPDR - (CGR + IR + XR - MR)$

(R.11) $IR = IPR + IGR$

(R.12) $\log(IPR) = -0.05662 + 2.3462 * \log(GDPR[1]) - 1.4914 * \log(KR[1]) + 0.1279$
(0.019) (3.79) (1.80) (1.57)
$* \log((CRPMS - CRPMS[1])/PGDP)$
0.9194/0.09317/1.7695 1970–80

(R.13) $XR = XOILR + XGASR + XNOSR + XSDR$

(R.14) $XOILR = XOILD * 415 / (PXOIL/4.0094) * (1/1{,}000)$

(R.15) $XOILD = QXOIL * PXOIL$

(R.16) $QXOIL = QOIL + QMOIL - QDOIL + QXOSD$

(R.17) $QDOIL = (1/0.7) * (((1/158.99) * QDROL) - QMROL)$

(R.18) $\log(QDROL) = -5.594 - 0.09680 * \log(PDROL/PGDP) + 1.7007 * \log(GDPR)$
(5.90) (0.87) (22.67)
0.9924/0.04079/0.9365 1969–80

(R.19) $XGASR = XGASD * 415 / PXGAS * (1/1{,}000)$

(R.20) $\log(XNOSR/XNOSR[1]) = -0.003711 + 0.2718$
(0.044) (2.72)
$* \log((PXNOS * RFEX/PGDP)/(PXNOS[1] * RFEX[1]/PGDP[1]00 + 1.3115$
(1.26)

* log(*GDPR/GDPR*[1]) – 0.01684 * *TIME*
(2.60)
0.5620/0.05606/2.9838 1971–80

(R.21) *XNOSD* = *XNOSR* * *PXNOS* * 1,000 / 415

(R.22) *MR* = *MCR* + *MIR* + *MRMR* + *MSDR*

(R.23) log(*MCR*) = 0.8964 – 1.7137 * log(*PMC/PC*) + 0.5085 * log(*CR*)
(0.27) (4.03) (1.38)
0.9163/0.1613/1.6865 1970–80

(R.24) log(*MIR*) = 0.02837 – 1.3873 * log(*PMI/PI*) + 0.7236 * log(*IR*)
(0.049) (5.45) (4.54)
+ 0.1653 * log(*MIR*[1])
(1.24)
0.9453/0.09911/1.6669 1970–80

(R.25) *MRMR* = –77.5312 – 194.2540 * *PMRM* / *PGDP* + 0.09778 * *GDPR*
(0.42) (1.84) (8.38)
0.9596/44.1542/1.6009 1970–80

(R.26) log(*MSDR*) = –21.4547 + 3.1147 * log(*GDPR*)
(5.91) (7.68)
0.8529/0.3137/1.6014 1970–80

(R.27) *GDPRCP* = (*CGR* + *IR* + *XR*) / 0.35 – *MR*

(R.28) log(*PGDP/PGDP*[1]) = –0.3558 + 0.6175 * log(*GDPRCP/GDPR*)
(2.30) (2.96)
+ 1.0735 * log(*SMB/SMB*[1])
(3.07)
0.5084/0.07240/2.1361 1970–80

(R.29) log(*PCG*) = –1.2671 + 0.6426 * log(*PGDP*) + 0.1807 * log(*SMB*)
(2.22) (4.78) (2.16)
0.9970/0.03181/1.7879 1970–80

(R.30) log(*PI*) = –1.6534 + 0.4934 * log(*PGDP*) + 0.2406 * log(*SMB*)
(1.94) (2.45) (1.92)
0.9926/0.04753/2.4478 1970–80

(R.31) *CP* = *PCP* * *CPR*

(R.32) $\log(PCP) = -0.8223 + 0.6265 * \log(PGDP) + 0.1213 * \log(SMB)$
(1.62) (5.23) (1.62)
0.9969/0.07525/0.9039 1970–80

(R.33) $\log(PCPI) = 3.7933 + 0.8815 * \log(PGDP)$
(138.08) (23.32)
0.9819/0.07525/0.9039 1970–80

(R.34) $PX = X / XR$

(R.35) $PM = M / MR$

(R.36) $PMC = PMCD * RFEX / 415$

(R.37) $PMI = PMID * RFEX / 415$

(R.38) $PMRM = PMRMD * RFEX / 415$

(R.39) $GDP = PGDP * GDPR$

(R.40) $GNP = GDP + NFIA$

(R.41) $NNP = GNP - DEP - TI$

(R.42) $DEP = PGDP * DEPR$

(R.43) $C = CP + CG$

(R.44) $PC = C / CR$

(R.45) $CG = PCG * CGR$

(R.46) $I = PI * IR$

(R.47) $X = XOIL + XGAS + XNOS + XSD$

(R.48) $XOIL = XOILD * RFEX * (1/100)$

(R.49) $XGAS = XGASD * RFEX * (1/100)$

(R.50) $XNOS = XNOSD * RFEX * (1/100)$

(R.51) $M = MC + MI + MRM + MSD$

(R.52) $MC = PMC * MCR$

(R.53) $MI = PMI * MIR$

(R.54) $MRM = PMRM * MRMR$

(R.55) $MSD = PMSD * MSDR$

Monetary Sector

(M.1) $BOP = X - M + NFIA + CAP$

(M.2) $NFAMS = NFAMS[1] + BOP + BOPSD$

(M.3) $SMB = NFAMS + CRGMS + CROMS + CRPMS - NOIMS$

(M.4) $CRGMS = CRGMA + CRGMB$

(M.5) $CROMS = CROMA + CROMB$

(M.6) $CRPMS = CRPMA + CRPMB$

(M.7) $NOIMS = NOIMA + NOIMB - (CMBMA - BMAMB) + (RMO - RMB)$

(M.8) $NFAMA = NFAHS - NFAHB$

(M.9) $RM = NFAMA + CRGMA + CROMA + CRPMA + CMBMA - FODMA - NOIMA$

(M.10) $CMBMA = -19.6462 + 1.0471 * BMAMB$
(1.73) (68.27)
0.9965/19.6249/1.2591 1970–80

(M.11) $RMO = 14.9351 + 0.9238 * RMB$
(1.59) (53.70)
0.9965/19.6249/1.2591 1970–80

(M.12) $CUR = SMB - (DDPHA + FODMA) - (DD + TSD + FCD)$

(M.13) $NFAMB = BMAMB + DD + TSD + FCD + NOIMB - CRGMB - CROMB - CRPMB - RMB$

(M.14) $\log(CRPMB/CRPMB[1]) = -0.4094 + 1.5495 * \log((DD + TSD + FCD + BMAMB - RMB) / (DD[1] + TSD[1] + FCD[1] + GMAMB[1] - RMB[1]))$
(3.08) (5.09)
$- 0.4479 * \log((CRGMB + CROMB) / (CRGMB[1] + CROMB[1]))$
(5.07)
$+ 0.02592 * RIDCR * (1.0 - D880) + 0.05734 * (RIDCR - RIF) * D7880 - 27.9780 * (RIDCR - RIF) * D7880$
(5.05) (3.28)
0.7877/0.06444/2.7398 1972–80

(M.15) $RMB = 385.7137 + 1.0953 * RRMB - 20.8916 * RIDCR * (1.0 - D7880) - 27.9780 * (RIDCR - RIF) * D7880$
(3.61) (7.01) (5.13) (2.04)
0.9780/51.1562/2.3254 1972–80

(M.16) $RRMB = RRR * (DD + TSD)$

(M.17) $\log(DD/PGDP) = -5.7272 + 0.9794 * \log(GDPR - 0.2693 * \log(PGDP/PGDDP[1]) + 0.5020 * \log(DD[1]/PGDP[1])$
(1.06) (1.18) (0.77) (1.36)
0.9656/0.09602/1.8233 1970–80

(M.18) $\log(TSD/PGDP) = -2.2924 + 0.3611 * \log(GDPR) - 0.4560 * \log(PGDP/PGDP[1]) + 0.03674 * RITSD + 0.7487 * \log(TSD[1]/PGDP[1])$
(0.91) (1.03) (1.36) (2.94) (4.89)
0.9399/0.09849/3,1753 1970–80

Error Analysis, Root Mean Square Percentage Error (RMSPE), 1972–80

GDPR	2.8	*MRMR*	9.9	*XGAS*	0.0
GNPR	3.0	*MSDR*	32.8	*XNOS*	3.5
NNPR	3.2	*GDPRCP*	1.5	*M*	5.6
EMP	0.5	*PGDP*	6.0	*MC*	23.1
LABF	0.5	*PCG*	5.8	*MI*	14.6
UNEM	4.7	*PI*	5.2	*MRM*	9.9
KR	0.8	*CP*	9.8	*MSD*	33.8
DEPR	2.4	*PCP*	7.8	*BOP*	74.1
CR	4.3	*PCPI*	7.0	*NFAMS*	147.2
CPR	4.9	*PX*	0.7	*SMB*	15.5
IR	4.3	*PM*	3.0	*CRGMS*	0.0
IPR	7.2	*PMC*	0.0	*CROMS*	0.0
XR	1.5	*PMI*	0.0	*CRPMS*	8.6
XOILR	1.3	*PMRM*	0.0	*NOIMS*	1.3
XOILD	1.3	*GDP*	7.0	*NFAMA*	116.3
QXOIL	1.3	*GNP*	7.4	*RM*	30.9
QDOIL	4.9	*NNP*	7.8	*CMBMA*	0.0
QDROL	3.9	*DEP*	6.8	*RMO*	14.0
XGASR	0.0	*C*	9.1	*CUR*	51.7
XNOSR	3.5	*PC*	7.3	*NFAMB*	123.3
XNOSD	3.5	*CG*	5.8	*CRPMB*	8.6
MR	5.8	*I*	6.9	*RMB*	13.8
MCR	23.1	*X*	1.0	*RRMB*	7.8
MIR	14.6	*XOIL*	1.3	*DD*	10.9
				TSD	7.6

Table A.1 Change in Real Gross Domestic Product (GDP), 1950–90

Year	Percent	Year	Percent	Year	Percent	Year	Percent
1950	—	1960	2.0	1970	6.5	1980	7.9
1951	6.3	1961	5.7	1971	7.0	1981	7.4
1952	3.1	1962	1.8	1972	9.4	1982	–0.3
1953	6.5	1963	–2.2	1973	11.3	1983	3.3
1954	6.9	1964	3.5	1974	7.6	1984	6.0
1955	5.8	1965	1.1	1975	5.0	1985	2.4
1956	2.6	1966	2.3	1976	6.9	1986	4.0
1957	7.1	1967	2.3	1977	8.9	1987	3.9
1958	–4.1	1968	11.1	1978	7.7	1988	5.7
1959	2.4	1969	7.1	1979	6.3	1989	7.4
						1990	7.1

Note: 1960–65 from 1960 weights, 1966–77 from 1973 weights, 1978–90 from 1983 weights.
Source: World Bank data.

Table A.2 Rate of Inflation, 1950–90

Year	Percent	Year	Percent	Year	Percent	Year	Percent
1950	21.4	1960	20.0	1970	12.3	1980	18.5
1951	64.7	1961	76.7	1971	4.4	1981	12.2
1952	6.0	1962	155.9	1972	6.4	1982	9.5
1953	5.6	1963	128.8	1973	31.0	1983	11.8
1954	6.4	1964	135.3	1974	40.6	1984	10.5
1955	35.0	1965	593.7	1975	19.1	1985	4.7
1956	–1.5	1966	635.4	1976	19.8	1986	5.9
1957	54.9	1967	112.2	1977	11.0	1987	9.1
1958	18.0	1968	84.8	1978	8.1	1988	5.8
1959	13.2	1969	17.4	1979	20.6	1989	6.0
						1990	10.0

Source: World Bank data.

Table A.3 All Exports, 1965–89

Year	*Billions of current rupiahs*	*Percentage of GDP*	*Millions of dollars*
1965	1	4.2	708
1966	40	12.7	679
1967	74	8.7	665
1968	228	10.9	731
1969	245	9.0	854
1970	429	12.8	1,108
1971	530	14.4	1,234
1972	754	16.5	1,777
1973	1,354	20.1	3,211
1974	3,105	29.0	7,426
1975	2,851	22.6	7,102
1976	3,340	22.2	8,547
1977	4,466	23.5	10,853
1978	4,935	21.7	11,643
1979	9,629	30.1	15,591
1980	13,849	30.5	21,909
1981	16,177	27.8	22,260
1982	15,103	24.2	22,293
1983	20,488	27.8	21,152
1984	22,985	26.4	21,902
1985	21,534	22.9	18,590
1986	20,010	—	14,824
1987	29,874	23.7	18,271
1988	34,666	24.9	20,725
1989	42,503	25.3	24,965

Source: IMF (1988); World Bank data.

Table A.4 All Imports, 1965–89

Year	Billions of current rupiahs	Percentage of GDP	Millions of dollars
1965	1	4.2	695
1966	70	22.2	527
1967	143	16.9	649
1968	327	15.6	716
1969	403	14.8	781
1970	529	15.8	1,002
1971	611	16.6	1,103
1972	862	18.9	1,562
1973	1,316	19.5	2,729
1974	2,294	21.4	3,842
1975	2,778	22.0	4,770
1976	3,222	20.8	5,673
1977	3,817	20.1	6,230
1978	3,370	14.8	6,690
1979	7,555	23.6	7,202
1980	10,080	22.2	10,834
1981	14,119	24.3	13,272
1982	15,186	24.3	16,859
1983	21,225	28.8	16,352
1984	18,627	21.4	13,882
1985	19,835	21.1	10,259
1986	21,036	—	10,724
1987	27,956	21.1	16,972
1988	31,171	21.4	18,341
1989	38,395	22.2	21,439

Source: IMF (1988); World Bank data.

Table A.5—Part A Effective Exchange Rate, 1950–72
(export exchange rate after taking various export subsidies and FEC incentives into account)

Year	Rupiahs per dollar	Year	Rupiahs per dollar	Year	Rupiahs per dollar	Year	Rupiahs per dollar
1950	7.08	1956	11.84	1962	136.50	1968	269.00
1951	7.60	1957	17.33	1963	320.55	1969	318.20
1952	9.44	1958	29.55	1964	788.35	1970	333.70
1953	11.60	1959	32.21	1965	2,683.00	1971	353.90
1954	12.52	1960	37.52	1966	36.00	1972	373.50
1955	11.07	1961	40.50	1967	103.40		

Table A.5—Part B The Free Market Exchange Rate, 1950–86

Year	Rupiahs per dollar	Year	Rupiahs per dollar	Year	Rupiahs per dollar	Year	Rupiahs per dollar
1950	24.65	1959	130.82	1968	386.70	1977	415.00
1951	16.17	1960	285.17	1969	408.40	1978	625.00
1952	19.63	1961	186.67	1970	388.60	1979	627.00
1953	27.32	1962	760.42	1971	397.30	1980	627.00
1954	31.98	1963	1,456.00	1972	415.00	1981	644.00
1955	39.13	1964	3,004.00	1973	415.00	1982	692.00
1956	33.33	1965	14,083.00	1974	415.00	1983	994.00
1957	43.65	1966	105.70	1975	415.00	1984	1,074.00
1958	71.74	1967	172.30	1976	415.00	1985	1,125.00
						1986	1,641.00

Note: 1950–65 in "old" rupiahs; 1966–86 in "new" rupiahs; 1 new rupiah = 1,000 old rupiahs.
Source: IMF (1988); Pitt (1991); World Bank data.

Table A.6 Current Account Balance, 1965–89

Year	Millions of dollars	Year	Millions of dollars	Year	Millions of dollars
1965	–222	1974	+598	1983	–6,338
1966	–108	1975	–1,109	1984	–1,856
1967	–254	1976	–907	1985	–1,923
1968	–255	1977	–51	1986	–3,911
1969	–336	1978	–1,413	1987	–2,098
1970	–310	1979	+980	1988	–1,189
1971	–372	1980	+2,864	1989	–1,721
1972	–334	1981	–566		
1973	–476	1982	–5,324		

Source: World Bank data.

Table A.7 Nonoil, Non-LNG Exports, 1971–90

Year	Millions of dollars	Percentage of GDP
1971	721	7.7
1972	864	7.9
1973	1,602	9.8
1974	2,214	8.6
1975	1,791	5.9
1976	2,542	6.8
1977	3,474	7.6
1978	3,657	7.1
1979	5,426	10.6
1980	6,167	8.5
1981	4,200	4.7
1982	3,900	4.2
1983	5,400	7.7
1984	5,900	7.5
1985	6,200	7.7
1986	6,700	9.4
1987	9,500	13.0
1988	12,200	14.8
1989	14,300	15.9
1990	15,500	15.5

Source: World Bank data.

Table A.8 Oil and LNG Exports, 1965–86

(millions of dollars)

Year	Exports	Year	Exports
1965	272	1976	6,004
1966	203	1977	7,298
1967	240	1978	7,439
1968	298	1979	8,871
1969	383	1980	12,850
1970	446	1981	14,390
1971	565	1982	14,861
1972	913	1983	13,478
1973	1,609	1984	12,097
1974	5,211	1985	7,670
1975	5,311	1986	5,167

Source: IMF (1988); World Bank data.

Table A.9 Gross Domestic Investment as Percentage of GDP, 1965–89

Year	*Percent*	*Year*	*Percent*
1965	8.3	1978	26.6
1966	4.4	1979	23.4
1967	8.0	1980	29.6
1968	8.8	1981	27.5
1969	14.6	1982	29.4
1970	13.6	1983	25.5
1971	15.8	1984	26.4
1972	18.8	1985	26.2
1973	17.9	1986	—
1974	16.8	1987	22.5
1975	20.3	1988	22.2
1976	19.3	1989	23.5
1977	20.2		

Source: Government of Indonesia.

Table A.10 Government Expenditure as Percentage of GDP, 1965–89

Year	*Percent*	*Year*	*Percent*
1965	12.5	1978	19.6
1966	9.2	1979	22.4
1967	10.4	1980	25.3
1968	8.8	1981	25.7
1969	12.8	1982	23.0
1970	13.8	1983	22.5
1971	14.5	1984	20.6
1972	16.0	1985	22.4
1973	16.7	1986	22.7
1974	17.7	1987	20.2
1975	21.2	1988	19.7
1976	20.6	1989	19.8
1977	18.1		

Source: Department of Finance, Government of Indonesia.

Table A.11 Macroeconomic Indicators, 1965–89
(billions of current rupiahs)

Year	GDP	Total consumption expenditure	Private consumption	Government consumption	Gross capital formation
1965	24	22	21	1	2
1966	316	331	303	28	14
1967	848	849	786	63	68
1968	2,097	2,010	1,854	156	185
1969	2,718	2,559	2,360	199	317
1970	3,340	2,986	2,693	293	455
1971	3,672	3,174	2,833	341	580
1972	4,564	3,816	3,402	414	857
1973	6,753	5,507	4,791	716	1,208
1974	10,708	8,136	7,295	841	1,797
1975	12,643	9,999	8,745	1,254	2,572
1976	15,467	12,055	10,464	1,591	3,205
1977	19,011	14,535	12,458	2,077	3,826
1978	22,746	16,510	13,851	2,659	4,671
1979	32,025	23,687	19,954	3,733	6,704
1980	45,446	32,191	27,503	4,688	9,485
1981	58,127	38,745	32,293	6,452	17,324
1982	62,476	45,153	37,924	7,229	17,406
1983	73,698	52,816	44,739	8,077	21,668
1984	87,055	60,521	51,399	9,122	22,177
1985	96,997	68,094	57,201	10,893	22,367
1986	102,683	74,684	63,355	11,329	24,782
1987	124,817	83,753	71,989	11,764	30,980
1988	142,020	93,801	81,045	12,756	36,803
1989	166,330	104,450	88,752	15,698	45,650

Source: IMF, *International Financial Statistics Yearbook* (1988); Central Bureau of Statistics.

Table A.12 Central Government Expenditures, 1969/70 to 1991/92

(billions of current rupiahs)

Item	*1969/70*	*1970/71*	*1971/72*	*1972/73*	*1973/74*	*1974/75*	*1975/76*	*1976/77*
Personnel	103.8	131.4	163.3	200.4	268.9	420.1	593.9	636.6
Debt service	14.4	25.6	46.6	53.4	70.7	73.7	78.5	189.5
External debt service	12.7	23.6	37.2	44.1	62.6	67.3	71.7	165.1
Internal debt service	1.7	2.0	8.4	5.3	11.1	6.4	6.8	24.4
Subsidies to regions	44.1	56.2	66.8	83.9	108.6	201.9	284.5	313.0
Food subsidy	0.0	0.0	0.0	0.0	0.0	141.0	50.0	39.0
Oil subsidy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other routine expenditures	54.2	75.0	72.4	100.4	265.1	179.4	325.7	451.7
Standard expenditures	216.5	288.2	349.1	438.1	713.3	1,016.1	1,332.6	1,629.8
Regional development	12.6	43.5	49.6	55.7	70.1	136.0	173.0	190.0
Fertilizer subsidy	0.0	0.0	0.0	0.0	33.0	227.2	134.0	107.0
Agriculture and irrigation, excluding fertilizer subsidy	25.0	32.1	46.6	39.6	45.0	74.8	123.0	249.0
Industry and mining	5.8	1.8	8.1	4.7	5.3	71.0	124.0	195.0
Electric power	4.1	7.1	14.1	16.2	21.6	79.0	128.0	218.0
Transportation, tourism, and communications	25.3	17.7	42.4	44.0	57.0	124.0	312.0	429.0
Manpower and transmigration	0.1	1.0	0.7	0.3	0.0	5.0	12.0	27.0
Education and culture	9.1	8.9	10.9	16.2	29.9	47.0	114.0	136.0
Health and social welfare	4.5	3.5	4.6	7.3	14.4	25.0	38.0	48.0
Housing and water supply	1.2	2.6	2.4	4.4	5.3	7.0	13.0	30.0
General public services	11.8	14.6	11.9	16.0	78.0	49.0	72.0	114.0
Government capital participation	0.0	1.0	7.0	24.7	0.0	98.0	115.0	225.0
Other items in development budget	0.9	1.2	1.6	1.9	0.0	19.0	40.0	87.0
Unknown allocation of project aid	25.8	44.6	8.0	67.2	91.3	0.0	0.0	0.0
Development expenditure	126.2	179.6	207.9	298.2	450.9	961.8	1,397.7	2,054.5
Total expenditure	342.7	467.8	557.0	736.3	1,164.2	1,977.9	2,730.3	3,684.3

Item	1977/78	1978/79	1979/80	1980/81	1981/782	1982/83	1983/84	1984/85
Personnel	893.2	1,001.6	1,419.9	2,023.3	2,277.7	2,418.1	2,757.0	3,046.8
Debt service	228.3	534.5	684.1	784.8	931.0	1,224.5	2,102.7	2,776.5
External debt service	220.9	525.7	647.6	754.0	915.0	1,204.7	2,072.9	2,737.2
Internal debt service	7.4	8.8	36.5	30.8	16.0	19.8	29.8	39.3
Subsidies to regions	478.4	522.3	669.9	976.1	1,209.4	1,315.4	1,546.9	1,883.3
Food subsidy	0.0	43.5	124.9	281.6	224.0	1.0	0.0	0.0
Oil subsidy	65.1	197.0	534.9	1,022.0	1,316.0	962.0	928.1	506.7
Other routine expenditures	483.9	444.8	628.1	712.2	1,019.5	1,075.3	1,077.1	1,215.6
Standard expenditures	2,148.9	2,743.7	4,061.8	5,800.0	6,977.6	6,996.3	8,411.8	9,428.9
Regional development	251.0	275.0	336.0	482.0	616.0	711.0	749.0	791.0
Fertilizer subsidy	32.0	83.0	85.0	283.0	371.0	420.0	324.0	732.0
Agriculture and irrigation, excluding fertilizer subsidy	348.0	367.0	423.0	646.0	583.0	511.0	589.0	967.0
Industry and mining	139.0	205.0	356.0	491.0	827.0	913.0	2,153.0	839.0
Electric power	223.0	272.0	376.0	431.0	530.0	758.0	660.0	911.0
Transportation, tourism, and communications	355.0	413.0	466.0	780.0	807.0	876.0	1,527.0	1,428.0
Manpower and transmigration	61.0	95.0	162.0	326.0	417.0	436.0	456.0	422.0
Education and culture	211.0	251.0	362.0	575.0	726.0	703.0	1,032.0	1,231.0
Health and social welfare	71.0	79.0	142.0	218.0	286.0	259.0	279.0	320.0
Housing and water supply	90.0	56.0	117.0	191.0	166.0	151.0	221.0	224.0
General public services	123.0	225.0	473.0	700.0	800.0	785.0	899.0	927.0
Government capital participation	190.0	162.0	466.0	389.0	389.0	281.0	234.0	292.0
Other items in development budget	63.0	73.0	250.0	404.0	422.0	556.0	776.0	868.0
Unknown allocation of project aid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Development expenditure	2,156.8	2,555.6	4,014.2	5,916.1	6,940.0	7,359.6	9,899.2	9,951.9
Total expenditure	4,305.7	5,299.3	8,076.0	11,716.1	13,917.6	14,355.9	18,311.0	19,380.8

(Table continues on next page.)

Table A.12 ***continued***

Item	*1985/86*	*19786/87*	*1987/88*	*1988/89*	*1989/90*	*1990/91*	*1991/92*
Personnel	4,018.3	4,311.0	4,617.0	4,998.0	6,202.0	6,909.0	7,753.0
Debt service	3,323.1	5,058.0	8,205.0	10,940.0	11,939.0	12,984.0	14,381.0
External debt service	3,303.1	5,058.0	8,166.0	10,863.0	11,790.0	12,739.0	14,130.0
Internal debt service	20.0	0.0	39.0	78.0	149.0	245.0	251.0
Subsidies to regions	2,489.0	2,650.0	2,816.0	3,038.0	3,566.0	4,227.0	4,660.0
Food subsidy	0.0	29.0	0.0	0.0	0.0	0.0	0.0
Oil subsidy	374.2	0.0	0.0	0.0	0.0	627.0	1,187.0
Other routine expenditures	1,746.9	1,511.0	1,844.0	1,763.0	2,624.0	1,901.0	2,577.0
Standard expenditures	11,951.5	13,559.0	17,482.0	20,739.0	24,331.0	26,648.0	30,558.0
Regional development	850.0	939.0	930.0	1,137.0	1,369.0	1,873.0	2,409.0
Fertilizer subsidy	477.1	467.0	756.0	200.0	278.0	155.0	175.0
Agriculture and irrigation, excluding fertilizer subsidy	660.9	423.0	1,181.0	1,414.0	1,771.0	2,237.0	2,641.0
Industry and mining	1,189.0	681.0	335.0	565.0	420.0	661.0	728.0
Electric power	1,447.0	960.0	1,085.0	1,955.0	1,397.0	1,759.0	2,210.0
Transportation, tourism, and communications	1,484.0	1,131.0	1,598.0	2,011.0	3,006.0	3,042.0	3,968.0
Manpower and transmigration	665.0	292.0	200.0	266.0	281.0	556.0	745.0
Education and culture	1,413.0	1,184.0	1,181.0	1,606.0	1,507.0	2,065.0	2,503.0
Health and social welfare	398.0	326.0	225.0	339.0	470.0	592.0	783.0
Housing and water supply	335.0	337.0	432.0	481.0	495.0	729.0	833.0
General public services	977.0	769.0	652.0	733.0	909.0	1,166.0	1,376.0
Government capital participatioa	221.0	211.0	219.0	238.0	625.0	339.0	378.0
Other items in development budget	758.0	1,078.0	684.0	1,305.0	1,306.0	1,051.0	1,250.0
Unknown allocation of project aid	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Development expenditure	10,873.1	8,332.0	9,477.0	12,251.0	13,834.0	16,225.0	19,998.0
Total expenditure	22,824.6	21,891.0	26,950.0	32,990.0	38,165.0	42,873.0	50,556.0

Note: GDP deflator (1980 = 100).
Source: Department of Finance, Government of Indonesia.

Table A.13 Government Revenues, 1969/70 to 1991/92

(billions of current rupiahs)

Tax category	*1969/70*	*1970/71*	*1971/72*	*1972/73*	*1973/74*	*1974/75*	*1975/76*	*1976/77*
Revenue sources								
Tax on nonoil income	42.9	52.8	67.4	84.6	135.4	217.8	287.2	359.8
Tax on oil and LNG	65.8	99.2	140.7	230.5	382.2	957.2	1,248.0	1,635.3
Tax on nonoil domestic consumption	50.8	61.8	72.5	92.1	133.3	184.3	253.6	328.9
Tax on international trade	81.0	117.8	119.9	133.7	247.5	299.8	308.1	421.3
Tax on property	8.0	10.0	12.0	15.1	19.5	28.0	34.6	42.2
Nontax receipts	3.1	13.1	27.5	34.6	49.8	66.6	110.4	118.5
Total	251.6	354.7	440.0	590.6	967.7	1,753.7	2,241.9	2,906.0
Percentage of total revenue								
Tax on nonoil income	17.1	14.9	15.3	14.3	14.0	12.4	12.8	12.4
Tax on oil and LNG	26.2	28.0	32.0	39.0	39.5	54.6	55.7	56.3
Tax on nonoil domestic consumption	20.2	17.4	16.5	15.6	13.8	10.5	11.3	11.3
Tax on international trade	32.2	33.2	27.3	22.6	25.6	17.1	13.7	14.5
Tax on property	3.2	2.8	2.7	2.6	2.0	1.6	1.5	1.5
Nontax receipts	1.2	3.7	6.3	5.9	5.1	3.8	4.9	4.1

(Table continues on next page.)

Table A.13 ***continued***

Tax category	*1977/78*	*1978/79*	*1979/80*	*1980/81*	*1981/782*	*1982/83*	*1983/84*	*1984/85*
Revenue sources								
Tax on nonoil income	475.8	581.2	736.5	1,045.3	1,279.3	1,605.2	1,784.3	2,121.0
Tax on oil and LNG	1,948.7	2,308.7	4,259.6	7,019.6	8,627.8	8,170.4	9,520.2	10,429.9
Tax on nonoil domestic consumption	432.1	534.7	599.0	811.1	986.7	1,266.5	1,560.3	1,648.2
Tax on international trade	481.7	587.0	843.0	948.1	887.9	835.4	916.0	861.9
Tax on property	52.5	63.1	71.4	87.2	94.5	105.2	132.4	157.2
Nontax receipts	143.6	191.4	187.3	315.7	336.4	435.6	519.5	687.3
Total	3,534.4	4,266.1	6,696.8	10,227.0	12,212.6	12,418.3	14,432.7	15,905.5
Percentage of total revenue								
Tax on nonoil income	13.5	13.6	11.0	10.2	10.5	12.9	12.4	13.3
Tax on oil and LNG	55.1	54.1	63.6	68.6	70.6	65.8	66.0	65.6
Tax on nonoil domestic consumption	12.2	12.5	8.9	7.9	8.1	10.2	10.8	10.4
Tax on international trade	13.6	13.8	12.6	9.3	7.3	6.7	6.3	5.4
Tax on property	1.5	1.5	1.1	0.9	0.8	0.8	0.9	1.0
Nontax receipts	4.1	4.5	2.8	3.1	2.8	3.5	3.6	4.3

Tax category	1985/86	19786/87	1987/88	1988/89	1989/90	1990/91	1991/92
Revenue sources							
Tax on nonoil income	2,313.0	2,271.0	2,663.0	3,949.0	5,488.0	6,516.0	8,021.0
Tax on oil and LNG	11,144.4	7,348.0	10,047.0	9,527.0	11,252.0	10,783.0	15,009.0
Tax on nonoil domestic consumption	3,478.6	4,146.0	4,719.0	6,187.0	7,589.0	9,025.0	10,790.0
Tax on international trade	657.8	1,039.0	1,122.0	1,348.0	1,759.0	2,080.0	2,695.0
Tax on property	167.5	190.0	275.0	424.0	590.0	620.0	839.0
Nontax receipts	1,491.5	1,147.0	1,977.0	1,569.0	2,062.0	2,560.0	2,831.0
Total	19,252.8	16,141.0	20,803.0	23,004.0	28,740.0	31,584.0	40,185.0
Percentage of total revenue							
Tax on nonoil income	12.0	14.1	12.8	17.2	19.1	20.6	20.0
Tax on oil and LNG	57.9	45.5	48.3	41.4	39.2	34.1	37.3
Tax on nonoil domestic consumption	18.1	25.7	22.7	26.9	26.4	28.6	26.9
Tax on international trade	3.4	6.4	5.4	5.9	6.1	6.6	6.7
Tax on property	0.9	1.2	1.3	1.8	2.1	2.0	2.1
Nontax receipts	7.7	7.1	9.5	6.8	7.2	8.1	7.0

Source: Department of Finance, Government of Indonesia.

Table A.14 National Income Statistics

(constant prices; 1968–77, 1976 prices; 1978–86, 1983 prices)

Year	Total consumption	Private consumption	Government consumption[a]	Gross domestic investment[b]	Gross domestic saving[b]	Exports of goods and services[c]	Imports of goods and services[c]
1968	6,823	6,090	733	775	530	1,459	811
1969	7,288	6,537	751	983	600	1,674	982
1970	7,604	6,728	876	1,305	1,097	1,961	1,100
1971	7,882	6,935	947	1,588	1,427	2,144	1,209
1972	8,357	7,427	930	1,891	1,698	2,703	1,531
1973	9,543	8,273	1,270	2,213	2,278	3,258	2,177
1974	10,483	9,108	1,375	2,638	3,617	3,377	2,762
1975	11,295	9,813	1,482	3,023	3,102	3,048	2,980
1976	12,082	10,491	1,591	3,205	3,412	3,430	3,222
1977	12,705	10,860	1,845	3,368	3,854	3,801	3,252
1978	34,976	29,848	5,128	11,153	12,665	24,255	12,194
1979	38,235	32,491	5,743	12,279	16,478	24,801	13,547
1980	42,911	36,037	6,847	12,448	21,886	26,182	14,866
1981	47,250	39,699	7,551	22,797	26,152	21,457	19,890
1982	50,402	42,172	8,230	21,622	21,961	19,524	20,171
1983	52,817	44,739	8,077	21,669	20,881	20,448	21,235
1984	55,251	46,898	8,353	18,875	22,745	20,563	16,544
1985	57,016	48,041	8,975	21,079	22,546	18,915	16,996
1986	58,879	49,638	9,241	21,462	17,941	21,637	18,798

a. Central government only.
b. Not disaggregated.
c. Nonfactor.
Source: World Bank data.

Table A.15 Expenditure on GDP at Constant 1983 Market Price, 1985–89

(billions of rupiahs)

Item	1985	1986	1987	1988	1989
Private consumption	49,448	50,530	52,200	54,225	56,476
Government consumption	8,991	9,241	9,226	9,924	10,965
Gross fixed investment	19,616	21,422	22,597	25,201	28,568
Changes in stock	6,641	6,333	5,049	1,075	1,230
Exports of goods and nonfactor services	19,495	22,460	25,745	26,010	27,851
Less imports of goods and nonfactor services	19,109	19,906	20,299	16,504	17,768
Gross domestic product	85,082	90,081	94,518	99,936	107,321

Source: Central Bureau of Statistics.

Table A.16 Monetary Variables

(billions of rupiahs)

Year	M_1	M_2	Reserve money	Domestic credit private sector	Domestic credit public sector		
					Government	Other	Total
1965	3	3	2	1	17	—	—
1966	22	23	18	7	29	—	—
1967	52	54	45	32	38	—	—
1968	116	128	100	60	43	37	80
1969	183	233	160	159	41	73	114
1970	250	330	207	287	48	63	111
1971	319	468	267	405	62	73	135
1972	474	696	389	597	9	115	124
1973	671	994	542	954	–16	249	233
1974	942	1,454	850	1,385	–137	428	291
1975	1,274	2,022	1,132	1,124	51	1,263	1,314
1976	1,601	2,651	1,380	1,420	–287	1,755	1,468
1977	2,006	3,133	1,720	2,791	–407	1,834	1,427
1978	2,488	3,822	1,885	2,205	–462	2,610	2,148
1979	3,316	5,159	2,478	2,900	–1,163	3,024	1,861
1980	5,011	7,707	3,375	4,323	–2,746	3,729	983
1981	6,474	9,705	3,920	6,049	–4,691	4,258	–433
1982	7,120	11,074	4,107	8,515	–5,195	4,879	–316
1983	7,576	14,670	5,138	10,934	–4,938	4,682	–256
1984	8,581	17,937	5,701	14,737	–8,031	4,717	–3,314
1985	10,124	23,177	6,721	18,104	–9,087	5,013	–4,074
1986	11,631	27,615	8,170	22,864	–8,541	5,104	–3,437

Source: Department of Finance, Government of Indonesia; IMF, *International Financial Statistics Yearbook* (1988).

Table A.17 Interest Rates, 1965–86

Year	Money market rate (percent)	Deposit interest rate (percent)
1965	—	—
1966	—	—
1967	—	—
1968	—	—
1969	—	—
1970	—	—
1971	—	21
1972	—	21
1973	—	15
1974	11.4	12
1975	13.4	12
1976	14.2	12
1977	7.2	12
1978	7.3	9
1979	13.2	6
1980	12.9	6
1981	16.3	6
1982	17.2	6
1983	13.2	6
1984	18.6	16
1985	10.3	18
1986	13.0	—

Source: IMF, *International Financial Statistics Yearbook* (1988).

Table A.18 Exports, 1974/75 to 1983/84

(millions of dollars)

Product	*1974/75*	*1975/76*	*1976/77*	*1977/78*	*1978/79*	*1979/80*	*1980/81*	*1981/82*	*1982/83*	*1983/84*
Timber[a]	615	527	885	943	1,130	2,166	1,672	752	559	514
Rubber	425	381	577	608	774	1,101	1,078	770	614	829
Coffee	92	112	330	626	508	715	588	343	364	496
Other agricultural exports										
Palm oil	184	142	147	202	221	257	178	79	103	146
Tea	50	50	64	120	98	91	97	94	116	148
Tobacco	36	40	41	59	58	60	69	49	37	72
Pepper	22	25	55	62	66	46	51	49	41	66
Others	199	195	248	278	344	679	540	595	502	618
Subtotal agriculture	1,623	1,472	2,347	2,898	3,199	5,115	4,273	2,731	2,336	2,889
Tin	166	158	181	253	324	388	454	437	349	331
Other metals and minerals										
Nickel	—	—	—	—	—	95	165	145	139	174
Aluminum	—	—	—	—	—	—	—	—	48	173
Copper	102	74	95	74	64	95	115	133	115	89
Others	28	25	44	36	49	31	40	41	25	60
Subtotal metals and minerals	296	257	320	363	437	609	774	756	676	827
Manufactures										
Plywood	—	—	—	—	—	—	—	199	324	574
Others	114	144	196	245	360	447	540	484	558	880
Subtotal manufactures	114	144	196	245	360	447	540	683	882	1,454
Total nonoil exports	2,033	1,873	2,863	3,507	3,979	6,171	5,587	4,170	3,894	5,170
Oil and oil products	4,548	5,410	6,350	7,192	6,858	10,995	15,187	16,482	12,282	12,330
LNG	—	—	—	162	516	1,345	2,111	2,342	2,461	2,230
Total oil and LNG	4,548	5,410	6,350	7,354	7,374	12,340	17,298	18,824	14,743	14,560

a. Includes plywood up to 1980/81.

Source: World Bank estimates.

Table A.19 Types of External Public Debt Outstanding (Disbursed) as of December 31, 1990, by Country or Institution

(millions of dollars)

Suppliers' credits		*Bilateral loans*	
Finland	10,808	Australia	273,683
France	38	Austria	57,138
Japan	2,661,129	Belgium	100,283
Korea, Republic of	9,795	Brunei	100,000
Pakistan	5,073	Bulgaria	995
Switzerland	1,258	Canada	339,260
Yugoslavia	1,383	China	26,901
Total	2,689,484	Czechoslovakia[e]	33,173
		Denmark	30,710
Financial institutions		Egypt, Arab Republic of	1,433
France	129,319	France	708,888
Germany[e]	5,239	Germany[e]	1,974,645
Hong Kong	954,370	Hungary	8,275
Italy	2,685	India	18,651
Japan	3,199,385	Italy	53,616
Multiple lenders	281,250	Japan	10,821,334
the Netherlands	2,869	Kuwait	73,582
Singapore	114,202	the Netherlands	1,155,608
United Kingdom	270,710	New Zealand	1,046
United States	505,439	Other	20,000
Other	20,000	Pakistan	3,483
Total	5,465,470	Poland	46,595
		Romania	6,680
Bonds		Saudi Arabia	76,109
Germany	200,803	Spain	128
Kuwait	6,864	Switzerland	286
the Netherlands	17,751	United Arab Emirates	5,015
Switzerland	82,500	United Kingdom	49,480
United Kingdom	88,100	United States	2,365,039
United States	300,000	U.S.S.R.[e]	445,655
Yugoslavia[e]	55,849	Yugoslavia[e]	55,849
Total	696,019	Total	18,853,541
Nationalization		*Export credits*	
Austria	139,337	Austria	139,337
the Netherlands	133,491	Belgium	118,998
Total	133,491	France	854,279
		Germany[e]	226,692
Multilateral loans		Japan	191,353
Asian Development Bank	3,138,614	the Netherlands	275,279
EC[a]	4,297	Norway	4,297
IBRD[b]	9,542,263	Singapore	6,143
IDA[c]	842,438	Sweden	179,649
IFAD[d]	44,176	Switzerland	70,121
Islamic Development Bank	691	United Kingdom	772,514
Nordic Investment Bank	26,000	Total	2,838,663
Total	13,598,480	Total external public debt	44,275,147

a. European Community.
b. International Bank for Reconstruction and Development.
c. International Development Association.
d. International Fund for Agricultural Development.
e. Country names correct for the period when data for this table were collected.

Source: Department of Finance, Government of Indonesia.

Table A.20 International Reserves and Debt Service by Category, 1965–86
(millions of dollars)

Year	International reserves[a]	Principal	Interest service payments	Total
1965	17	—	—	—
1966	19	—	—	—
1967	2	66	22	88
1968	83	111	41	152
1969	118	169	56	225
1970	156	235	85	320
1971	185	365	138	503
1972	572	699	162	861
1973	805	755	226	981
1974	1,490	1,269	304	1,572
1975	584	717	239	956
1976	1,497	641	232	874
1977	2,509	601	289	890
1978	2,626	1,548	514	2,062
1979	4,062	1,328	771	2,099
1980	5,392	935	823	1,758
1981	5,014	1,052	994	2,047
1982	3,144	1,103	1,146	2,249
1983	3,718	1,287	1,255	2,542
1984	4,773	1,613	1,628	3,240
1985	4,974	2,347	1,644	3,991
1986	4,051	2,334	2,044	4,378

a. Total reserves minus gold.

Source: IMF, *International Financial Statistics Yearbook* (1988); World Bank data; World Bank, *World Debt Tables* (1976 and 1980).

Table A.21 Liquidity Credits of Bank Indonesia, 1980-83
(billions of rupiah)

	1980 March	*1981 March*	*1982 March*	*1983 March*
State banks	1,333	1,769	2,769	3,876
Investment credit	414	623	987	1,500
Medium-term credit	29	84	267	561
Local cost project aid	37	60	69	91
Replanting, rehabilitation, and development of export commodities	10	11	34	75
Nucleus estate and development projects	—	1	10	31
Inpres pasar	29	33	45	56
Resettlement of transmigration area	6	7	9	5
Peruntel	51	65	86	100
Bank's office building construction	2	5	8	14
PT Krakatau steel/steel production	250	58	460	568
Working capital	275	470	756	1,113
Food	8	19	19	25
Bimas/mass guidance	128	144	133	139
Flour	18	14	14	59
Export	19	58	88	163
Fertilizers	16	12	5	82
Production/industry	52	116	188	99
Sugar stock	—	8	40	120
Domestic trade	3	15	52	30
Sugar production	—	67	55	82
Others	30	28	162	314
KIK/KMKP/small-scale enterprise	210	397	738	850
KIK - investment	80	148	302	282
KMKP - working capital	130	248	437	568
Feasibility credits	—	—	42	35
Keppres 14A/contractor	—	17	95	25
Kredit midi	—	—	24	37
Motorcycles for teachers	—	—	—	11
Student loans	—	—	—	15

	1980 March	*1981 March*	*1982 March*	*1983 March*
Liquidity credit for government participation	119	175	100	—
Others:				
Temporary liquidity credit				
Old (3 percent)	315	51	—	—
New (12 percent)	—	—	—	264
Accrued interest	—	27	27	26
Local development banks	8	35	67	119
Private national banks	46	75	119	208
Total	1,387	1,879	2,954	4,203

Source: Bank Indonesia.

Table A.22 The Revolving Cabinets in the Pre-1960 Period

Prime minister	*Dominant political party in governing coalition*	*Duration*
The Period of Constitutional Democracy, 1949–57		
Mohammad Hatta	nonparty	December 1949 to August 1950
Mohammad Natsir	Masjumi	September 1950 to March 1951
Sukiman Wirjosandjojo	Masjumi	April 1952 to June 1953
Wilopo	PNI	April 1951 to June 1953
Ali Sastromidjojo	PNI	July 1953 to July 1955
Burhanuddin Harahap	Masjumi	August 1955 to March 1956
Ali Sastromidjojo	PNI	March 1956 to March 1957
The Period of Guided Democracy, 1957–65		
Djuanda Kartawidjaja	nonparty	April 1957 to March 1957

Note: Parties which were the dominant partners in different cabinets were the Partai Nationalisma Indonesia, (PNI), the Nationalist Party of Indonesia, the Partai Socialisma Indonesia, (PSI), the Sociali Party of Indonesia—Masjumi, and the Muslim Party. In July 1959 President Soekarno dissolved the elected Constituent Assembly and assumed the post of prime minister.

Source: Feith (1962) and Glassburner (1971).

Table A.23 Causes of Changes in Money Supply

Date	Government	Enterprises		Foreign assets	Other	Change in narrow money (M_1)
		Public	Private			
1955	1.6	0.2	–1.3	1.0	–0.4	1.1
1956	2.5	–0.2	1.0	–1.8	–0.3	1.2
1957	5.8	0.1	2.2	–1.0	–1.5	5.6
1958	9.5	1.3	–0.9	0.6	–0.1	10.4
1959	3.4	5.3	1.1	14.0	–18.2	5.6
1960	–0.8	3.3	–1.2	4.5	7.2	13.0
1961	23.4	3.1	7.1	–6.8	–7.0	19.8
1962	53.6	12.8	5.1	–9.4	6.1	68.2
1963	122.8	23.6	10.0	–11.0	–17.9	127.5
1964	369.7	81.7	32.5	–7.2	–37.0	439.8
1965	1,464.0	395.5	237.3	–6.8	–17.6	2,072.3
1966	12.5	0.0	5.9	–0.3	1.5	19.6
1967	8.3	0.0	24.7	2.7	–6.4	29.3
1968	5.4	37.3	57.4	44.6	–80.0	64.7
1969	–1.7	35.9	83.9	–4.5	–46.4	67.2
1970	6.5	–10.3	143.3	–4.3	–68.4	66.8

Note: 1955-65 data in old rupiahs, 1966-70 in new rupiahs; 1,000 old rupiahs = 1 new rupiah.
Source: 1955-63: Arndt (1971); 1964-65: Pitt (1991); 1966-70: *International Financial Statistics 1988 Yearbook.*

Table A.24 Structure of Real GDP (1960 prices), 1960-71
(billions of rupiah)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Expenditure Structure												
Private consumption expenditure	311	336	359	345	348	356	350	382	417	442	455	474
Government consumption	45	42	34	34	40	29	40	36	41	42	49	53
Gross domestic capital formation	31	44	40	31	35	36	41	33	41	52	69	84
Exports	52	57	52	49	55	56	56	56	61	70	82	92
Imports	–49	–66	–65	–48	–52	–48	–46	–58	–62	–75	–84	–92
Gross domestic product	390	413	420	411	425	430	442	448	497	531	571	611
Contribution to GDP growth rate												
Private consumption expenditure	—	6.4	5.6	–3.3	0.7	1.9	–1.4	7.2	7.8	5.0	2.4	3.3
Government consumption	—	–0.8	–1.9	0.0	1.5	–2.6	2.6	–0.9	1.1	0.2	1.3	0.7
Gross domestic capital formation	—	3.3	–1.0	–2.1	1.0	0.2	1.2	–1.8	1.8	2.2	3.2	2.6
Exports	—	1.3	–1.2	–0.7	1.5	0.2	0.0	0.0	1.1	1.8	2.3	1.8
Imports	—	–4.4	0.2	4.0	–1.0	0.9	0.5	–2.7	–0.9	–2.6	–1.7	–1.4
Gross domestic product		5.9	1.7	–2.1	3.4	1.2	2.8	1.4	10.9	6.8	7.5	7.0
Production Structure												
Agriculture, forestry and fisheries	210.4	213.9	220.9	212.7	223.6	225.3	236.1	232.1	255.2	260.1	270.7	280.5

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Mining and quarrying	14.4	14.6	15.4	14.9	15.6	16.0	15.4	16.7	22.8	27.7	32.2	34.0
Manufacturing	32.6	36.6	37.1	36.4	35.9	35.6	36.3	37.5	40.8	46.6	51.1	56.7
Construction	7.9	10.2	8.6	6.5	6.5	7.4	8.4	7.3	9.2	12.1	15.2	17.1
Electricity, gas and water supply	1.1	1.2	1.3	1.5	1.7	1.7	1.7	2.2	2.3	2.6	3.0	3.3
Transport and communications	14.5	14.5	14.9	15.3	14.8	15.1	15.2	15.6	15.9	16.5	17.4	22.1
Wholesale and retail trade	55.8	64.7	64.4	66.2	68.1	67.4	64.5	70.8	78.8	88.8	100.2	108.5
Banking and other financial institutions	3.9	4.9	4.2	3.5	4.3	4.3	3.4	3.5	4.0	6.6	8.6	11.3
Ownership of dwellings	7.7	8.1	8.2	8.1	8.3	8.4	8.7	8.8	9.7	10.4	11.2	11.9
Public administration and defense	17.6	19.2	19.6	19.8	19.9	21.3	24.3	24.7	28.8	29.3	30.4	31.8
Services	24.3	24.7	26.6	25.9	26.6	27.4	27.9	28.8	29.4	30.1	30.9	31.7
Gross domestic product	390.2	412.6	420.2	410.8	425.3	429.9	441.9	448	496.9	530.8	570.9	608.9
Contribution to GDP growth rate												
Agriculture, forestry and fisheries	—	0.90	1.70	–1.95	2.65	0.40	2.51	–0.91	5.16	0.99	2.00	1.72
Mining and quarrying	—	0.05	0.19	–0.12	0.17	0.09	–0.14	0.29	1.36	0.99	0.85	0.32
Manufacturing	—	1.03	0.12	–0.17	–0.12	–0.07	0.16	0.27	0.74	1.17	0.85	0.98
Construction	—	0.59	–0.39	–0.50	0.00	0.21	0.23	–0.25	0.42	0.58	0.58	0.33
Electricity, gas and water supply	—	0.03	0.02	0.05	0.05	0.00	0.00	0.11	0.02	0.06	0.08	0.05

(Table continues on next page.)

Table A.24 ***continued***

	1960	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*
Transport and communications	—	0.00	0.10	0.10	–0.12	0.07	0.02	0.09	0.07	0.12	0.17	0.82
Wholesale and retail trade	—	2.28	–0.07	0.43	0.46	–0.16	–0.67	1.43	1.79	2.01	2.15	1.45
Banking and other financial institutions	—	0.26	–0.17	–0.17	0.19	0.00	–0.21	0.02	0.11	0.52	0.38	0.47
Ownership of dwellings	—	0.10	0.02	–0.02	0.05	0.02	0.07	0.02	0.20	0.14	0.15	0.12
Public administration and defense	—	0.41	0.10	0.05	0.02	0.33	0.70	0.09	0.92	0.10	0.21	0.25
Services	—	0.10	0.46	–0.17	0.17	0.19	0.12	0.20	0.13	0.14	0.15	0.14
Gross domestic product	—	5.74	1.84	–2.24	3.53	1.08	2.79	1.38	10.92	6.82	7.55	6.66

Source: Data are from tables 2.2 and 2.5 in World Bank (1975).

Table A.25 External Resource Availability

(millions of US dollars)

Annual amount of foreign aid

	1966	1967	1968	1969	1970	1971
Total amount committed	—	183	369	549	610	646
Amount from IGGI	0	167	361	508	610	634
Total amount used	128	219	231	282	373	291
Program aid	—	195	245	249	383	300
Project aid	—	78	61	73	56	90
Debt repayment	—	–54	–75	–40	–66	–99

Private capital flows

	1965	1966	1967	1968	1969	1970	1971
Official estimate	9	6	84	27	51	89	144
Rosendale's estimate	9	6	108	99	178	497	818
Capital repatriation	—	—	68	35	12	18	0

Sectoral distribution of foreign investment

Sector	1967	1968	1969	1970	1971	1972
Agriculture	—	8.2	1	1.3	2.2	3
Forestry	0.6	2.7	10.8	32.2	30.6	37.6
Fishery	—		3.1	3.8	6.7	6.5
Mining	—	0.9	3.8	34.4	101.6	9.1
Manufacturing	0.1	10.4	20.9	41.1	81	192.8
Construction	—		0.3	1.4	1.2	1.1
Trade & Hotels	—	0.2	1.3	4.3	6.3	5.8
Transportation and Communication	—	2.3	2	1.6	0.9	0.7
Social & Personal Services	—	1.1	1.5	2.3	1.8	1.1
Total	0.7	25.8	44.7	122.4	232.3	257.7

Source: World Bank (1975) *Indonesia: Development Prospects and Needs: Basic Economic Report*, Table 10.14 in Statistical Annex.

Table A.26 External Public and Publicly-Guaranteed Debt of Indonesia
(end of period, millions of US dollars

Structure of debt	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1986*
Debt outstanding and undisbursed	6,693.6	9,060.9	11,741.2	14,572.5	16,134.6	19,037.3	21,199.8	48,712.0
Debt outstanding and disbursed (DOD)	5,248.8	6,358.2	7,994.0	10,001.6	11,658.3	13,149.7	13,277.8	32,119.0
Private creditors	1,218.9	1,739.4	2,990.1	4,089.1	4,583.1	4,761.1	4,767.8	14,556.0
Total debt service (TDS)	207.5	291.6	523.5	760.6	1,261.7	2,062.1	2,099.6	4,401.0
Private creditors	114.8	168.4	388.9	573.6	985.3	1,632.9	1,535.7	2,549.0
Principal ratios (percent)								
DOD/XGS	158.8	85.2	113.8	114.0	106.7	116.3	85.5	212.8
DOD/GNP	33.5	25.8	27.4	27.7	26.4	26.6	27.1	48.2
TDS/XGS	6.3	3.9	7.5	8.7	11.5	18.2	13.5	29.2
TDS/GNP	1.3	1.2	1.8	2.1	2.9	4.2	4.3	6.6
Proportion of DOD								
Concessionary	75.3	71.3	60.8	53.4	52.2	53.2	51.5	—
Bears variable *i*-rates	4.5	6.8	19.4	20.7	18.7	15.0	14.5	—
From private creditors	23.2	27.4	37.4	40.9	39.3	36.2	35.9	45.3
Proportion of debt service paid to private creditors	55.3	57.8	74.3	75.4	78.1	79.2	73.1	57.9

Distribution of external sovereign debt by sectors	*1973/74*	*1974/75*	*1975/76*	*1976/77*	*1977/78*	*1978/79*	*1979/80*	*1986/87*
Government sector								
Net drawings	562.0	571.0	1,918.0	1,657.0	1,345.0	1,425.0	1,263.0	3,134.0
Adjustment	—	—	—	—	—	571.0	–975.0	3,603.0
Outstanding debt	3,979.0	4,550.0	6,468.0	8,125.0	9,470.0	11,466.0	11,754.0	34,081.0
Public enterprises								
Net drawings	352.6	555.2	–109.3	50.7	–327.1	–10.0	–72.0	–383.0
Adjustment	—	—	—	—	—	0.0	–17.0	18.0
Outstanding debt	1,665.5	2,220.7	2,111.4	2,162.1	1,835.0	1,825.0	1,735.0	2,526.0
Unattributable drawings or adjustments during 1973-77	–118.3	–3.6	–83.5	128.0	726.1	—	—	—
Total public sector								
Net drawings	914.6	1,126.2	1,808.7	1,707.7	1,017.9	1,415.0	1,190.0	2,751.0
Adjustment and unattributed sums	–118.3	–3.6	–83.5	128.0	726.1	571.0	–992.0	3,621.0
Outstanding debt	5,526.2	6,767.1	8,495.9	10,415.1	12,031.1	13,291.0	13,489.0	36,607.0
Ratio of public enterprise to total public sector debt, percent	30.1	32.8	24.9	20.8	15.3	13.7	12.9	6.9

Note: For the earlier years, net drawing of public sector is from World Bank *World Debt Tables* and net drawing of government sector is from the balance of payments. The difference between the two numbers is attributed to net drawing by public enterprises. The difference between the cumulated flows and the stocks in *World Debt Tables* is reported in the "Unattributable drawings..." item.

Source: World Bank *World Debt Tables* and IMF.

Table A.27 State Expenditure in Times of Scarcity

Ratio of actual expenditure to planned expenditure in repelita

	1980	*1984*	*1987*
Total expenditure	1.5	0.9	0.7
Debt service	1.2	1.9	1.5
Current expenditure	1.8	0.8	0.7
Capital expenditure	1.5	0.9	0.5
Components of current expenditure			
Education and health	1.51	0.88	0.73
Other wages and salaries	1.20	1.01	0.85
Other goods and services	1.24	0.97	0.56
Subsidies	1.87	0.70	0.43
Others	1.00	0.96	0.99
Components of capital expenditure			
Transfer to private sector	6.10	1.24	0.55
Investment			
Agriculture	1.87	1.29	0.80
Industry and mining	1.20	0.87	0.25
Electric power	1.46	0.85	0.49
Transport and tourism	1.28	0.98	0.63
Education	1.41	0.79	0.43
Health	1.48	0.75	0.28
Housing and water supply	1.98	0.50	0.68
General public services	1.59	0.96	0.31
Other programs	1.35	0.90	0.48

(Table continues on next page.)

Table A.27 ***continued***

Programs identifiable as exclusively antipoverty

Fiscal Year	Rp. billions[a]			Percentage change		
	1980/84	1984/87	1980/87	1980/84	1984/87	1980/87
Change in						
Inpres to kabupaten and villages	18.2	7.2	25.4	10.7	3.8	14.9
Sectoral inpres	161.6	–297.1	–135.6	42.9	–55.2	–36.0
Fertilizer subsidy	194.4	–73.7	120.7	68.5	–15.4	42.5
Sum of above three items	374.2	–363.6	10.6	45.0	–30.2	1.3
Sum of above three items as percentage (of total expenditure-debt service)				1980 7.6	1984 11.1	1987 7.1

a. 1980 prices

Source: Expenditure classification scheme and data are from table 3 in Thorbeck (1991). Our definition of current and capital expenditure differ from Thorbecke in that they are net of debt service payments. The data for current and capital expenditure have been adjusted to fit our usage. GDP and revenue data were converted to 1980 prices with implicit deflator in Thorbeck (1991).

Table A.28 Revenue as a Motivation for Devaluation, Actual and Counterfactual Data
(billions of rupiahs)

Part A: Revenue consequences of exchange rate realignments

	Total domestic revenue	*Oil tax*	*Oil tax revenue if exchange rate were:*		
			Rp415	*Rp708*	*Rp1131*
1978	4,266.1	2,308.7	1,975.5	—	—
1979	6,696.8	4,259.6	2,828.4	—	—
1980	10,227.0	7,019.6	4,636.9	—	—
1981	12,212.6	8,627.8	5,601.2	—	—
1982	12,418.3	8,170.4	5,061.7	—	—
1983	14,432.7	9,520.2	4,031.5	6,800.1	—
1984	15,905.5	10,429.9	4,133.1	6,971.5	—
1985	19,252.8	11,144.4	4,147.0	6,994.9	—
1986	16,140.6	6,337.6	1,897.6	3,200.8	5,171.6
1987	20,803.3	10,047.2	2,520.1	4,250.9	6,868.2
1988	21,803.0	8,855.8	2,153.1	3,631.7	5,867.8
1989	25,249.8	7,899.7	1,831.5	3,089.3	4,991.4

Part B: External debt service consequences of exchange rate realignments

	Total expenditure	*External debt service*	*External debt service if exchange rate were:*		
			Rp415	*Rp708*	*Rp1131*
1978	5,299.3	525.7	449.8	—	—
1979	8,076.0	647.6	430.0	—	—
1980	11,716.0	754.0	498.1	—	—
1981	13,917.6	915.0	594.0	—	—
1982	14,355.9	1,204.7	746.3	—	—

1983	18,311.0	2,072.9	877.8	1,480.6	—
1984	19,380.8	2,737.2	1,084.7	1,829.6	—
1985	22,824.6	3,303.1	1,229.1	2,073.2	—
1986	21,891.3	5,058.1	1,514.5	2,554.6	4,127.5
1987	26,958.9	8,165.5	2,048.2	3,454.7	5,581.9
1988	28,963.6	10,608.0	2,579.1	4,350.3	7,028.8
1989	36,574.9	12,088.0	2,802.5	4,727.2	7,637.7

Part C: Revenue minus expenditure

	Overall budget deficit	*Oil revenue minus external debt service*	*Oil revenue minus external debt service if exchange rate were:*		
			Rp415	*Rp708*	*Rp1131*
1978	–1,033.2	1,783.0	1,525.7	—	—
1979	–1,379.2	3,612.0	2,398.4	—	—
1980	–1,489.0	6,265.6	4,138.8	—	—
1981	–1,705.0	7,712.8	5007.1	—	—
1982	–1,937.6	6,965.7	4,315.4	—	—
1983	–3,878.3	7,447.3	3,153.7	5,319.5	—
1984	–3,475.3	7,692.7	3,048.4	5,141.9	—
1985	–3,571.8	7,841.3	2,917.9	4,921.7	—
1986	–5,750.7	1,279.5	383.1	646.2	1,044.1
1987	–6,155.6	1,881.7	472.0	796.1	1,286.3
1988	–7,160.6	–1,752.2	–426.0	–718.6	–1,161.0
1989	–11,325.1	–4,188.3	–971.0	–1,637.9	–2,646.4

Note: Devaluations: a. November 1978: 415 to 625; b. March 1983: 700 to 970; and c. September 1986: 1131 to 1641.

Source: Author's calculations.

Table A.29 Sectoral Composition of Gross Domestic Product at Constant Prices

Share of GDP (percentage)	*1960*	*1967*	*1973*	*1983*	*1989*
Agriculture, livestock, etc.	53.9	51.8	40.1	22.8	20.6
Mining and quarrying	3.7	3.7	12.3	20.7	15.6
Manufacturing industries	8.4	8.4	9.6	12.7	18.5
Electricity, gas, and water supply	0.3	0.5	0.5	0.4	0.6
Construction	2.0	1.6	3.9	5.9	5.5
Trade, hotel, and restaurant	14.3	15.8	16.6	14.9	16.1
Transport and communication	3.7	3.5	3.8	5.3	5.3
Banking and other financial intermediaries	1.0	0.8	1.2	3.0	4.0
Ownership of dwelling	2.0	2.0	2.1	3.0	2.7
Public administration and defense	4.5	5.5	6.0	7.4	7.8
Services	6.2	6.4	3.9	3.9	3.5

Average annual growth rate in period (percentage)	*1960–66*	*1967–72*	*1973–81*	*1983–89*
Agriculture,livestock,etc.	1.9	4.3	3.6	3.8
Mining and quarrying	1.1	19.7	3.2	0.6
Manufacturing industries	1.8	10.2	14.2	12.3
Electricity, gas, and water supply	7.5	12.7	14.5	11.9
Construction	1.0	24.7	13.5	4.2
Trade, hotel, and restaurant	2.4	11.9	7.8	6.9
Transport and communication	0.8	9.9	12.9	5.6
Banking and other financial intermediaries	–2.3	27.9	13.7	10.5
Ownership of dwelling	2.1	8.1	12.2	3.4

Public administration and defense	5.5	6.0	13.0	6.6
Services	2.3	2.1	2.4	3.6
Gross domestic product	2.1	7.9	7.5	5.5

Contribution to growth in period (percentage of total)

	1960–66	*1967–72*	*1973–81*	*1983–89*
Agriculture, livestock,etc.	49.7	26.7	16.7	14.8
Mining and quarrying	1.9	11.8	4.5	2.1
Manufacturing industries	7.2	11.4	23.2	33.5
Electricity, gas, and water supply	1.2	0.9	1.1	1.0
Construction	1.0	7.1	8.6	4.3
Trade, hotel, and restaurant	16.8	25.8	17.4	19.2
Transport and communication	1.4	4.6	7.9	5.3
Banking and other financial intermediaries	–1.0	4.1	2.8	6.5
Ownership of dwelling	1.9	2.0	4.1	1.8
Public administration and defense	13.0	4.0	12.7	9.1
Services	7.0	1.6	1.0	2.4
Memo items	*1960–66*	*1967–72*	*1973–81*	*1982–89*
Population growth rate in period	2.6	2.6	2.0	2.1

	level in 1983 prices		*Average annual growth rate in 1983-89, %*	*Contribution to growth in 1983-89, %*
	1983	*1989*		
Nonoil non-LNG manufacturing sector	7,666.0	15,181.0	12.1	25.3

Note: 1960–72 data were based on 1960 prices, 1973–81 data on 1973 prices, and 1983–89 data on 1983 prices. 1982 was not used because comparable data did not extend over relevant period. Average annual growth rate is compound rate calculated from the two end points.

Source: Calculated from Biro Pusat Statistical data.

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