DISSERTATION

DEVELOPMENT STAGES AND FOREIGN DIRECT INVESTMENT: AN ANALYSIS OF INDONESIA'S RECENT EXPERIENCES

Submitted by

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ABSTRACT OF DISSERTATION

DEVELOPMENT STAGES AND FOREIGN DIRECT INVESTMENT: AN ANALYSIS OF INDONESIA'S RECENT EXPERIENCES

The role of foreign direct investment (FDI) in the industrial restructuring of developing countries is of concern to host countries. Nowadays, most countries compete for international investment. Every country, including Indonesia, is aggressively attracting inward FDI to further economic growth, opportunities for technology transfer and stronger exports as catalysts for prosperity and employment. Obviously, technological advance is the prerequisite for improvement in factor productivity and product innovations.

Since the impact of foreign capital on economic growth of developing countries and the relative significance of various types of foreign capital is still controversial, this study investigates the impact of FDI on Indonesia's economy.

The study empirically examines the role of FDI in Indonesia's economic development. FDI also contributed to welfare improvement as measured by increased marginal productivity of labor (MPL). Meanwhile, the main cause of exessive (speculative) investment was easy credit to investors in Indonesia due to abundant capital inflows and the emotional behavior of investors. In addition, Indonesia's economy also experienced a rapid structural upgrading. A simulation model indicates that the role of labor-intensive sector declines as per-capita income increases, and that technology-

intensive industries become more important at higher levels of per-capita income. Structural upgrading is thus positively correlated to increases in the income level.

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CHAPTER 1

Introduction

1.1 Background of the Study

Since President Suharto took administration in 1967, there has been a positive political attitude towards the role of foreign direct investment (FDI) in economic development. The new administration believed that foreign capital, technology, and managerial skills would transform Indonesia's abundant potential economic resources into a real economic strength. Indonesia has made remarkable progress over the last 30 years. Indonesia was one of the world's poorest countries in 1966, with per capita GDP of $70. Indonesia's per capita GDP passed $1,000 in 1997, life expectancy rose to 63 years from 41 years in 1965, and infant mortality and illiteracy rates fell dramatically. Real GDP growth had averaged over 7 percent per year from 1991 up to the second half of 1997 when the Asian crisis hit Indonesia. Then economic growth decreased dramatically to 4.7 percent, 13.2 percent, 0.2 percent in 1997, 1998, and 1999, respectively. Overall, in East Asia, there was a $109 billion reversal of net private capital flow (more than 10 per cent of GDP) to the region between 1996 and 1997. It is also noteworthy that FDI to the five East Asian economies is estimated to have been essentially unchanged (Stiglitz, 1999). The crisis involved substantial capital outflows

from Indonesia. (Many studies were reviewed for this thesis, and not all of them are used as explicit references. Therefore, selected extra literature is given in Appendix I.)

Because of a structural and institutional damage, the economic recovery, however, was slow and quite vulnerable to instability in domestic socio-political conditions. Economic growth returned to Indonesia in 2000, after two years of economic and political turmoil. Real GDP grew around 4 percent in 2000, just half the rate of the first half of 1990s. Nonetheless, doubts still remain about the sustainability of Indonesia's economic recovery. New investment has lagged considerably as continuing political turbulence and politically related violence have kept investors away as reflected in Table 1.1. This contrasts with other Asian countries, such as Thailand and South Korea, which have recorded economic growth rates close to the pre-crisis levels, with export as the locomotive for their economic growth.

Table 1.1: Balance of Payment (billion US$)

Indicators	1994	1995	1996	1997	1998	1999	2000
Current Account	-2.9	-7.0	-7.8	-5.0	4.1	5.8	8.0
Capital Account	5.7	11.5	11.0	2.5	-3.9	-4.6	-6.7
Official	1.1	-0.2	-0.5	2.9	10.0	5.3	3.2
FDI	2.0	5.4	6.2	4.6	-0.4	-2.7	-4.5
Portfolio Inv.[1)]	2.6	6.3	5.3	-5.0	-13.5	-7.2	-5.4
Total	2.8	4.5	3.2	-2.4	.2	1.2	1.2
Errors & Omissions	-2.1	-1.8	1.3	-1.6	2.1	2.1	3.8
Monetary Movements[2)]	-0.7	-2.7	-4.5	4.0	-2.3	-3.3	-5.0

1) Includes borrowing by state enterprises and commercial banks
2) Negative represents surplus and positive represents deficit
Source: Annual Report 1999 and 1997/98 and Indonesian Financial Statistic November 2001, Bank Indonesia

What is a financial crisis? A country that usually receives large flows of capital experiences those flows suddenly cut off. It also faces many demands that it repays outstanding loans. Such an abrupt switch may force the country to default or reschedule its outstanding debt.

As a result of shouldering the cost of the 1997-1998 banking crisis and borrowing from the IMF, the Indonesian government's debt burden increased sharply over 1998-2000. The external debts outstanding at the end of 2000 amounted to $165.70 billion, consisting of $99.40 billion owned by the government and $66.30 billion owned by the private sector. Therefore, external debts per capita reached $789, which was higher than gross domestic product per capita reaching only $627. Meanwhile other external debt indicators also surpassed the World Bank criteria. The debt-service ratio, the debt-outstanding-export ratio, and the debt-outstanding-GDP ratio reached 52 percent, 274 percent, 113 percent, respectively[1]. The debt outstanding-GDP ratio is the highest in the world as shown in Table 1.2.

Table 1.2: External Debt Indicators (percent)

Indicators	1970	1995	1996	1997	1998	1999	2000	Bank Criteria
Debt-Service Ratio	13.9	22.3	34.0	44.6	58.7	51.9	48.65	20.0
Debt-Outstanding/Export	221	238	271	268	281	303	265	130-220
Debt-Outstanding/GDP	25	56	60	71	139	124	126	50-80

Source: Annual Report 1999, Bank Indonesia

[1]Annual Report 1999 Bank Indonesia

1.2 Problem Statement

When the debt crisis hit many developing countries in 1982, Indonesia succeeded in avoiding it, and the economic growth was still high enough. Before the Asian crisis occurred, East Asia, growing faster than all other regions, had a remarkable record of high and sustained economic growth over the period of 1970-1996. The astonishing growth was known as the "Asian Economic Miracle" (World Bank 1993). Then, the Asian model became a big questionable one.

The nature of the Indonesian crisis actually involved corporate and banking debts rather than a national debt. Indonesian's economy experienced the worst condition compared to others. Up to now, the economic growth still continues to deteriorate and investment is stagnant. The investment slump is reflected in imports of non-oil/gas capital goods. It is also mirrored in the net outflow of both portfolio investment and FDI and in the decrease of domestic direct investment approval. FDI experienced negative $356 million, $2,723 million, and $4,457 million in 1998, 1999, and 2000, respectively. The sharp drop in investment activities was also due to stagnant financing, both domestic and overseas.

In addition, non-oil export activities were disappointing even though the rupiah experienced a big depreciation. The main obstacles appear to be limited sources of funding for working capital and continuing low confidence on the part of foreign buyers, regarding the capability of exporters to fulfill supply contracts. Reflecting the remaining weak domestic demand, the saving-investment gap amounted to 23,223 billion Rupiah or 7.7 % of GDP. This saving surplus occurred in the private sector; despite the fact the

government sector was running a deficit. On top of that, the burden of external debts on Indonesia's economy was very heavy. Therefore, aggressive domestic investment as well as FDI needs to be promoted to alleviate the burden of debts in order to boost growth.

Indonesia has a potential to be one of the developed countries in the world if its policy makers can manage well. A rich variety of natural resources alone will not make Indonesia's economy automatically and steadily grow. National prosperity needs to be "created" not "inherited"[2].

1.3 The Study Objectives

The study is basically aimed at determining the pattern of development of Indonesia during the course of its industrialization process supported by inward FDI up to the crisis (1970-1997) and after the crisis (1999-2000). Whether Indonesia is still attractive for foreign investor is examined in term of the rate of return measured by the incremental output capital ratio (IOCR). Here, we use IOCR as a proxy to the marginal product of capital (MPK), following Rana and Dowling (1988). We also explore whether Indonesia is experiencing an improvement in economic welfare or higher incomes, measured by the marginal product of labor (MPL), for the working class as a result of capital inflows. In addition, we attempt to explore whether Indonesia has experienced structural upgrading on its economy. In order to do that we are going:

1. to estimate empirically the impact of FDI on the Indonesian economy, measured by GDP, GDS, exports and to measure whether Indonesia is still

[2]See Porter (1990)

attractive to foreign investors, measured by the Marginal Product of Capital (MPK),

2. to elaborate on whether Indonesia is experiencing rising wages (i.e. higher income for the working class), measured by the Marginal Product of Labor (MPL),
3. to explore a conceptual framework on structural upgrading in the Indonesian economy in term of the roles of the primary, secondary, and tertier sectors in the economy,
4. to consider industrial upgrading in the manufacturing sector alone,
5. to investigate the causes of the crisis, since the weak currency is merely a sign that other things are going wrong,
6. to elaborate why the recovery of Indonesia's economy is so sluggish after the Asian flu hit Indonesia, and
7. to test empirically, a set of single equation models which embodies the structural relationships among FDI, GDP, exports, and other related variables. The equations are estimated by using the Eview program.

1.4 The Hypotheses

We argue that FDI has a positive impact on GDP, productivity and domestic saving. In addition, we also elaborate on the causes and the impact of the crisis on Indonesia because its weakened currency is merely a sign that other things are going wrong. Therefore, instead of talking about "fixing" the currency, policy makers should strive to "fix" the economy. The healthier the economy, the stronger the immunity of the

Table 1.3: Selected Economic Indicators, 1970, 1995, 1996, 1997, 1998, 1999, and 2000 (millions US$)

	1970	1995	1996	1997	1998	1999	2000
GDP (million US$)	9,657	202,276	226,914	212,634	101,440	125,614	131,820
GNP (million US$)	9,440	196,328	220,833	206,416	95,992	116,669	123,456
Real GDP growth (%)	5.2	8.2	7.8	4.7	-13.2	0.2	4.5
Population (million)	120.0	193.7	196.8	199.8	202.9	205.9	210
GDP per capita (US$)	80	1,043	1,153	1,066	498	607	782
GNP per capita	79	1,013	1,122	1,033	473	567	588
Merchandise							
Exports	1,108	47,454	50,188	56,297	50,371	51,435	62,500
- Non-Oil/gas (%)	78	89	90	91	92	93	85
- Oil/gas (%)	22	11	10	9	8	7	15
Merchandise Imports	1,002	40,921	44,240	46,223	31,942	31,357	37,400
Trade Balance	106	6,533	5,948	10,074	18,429	20,078	25,100
Export of good &							
services	1,189	50,511	53,975	60,533	52,525	53,624	63,200
Import of good &							
services	1,565	57,271	61,776	65,534	48,937	49,272	54,800
Grant	na	330	125	309	508	804	0
Current Account	-376	-6,430	-7,676	-4,692	4,096	5,156	8,400
Current Account/GDP (%)	-3.8	3.2	-3.4	-2.2	4.0	4.1	6.4
Ratio Export $							
Import to GDP (%)	21,9	44	42	48	81	66	75.8
Reserve (million US$)	160	14,362	18,593	17,600	14,100	16,400	17,235
Month of import							
coverage of reserve	1.2	3.0	3.6	3.2	3.5	4.0	5.53
External Debts							
Outstanding	2,453	106,455	113,143	136,088	150,887	141,381	139,997
External Debt as % of:							
GDP	25	53	56	64	149	118	106
Total Export	221	224	225	241	299	288	224
Debt service ratio (%)	13.9	22.3	34.0	44.6	58.7	51.9	58.4
FDI (million US$)	83	4,346	6,194	4,677	-356	-2,323	-4,551
FDI stock (million US$)	na	50,601	56,797	62,147	68,458	65,188	61,247
Average exchange rate	365	2,247	2,347	2,952	9,881	8,815	9,245

Sources: - Annual Report 1997/98, 1999, Bank Indonesia
- World Investment Report 1993, 1995, 1998, and 2000, United Nations
- BPS, various issues

economy to diseases such as the Asian flu. Some key indicators of Indonesian economy are presented in Table 1.3. Economic indicators that reflect economic performances are employed to test our hypotheses in order to understand the relations between dependent variables and independent ones (such as GDP, FDI, AID, and Domestic Investment). Our hypotheses are as follows:

1. FDI, lagged FDI, openness, and infrastructure appear to have a significant positive influence on GDP,
2. Domestic saving is positively related to capital inflows,
3. Increases in capital inflow (FDI) will increase income for the working class,
4. the Indonesian economy experienced overinvestment, measured by MPK,
5. the Indonesian economy experienced a structural upgrading indicated by the decreasing role of the labor-intensive sector and the increasing role of technology-intensive industries, and
6. easy credit caused the Asian crisis.

Good macroeconomic management such as a stable macroeconomy does not guarantee rapid and sustained growth, if it is not supported by good institutions such as effective monitoring. Therefore, the government's ability to deliver economic growth did not indicate its ability to supervise and regulate a modern financial sector. In addition, the government's ability to carry out financial liberalization does not mean that the government can effectively manage the consequences of competition and development in the financial sector. It seems that there was "a hidden/sleeping problem" in Indonesia's economic growth, a problem not seen before the Asian crisis occurred.

CHAPTER II

Some Related Frameworks of Analyses

2.1 An Overview

Economic growth did not begin everywhere in the world at the same time. Instead it spread slowly across Europe and North America since England began to transform its economy, a process that would later be called the industrial revolution through invention in the late eighteenth century. One feature of the world economy is that some countries experienced periods of rapid growth at a much earlier date than others, largely because they began to industrialize at an earlier date (Aliber, 1993). Thereafter, industrialization occurs among "backward" countries on the basis of learning (Amsden, 1989). By treating FDI as an instrument of knowledge transfer, Ozawa (1992) explores the connection between FDI and economic development in a dynamic fashion which fits with the type of "economic miracles" exhibited Asia's newly industrialized countries (NICs) which started out with an outward-looking, export-oriented (OL-EO) strategy. Ozawa also analyzes the five basic structural characteristics (SC) of the world economy consisting of inter-economy divergences in supply and demand conditions, firms as creators and traders of intangible assets, a hierarchy of economies, natural (stage-compatible) sequencing of structural upgrading and development, and a strong trend away from inward-looking and towards outward-looking orientation in trade and

investment policy. Structural change (upgrading) and economic growth are inseparable from industrialization.

Therefore, industrialization certainly brings about structural changes in sectoral output and growth. Similarly, growth accompanies structural change in labor employment. One clear pattern of changing economic structure in the course of economic development is that, as per-capita income rises, the share of industry in gross national product rises too.

Countries can be classified according to four stages of development (Porter, 1990): (1) factor-driven, (2) investment-driven, (3) Innovation-driven, and (4) wealth-driven. In the early stages the economy of developing countries are based on primary factor, either natural resources or abundant and inexpensive semi-skilled labor by using simple technology. When prosperity increases, they will move to investment-driven using more sophisticated technology in industries. At this stage, countries have additional competitive advantages in the manufacturing of intermediate and capital goods. The innovation-driven stage is classified as a widening of industries and segments in which a country can successfully compete. This stage is characterized by an abundance of skilled human capital and an intensification of R&D. When they come to the wealth-driven stage, they ultimately will begin to decline as reliance on accumulated wealth makes national industries less competitive. In his view, the most important factor condition of national competitiveness includes skilled human resources and the scientific base and not, as the classical economic theory of comparative advantage suggests factors of production such as "raw" labor, land, natural resources and capital. Developing

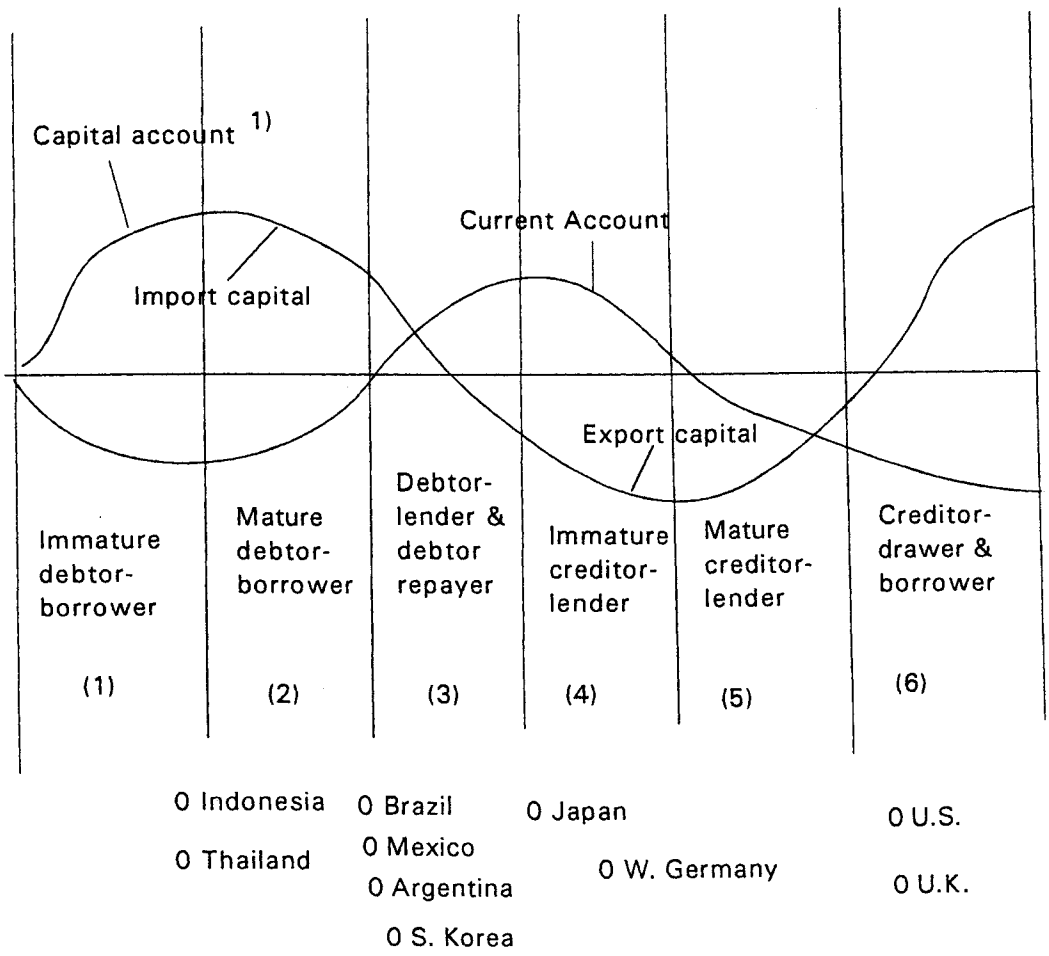
countries, growth are limited by a relatively small capital stock. In order to accelerate growth, any open-economy must borrow from other countries by running a current account deficit or "borrowed growth".

2.2 Borrowed Growth

Any closed-economies, their growth are limited by their saving in which the amount of investment cannot exceed their saving. The Harrod-Domar model shows that foreign capital can increase a growth rate. The model is formulated as: $g = sk$ where g is the proportional rate of growth of GDP, s is the proportion of national income saved and invested, and k is the incremental output-capital ratio (IOCR). Based on this model, foreign capital (A), measured as proportion to GDP, will cause the growth rate to increase to: $g' = (s+A)k$ in which $g'>g$. If we target a growth rate level, we know how much investment we need. Therefore, any open-economy has an opportunity to get a higher growth rate than any closed-economy because any open-economy can finance investment from abroad by running a capital account surplus and a current account deficit.

Unfortunately we only hear too much about the trade deficit or the current account deficit and too little about the nation's surplus in international capital flows. But in international financial accounts, the balance of payments always balances. This is true for a big, powerful country like the U.S., just as it is for small developing nations. In fact, the net inflow of investment capital account provides a mirror image of trade deficit or/and current account over a long period (see Figure 2.1).

Savvy investors put their money into economies that provide the best prospects for profit. The calculus depends on any number of factors, but there has little doubt that



1) Capital account provides a mirror image of the current account

Figure 2.1: Balance of Payments Stages

the most important are political stability, fast growth, stable financial markets and cutting-edge technology. If any country runs a trade or current account deficit, it means that the country is a good place for investment or the country experiences capital account surplus. In addition, the current account deficit now implies that a trade surplus in the future because any country cannot run a current account deficit forever.

Unfortunately, we have difficulty to control the composition of capital inflows (FDI, bank loans, portfolio investment, and speculative investment). However, if we can direct foreign capital to productive sectors, the capital has power to accelerate economic growth.

Nicholas Kristof and Edward Wyatt wrote an article titled "Who Went Under in the World's Sea of Cash?" in New York Times (February 15, 1999):

> Several forced have conspired in recent years to create a fundamentally new financial landscape that has fostered a world crisis. Money zips around the world faster than ever. In 1986 average global trading in currencies was less than $0.2 trillion. By 1998 this figure had risen to $1.5 trillion. Most of them was on borrowed money and can be riskier. In 1987 trading in financial derivatives was less than $1 trillion per year. By 1997 this figure had risen to $18 trillion per year. By 1997 the value of derivatives traded during the year was more than 10 times the value of global production during the year.

During the 1990s it seemed no longer the real sector driving the financial or money sector (market), but the financial markets driving the real sector. In other word, a role reversal occurred: capital account transactions become masters, whereas CA transactions become servants (Ozawa, 2001a). Money is not a 'veil' of the real sector; indeed, finance matters - and matters a lot for the process of economic development, which is nothing but a process of real capital formation (Ozawa, 1999b). In other word,

Industrial-sector transactions require money sector transactions for finance and settlement of trade accounts, but the financial sector often becomes autonomous (no longer accommodating) in this age of hot capital flows, compelling the current account (CA) to accommodate (Ozawa, 2001a). Any open-economy that invests more than it saves at home will run a current account deficit (i.e., CA = S-I, assuming G=T) which will be financed through a capital account surplus. This type of CA deficit may be called "borrowed growth" (Ozawa, 2001a).

Any country, developing countries in particular, depending on foreign investment, especially short-term investment, faces a double-edged sword. Helped by capital inflows, "input-driven industrialization a la Krugman (1994) is made possible and, indeed, accelerated - and results in a miraculous economic growth. At the same time, however, once the excessive character of the upswing is realized, the financial system experiences a sort of "distress" in the course of which the rush to reverse the expansion process may become so precipitous as to resemble panic (Kindleberger, 2000). Capital flows are at the heart of modern international crisis. The withdrawal of capital or the refusal to roll over short-term loans are at the centre of developing country's most severe balance of payment.

Therefore, growth becomes constrained ultimately by the rate of growth of capital inflows (balance of payments constrained growth rate) (Thirlwall and Hussain, 1982). In other word, export (external demand) and capital inflows are important part to boost growth. In an open economy, the dominant constraint is the balance of payments (Thirlwall and Hussain, 1982). If countries wish to grow faster, they must first raise the

balance of payments constraint on demand. By making exports more attractive, demand can be expanded without producing balance of payments difficulties as demand can generate its own supply by encouraging investment, absorbing underemployment, raising productivity growth and so on.

2.3. The Dornbusch Overshooting Model

If the market mechanism functions properly and if expectations are based on economic fundamentals, a number of economists believe that expectations will play a big role in stabilizing the exchange rate. For example, if the domestic currency overshoots its equilibrium value, as determined by purchasing power parity, due to an increase in the money supply, speculators or investors will expect the currency to appreciate again. How such expectations are formed can be explained with Dornbusch's model, as illustrated in Figure 2.2.

In the short run we assume prices do not change (sticky prices). A 10 percent increase in currency in circulation will cause real currency in circulation to grow by 10 percent. The adjustment mechanism in the money market will lead interest rates to go down, which in turn will trigger a capital outflow causing the domestic currency to depreciate.

The equilibrium exchange rate, S, will also depreciate by 10 percent, but, in reality it is possible for the exchange rate in the market to overshoot, depreciating by more than 10 percent to reach s. At this level the exchange rate and interest rate is very weak (competitive). As a result, consumption and investment will increase.

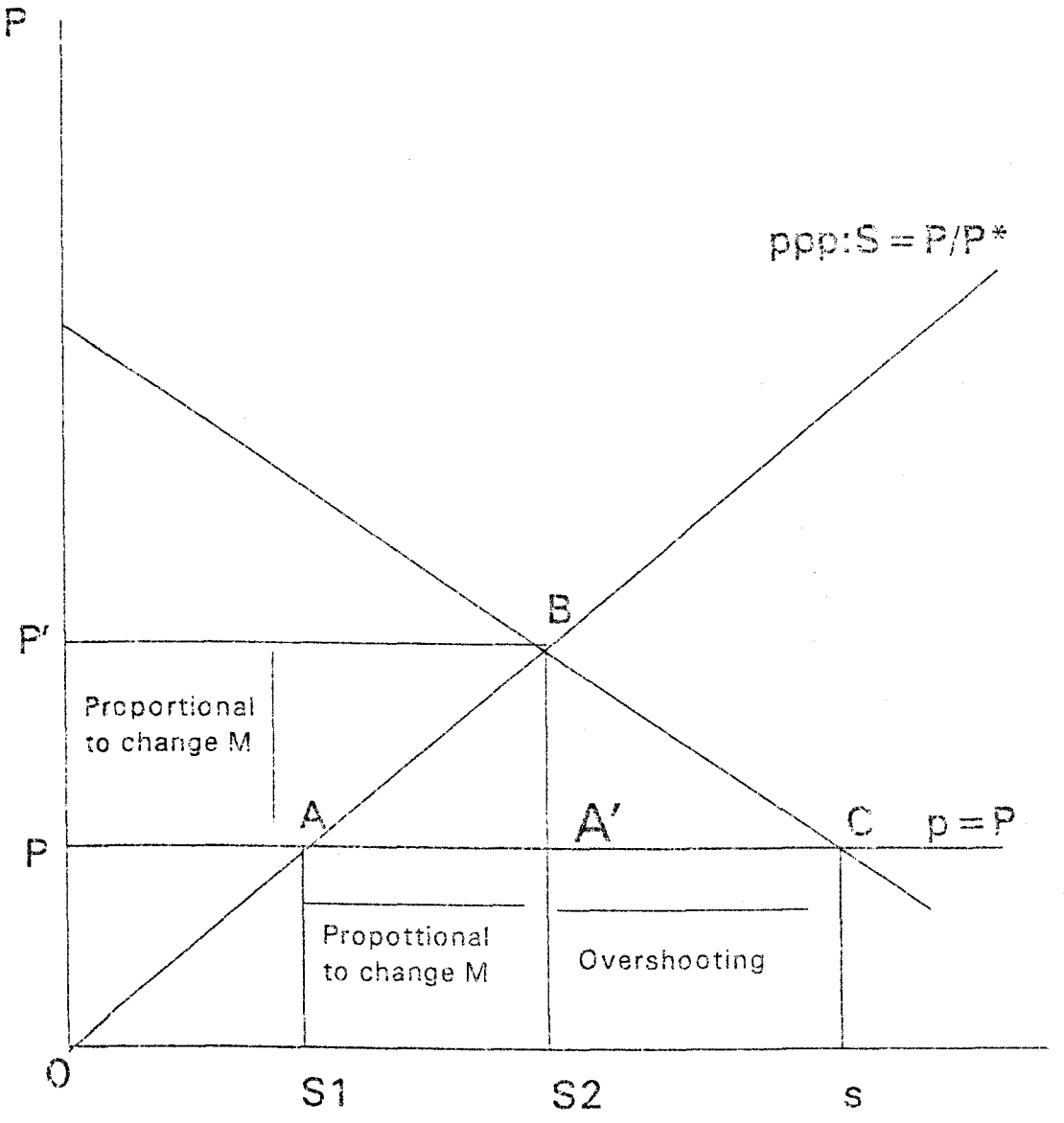


Figure 2.2: The Dornbusch Overshooting Model

In the long run, prices are flexible. These two factors create pressure on prices, which in turn causes the real quantity of money in circulation to decline. Consequently interest rates gradually increase, encouraging capital inflows and causing the exhange rate to appreciate back to the equilibrium value based on purchasing power parity, moving the economy to B due to an increase in domestic currency purchase.

However, if investors do not react based on economic fundamentals, the equilibrium cannot move back to B. The investor actions are based on a "speculative bubble" in the foreign exchange market due to domestic political instability. This condition can deter to repatriate all export revenue. Domestic investors are also afraid to hold domestic currency and if the investors react this way, domestic currency will depreciate persistently.

2.4 The Role of Foreign Direct Investment

Theoretically, there are two views concerning FDI. The first view believes that FDI is a zero sum game where a home country (investing country) will gain at the expense of a host country. Another view argues that FDI is not a zero-sum game, since both home and host countries can gain simultaneously. In addition, FDI through multinational corporations means technology, capital, and access to market, needed for developing countries in order to develop their countries with the help of FDI. However, if FDI related to the colonized era, mostly host country will suffer as the colonized era means exploitation. It is not surprising that the early trading companies are commonly conceived of in rather simplistic exploitative terms as although they helped to open and

expand the world for trade. It was bilateral trade of a "beggar thy neighbor" type in which the companies, acting in their interest, and often backed by the military support, scoured the world for resources and colonies which would advance the economic wellbeing of the developing European countries at the expense of overseas areas[3].

The standard literature on the determinants of private capital flows toward emerging market economies has distinguished between two categories of factors: pull factors - those related to better opportunities in the recipient countries - and push factors - those related to lower interest rates and a slowdown in economic activity in industrial countries (Corbo and Hernandez, 2000). Basically, whatever reasons, capital always goes to the countries which promise a high return of investment.

A. Capital Inflow and Domestic Saving

Using a simple intertemporal budget constraint between current consumption and future consumption, we can show that capital inflow may induce current consumption (Griffin, 1970). It means that part of capital inflow is directed to increase current consumption. The choice of a government or a community between present and future consumption can be represented in terms of indifference curves and a budget line. The slope of the indifference curve reflects the government's or the community's time preference, meanwhile the slope, measured by $P_{Ct}/P_{Ct+1} = 1/1+r$, and position of the budget line b_1b_1 are determined by the amount of resources available to be allocated and the rate of return on investment assumed to be equal to the interest rate.

[3]McNulty page 73.

Initially, equilibrium is at E (Figure 2.3). Suppose that EG amount of foreign aid becomes available to the host country. Therefore, the budget line shifts to the right from (b_1b_1) to (b_2b_2) as shown in the diagram. It is conceivable, as is assumed in the savings gap model, that the new equilibrium position would be directly above E, i.e. at E', so that C_t remained constant, but it is most unlikely. Normally, one would expect the new equilibrium to be at some point such as H, at which both current consumption (C_t) and future consumption are higher than originally, but our indifferent curve will be in the highest position.

Thus, capital inflow of EG leads to a rise in current consumption of EF and the amount of saving increases to FH. Only FG amount of capital inflow supplements investment and this leads to increase in future consumption of FH. A significant part of capital inflow is directed to increase domestic consumption. However, if the preference is biased to current consumption, the position will be on G and if preference is ultra-current consumption-biased the position could end at point B. This may occur when borrowed capital is spent for present consumption (e.g., shopping malls, golf courses, and luxury condominiums, etc.). And if the indifferent curve is ultra-consumption-biased to future consumption, it will be at point in such as A.

Furthermore, Salvatore (1994) shows that inward FDI can result in a net gain for the host country even though domestic investment experiences a decrease (or consumption increases). D is the demand curve for and S is the supply curve of investment funds in the host country in the absence of inward FDI. D and S intersect at

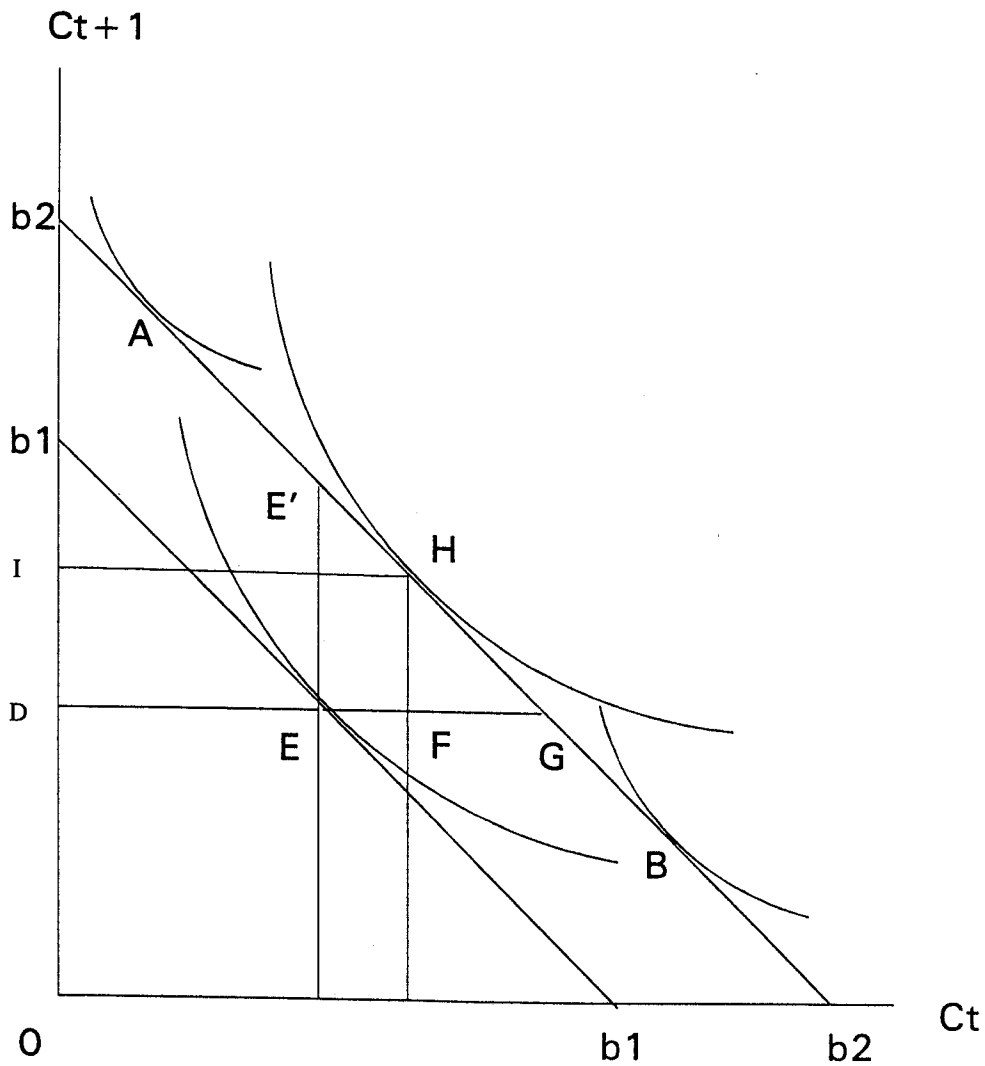


Figure 2.3: Capital Inflow and Domestic Saving

point E, defining the equilibrium rate of return (r) of 0.15 or 15% and level of investment in OG (see Figure: 2.4).

With DM of FDI, S shifts to S', defining the new equilibrium point E', at which total investment in the nation rise to OM (OD domestic and DM FDI) and r falls to 0.10 or 10%. Thus, FDI reduces the rate of return on domestic investments from 15% to 10% which leads to a reduction in the quantity supplied of domestic investment from OG to OD or increase consumption. The DM of FDI increases the total output of host country by GEE'M, of which GCE'M is the return on foreign investments and EE'C is the net gain of host country. Some of this net benefit goes to domestic labor because the inflow of FDI increases the capital-labor ratio and thus the productivity and wages of domestic labor. No doubt that FDI can maximize host country's welfare.

B. Pro-Trade-Oriented FDI

However, FDI can maximize host countries' welfare as long as FDI results in an ultra-pro-trade-biased FDI (Kojima and Ozawa, 1984, 1985). They present a geometrical analysis to show that host countries gain from trade and maximize their welfare.

A host country's product transformation curve is indicated by tt (Figure 2.5) where q and c are production and consumption points, respectively, which are determined by an international price-ratio line pp before FDI inflow. Host country has a comparative advantage in good X and a comparative disadvantage in good Y. When FDI brings superior entrepreneurial assets acquired by a good X (comparatively advantaged good), the host country's product transformation curve expands and becomes t't.

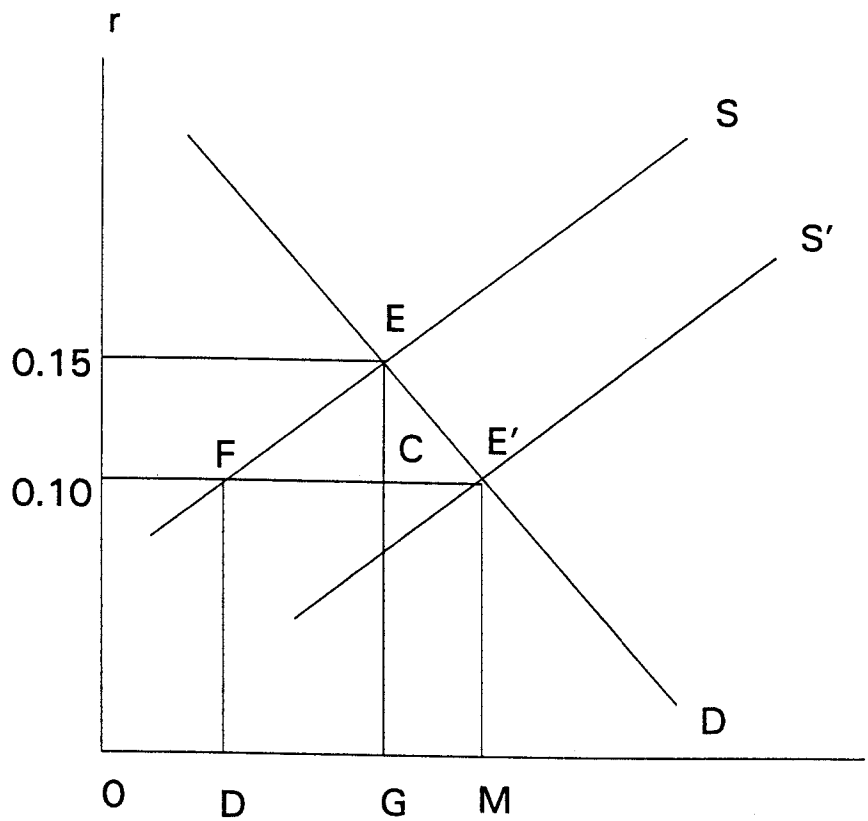


Figure 2.4: FDI and Host Country

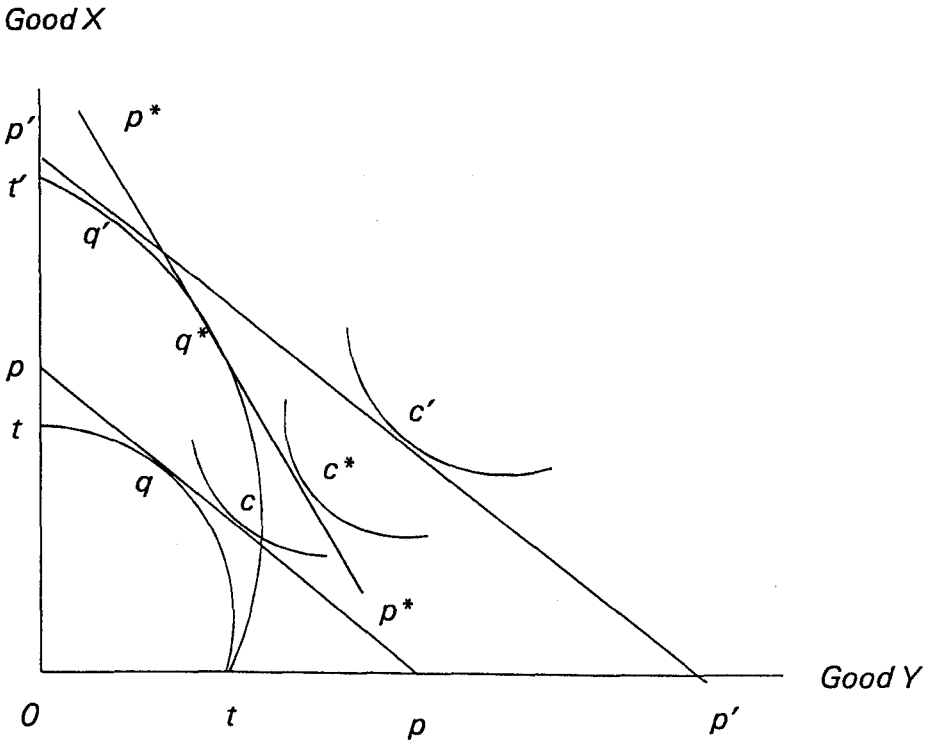


Figure 2.5: Impacts of trade-oriented FDI upon host country

Production of X expands, while production of Y shrinks where trade will expand and new production and consumption points are q' and c', respectively. Expanding good X due to efficiency may lead to decrease in its price to some extent, as shown by a new price line p*p* where new production and consumption move to q* and c*, respectively. It is clear that points c' and c* are still higher than point c. It means that host country's welfare increases.

In addition, Kojima and Ozawa (1984) also explore the benefit of FDI by using unit isoquants, which can be seen in Figure 2.6. Good X is labor-intensive, while a good Y is capital-intensive in which the factor price ratio W/R of Country A (say, a relatively capital-abundant industrialized country) is indicated by line MN, to which good Y's unit isoquant tangent at B and goods X's unit isoquant is tangent A, respectively.

The unit cost of both goods X and Y are OM when measured in terms of labor, and ON when measured in terms of capital. On the other hand, the factor price ratio of country B (say a relatively labor-abundant developing country) is shown by line M'N', to which the unit isoquant of good X is tangent at point a and that of good Y at point b. The fact that country B's isoquants are both farther away from the origin than country A's indicates less efficient production functions in country B. In other words, industrial knowledge in both industries is far superior in country A than in country B. In addition, country B's isoquant for good Y is farther out than for good X, meaning that country B is relatively far less efficient in good Y relative to good X in terms of the use of industrial knowledge. Since the firms in country A have absolute entrepreneurial

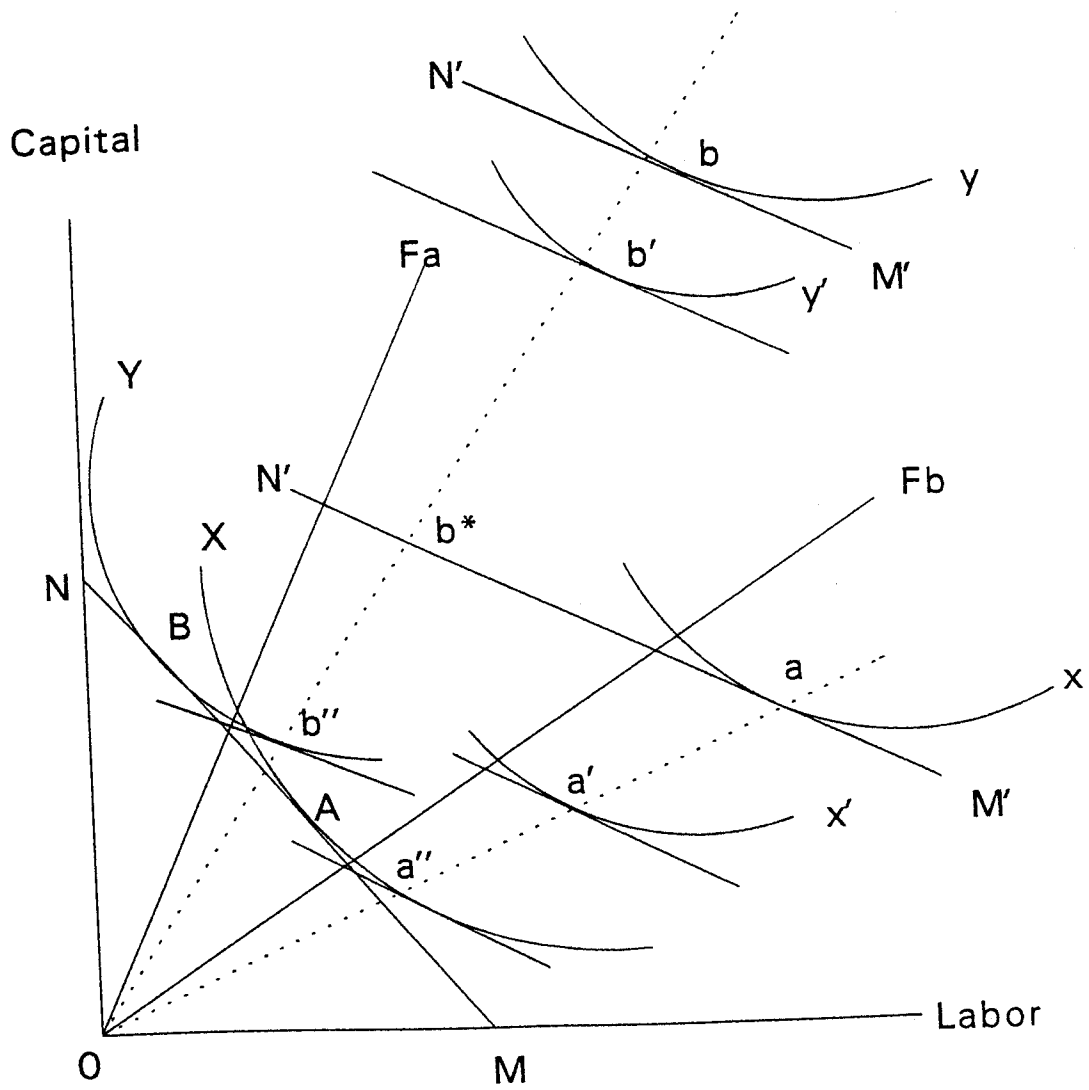


Figure 2.6: A Model of Direct Foreign Investment

advantages in both goods X and Y (both isoquants are close to the origin) over their counterparts in country B, they will become an investor in country B.

Country B is likely to perform better in learning from country A's technologies for good X, a labor-intensive good, in which country B has a much smaller technology gap and a comparative advantage. Therefore, a more likely outcome is that country B's isoquant for good X shifts inward substantially, say, from x to x', meaning efficiency improves considerably, whereas its isoquant for good Y shifts inward only slightly, say from y to y', meaning efficiency improves only to a small extent. This type of entrepreneurial asset transfers reinforces the H-O determined pattern of comparative advantage. The net result is a much more expanded basis for trade, that is, a complementary case between FDI and trade called as "a pro-trade-biased FDI."

If country A invests in country B's X industry alone, it will assist the latter to improve efficiency and expand the basis for trade to its maximum representing an ultra-pro-trade-biased FDI, a case of full complementarities between FDI and trade. Therefore, Kojima (1973) and Ozawa (1979) have argued that Western technologies are adjusted to suit the condition in developing countries.

In short, FDI, particularly in the case of labor-intensive manufacturing with a simple technology, should play the role of 'tutor', teaching technological, management and marketing skills to local people, and encouraging them to establish their own business. When FDI successfully completes its job as a tutor, it may be faded out. As a consequence, FDI then shifts to more sophisticated intermediate goods (Kojima, 1973).

The *World Investment Report* (1994) identifies the effects of inward FDI on competitiveness as follow: access to resources such as capital, technology, skills and information; access to markets associated with linkages to export market as foreign affiliates may serve as suppliers to the parent firms, export to the home country or third countries; and can contribute to industrial restructuring.

Even though the effectiveness of FDI on economic development in host countries has been an area of controversy, many developing countries believe that inward FDI can spur growth in host countries due to lack of domestic saving and technology. Therefore, many developing countries including Indonesia compete to attract more inward FDI among them. However, it has been clear even without statistical analysis that FDI can generate employment, domestic production, and government revenues through tax which have positive impact on economic growth. FDI brings to the host country a package of cheap capital, advanced technology, superior management ability, and superior knowledge of foreign market. Therefore, it is not a zero-sum game and both the home countries and host countries can gain from it. Combination of human capital, physical capital and technology, which can be transmitted through FDI, is the most crucial determinants for economic growth. The most important for developing countries is to integrate received FDI into the framework of their own industrial plans and programs, and to take advantage of foreign enterprises' activities to enhance their own indigenous capabilities (Kojima, 1973). In other word, the role of FDI has to be fitted into the host country's development strategy without sacrificing the main objective of FDI through transnational corporations, which is to make a profit. The benefits to be

reaped from FDI critically depend on the type and age of the investment, the economic characteristics of the host country and the macroeconomics and organizational strategies pursued by host Governments (Dunning, 1994). In other word, host countries should receive FDI with differing technological contents that are compatible with their level of development (Porter, 1990). The last, FDI through transnational corporations (TNCs) are no longer the subject of such prejudice among developing countries and intellectuals as they were in the 1970s. They have proved their worth as agents of economic growth and change, particularly in Asia, and have gained new respect in this free-market era (Far Eastern Economic Review, 3 October 1991).

In connection with FDI, Kojima (1973) also postulates a basic hypothesis: DFI (Direct Foreign Investment) should originate in the investing country's comparatively disadvantaged industries, which are comparatively advantaged or potentially comparatively advantaged in the host country. This may be called "the principle of complementing comparative advantages" This concept is understandable because a developing country can easily absorb or learn simple technology. Through an international division of labor, developing countries can compete in the world market because developing countries (low-wage countries) have a power in labor-intensive goods. Low wages are the basis for price competitiveness.

However, wages will increase if more inward FDI through the well known "Stolper-Samuelson factor-price magnification" effect. The rising wages will increase purchasing power which expands domestic market and national income. Recently, trade or OL-EO strategy plays an important role in economic growth which is supported by the

case of NICs. It is now widely recognized that OL-EO strategy is more effective than inward-looking, import substituting (IL-IS) strategy in achieving a faster growth and structural improvement in the developing countries (Balassa, 1989).

2.5. Flying-Geese Paradigm

A. An Overview

The 'Flying Geese' (FG) is a popular metaphor to explain the trade-FDI link in East Asia in connection with changes in industrialization and comparative advantage (Akamatsu, 1962 and Ozawa (1992). According to this paradigm, technologies are transmitted through FDI from a lead country (e.g. U.S., and Japan) to the follower countries such as the NICS and the Association of South East Asian Nations (ASEAN-4) consisting of Indonesia, Malaysia, the Philippines, and Thailand. When Japan experienced a labor shortage in the sixties and seventies, Japan started outward FDI in the NICs in labor-intensive industries such as textiles. When the NICS also experienced labor shortage, they started doing outward FDI in ASEAN-4 in labor intensive industries. As both labor and capital became less abundant in the eighties, Japan shifted into technology intensive goods and started outward FDI in the NICs in capital intensive industries. The NICS followed the suit investing in ASEAN-4.

This process resulted in changes in trade patterns as Japan moved production of its second tier products offshore to the NICS and then the NICS also moved production of their second tier products offshore to the ASEAN-4. As a result, the revealed comparative advantage (RCA) of the lead country and the second follower countries (NICS) in a particular industry declined as its production moved overseas, while the

corresponding RCA in the follower countries increased. Therefore, we can define the flying-geese pattern as moving targets due to relocation of certain industries from the lead countries to the follower countries.

This paradigm is consistent with the product life cycle theory where every commodity/export commodity passes through a cycle of growth and eventually deteriorates. Therefore, it is common for developing countries to take over industries in which advanced countries have lost their comparative advantage. In order to maintain the export growth we need to always create new export goods like Japan did. When the rises and falls of imports, domestic production, and exports in volumes are plotted against time, we get a graph like a flock of geese flying in formation. The patterns between consumer goods industry and producer goods industry show a time-lag. However, if we introduce FDI into the paradigm, both production and export curves will occur almost at the same time in the early stages of industrial growth without much time-lag after the appearance of a production for consumer goods. In this connection, FDI through MNCs help to compress the time needed to move from the consumer goods industry to the producer goods (higher value added). They transform into "inter-stage arbitrageurs of economic development" (Kojima and Ozawa, 1985; Ozawa 1992, 1993). This pattern can enhance trade between home and host countries and/or between host countries and third countries.

B. The "hidden" side of the "flying-geese"

The flying-geese pattern creates what may be called the "economies of concatenation" through "shredded" industrial activities or industrial recycling in the form

of trade, investment, and knowledge transfers among a group of nations which are at different stages of economic development (Ozawa, 1992). Furthermore, the dynamics of the Asian Pacific economies can really be explained within this framework of analysis. They are developing their export capacities and strengths based upon interactive cooperation and coordination as an interdependent group to boost their economic growth together as a sequence of tandem development. What is important is a country's ability to generate new exports one after another in order to maintain exports. Therefore, the "flying-geese" formation can be considered as a "new" form of economic development. Japan's pattern of success will become a pattern for East Asia's success. In other word, NICs follow Japan and ASEAN-4 strive to catch up with NICs. It seems that trade and FDI can be explained by the same virtue. This is because not all manufacturing sectors in Japan and NICs are able to maintain their dominance as international trade and the industrialization of East Asian nations advance. As a consequence, many sectors will be relocated to Asean-4 through FDI due to a disadvantage in their home for a certain industry. It means that they give up production share to East Asian nations, however, their shares in export (or market) regardless of their location are still high measured by ownership. The flying-geese pattern was facilitated by the growth of interdependence among the countries of this region reflected by the growth of inward FDI to ASEAN-4 from Japan and NICs. The second and/or the third tiers need and/or receive a recycling industry from the first and/or second tiers. Ozawa (2001b) advances his work on the stages-specific correspondence between structural transformation and FDI, as schematically illustrated in Figure 2.7.

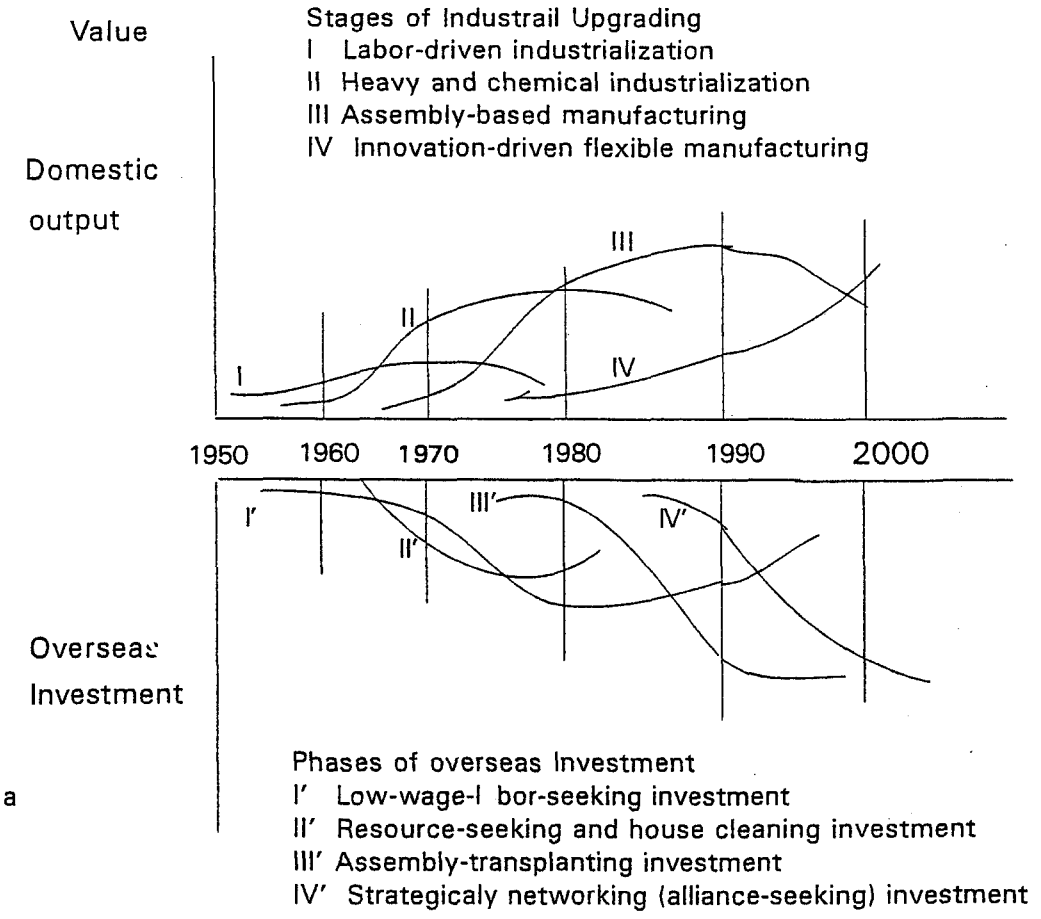


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Figure 2.7: Japan's Industrial Upgrading and Overseas Investment

The importance of industrialization to sustain an expansion of export over time can be justified as Japan and NICs sustain export expansion with manufactured goods. Many empirical studies show that there are positive relationship between growth and exports measured by a change in the national product (whether total or per capita) with a change in exports. Since exports are themselves part of the national product, an autocorrelation is present and a positive correlation of the two variables is almost inevitable, whatever their true relationship to each other. This suggests that countries which neglect their export sectors are likely to have to settle for lower rates of economic growth as a result. Therefore, export expansion is an important vehicle for their growth and also their export and import composition experience changes over time as the structure of the economy changes in the course of development.

The flying-geese pattern is seen as contributing to a "virtuous cycle" of FDI-trade expansion in which industrial restructuring evolves in synchrony with comparative advantage trends (Braga and Bannister, 1994). The World Investment Report 1995 presents the flying-geese paradigm in its report.

So far the FG model neglected its institutional dimension to transmit industrial restructuring to its neighboring countries or Asia. The FG model only concentrates on the real sector and did not include the financial sector dimension in delivering comparative advantage recycling (CAR) and an adaptive efficiency enhancement mechanism (AEE). The institutional, especially financial, dimension of FG strategy needs to be taken into account to explain why such a strategy once proved effective but later culminated in a deepening financial morass (Ozawa, 2001a). The FG model should

encompass not only the industrial dimension of catch-up but also its institutional, particularly financial, dimension. The financial sector is very important in supporting industrial upgrading in the wake of globalization.

2.6 Globalization

Globalization, a process through which an increasingly free flow of ideas, people, goods, services, and capital leads to integration of economies and societies, has brought rising prosperity to the countries that have participated. Two tremendous changes are driving through the world economy: technological advance in computing and communications, and the fall in barriers to trade and investment. The death of distance brings the two together. As the world moves toward virtually limitless and almost free electronic communications capacity, trade and investment flows will transform patterns of economic activity. It has boosted incomes and helped raise the living standards in many parts of the world, partly by making sophisticated technologies available to less advanced countries. Since 1960, for example, life expectancy in Indonesia has risen by more than 20 years, and illiteracy in South Korea has gone from nearly 30 percent to almost zero. In addition, income per capita in Indonesia more than doubled. These improvements are due to a number of factors, but it is unlikely that they could have occurred without globalization.

But in recent years, concerns have grown about the negative aspects of globalization and especially about whether the world's poorest, numbering 1.2 billion people who still live on less than $1 a day, will share in its benefits. The beliefs that free trade favors only rich countries and that volatile capital markets hurt developing

countries the most have led activists of many stripes to come together in an "anti-globalization" movement. The activists highlight such as the costs of rapid economic change, the loss of local control over economic policies and developments, and the disappearance of old industries.

Despite the large potential benefits, there is widespread concern among policymakers that growing financial globalization and increased reliance on private capital flows might render emerging markets more susceptible to volatility - including reversals in capital flows. Even Jacques Chirac, France's president, has expressed concern that globalization is not making life better for those who need most of benefits promised to them[4].

The recent pace of technological advantage has allowed for deeper globalization and integration of the classic factor of production of land, labor, and capital, including financial sector. The globalization is also induced by lower cost of globalization represented by cheaper transportation, communication, and information processing (see Table 2.1). Even today the cost to make phone call from New York to London is less than one dollar for three minutes.

2.7 Growth of Capital Flows

Capital flows have experienced major swings during the last 22 years. After a surge in the late 1970s, they went down dramatically following the explosion of the debt crisis. Then, as a result of globalization and deregulation in developing countries, in the early

[4]J. Chirac, "The Economy Must be Made to Serve People", address at the International Labor Conference, June 1996.

Table 2.1: The Cost of Air Fare, Telephone, and computer (In 1990 dollars)

Year	Average Air Fare per passenger mile	Cost of a three minute call, New York to London (1990=1,000)	Computer Price deflator (1990=1,000)
1930	0.68	244.65	n.a
1940	0.46	188.51	n.a
1950	0.30	53.20	n.a
1960	0.24	45.86	125,000
1970	0.16	31.58	19,474
1980	0.11	4.80	3,620
1990	0.11	3.32	1,000

Source: Cited from Malcolm Dowling (1997)

1990s huge private capital came into many developing countries. This flow was interrupted by the initiation of the Asian crisis and its aftermath

Net private capital flows to all non-industrialized countries increased from an annual average of $8.8 billion for period of 1983-1989 (IMF, 1995) to an annual average of $144.2 billion in 1990-1996 (IMF, 1998). These flows reached a peak of $214.9 billion in 1996 and then decreased to $123.5 billion in 1997, and less than $60 billion in 1998. When the Mexican crisis occurred, the reduction in capital flows was mostly a Latin American phenomenon. The Asian crisis has set in motion (panic) a reduction in flows to all emerging region.

The capital flows of the early 1990s are different from those of the late 1970s on at least two important counts. First, most of capital inflows in 1970s went to the public sector to finance ambitious public projects and current account deficits. Meanwhile, the

capital flows of 1990s have mostly been directed to the private sector. Second, the flows of 1970s were dominated by syndicated bank lending and the new wave (1990s) of capital inflows has been dominated by foreign direct investment (FDI) and portfolio investment (short-term investment).

Washington's policies also fostered vulnerabilities that are an underlying cause of the economic crisis that began in Thailand in July 1997, rippled through Asia and Russia, and is shaking Brazil and Latin America. President Clinton and his Treasury Secretary, Rubin, took the American passion for free trade and carried it further to press for freer movement of capital. The Clinton Administration pushed too hard for financial liberalization and freer capital flows, allowing foreign money to stream into these countries and local money to move out (*New York Times*, February 16, 1999). In many cases, foreign countries were happy to open up in this way because they thought it was the best road to economic development. But a wealth of evidence has shown that over-hasty liberalization can lead to banking chaos and financial crisis.

Even some former Administration officials acknowledge that they went too far. Mickey Kantor, the former trade representative and Commerce Secretary, now says that the United State was insufficiently aware of the kind of chaos that financial liberalization could provoke. This is not to say that American officials are primarily to blame for the crisis. Responsibility can be assigned all around: not only to Washington policy makers, but also to the officials and the bankers in emerging market countries who created the mess; to Western bankers and investors who blindly handed them money; to Western

officials who hailed free capital flows and neglected to make them save; to speculators who trade for currencies.

Free movement of capital is nothing new; it was the norm during most of Western history. At the beginning of this century, anyone could move money across borders without difficulty. The Great Depression changed all that. Governments moved to control capital so as to avoid what they saw as the chaos of capital rushing out of countries and setting off financial crisis. A result was that most countries of the world, including the United States in the 1960s, limited the right of companies and citizens to buy foreign securities or invest overseas. People were often allowed to buy only small amounts of foreign currencies (*New York Times*, February 16, 1999).

Then, as memories of the Depression faded, the tide shifted again in the 1970's and 1980's. Starting in the United States and Europe, it became fashionable to let money move freely, and Reagan Administration began to push for free capital flows in other countries. Ronald Reagan declared in 1985: "Our task is to knock down barriers to trade and foreign investment and the free movement of capital." In addition, George Bush described his Latin America program, the Enterprise for Americas Initiative, as a commitment to "free markets and to the free flow of capital, central to achieving economic growth and lasting prosperity."

The Clinton Administration inherited that agenda and amplified it. Previous administrations had pushed for financial liberalization principally in Japan, but under President Clinton it became a worldwide effort directed at all kinds of countries, even smaller ones much less able to absorb it than Japan. This push for financial liberalization

reflected President Clinton's growing enthusiasm for markets and his desire to make the economy as a centerpiece of his foreign policy.

The idea was to pressure Asia to ease its barriers to American goods and financial services, helping Fidelity sell mutual funds, Citibank sell checking accounts and American group sell insurance. The push for financial liberalization was directed at Asia in particular, largely because it was seen as a potential gold mine for American banks and brokerages.

In the end, Korea opened up the wrong way: it kept restrictions on long-term investments like buying Korean companies, but it dropped those on short-term money like banks loans, which could be pulled out quickly. The same thing happened to Indonesia which opened long and short term investments. In July 1996, the IMF's executive board praised Indonesia's "open capital account" and a few months later, "welcomed the acceleration of capital account liberalization" in South Korea (*Investor's Business Daily*, August 1996).

Ricki R. Helfer (*New York Times*, February 15, 1999) said that financial liberalization was undertaken in countries that did not have the infrastructure to support it. Developing countries are not ready to face financial globalization. Stiglitz (*New York Times*, February 17, 1999) warned about the need for slower pacing of financial liberalization abroad, but nobody listened. In addition, Stiglitz (2000) said that East Asian countries had liberalized their financial and capital markets not because they needed to attract more funds (savings rates were already 30 percent or more) but because of international pressure, including some from the U.S. Treasury Department. These

changed provoked a flood of short-term capital that is the kind of capital that looks for the highest return in the next day, week, or month, as opposed to long-term investment in things like factories. In Indonesia and Thailand, this short-term capital helped fuel an unsustainable real estate boom. The problem was not imprudent government, as in Latin America; the problem was on corporate and banking debt not on national debt, suggested by IMF. The private sectors, for instance, had gambled on the real estate bubble.

2.8 Financial Crisis

Theory of financial crises is connected to the context of an expanding economy which increases expectation and speculations that change the proper level of debt and risk. In addition, price of financial assets also increases (Minsky, 1975). When the speculation increases as the attitude about risk and the proper liability structure change, the financial system becomes increasingly fragile. The fragility grows as debt levels increase, the proportion of short-term debt rises and liquidity declines (Minsky, 1977).

Minsky (1986) also categorizes financing to: hedge, speculative, and Ponzi finance to indicate the relative difficulties that economic units have in repaying debt. A hedge firm is able to meet all cash payment liabilities with cash receipts. A speculative firm has difficulty meeting some payment liabilities, usually those coming due in the short term. A ponzi firm has the most difficulties; therefore the firm must borrow to meet current interest payment.

The globalization that allows capital to cross national borders and a lack of regulation in financial institution are preconditions for the financial crisis. Easy lending

and investment in the 1990s was a booster to financial fragility. Partly as a result of the recession and falling interest rates in U.S. and other developed countries, in which billion of dollars lent to Asian countries. In addition, international lenders made massive unsecured dollar loans to Asian banks whose local loan practices they scarcely monitored. The underlying problem lay in the dangers lurking in the newly liberalized international credit system. Asia was a more profitable place to invest than anywhere else in the 1980s and 1990s. At the same time most of major deregulations in financial sector and foreign investment took place in order to attract foreign investments. As a result, many international investments flooded into Asian countries.

Therefore, the global financial system was a critical factor in the Asian crisis of 1997. Vietnam and China both have deep and systemic problems in their banking sectors, but they were much less hurt by the crisis because their financial systems were only partially opened up to international capital flows.

According to Kindleberger (2000), it is hard to divide the blame for the financial crisis in East Asia, starting in July 1997, between euphoric lenders in developed countries who became enamored of diversifying their portfolios and the rapidly developing borrowing countries, pushed by the West to deregulate their markets and ambitious to expand investment in the interest of still more growth. Other factors were involved: crony capitalism and corruption in Indonesia, a weak government in Thailand, enormous conglomerates (chaebol) in South Korea, and bad bank loans everywhere.

However, the story of the recent Asian economic crisis should begin with Japan's crisis in 1989. Before 1990 most Japanese real estate and stock market prices

skyrocketed, creating a bubble. Japan had gone through one of the most dazzling stock and real estate manias in history. At the peak, in 1990, the land underneath the Imperial Palace in downtown Tokyo was said to be worth as much as all of California. By the mid-1990s, most Japanese real estate as well as stock market prices had dropped 50 percent from 1989 levels, economic growth was stagnant, and the Japanese miracle was over. In retrospect, Japan exported its bubble to Asia. In Indonesia, we can see other problems, such as wide-spread bad debt among local financial institutions and corporations. As consequence, the burden of government budget became heavier.

Since many Asian countries had problems with heavily indebted corporations, inflated stock and property prices, overvalued currencies, and bad loans, it was easy to find similarities with Thailand once people began to realize. Just as Western capital had flooded into emerging markets as a group in the early and mid-1990s, now it began to ebb. Perceptions of risk had altered and people began to get nervous about holding any Asian currency. Ultimately, Asia's economic crisis was about a sudden and profound loss of confidence and credibility on the part of local and foreign investors.

2.9 Econometric models

Theoretically, an of capital (MPK) and the marginal product of labor (MPL). In a certain degree, a decreasing marginal productivity of capital will prevail. In reality, however, this theoretical expectation needs to be verified with empirical study. In this regard, we are going to develop simple single equation models that connect dependent and independent variables. These models will be estimated by using the OLS method and increase in investment and saving will raise gross domestic product, and the

marginal product the Eview program in order to assess the impact of independent variables on the dependent variable empirically

A. Capital Shortage Theory

According to the capital through investment. Such investment fills resource gaps in developing countries and improves the quality of factors of production. In this theory, one of the most important contributions is capital. Given the incremental output capital ratio (IOCR), the rate of growth is a function of the propensity to save. The higher is the propensity to save, the higher is the rate of growth. In developing countries the marginal (as well as the average) propensity to save is low, therefore, the rate of growth is low. In order to fill the gap, the country needs capitals inflow from other countries. In this regard, we employ a single equation model, used in the World Investment Report for Taiwan, in order to explore the relationship between FDI and growth with little bit modification by adding real exchange and infrastructure variables.

$$Q_t = a+b*FDI_t+c*F_{t-k}+d*TR_t+e*EX_t+f*L_t+g*R_t+ E \qquad (2.1)$$

where:

Q_t = Gross Domestic Product (GDP) in year t,

FDI_t = FDI in year t;

F_{t-k} = lagged FDI;

TR_t = trade (import+export) in year t;

EX_t = real exchange rate in year t-1;

L_t = labor in year t;

R_t = infrastructure measured by the stock of the length of road;

E = Error term.

This single-equation model hypothesizes that the current FDI and the lagged FDI, openness, exchange rate, and infrastructure have a positive impact on GDP.

FDI also contributes to crucial foreign exchange earnings through their trade effect and finally contributes to GDP and GDP per capita. Meanwhile, the marginal propensity to save is assumed to rise with rising incomes. Therefore, algebraically, we use an equation to measure the impact of FDI on GDS, as follow:

$$S_t = a + b*F_t + c*Q_t + d*A_t + e*R_t + E \qquad (2.2)$$

Where:

S_t = Gross Domestic Saving (GDS) in year t;

F_t = FDI in year t;

Q_t = Gross Domestic Product (GDP) in year t;

A_t = AID in year t;

R = Interest rate

E = Error term.

B. Capital Inflows and Productivity of Capital and Labor

In general, we want to invest when the rate of return is high enough to cover the cost such as interest rate, risk, and taxes. In order to know whether capital inflow still attractive for foreign investor, we use the production function as follow: Q = f(K,L).

Furthermore, for the purpose of the empirical study, we assume that the production function takes the form of Cobb-Douglas function,

$$Q = K^a L^b \qquad (2.3)$$

where Q is output, K is capital, L is labor, a and b are parameters. Taking partial

derivative with respect to K, we get:

$$\_Q/\_K = aK^{a-1}L^{b}$$

where $\_Q/\_K$ is marginal productivity of capital (MPK). By taking log, we get:

$$\log \_Q/\_K = \log a + (a-1)\log K + b \log L \qquad (2.4)$$

Based on equation (2.4), we are going to estimate the effect of an increase in FDI by replacing K with FDI and L with marginal productivity of labor (MPL). Therefore the equation to be estimated is:

$$LMPK = a_0 + a_1 LFDI + a_2 LMPL + E \qquad (2.5)$$

where LMPK is the log of marginal productivity of capital, LFDI is the log of inward FDI, LMPL is log the of output labor ratio representing variable L, and E is an error term. The incremental output capital ratio (IOCR) is used as a proxy to the marginal product of capital (MPK). In practice it is extremely difficult to measure IOCR. As describe by Rana and Dowling (1988), IOCR is a rough but commonly used proxy for investment efficiency. They define IOCR = $(\_Y/Y)/(I/Y) = \_Y/I$, where Y is gross domestic product and I is investment. Therefore, the IOCR is calculated as the ratio of change in output in any period to gross investment in that period.

This simple model (2.5) is used to explore the effect of an increase in inward FDI on marginal productivity of capital.

Based on equation (2.4), we can take partial derivative with respect to L, we get:

$$LMPL = b_0 + b_1 LFDI + b_2 LMPK \qquad (2.6)$$

where LMPL is the log of marginal productivity or output labor ratio, LFDI is the log of inward Foreign Direct Investment, and LMPK is the log of marginal productivity of

capital. These equations are estimated by using OLS with the Eview program.

C. Structural Changes

Ito and Orii (2000) classified the manufacturing subsectors into three categories: Labor-intensive sector (L-sector), capital-intensive sector (C-sector), and technology-intensive sector (T-sector). To be more specific, these comprise:

- The L-sector includes International Standard Industrial Classification (ISIC) code 311 up to code 332, consisting of sectors producing food, beverage, tobacco, textile, apparel, leather products, shoes, lumber, and furniture;
- The C-sector (ISIC Code 341-381), including the sectors producing paper, printing and publishing, petrochemicals, rubber, plastic, nonmetal (ceramic, glass, cement), steel, and nonferrous metal;
- The T-sector (ISIC Code 382-390), including the sectors producing machinery (electric, transport, and professional & Scientific Equipment).

The early stage of industrialization starts from the L-sector and when income rises the C- and T-sectors will develop. Industrialization means that the role of labor sector will monotonically disappear over time as GDP increases. On the other hand, the role of the C-sector and the T-sector will increase.

In order to test a structural upgrading we employ a single equation as follow:

log(GDP)=c+b*1/(1-TWP)+c*log(Emap)+d*log(Prop)+c*e*servp+f*indvap+E (2.7)

where:

TWP = percentage of textile and wearing apparel's output to manufacturing's output;

Emap = percentage of electrical machinery's output to manufacturing's output;

Prop = percentage of professional & scientific equipment's output to manufacturing's output;

Servp= percentage of service to GDP;

Indvap = percentage of industry to GDP;

E = error term.

1-TWP = non textile and wearing apparel

2.10 Conclusions

Labor and technology have a crucial role in determining which country can advance faster in the race for economic development. The better the quality of labor and technology, the faster the country gets to finish the line. For example, Japan only needed a relatively short time to upgrade its economic structure compared to the early industrializers did. In general, the path of development is the same. For example, NICs follow Japan and ASEAN-4 follow NICS. The difference is only in when they get there and for how long. FDI has a crucial role for growth as long as FDI brings technology.

Abundant natural resources can not guarantee high economic growth and prosperity. The quality of labor and technology is more important than physical resources. Free trade lets us buy goods and services from abroad that are better or cheaper than those at home. Thus, our society is better off. Lack of financial institution and microeconomic policy for the corporate and banking system creates conditions for a financial crisis. Emerging markets are not ready to globalize their financial sector.

CHAPTER III

Foreign Investment Policy in Indonesia

3.1 An Overview of Indonesian Economy

Indonesia gradually liberalized its foreign exchange system starting in 1970. Since 1982 Indonesia has adopted a free foreign exchange system. The system was followed by liberalization of the financial sector, particularly banking, from 1983 to 1988. In order to attract foreign capital, especially FDI, the government of Indonesia (GOI) enacted the Law No. 1 in 1967 and Law No. 11 in 1970. Since then, the GOI has enacted other laws for inward FDI. The GOI was still heavily dependent on inflows of foreign capital and was in fact a net importer of capital due to a saving investment gap, as can be seen in Figure 3.1.

During the 1970-1990 period, the Indonesian economy fluctuated due to external shocks originating from a slowdown in world demand and a change in its terms of trade. The change in the terms of trade and world demand for Indonesia's exports definitely affected the country's real income through the balance of payments. The uninterrupted increase in oil prices from less than $3 per barrel in 1970 to $35 per barrel in 1981 increased export from only $1.1 billion to $25.2 billion. As a result, merchandise trade surplus increased from $108 million to $11.9 billion. The average growth of GDP amounted to 8.0% per annum over the 1970-1981 period.

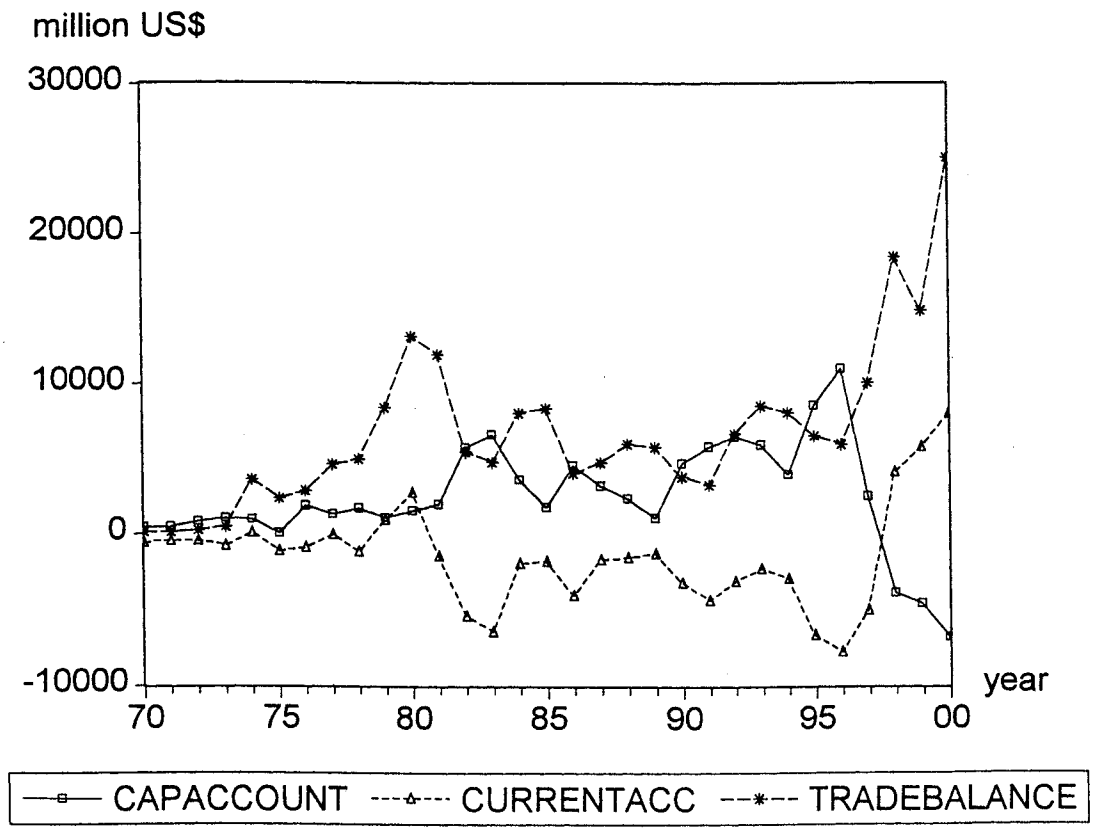

Figure 3.1: Current Account and Capital Account

Following a decade of rapid growth, Indonesia experienced a contraction over the period of 1981-1990 due to a global economic recession faced by industrialized countries. In addition, a decrease in oil prices from $30 per barrel in March 1983 to less than $10 in August 1986 caused in a 41% reduction in export revenues from $25.2 billion in 1981 to $14.8 billion. As a consequence, the average growth of GDP was only 4.7%, a drop of almost a half compared to the previous period.

Since the beginning of the 1980s, the share of agriculture and mining exports has declined, whereas the share of manufacturing (non-oil export) continued to increase (see Figure 3.2). The achievements of the 1980s were built around a fundamental shift in development strategy--a move away from inward-oriented, public-sector-led growth towards outward-oriented, private sector led growth. This has been manifested in a series of major deregulation measures—affecting trade, investment, finance, and infrastructure--aimed at reducing the reliance on controls and stimulating an efficient functioning of the market mechanism. However, economic growth moves in accordance with the country's current account.

After Indonesia gradually liberalized its financial sector in the 1990s, a huge a mount of foreign investment flowed into Indonesia, including short term capital such as portfolio investment in which the average economic growth rate amounted to around 7.5% in the period of 1990-1996. An important recent development was the growing role of private capital flows in financing Indonesia's balance of payments.

Unfortunately, Indonesia did not realize that the economic boom was only as a "bubble", especially in real estate (construction), and malls and hotels. The bubble

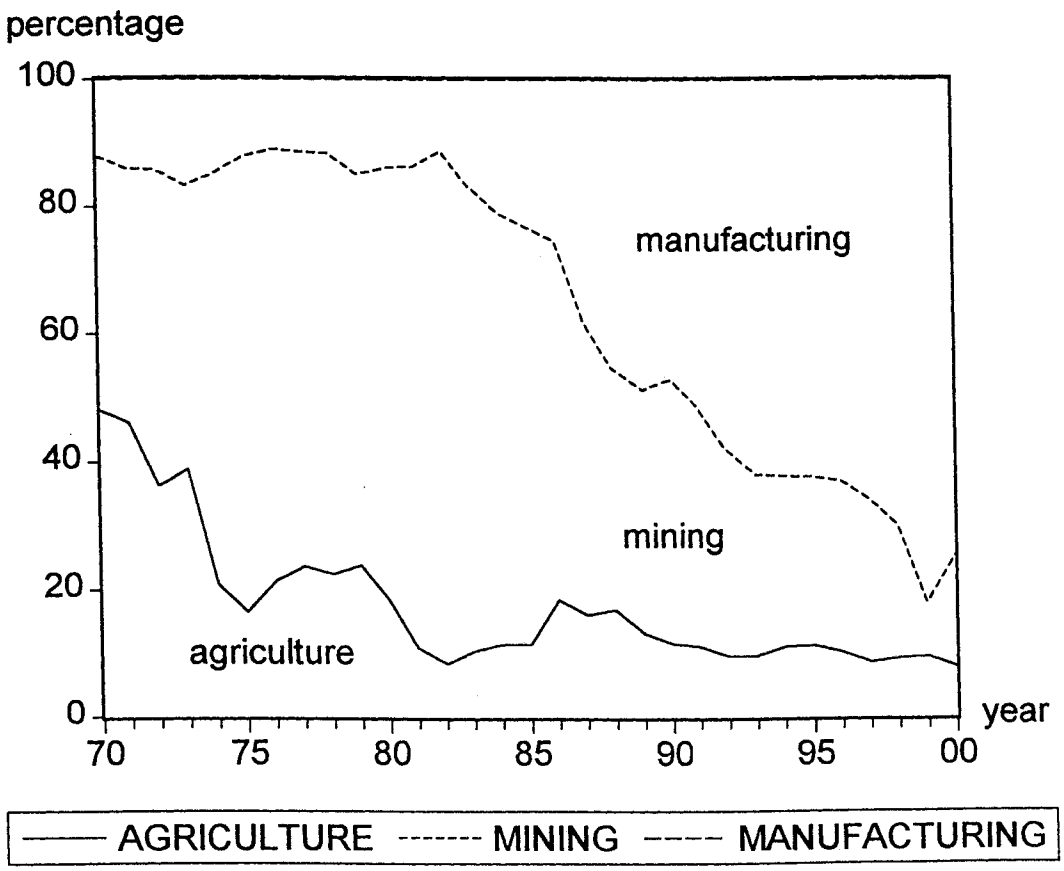

Figure 3.2: The Structure of Exports

eventually burst, often with disastrous consequences as we witnessed as the financial crisis hit Asian in 1997.

3.2 Fiscal Policy

Since 1968, Indonesia has adopted a balanced-budget policy where revenues (including foreign aid and loans) must equate to expenditures. The balanced budget does not relate to the economic definition of government surplus or deficit as long as we treat loans and foreign aid as part of financing. The revenue side used to depend on oil and gas revenues. The balanced budget law, when flexible used, provides Indonesian policy makers a good tool to maintain fiscal discipline. The flexibility has been in the form of an asset buildup or a drawdown to smooth out government expenditures. The expenditures include debt payments consisting of principal and interest payments.

Before the crisis hit Indonesia, the fiscal impact on the balance of payment was a deficit and the impact on money supply was a contraction. On the other hand, the government's financial operation caused a surplus on the balance of payment after the crisis. With respect to monetary developments, government financial transactions contributed to a rupiah supply expansion (see Table 3.1). The monetary expansion came from operational expenditures, particularly interest payments on government bonds, the payments of civil servant salaries and pensions as well as fuel subsidies.

3.3 Foreign Investment Policy

A. An Overview

FDI in Indonesia has a long unique history which began with the Dutch colonial government's policy of economic liberation in 1870s. Since then, FDI, which had been

supported over the following seven decades by colonial political power, has generally played an important role in the Indonesian economy with its inevitable consequences[5]. Since independence up to 1965, the political attitude toward FDI had been inconsistent and ambivalent.

Table 3.1:
Impact of Government Budget on Monetary and Balance of Payment
(Billion Rupiah)

End of Period	Monetary[1)]	Balance of Payment[2)]
1991/92	2,844	-437
1992/93	6,700	-6,488
1993/94	8,900	-7,315
1994/95	13,553	-5,854
1995/96	16,545	-6,657
1996/97	12,519	-4,900
1997/98	-6,710	10,700
1998/99	-12,700	38,300
1999/00	-10,000	10,500

Source: Indonesian Financial Statistic, November 1996 and 2001
1) Negative indicates expansion and positive indicates contraction
2) Negative indicates outflow and positive indicates inflow

On one hand, FDI has been valued as an important vehicle to boost Indonesian industrialization as FDI brought capital, technology, and skills needed for Indonesia. The main features of developing countries are low level of domestic saving, education, income, and skill. Even though Indonesia is very rich in natural resources, these natural resources do not guarantee to make Indonesia prosperous. On the other hand, FDI was treated as an exploitation of natural resources because of the origin of FDI (colonial government).

[5]For further review see Helmut G. Callis (1942)

Following long and intensive discussions, finally an act regarding foreign investment was passed in 1958, Act No. 78. Unfortunately, efforts to create a climate conducive to FDI were difficult, not only because of an unfavorable political attitude towards FDI, but also because of a worsening of the domestic economy during the period of 1958-1965. On the political front, there was an increasing influence of political power was not in favor of FDI. In addition, the concept of "guided economy", basically refusing the free market economic system, was introduced in 1959. The policy was designed toward an important role of state in the economy and limited the role of private sector. Finally, an anti FDI attitude developed widely and culminated in the abolition of Act No. 78 of 1958 in 1965 because of the policy implementation of "standing on own feet".

Under the old regime, Indonesia faced many domestic political and military problems, but paid little attention to economic development and most of potential resources were not devoted to economic development. However, Indonesia got sovereignty over west Irian from Dutch and political recognition in the world community.

Since the "New Order" took shape in 1966, the government of Indonesia (GOI) has a positive political attitude toward the role of FDI in economic development. The new government believed that FDI could bring those technology and managerial skills needed to transform Indonesia's abundant potential economic resources into a real economic strength. After President Soeharto stepped down in May 1998, the GOI continued to be interested in attracting and increasing FDI.

B. Investment Policy

Indonesian government policy is to encourage private sector-led growth and foreign investment. In order to provide a climate conducive to attracting FDI, since 1967, the government of Indonesia (GOI) has undertaken a number of important measures including the establishment of legal frameworks and a coordinating body. Finally, the GOI enacted the law to attract foreign investment through the Law No. 1 of 1967 and Law No. 11 of 1970. The Laws contained a number of attractive provisions, such as:

1. allowing foreign companies to freely transfer their foreign exchange earnings and repatriate their capital after a certain period,
2. the GOI will not take over foreign capital,
3. granting foreign investors tax holidays, and
4. allowing FDI to operate for a maximum period of 30 years.

With respect to legal protection for foreign investors, in 1968 the government signed an agreement on the Convention on the Settlement of Investment Disputes. In addition, the GOI was one of the founding members of Multilateral Investment Guarantee Agency (MIGA) in 1986.

In June 1994 and May 1995, several previously restricted sectors were opened to foreign investment, including harbors, electricity generation, and telecommunications. Indonesia re-introduced basic tax holidays with Government Regulation No. 45 of 1996. According to this regulation, specific sectors, including capital goods manufacturing,

agribusiness, infrastructure, sea and air transport, engineering, and professional personnel training may be eligible for tax holidays.

Furthermore, in 1998 and 1999, the GOI issued several new regulations to ease the entry of foreign firms and capital into Indonesia. However, the Foreign Capital Investment Law of 1967, which provides the basic framework for foreign investment, is still in effect. The law has been under revision for almost two years and its reform comprises one of the objectives of the GOI's IMF-supported economic reform program.

The GOI has also made effort to streamline and simplify foreign investment application processes. For example, the approval for foreign investment over $100 million no longer must be done by the President of Indonesia, but can now be done by the Chairman of Badan Koordinasi Penanaman Modal (BKPM). Some provinces such as the Jakarta District, West Java, West Kalimantan, and East Kalimantan have started accepting foreign investment applications since January 2000. Plans are made to permit the Indonesian embassies and consulates abroad to accept and process foreign investment applications.

Some sectors are closed to all private and foreign investment. According to the July 1998 "negative list", published by the Ministry of Investment and State-Owned Enterprises, 16 business fields are closed to both foreign and domestic private investment, while nine business fields are closed only to foreign investment such as freshwater fishing, forest utilization, taxi/bus transport, local shipping, private television, cinema operation, and medical services.

C. Conversion and Transfer Policy

The Indonesian rupiah is freely convertible and is traded in the Jakarta and offshore (principally Singapore) inter-bank markets. Indonesia maintains no capital and foreign exchange control. Foreign investors have the right to repatriate capital and profits at the prevailing rate of exchange. The government does not place restrictions on outward direct investment. Foreign Exchange Law No. 24/1999, which entered into force in April 2000, requires the reporting of all foreign exchange transactions above $10,000. The new law does not change the system of free currency convertibility.

3.4 Deregulation and Liberalization

A. An Overview

In line with the liberalization process and accelerated integration of the world financial system, foreign exchange transactions developed very rapidly, and capital flows continued to grow in which the private sector is the most active. Capital controls were avoided for fears that they would reduce investor confidence as Indonesia was still heavily dependent on foreign capital and was in fact a net importer of capital until 1997, as reflected on a high surplus capital account. Unfortunately, some of capital was short term such as portfolio investment and for speculation.

The liberalization process made Indonesia attractive in relation to cross border transactions, both in foreign exchange and local currency, indicated by Indonesia's low capital control index compared to other Asian countries (Table 3.2). In addition, Indonesian economy is considered more democratic than China and Vietnam. According to Heritage Foundation, Washington DC, economic freedom index in China

and Vietnam are among the worst with the indexes of 3.80 and 4.70 (range from 1 up to 5). Meanwhile, Indonesia has an index of 2.85 (see *Asiaweek*, March 7, 1997). These conditions promoted an active offshore rupiah market, reflecting a process of internationalization of the Rupiah.

Table 3.2: Capital Control Index

Countries	Capital Control Index
Singapore	0.30
Indonesia	0.35
Philippines	0.45
Thailand	0.60
South Korea	0.61
Malaysia	0.77

Source: Adapted from Annual Report 2000, Bank Indonesia

B. Internationalization of Rupiah

Internationalization of Rupiah means that rupiah, treated as goods, became a commodity tradable in the international market (especially in Singapore). In addition, the rupiah can be used in international transactions, including trade, investment, and financial market transactions. The international use of the rupiah for export and import payments is not significant. Export and import invoices are mostly denominated in major world currencies, including the U.S. dollar and Japanese Yen. Therefore, the internationalization process of the rupiah has been mostly in relation to the use of the rupiah in the financial market.

After the financial sector liberalization in 1983 and 1988, there was a tendency to push for internationalization of the rupiah. At the beginning, internationalization of the rupiah was deemed useful to encourage the development of the domestic financial market and to encourage foreign capital inflows. But later on, the internationalization of

rupiah gave an opportunity for non-residents to speculate in the offshore rupiah market.

Speculative activity or "speculative bubbles" in the rupiah intensified amid the lack of stability in Indonesia's social and political situation. This caused excessive exchange rate volatility and made it difficult for the monetary authorities to maintain the stability of the rupiah. Given this situation, non-residents played an important role in deciding the direction of the exchange rate as their actions were followed by local players.

C. Speculative Bubbles

Because of the deregulation of the banking system, the number of bank in Indonesia increased dramatically. As a result, every body can easily get credit and create a bubble economy through three excesses: excess borrowing, excess investment, and excess capacity. These excesses were so widespread that their effects can be seen not just in the capitol and other big cities, but even in such remote places as the Indonesian town of Mojokerto (East Java). Speculative conditions also happened to big corporations which invest too much in other real sectors such as real estate, highway, and hotel. Finally, the three excesses created a bubble boom and the bubble eventually burst (see Figure 3.3).

In addition, there were additional "speculative bubbles" in the foreign exchange market. Under a floating exchange rate regime, exchange rate volatility can often become excessive and out of line with the economic fundamentals. Even as the a nation's economic situation is improving, currency depreciation can still occur as expectations about the future direction of the exchange rate play a very important role in every decision made by market participants whether speculators or investors. In other words,

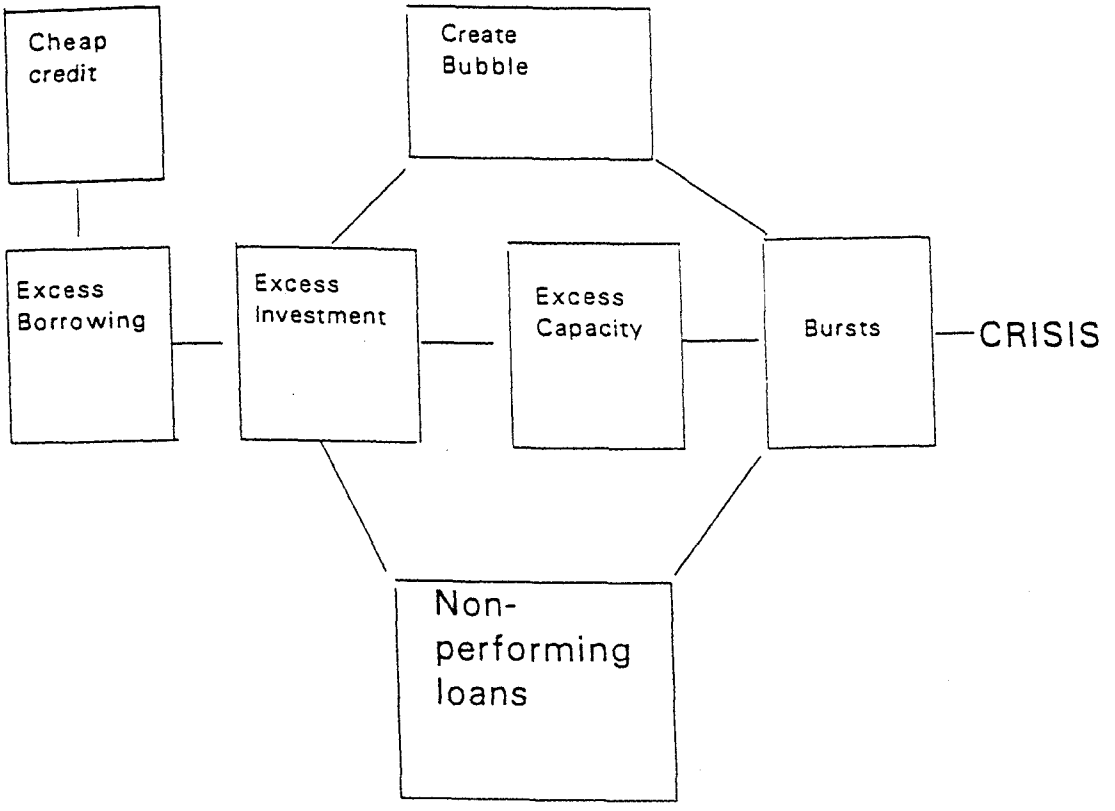

Figure 3.3: Three Excesses Creating Havoc

the exchange rate moves in a speculative bubble pattern that cannot be explained by macroeconomic variables.

When moving in this way, the exchange rate equilibrium value fluctuates farther than the market-determined exchange rate that is consistent with the nation's economic fundamentals. The main cause is an expectation bubble linked to the process of "self-confirming expectations" in the foreign exchange market. Without any known specific period when the process of the bubbling of expectations will stop, the value of the rupiah will continue to move away from its equilibrium value as determined by the economic fundamentals. In general, speculators tend to follow a "collective" behavior, because with a majority of the speculators in the market trying to put pressure on the rupiah in an upward direction, a speculator will lose if he tries to move against the market trend. It is quite possible for a speculative bubble to form and to burst over and over again, which increases the volatility of the exchange rate.

As a consequence of speculative bubbles in the foreign exchange market, the rupiah depreciated sharply, and it is difficult for the exchange rate to return to its fundamental equilibrium because "Dornbusch overshooting model" does not work for this condition (see Chapter 2). Even though the exchange rate of the rupiah has depreciated dramatically and contributed to a trade surplus, the automatic adjustment that should result from this surplus has not worked and has not helped the rupiah appreciate due to the strong "speculative bubble". In addition, persistent social and

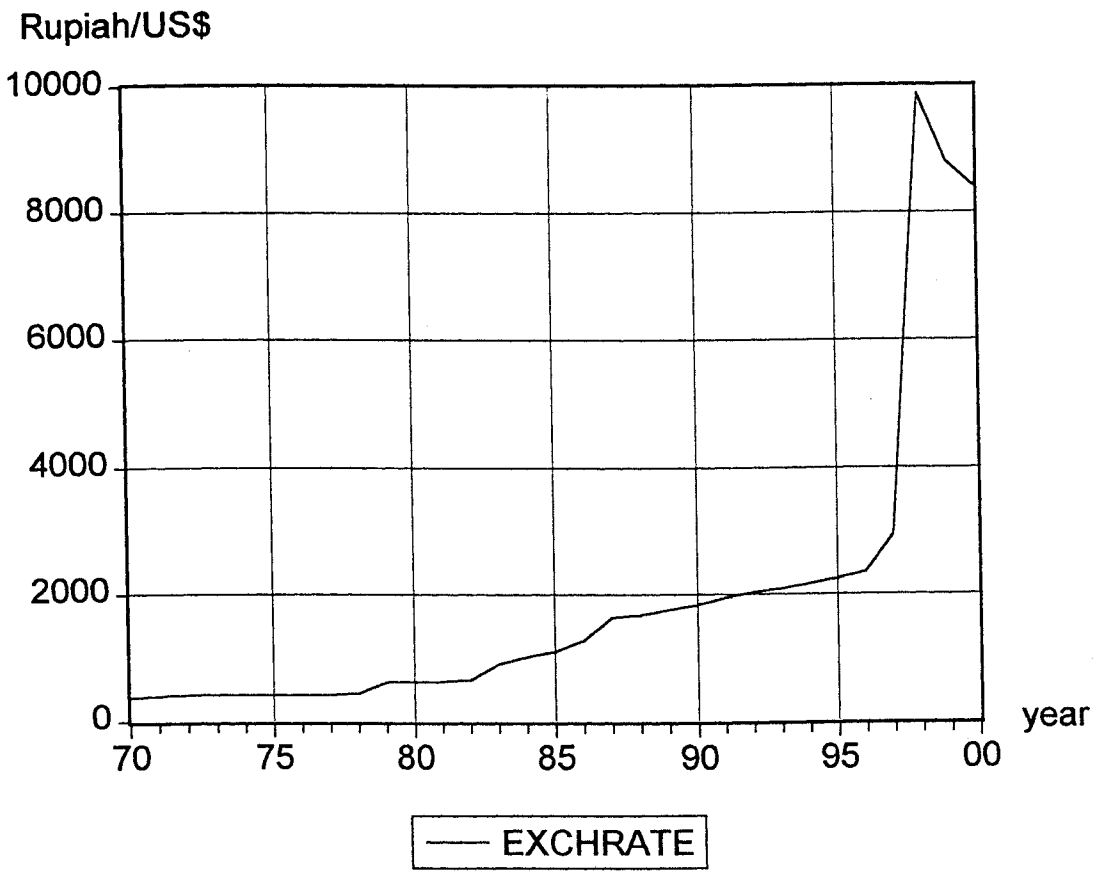

Figure 3.4: The Exchange Rate

political instability in 1998, 1999, and 2000 created a negative sentiment toward the rupiah in which rupiah never came back (close to) before the crisis (see Figure 3.4), providing further room for the development of a speculative bubble, which basically cannot be explained in terms of the economic fundamentals approach.

3.5 Foreign Investment's Statistics

A. Approved FDI

Since 1967 until 2000, the government has approved 7,665 projects with a total investment value of $244.20 billion. The rapid increase in inward FDI can be attributed to the following factors: the government's achievements in maintaining political and economic stability; sound macro economic policy in sustaining economic growth; continuing adjustment policies to create a hospitable climate for private investment in encouraging its participation in the development efforts; efforts to enhance the competitive advantage of the domestic economy; and a relatively large domestic market, availability of cheap labor as well as abundant natural resources. In addition, since the mid 1980s the increase in inward FDI has also been related to the appreciation of the Yen and the relocation of the labor-intensive industries of NICs (Hong Kong, Taiwan, South Korea, and Singapore).

Meanwhile, the largest amount of approved investment was from Japan amounting to 1,125 projects reaching the value of $43.2 billion contributing to 18% of total approval value of FDI. The other leading investors were from United Kingdom, Singapore, Hong Kong, Taiwan, and USA with the share of 17%, 9%, 8%, 7% and 7%, respectively. The rapid growth of foreign investment by Japanese firms has, in the main,

been attributed to Japan's current account surplus that expanded substantially and the drastic appreciation of the Yen during the 1990s. With regards to the performance of FDI coming from the NICs, the average investors coming from NICs tend to invest in smaller projects than investors from developed countries such as USA. These figures can be seen in Table 3.3.

Table 3.3: Top Ten Approved Investing Countries 1967-2000 (million US$)

No.	Countries	Value	Percent	Projects	Percent
1.	Japan43,188	17.7	1,125	16.7	
2.	United Kingdom	41,705	17.1	341	5.1
3.	Singapore	21,504	8.8	961	14.3
4.	Hong Kong	19,303	7.9	395	5.9
5.	Taiwan	17,008	7.0	763	11.3
6.	United States	15,979	6.5	368	5.5
7.	The Netherlands	12,987	5.3	245	3.6
8.	South Korea	11,146	4.6	773	11.5
9.	Germany	10,748	4.4	177	2.6
10.	Australia	9,913	4.1	414	6.1
11.	Others	40,730	16.6		
	T O T A L	244,211	100.0	6,722[1)]	100.0

Sources: BKPM

Table 3.4 indicates the favorable sectors for foreign investors based on the approval figures up to 2000. Meanwhile, Table 3.5 shows the favorable sectors for domestic investment. During the period of 1967 up to 2000 the largest amount in terms of the value of approved investment was engaged in the manufacturing sector with both FDI and domestic investment amounting to $158,974 million or 71 percent of total and 570,217 billion rupiah (64.687 million dollar[6]) or 65 percent of total, respectively. In term of dollar value, approved domestic investment was only 41 percent of FDI.

[6]Based on exchange rate 8,815 rupiah/dollar.

Table 3.4: Approved Foreign Investment by Sector (In millions of dollars)

Sector	1995	1996	1997	1998	1999	2000	1967-2000
Manufacturing	26,892	16,072	23,017	8,388	6,929	10,703	158,974
Other Service	3,702	4,933	2,283	2,178	2,792	2,259	25,720
Transportation	5,540	695	5,900	79	103	1,219	14,595
Real Estate	1,192	3,000	1,398	1,271	179	302	12,913
Hotel	997	1,717	463	451	229	260	11,591
Mining	-	1,697	2	-	14	2	9,922
Agriculture	1,384	1,522	464	998	491	443	8,308
Construction	206	297	307	198	153	225	2,188
T o t a l	39,915	29,931	33,833	13,563	10,891	15,413	244,211

Source: Annual Report 1999 and 2000, Bank Indonesia

Table 3.5: Approved Domestic Investment By Sector 1967-2000 (In billions of Rupiah)

Sector	1995	1996	1997	1998	1999	2000	1967-2000
Manufacturing	43,342	59,218	79,334	44,908	46,746	83,059	570,217
Agriculture	10,097	16,072	14,808	5,315	2,408	4,138	88,428
Real Estate	5,337	9426	4,301	1,548	996	226	37,628
Hotel	3,793	5,019	2,588	1,150	1,380	186	32,843
Other Service	2,266	5,905	13,190	2,460	1,226	1,846	29,184
Transportation	3,966	30,65	4,649.4	3,261	225	1,993	28,300
Construction	848	1,550	877	1,992	395	843	9,728
Mining	205	460	126	116	174	36	5,976
T o t a l	69,853	100,715	119,873	60,749	53,550	92,328	802,306

Source: Annual Report 1999, Bank Indonesia

Strengthening business confidence in Indonesia was reflected in growing investor interest, stimulated by a series of deregulatory packages before the financial crisis. The further increase of FDI's approvals happened after the deregulation was introduced in 1994. Complete foreign ownership is now permitted in newly formed foreign investment ventures, and foreign companies can now set up joint ventures in the vital sectors previously off limit to foreign investment. In addition, a tax holiday was reintroduced in 1996 before the Asian crisis in order to attract more foreign investment.

In addition, according to *World Investment Report 1995*, Indonesia has been identified as the sixth place and third place to FDI flows and stock, respectively, among the ten largest developing host economies. The higher the stock of FDI, the higher the structure of international production undertaken by TNCs. And the number of foreign affiliates in Indonesia has achieved 13,472 in 1999. However, most FDI originates from, and is still concentrated in, developed countries (*World Investment Report 1995*). Unfortunately, after the crisis, Indonesia was not included on top 20 countries receiving inward FDI in 1998 and 1999[7]. On the other hand, Singapore, Thailand, Malaysia and Philippines were included. The picture reflects that Indonesia is still not attractive enough for foreign investors compared to other ASEAN countries.

Unfortunately, after the Asian crisis hit Indonesia, all policies directed to boost growth through investment and export was not effective anymore. Foreign investors, interest in Indonesia has fallen substantially since the onset of the economic crisis in mid-1997. The sensitivity of FDI and other short-run capital inflows to political and

[7]World Investment Report 2000.

economic uncertainty was evident in May 1998, when in a month of turmoil FDI approvals dropped to 84% below the April level. FDI approvals reached almost $34 billion in 1997, they further declined to less than $14 billion and $11 billion in 1998 and 1999, respectively. FDI experienced little bit increase to less than $16 billion in 2000.

B. Realized FDI

Compared to approved FDI, realized FDI was relatively a small part. However, as mentioned before, the important factors for FDI are: technology transfer, know-how, and market for export. Natural resources alone do not guarantee economic growth. We must translate potential wealth to real wealth by using capital, know-how, and technology. In this case, Indonesia still needs more capital, technology, and know-how in order to explore and exploit the mineral resources such as Liquid Natural Gas (LNG) in Natuna. It means that having huge natural resources are meaningless without the role of foreign investment as long as we do not have educated human resources, technology, and capital to process them into useful goods. Blessed with a rich variety of natural resources, it does not mean that Indonesian has a high national income, since national prosperity is to be created not inherited. Even though Singapore, Hong Kong, and Taiwan do not have abundant natural resources as Indonesia, their national incomes are higher than Indonesia.

Meanwhile, realized FDI still showed negative signs of $356 million, $2,700 million, and $4,500 million in 1998, 1999, and 2000, respectively. According to

International Survey[8], low political and social risk is an important factor in determining the location of FDI. On the other hand, access to raw materials is not considered as an important factor anymore. The first, second, third, fourth places are potential profit, growth of local market, size of local market, and good protection of foreign investment (see Table 3.6).

Table 3.6: Ranking of Localization Criterias

No.	Subjects	No.	Subjects
1.	Potential Profit	13.	Access to skilled workforce
2.	Local market growth	14.	Good network of supplies
3.	Size of local market	15.	Existence of a strategic
4.	Protection of FDI	16.	International agreement
5.	Low political risk	17.	Key area for restructuring
6.	Sound economic	18.	Tax incentives
7.	Host country welcome	19.	Fear of protectionism
8.	Favorable regulatory	20.	Low labor cost
9.	Fiscal considerations	21.	Access to technology
10.	Infrastructure	22.	High quality land
11.	Low level of red tape	23.	Access to raw materials
12.	Nearby large markets	24.	Access to financial

Source: United Nations (1998).

[8]United Nations, 1998.

CHAPTER IV

Empirical Results and Analyses

4.1 The Data

All data are compiled from IMF and Biro Pusat Statistic, Bank Indonesia sources, and in addition, from CD ROMs from International Statistics Yearbook 2000 from UNIDO and the World Bank's 2002 World Development Indicators. The data on gross domestic product and gross capital formation are compiled from Biro Pusat Statistik, while the data on foreign direct investment are obtained from Bank Indonesia. The data on exports and imports are collected from IMF.

In this chapter, we employ five single equations in order to test the impact of FDI on GDP, savings, marginal productivity of capital (MPK) and labor (MPL), and structural change. The incremental output capital ratio (IOCR) is used as a proxy for the marginal productivity of capital. IOCR is calculated through IOCR = (_Y/Y)/(I/Y) = (_Y/I) and MPL = (_Y/Y)/(_L/Y) = (_Y/_L). In order to test for structural changes, we employ two equations. All five equations are estimated using EVIEWS.

As mentioned in Chapter 2, more capital (investment) means more growth. According to this theory, there is a positive relation between FDI and GDP. Investors still invest up to the point at which the rate of return is equal to the cost of capital, measured by sum of the interest rate, taxes, depreciation, and risk (MPK=i+t+d+r). Therefore, as long as MPK is greater than (i+t+d+r), investors will invest. More capital

also means that productivity of labor (MPL) will increase, leading to an increase in wages. (However, it is difficult to measure risk.)

4.2 The Relationship Between FDI and GDP

As mentioned in previous chapters, FDI brings capital and technology in its investment. In addition, international production today is more important than exports when it comes to delivering goods and services to foreign markets. FDI not only integrates markets through intra-firm trade, but also affects the production systems of host countries. In order to know the impact of FDI on the growth rate of Indonesia, we employ a single-equation model to examine the relationship between FDI and the growth of real domestic output for period 1970 to 2000. The single equation model is:

Equation 1: $Q_t = a_0+a_1FDI_t + a_2FDI_{t-1}+a_3FDI_{t-2}+a_4TR_t+a_5EX_t+a_6L_t+a_7R_t+ E$

Where: Q_t = GDP in year t;

FDI_t = FDI in year t ;

FDI_{t-k} = lagged FDI;

TR_t = trade as a proxy for openness in year t;

EX_t = exchange rate Rupiah/US$ in year t

L_t = labor in year t;

R_t = length of the road;

E = error term.

Many alternatives for the dependent variable were tried, in forms such as ratios and growth rates, as used in World Investment Report 1992 to analyze the impact of FDI for Taiwan. However, many results were unsatisfactory. In the end, the national income equation was estimated using GDP itself as the dependent variable, with explanatory variables including current and lagged FDI, trade (TR), which is defined as

the sum of exports and imports, the real exchange rate (EX), labor force, and infrastructure (R), defined as the kilometers of roads in the country. The estimated empirical results can be seen in Table 4.1.

Table 4.1: The impacts of Current and Lagged FDI on GDP

Variables	Coefficient	T-statistic	Significance Level
C	11556	0.282	NO
FDI	19.394	3.794	5%
FDI(-1)	8.826	1.655	25%
FDI(-2)	34.213	4.571	5%
TR	0.608	1.161	25%
EX	16.950	0.781	NO
L	-1.633	-1.521	25%
R	0.059	2.424	5%
Coefficient Sum of FDI effects	62.433		
R^2	0.98		
Adjusted R^2	0.97		
Durbin-Watson 2.08			
No. of observations	26		
F-statistic	1247		

In general, the estimation was satisfactory, as measured by the high R^2 and value of Durbin-Watson statistic, which was significant at 5 percent, indicating no serial correlation. R^2 measures the success of the regression in predicting the values of the dependent variable within the sample. R^2 (0.98) shows that the regression fits almost perfectly and the F-statistic suggests that we are at least 95 percent confident that all of the parameters are not zero.

All dependent variables had the expected signs except labor. Current FDI and two years lagged FDI had a strong positive effect, at least at a 95% level of confidence. The real exchange rate had the expected sign but was not significant. In addition, trade had a

moderate positive effect, at least at the 75% level of confidence. It seems that infrastructure also had an important role in generating GDP, with a 95% level of confidence.

The regression results indicate that, for every one percent increase in FDI, one lagged FDI, two years lagged FDI, trade, the length of road will increase 19.40 percent, 8.83 percent, 34.21 percent, 0.61, 3.89 percent, and 0.06 percent in output, respectively. The higher the current and lagged FDI, trade, and the more road available, the higher the growth of GDP. On the other hand, labor shows negative effect.. The magnitudes of the coefficient in the first three years indicate that a US$1.0 million in FDI leads to cumulative Rp62.43 billion increase in GDP.

4.3 The Impact of FDI on Domestic Saving

Foreign capital provides additional resources for investment and gives an opportunity to achieve higher growth than with only domestic financing. Section 5.2 indicates that foreign capital indeed has a positive impact on the domestic economy in Indonesia. As mentioned in Chapter 2 concerning borrowed growth, basically the growth rate is constrained by the balance of payments in an open-economy. However, theoretically, part of entering foreign capital can be used to increase consumption rather than investment.

In order to examine the impact of FDI on domestic saving we employ a single equation as follows:

Equation 2: $S_t = b_0 + b_1*FDI_t + b_2*AID_t + b_3*GDP_t + b_4*R + E$

Where:

S_t = gross domestic saving in year t;

FDI_t = FDI in year t;

AID_t = aid in year t

GDP_t = gross domestic product (GDP) in year t;

R_t = interest rate in year t;

E = error term.

The results are summarized in Table 4.2.

Table 4.2: The Impacts of FDI on Savings

Parameter	Exp. Sign	Estimate	T-Statistic	Confident
Constant	+/-	7.00	2.17	95%
FDI	+/-	9.70	5.73	95%
AID	+/-	0.74	1.06	75%
GDP	+	0.08	2.98	95%
R	+	126.40	0.01	NO
R-squared	0.844			
Adjusted R-squared	0.820			
Durbin Watson	0.291			
F-statistic	35			

FDI and income have positively significant effects at least at 95 percent level of confidence. Meanwhile, foreign aid shows significance at the 75 percent confidence level. The positive sign indicates that saving will increase when capital inflows increase. It means that the indifference curve has an ultra-consumption-bias towards future consumption that induces domestic saving in the manner shown at point A in Figure 2.3. High interest rates in Indonesia lead to increased domestic saving. The empirical work here shows that capital inflows are used for investment only, but the magnitude of

the Durbin Watson could not be corrected successfully using AR(1) and/or MA(1) processes. Therefore, the significance levels shown in Table 4.2 can only be interpreted in a limited way.

4.4 The Impact of FDI on MPK

The incremental output capital ratio (IOCR) is used as a proxy for the marginal productivity of capital (MPK). This IOCR is calculated as the ratio of incremental gross domestic product between t and t-1 and gross capital formation in t. In order to estimate the impact of FDI on MPK we recall equation (2.5) from chapter 2 as follows:

Equation 3: $LMK = c_0 + c_1 * LFDI + c_2 * LMPL + AR(1) + E$

where LMPK is the log of the marginal productivity of capital, LFDI is log of foreign direct investment, LMPL is log marginal productivity of labor, and the AR(1) is added to deal with serial correlation as a autoregressive correction. The result is as follows:

$$\underset{\quad}{LMPK} = \underset{(0.381)}{0.476} - \underset{(-1.889)}{0.352FDI} + \underset{(2.988)}{0.297\ LMPL} + \underset{(4.882)}{0.766\ AR(1)}$$

where t-statistics are in parentheses, $R^2 = 0.528$, the F-statistic = 7.84, and the Durbin-Watson statistic = 2.091. Without the AR(1), Durbin-Watson stat is under 1.5, which indicates positive serial correlation. By adding the AR(1), Durbin-Watson improves from 1.289 to 2.091.

The independent variables are significant at least with a degree of confidence at the 75 percent level. The negative sign on FDI indicates that foreign capital inflows decrease the productivity of capital. Therefore, over investment and overcapacity is verified empirically using this model, and, as such, the rule of the diminishing marginal product of capital prevails here. However, it does not mean that Indonesia does not need

foreign capital, as over investment is probably only in certain sectors, such as hotels, malls, and golf courses. This condition was consistent with the "economic bubble" experienced by Indonesia before the Asian financial crisis.

In addition, manufacturing sectors may also experience over investment, indicated by a negative sign on FDI. However, the increase in the productivity of labor in manufacturing (MANMPL) will raise the productivity of capital in manufacturing (MANMPK). By replacing MPK and MPL with MPK and MPL in manufacturing sectors, respectively, the following result is obtained:

$$\underset{}{\text{LMANMPK}} = \underset{(5.5)}{10.429} - \underset{(-3.0)}{0.544}\text{LFDI} + \underset{(6.4)}{1.083}\text{LMANMPL} + \underset{(7.9)}{0.76}\text{AR(1)},$$

where t-statistics are in parentheses, $R^2 = 0.555$, the F-statistic = 7.48, and the Durbin-Watson statistic = 2.127. LMANMPK is log of marginal productivity of capital in manufacturing sectors, measured as the ratio of the change in manufacturing output to investment in that sector in a given period, LFDI is log of inward FDI, and LMANMPL is log of the output-labor ratio in manufacturing, calculated as the ratio of change in manufacturing output to the change in labor employed in manufacturing.

4.5 The Impact of FDI on MPL

In order to estimate the impact of FDI on MPL, equation (2.6) is used with adjustment and the equation to be estimated is:

Equation 4: $\text{LMPL} = d_0 + d_1{*}\text{LFDI} + d_2{*}\text{LMPK} + \text{AR(1)},$

where all variables have been defined above. The estimated results for this equation are

$$\text{LMPL} = 0.140 + 0.707\ \text{LFDI} + 0.996\ \text{LMPK} + 0.757\text{AR(1)}$$

(0.053) (2.053) (2.788) (4.525)

where t-statistics are in parentheses, R^2 = 0.749, the F-statistic = 20.96, and the Durbin-Watson statistic = 2.672. The results indicate that all variables have a significant impact on the marginal productivity of labor at least at the 95 percent level of confidence. In addition, the estimation has adequate explanatory power as reflected by the R^2. R^2 measures the success of the regression in predicting values of the dependent variable within the sample. R^2 is one if the regression fits perfectly, and zero if it fits no better than the simple mean of the dependent variable.

These results indicate that Indonesian workers still need more capital to increase productivity and wages because the sign of the parameter on LMPK is positive. This condition makes sense for a country with high population and workers, such as Indonesia, where workers need more capital to work with. The widely accepted assumption of increasing welfare (wages) due to FDI inflows is verified empirically using this model.

FDI also increases productivity of labor in manufacturing sectors. By replacing MPK and MPL with MPK and MPL in manufacturing sectors, respectively, the results are as follows:

LMANMPL = -9.434 + 0.515 LFDI + 0.637 LMANMPK + 0.757AR(1)
(-11.351) (4.450) (6.291) (9.833)

where in the parentheses are the t-statistic, R^2 = 0.749, Durbin-Watson stat = 2.672, and F-statistic = 20.963. The results indicate that all variables have a significant impact on the marginal productivity of labor, with at least a 95 percent level of confidence. The implication is that increasing the marginal productivity of capital by one percent raises

the marginal productivity of labor by .637 percent in manufacturing, suggesting a strong effect from added capital. Moreover, increased FDI has almost the same effect, where a one percent increase in FDI raises the marginal productivity of labor by .515 percent in manufacturing, and this is after the general effect of capital, suggesting some strong and unique effects from the FDI process as well.

4.6 Structural Changes

In this section, the principal changes in the economic structure of Indonesia from 1970 up to 2000 are discussed. The analytical method used here is based on the Flying Geese structural upgrading model, which provides a uniform analysis of principal changes in economic structure that accompany economic growth. In essence, the recycling of production to other countries arises when the time is appropriate. As mentioned in the previous chapter, economic development does not start at the same time, but rather depends upon how fast a country can catch up in technology to accelerate the development process.

Basically, development processes occur with sufficient uniformity among countries to produce a consistent pattern of change in resource allocation and other structural features as per capita income rises. The single equation regression in the following equation is the basis of this part of the analysis:

Equation 5: Log(GDPCAP)=a+b*1/(1-TWP)+c*log(EMAP)+d*log(PROP)+
e*SERVP+f*INDVAP,

where:

GDPCAP = real gdp/capita;
TWP = percentage of textile and wearing apparel's output to total manufacturing;

EMA = percentage of electrical machinery to manufacturing's output;

PROP = percentage of professional and scientific equipment to manufacturing's output;

SERVP = percentage of service to real GDP;

INDVAP = percentage of industry to real GDP.

The results are seen in Table 4.3. b has correct sign (negative) because it is based on a log inverse model, and a negative sign on the inverse suggests a positive sign between the variables in levels. Additionally, the variable is defined to be *(1-TWP)*, so that the positive effect on real GDP increases as the economy *exits* textiles.

Table 4.3: Structural Upgrading Model Results

Parameters	Coefficient	t-statistic	Significant level
a	4.372	1.991	75%
b	-1.964	-1.798	75%
c	0.297	1.583	75%
d	0.133	1.964	75%
e	0.065	7.580	95%
f	0.091	6.526	95%
R-squared	0.97028		
Adjusted R-squared	0.95980		
F-statistic	92.52267		
Durbin-Watson	2.05714		

Thus, textiles and apparel have an important role in Indonesian economy' although the role of textiles will diminish as income per capita increases. On the other hand, the role of electrical machinery and professional production will rise as income increases. In order to check the role of TWP, Emap, and Prop in income formation, we make a simulation based on above equation in EXCEL. By taking the antilog of equation 5, we can get the equation below.

Equation 6: $e^{lnGDP} = GDP = e^{(4.37-1.96(1/1-TWP)} * Emap^{.297} * Prop^{.133} * e^{(.06*Servp+.091*Indvap)} * e^{(.77MA)}$

Based on equation 6, we make simulations using excel program. The result of simulation can be seen in Table 4.4.

Table 4.4: The Results of simulation

Industry	TWP	Y	Emap	Y	Prop	Y
20	0.50	20.91	0.00	0.00	0.00	0.00
25	0.40	63.44	0.01	102.00	0.01	221.00
30	0.30	160.00	0.04	243.00	0.04	419.00
35	0.20	357.00	0.05	410.00	0.05	681.00
38	0.10	616	0.10	661.00	0.10	980.00
40	0.05	8290	.20	975.00	0.20	1,289
45	0.04	1,334	0.30	1,732	0.30	2,143
48	0.01	1,864	0.40	2,263	0.40	2,671
50	0.00	2,497	0.50	3,176	0.50	3,613

Table 4.4 tells us that the higher income per capita the less important the role of TWP or labor intensive will be. Based on the simulation, the role of TWP will disappear when income reaches $2,497. On the other hand, the role of emap and prop will dominate the industry as income rises. The share of Emap and Prop achieve 50 percent from manufacturing sector when income per capita reaches $3,176 and $3,613, respectively. It means that capital intensive (Emap) and technology intensive (prop) product require high income per capita to develop and labor intensive develops in the early stage of industrialization or low income per capita. This pattern will prevail with any combination of industry share to GDP and the share of TWP, Emap, and Prop to manufacturing sector.

Based on the empirical study, we can picture the "development stages and foreign direct investment" for Indonesia as shown in Figure 4.1. The figure shows that labor-

driven and resource-driven industries develop in the early stage of development starting in 1960s. Heavy chemicals, a capital-intensive industry, started in the 1970s and assembly-based manufacturing or technology industry developed in the 1980s. In the period of 1970-1996, Indonesia received an important amount of FDI to help its structural upgrading. At the end of the 1980s, Indonesia started to invest abroad (FDI outflow) in labor-driven industries, especially in China.

The structural changes can be seen in Figure 4.2, where the share of the primary output is decreasing overtime, while the share of industry output (secondary sector) is increasing overtime. Meanwhile, the share of tertiary sector (services) remained relatively the same, although the share of finance in the tertiary sector experienced a significant increase, especially in the middle of the 1990s. In 1970, the share of the primary sector was more than 50% of GDP, and shrank to around 30% of GDP in 2000, and industry's share had exceeded the primary share in 1985. This picture is consistent with "Colin Clark's Stages of Growth". In addition, the structure of exports came to be dominated by manufacturing sectors over time, indicated by increasing from around 12% in 1970 to 70% in 2000. On the other hand, the role of mining and agricultural exports experience decreases over time (see Figure 3.2). In addition, the share of labor-intensive industry and capital intensive are decreasing and increasing, respectively (Figure 4.3).

Therefore, Figures 3.2, 4.2 and 4.3 have demonstrated that the structure of Indonesian economy has changed radically and the change was faster than the standard performance of the majority of developing countries. This exceptional structural change has led some economists to call it the "miracle" of the Indonesian economy. Indeed, the

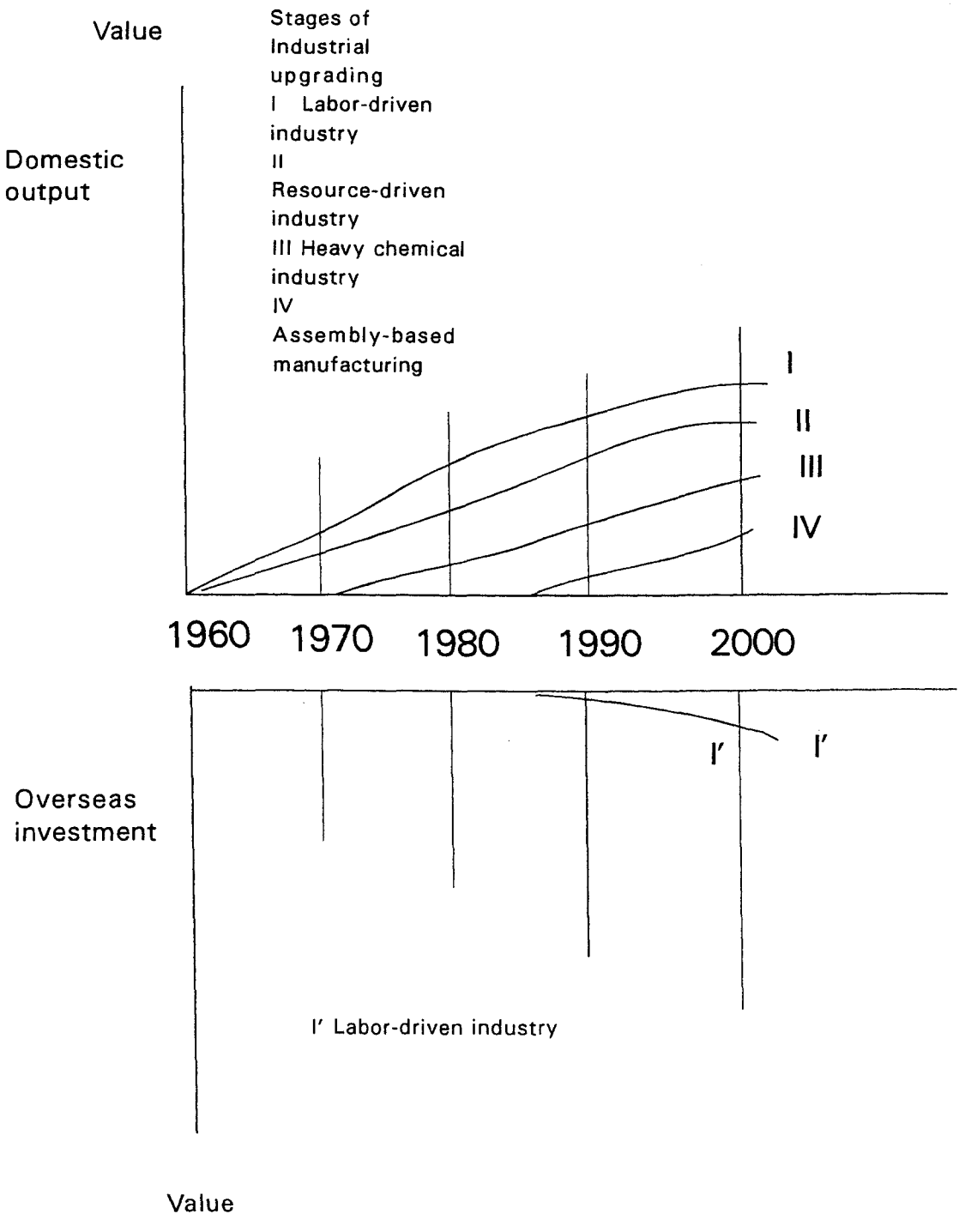

Figure 4.1: Indonesia's Structural Upgrading and Overseas Investment Model

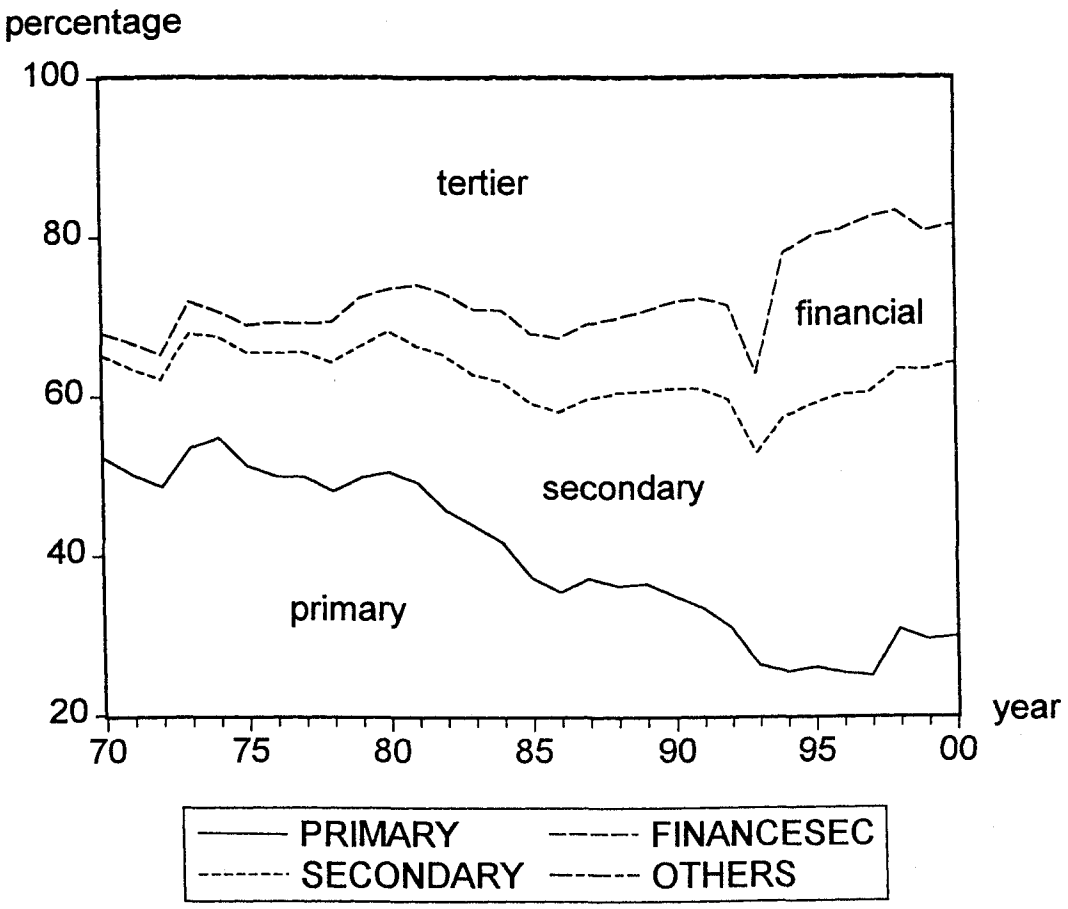

Figure 4.2: The Structure of GDP

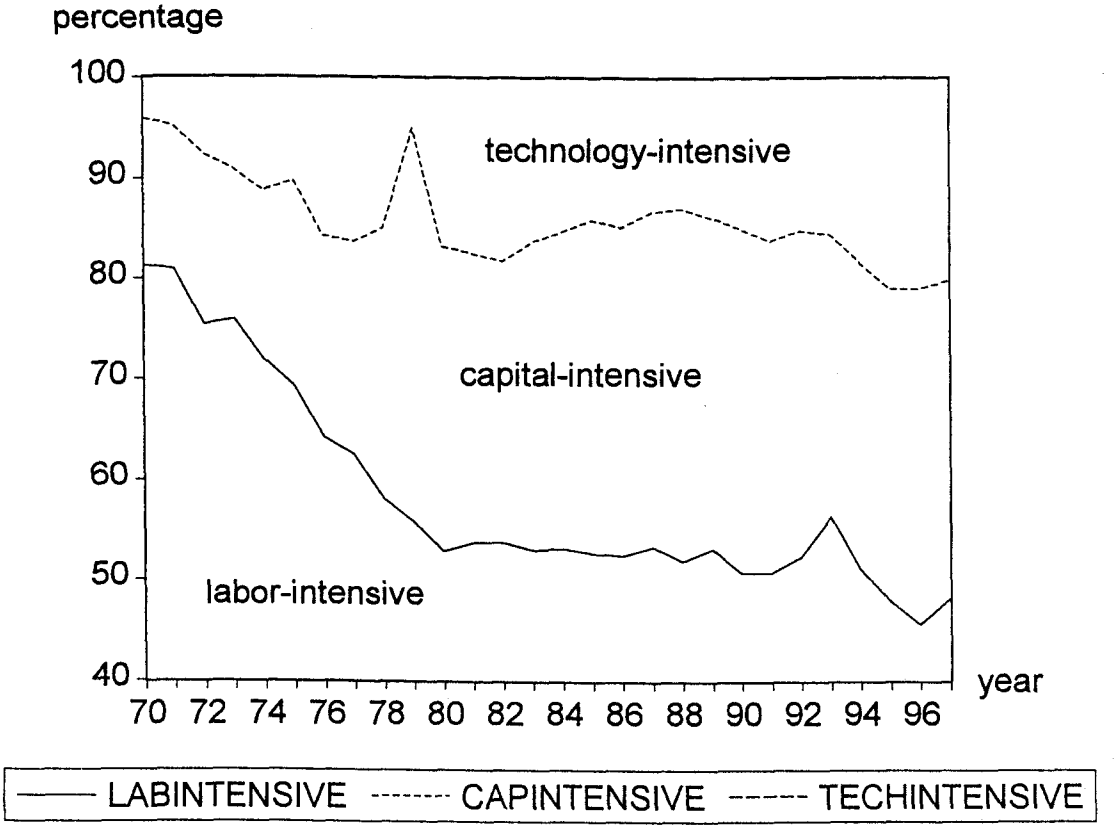

Figure 4.3: Manufacturing's Output

spectacularly high rate of growth of manufacturing sector, supported by FDI, was caused by this rapid structural change.

The sources of the rapid accelerated growth of the manufacturing sector in Indonesia, however, can not be separated from the associated spectacular increase in export which is also dominated by manufacturing product (see Figure 3.2). The sources of the rapid growth of manufactured exports are identified in the following paragraph. The enactment of the foreign investment law started in 1969, the appropriate government's policies such as the major financial reform started in 1983, fiscal incentives for exports, in effect changing policy from import substitution induced growth to export induced growth, the adjustment of exchange rates and interest rates to realistic levels, and the GOI stabilization policies to depress the inflation rate have successfully created a very favorable business climate which induces a rapid acceleration in investment.

4.7. Conclusions

The empirical study shows that FDI in Indonesia has contributed to economic development, supporting results of a previous study on "The relationship between foreign direct investment and growth" in Taiwan (*World Investment Report* 1992). In addition, foreign capital will induce domestic savings, creating an ultra-consumption bias to future consumption, thereby decreasing current consumption.

Right now, Indonesia is experiencing excess investment reflected by the negative sign on marginal productivity of capital when foreign capital flows in. The excess or over investment is in the sense that there are some sectors experiencing decreasing marginal productivity of capital and some sectors still experiencing an increasing marginal

productivity of capital. Because decreasing marginal productivity of capital in certain sectors outweighed increasing marginal productivity of capital, the total effect was negative. In order to increase the productivity of capital, capital should be redirected to productive sectors that do not create a "bubble" economy.

As Indonesia has abundant labor, the capital inflow still helped to increase the marginal productivity of labor by an increase in wages gained through their increased productivity. The Indonesian economy has experienced a radical structural economic change, especially in its production and trade patterns. The primary source of growth comes from the manufacturing sector or, specifically, the manufactured export industries. The government as an agent of development has a great role in influencing the direction of the course of industrialization and hence determines the development pattern of Indonesia over the last three decades after a New Order Administration took office in 1968. The success of Indonesian government is not merely in its ability to formulate the plan but rather in its ability to stimulate private sectors and firms to participate in development processes.

After all, we can conclude that most of government policies are more oriented towards giving greater incentives to free movement of capital, internationalization of rupiah for the promotion of exports, and foreign investment. Unfortunately, Indonesia went too far in liberalizing financial sector and did not anticipate the globalization era. The analysis of financial crisis will be addressed in Chapter 5.

CHAPTER V

Financial Crisis

5.1 An Overview

Before the crisis, the Indonesian economy was hobbled by many regulations and monopolies that furthered the interest of the president's family and friends, and those who were well connected politically to the Suharto regime. Even foreign companies hoping to do business in Indonesia often hired Suharto scions as "consultants" to grease the wheels (*U.S. News & World Report*, January 26, 1998). The government of Indonesia (GOI) thought that the Indonesian economy had done so well to that point that it did not need to make changes or to deregulate monopolies involving Suharto's family.

Oil and gas reserves helped Indonesia's economy grow, and the standard of living rose for many people. Before economic troubles hit East Asia, the region was one of the most exciting and important places to do business in the world, especially for Japanese and American companies. Globalization induced the acceleration of Indonesia's economic integration into the world economy given the openness of the economy with a free foreign exchange system, together with various deregulation adopted by the government, as mentioned in Chapter 4. The reforms have produced a dramatic increase in the role of the private sector in Indonesia's economy and have resulted in a favorable development climate reflected in a robust economy, modest inflation, and a significant

surplus in the capital account of the balance of payments in the past few years to finance accelerated development. The share of private investment accounted for around 40 percent of total investment in 1980. In 1997, 75% of total investment came from private capital. These favorable developments have strengthened both domestic and foreign investors' confidence in the prospect of Indonesia's economy, which further induced capital inflows and deepened the process of integration into the world economy.

Unfortunately, well-developed institutions have not supported the process of integration in the banking system, corporate governance, and public governance, which are prerequisites for the operation of an efficient market economy. Instead, deregulation gave an opportunity only to the new politico-business interests connecting to government power. As consequences, many projects or investments through deregulation were given to certain investors in connection with state corporations and family connections such as public monopolies in utilities, road, port construction, television broadcasting and public transportation, and national car projects that had special privileges. Public monopoly was to become private monopoly associated with government power.

Before the crisis, Indonesia's macroeconomic fundamentals were in good shape, reflected by relatively low inflation rate (under 10%), a current account deficit that was 3.5% of GDP before the crisis and other Indonesian macroeconomic indicators were moving in the right direction. In dollar values, the current account deficit increased to $7.7 billion in 1996 from $ 2.3 billion in 1993, but was still regarded as safe because the deficit was self-financed through the capital account surplus, so the increasing current

account deficit was matched by incoming funds. The government's external debt, reaching around $54 billion in 1997, was very much better managed. There was no indication that the economy would collapse.

However, private debt, mostly short-term, had accumulated to $82.22 billion in less than 10 years due to the globalization of the financial sector. Borrowed growth is a double-edged sword for developing countries. Borrowers and investors can obtain better terms on their financing. Corporations can finance physical investments more cheaply, which encourages investment and saving that facilitate real economic activity and growth, and improve economic welfare. At the same, however, once foreign investors/lenders experience sudden shifts in perceptions, capital can flee elsewhere as a result of unexpected outcomes. Initially, the concern over an increasing CA deficit overlooks the fact that world capital basically seeks regions with superior investment climates.

However, in reality, huge foreign capital went to massive and inefficient investment, which almost had no equity to back up loans. Finally, the aggressively borrowed growth created the financial crisis as lenders did not want to roll over/renew their loans once people had seen the Thai baht plummet. Therefore, the East Asian miracle and the Asian debacle are nothing but the results of excessive debts created through the liberalized financial market by way of CA deficits (Ozawa 2001a). He further argues that the exaggerated swing from miracle to debacle represents the perils of borrowed growth. Indeed, the string of recent currency and financial crises in Mexico, East Asia, Russia, and Brazil have occurred because of the mismanagement (or "non-

management") of borrowed growth, and they were aggravated by inappropriate policy responses. However, the Asian crisis was mainly caused by the private sector, not the public sector.

The way investors acted was consistent with Kahneman's finding (*Wall Street Journal*, October 10, 2002). Kahneman, a Nobel Prize winner in economics for 2002, underscored a point that many economists have been slow to appreciate: Markets are more complicated animals than Adam Smith might have led one to believe. They can overshoot or break down when not regulated well-a point all too familiar to many investors today.

Kahneman found that contrary to popular economic thought, people sometimes make decisions based less on rational thought and probability but more on emotion, experience and interest for others. As a result, people repeatedly make errors in judgment that can be predicted and categorized. We can see his important insight in his work on real estate and stock price bubbles recently.

Finally, the "evolutionary model" mandated by "Flying Geese" paradigm turned into a "revolution" in financing due to huge money and foreign investment flowing to Indonesia and other Asian countries.

5.2 The Underlying Crisis

A. An Overview

Industrialization needs increasing investment to accelerate economic growth. And investment, in turn, requires financing. Basically, investment can be financed through domestic saving, inward foreign direct investment, and portfolio capital inflows

including bonds, bank loan, and equity. (See Table 5.1). If financial needs for investment exceed domestic saving, it implies that the country must run a current account (CA) deficit financed by a surplus in capital account. This type of CA deficit-based development finance may be called "balance of payment (BP) constrained growth". Due to optimism about the future, many investors try to reap good fortune by investing more but they have a "maturity mismatch" and "currency mismatch." Maturity mismatch occurs when long term investment was financed by short-term funds, while a currency mismatch occurs when the fund-denominated in hard currencies, US$, Yen, and Euro-was not directed to export-oriented investment that could produce foreign exchange. The amount, mostly of unhedged and unsecured loans, was accumulated in less than ten years.

Table 5.1: Important Macroeconomic Indicators (Percentage)

	1993	1994	1995	1996	1997	1998
Inflation	9.77	9.24	7.85	6.47	11.05	77.63
GDP Growth	6.50	6.90	8.20	7.80	4.70	-13.20
Current Account[1)]	-2.30	-3.00	-6.40	-7.70	-4.70	4.10
(% of GDP)	(-1.5)	(-1.7)	(-3.2)	(-3.50)	(-2.20)	(4.20)
Capital Account[1)]	5.96	4.01	10.59	11.00	2.50	-3.80
Outstanding Debt[1)]:	86.50	105.03	122.61	119.54	140.09	155.04
Government	55.04	62.57	59.60	55.30	53.87	67.32
State Enterprises	3.20	3.75	4.82	3.74	4.00	4.15
- Private[3)]	28.26	38.71	58.19	60.50	82.22	83.57
Debt Service Ratio	22.45	20.50	22.30	35.90	44.50	57.90
External Debt/ Domestic Credit Ratio	120.19	120.11	122.85	263.60	252.00	216.80

Source: Indonesian Financial Statistics, November 1995 and 2001, Bank Indonesia
Note: 1) in billion US$
2) includes bank, non-bank, and securities

Most of surplus in the capital account was directed to the private sector. The flood of hot money caused difficulty in monitoring and controlling the money supply because the fluctuation of foreign assets was unpredictable. At the end of December 1994, net foreign assets amounted to Rp 25.27 trillion, being 55.70 percent of the narrow money supply (M1) or 14.48 percent of broad money supply (M1). Before the crisis, the share of net foreign assets in the money supply increased to 86.78 percent and 19.12 percent, respectively at the end of 1997.

Indonesia received sizable portfolio capital inflows before the crisis of 1997 as indicated in Table 5.2. Relying on short-term portfolio inflows, especially bonds and bank loans, increased the vulnerability of the country's financial markets.

Table 5.2: Capital Flows (percentage of GDP)

Year	FDI	Equity Portfolio	Other Portfolio
1990	0.95	0.27	-0.06
1991	1.10	0	0.29
1992	1.30	0.08	0.05
1993	1.20	1.55	1.15
1994	1.20	2.08	2.47
1995	2.10	2.41	1.11
1996	2.70	1.36	3.85
1997	2.10	0.14	0.22
1998	-0.37	0.26	-2.11
1999	-1.90	0.90	-2.30
2000	-2.90	2.47	-2.58

Sources: 2002 World Development Indicators, CD-ROM

B. The Cause of The Crisis

Many politicians, economists, and officials blamed the Asian crisis on "crony capitalism" and lack of transparency. However, Stiglitz does not buy that argument because, if transparency is the key to the economic riddle, then the countries of East Asia should have had more crises earlier, since the data showed that they were becoming

more, not less, transparent (Stiglitz, 2002). There were many countries that were far less transparent than Korea, Malaysia, and Indonesia - and they did not have a crisis. Furthermore, he argues that vulnerability in East Asia was based not on an increased lack of transparency but on another familiar factor: the premature capital and financial market liberalization that the IMF had pushed on these countries. On the other hand, the IMF and the U.S. Treasury had to argue that the problem was not with the reforms-implementing liberalization of capital markets, above all, that sacred article of faith - but with the fact that the reforms had not been carried far enough.

Ozawa also argues that the Asian crisis was lack of institutional, particularly financial, dimension in delivering industrialization of sequential catch-up with developed countries (Ozawa, 2001b). The countries need to have the institutional strength to deal with it before opening their door for foreign capital. In practice, liberalization frequently takes place without any improvement in bank supervision.

Basically, there are three main camps in the academic battleground. The first, led by Jeffrey Sachs of Columbia University, argues that the crisis was essentially a panic, in which investor rushed for the exit as everybody else was rushing for the exit. The second, initially led by Paul Krugman (1979) of Princeton, argues that the hardest-hit countries had fundamental weaknesses, such as weak regulation, that sealed their fates. Still, there is general agreement that there were both structural problems and panic, even if there is a critical dispute about their relative importance. The most common view is that several key factors worked together to set the stage.

The 1997 financial disturbance that affected most of the Southeast Asian economies hit Indonesia more severely than any other country. The economic disturbance was further, and not coincidently, compounded by abrupt transformations of a political environment that had been stable for the last thirty years under Suharto.

We believe that the crisis was caused by the low quality of financing and investment. The crisis was related to quality of people who actively involved in decision-making in economic activity. With many corrupt and corporate scandals, the quality term becomes a very important factor in our lives. Poor quality in handling economic activity had created severe sleeping/hidden internal vulnerabilities where people did not realize until it actually happened.

5.3 Analyses

A. An Overview

Investors were too anxious to invest, and they forgot that economic activity always experiences business cycles (ups and downs). They believed that the economy was always at peak position, and therefore they borrowed eagerly for investment without using economic principles. At the same time, lenders also thought the same way as their borrowers, and they wanted to reap good returns on their loan. It seems that investors who had the temptation to borrow during the boom are looking smart. Corruption, poor corporate governance, and fragile banking system amplified the situation. As consequence, the economic activity also created a "high cost economy" due to connection to government power by marking up the cost of investments/projects.

At the same time, the combination of globalization and domestic financial liberalization induced huge capital inflows attracted by the prospect that the Indonesian economy had escaped the curse of the business cycle. At the same time, industrialized countries, such as Japan and the U.S, experienced a sluggish economy and falling interest rates and they are looking for higher returns for their money. As a result, investors over borrowed and over invested, and finally created an overcapacity in certain sectors (or "bubble" sectors). The Asian countries liberalized their capital markets quickly, under pressure from the International Monetary Fund (IMF) and the U.S. Treasury, before the appropriate regulatory structures were in place (Stiglitz, 2001).

The quality of financing and investment were the pre-condition to have financial crisis. It means even if Asia's crisis did not show up, Indonesia will experience crisis later on since Indonesia's economy practiced a bad financing system and ambitious expansion. In addition, crony capitalism and corruption will amplifier the problem. Amin Rais accused the Suharto government of breeding "corruption, collusion, nepotism, greed and moral degeneration" and denounced "those who act solely in the interests of themselves and their families" (*Far Eastern Economic Review*, January 8, 1998).

B. Easy Credit

After the banking deregulation in the 1980s, many banks gave loans to small villages and offered high interest rates on deposits to compete with each other. As a consequence, the interest rate for loans channeled to debtors was also high, and the requirements to obtain loans were lax. The credit boom flourished once deregulation had taken place, especially in the beginning of the 1990s. As mentioned earlier, cheap

credit and optimism led to the same problems around the world. The collective behavior towards investment and financing caused over investment in sectors such as rickshaws, little shops, taxis, real estate, and hotels.

In order to get the picture of the crisis, a look at an Indonesian shrimp processor, prawn crackers, and prawn feed, called Sekar group, provides an example. The story of Sekar sums up much of what went wrong in Asia. It is a tale of financial gambles, and emotional investment decisions in which banks/financial institutions and borrowers were "overeager" to lend and to "over borrow", respectively. Until 1994, most of Sekar's product was directed to exports. Later, the Sekar group began to acquire more glamorous but less productive assets, such as hotels and golf courses, far from their core businesses, having been influenced by other investors who also invested in those sectors. This "emotional" decision led Sekar headlong into the risky world of high finance.

Sekar group's borrowing outweighed their capacity to repay. Before the Asian crisis, the debt burden of the Sekar group reached an unbelievable amount of 600 billion rupiah ($230 million), $20 million in foreign currency, and $500 million in currency call options. Most of the loans were short term. Meanwhile, the total revenue and profit were only 203 billion rupiah ($86 million) and 27 billion rupiah ($11.44 million), respectively (*Far Eastern Economic Review*, January, 1998). Thus Sekar was able to borrow more than fifty times its profit. It seems that the domestic and foreign banks/financial institutions offered money too easily and acted "collectively" to lend to Sekar without proper analysis. In response to the Asian currency crisis, creditors did not roll over their debt because had they already lost confidence in Indonesia. Sekar was not alone, as there were many

investors who did the same thing. One other example is the taxi company, Steady Safe, which produced a profit of $9 million but could sell $270 million (30 times its profit) in promissory notes to Peregrime Brokerage.

The short-term debt market, including promissory notes and commercial paper, was a popular channel for Indonesian firms seeking to raise funds overseas. The market was so buoyant that companies like Sekar and Steady Safe were able to raise sums vastly disproportionate to the size of their businesses. Many investors flocked to the short-term debt market because it was cheaper and faster. Bank Indonesia estimated that companies had raised around Rp1.3 trillion ($600 million) through local currency offers and $1.40 billion in foreign currency, mostly in US dollars.

In this connection, investors have practiced the double mismatch- investment and currency. Companies borrowed for the short term but invested in long-term projects (mismatch of investment). Projects financed in this way were often real estate and hotel construction. This was risky because if the bank did not renew loans and instead asked for repayment, the money would be in half-completed buildings.

Companies and banks borrowed in dollars and Yen even though the returns would be in local currencies (mismatch of currency) without hedging. These situations became a problem when local currencies plummeted against the dollar. This seemed safe as long as Indonesia maintained its currency at 2,400 rupiah/dollar. But if it devalued to 10,000 rupiah (which eventually happened), borrowers were devastated.

Over-confidence, born of conceit and economic success, led to business being based on personal relations, not commercial principles; banks lent recklessly, special

favors were given to the well-connected, especially the president's family and friends, and often for absurd projects. Corruption has grown ever more eye-popping (*The Economist*, January, 17th 1998)

As consequences, the outcome of investment was not based on an economic criterion (microeconomic) such as efficiency in term of costs and profit maximization. In other words, we must increase the growth rate of productivity, the most basic measure of business efficiency and the primary determinant of an economy's ability to grow faster without igniting inflation. Investors poured money into Asian markets without worrying about the risks, because they believed the IMF would bail them out.

Actually, the dramatic increase in capital inflows to emerging markets in the beginning of the 1990s were good as long as their loans were invested in good projects creating returns to pay back lenders on time. The quality of financing and investment became critical issues since these issues were not included in fundamental macroeconomic indicators as shown in Table 5.1. It seems there was "a hidden problem" in delivering economic growth that was not easily seen before the "Asian crisis" hit Indonesia.

The way banks gave loans to eager investors was identical to credit card lending practiced in the US. For example, a customer behind in payments might be given a new credit limit, a practice that can increase debt rather than capping credit lines until the debt is repaid. One person can own more than 10 credit cards through credit-card solicitations sent to our houses and have debt beyond his capacity. On the contrary, mortgage companies take a careful decision on whether a homebuyer should be

approved for home loans or not. There are certain measures, such as the quality of the credit history and how much income is needed to qualify for a certain interest rate and loan. This practice is a good example of how to smartly channel the loan to people who need money.

C. Use Credit Smartly

The role of private sector (companies) in Indonesia is very important in delivering economic growth, and most investment comes from the private sector. The healthier the private sector, the healthier the Indonesian economy over all. Good financing and investment carried out by the private sector can boost economic growth continuously.

Companies with no debt fly high. Microsoft, Walgreen, Cisco Systems and William Wrigley have something in common that may surprise us. None of them has any debt (*USA TODAY*, August 22, 2002). Unlike companies such as WorldCom, US Airways, and Vivendi Universal, which have choked on their debt loads, companies that avoided the temptation to borrow during the boom are looking smart. Now that the economy has slowed, they do not have ominous interest payments that have caused their overaggressive rivals to blow up. "What kills companies is debt". Without debt, companies have the financial wherewithal to survive. Staying debt free is part of their strategy. It does not mean that having debt is bad, however, we must use credit accordingly based on economic principles, not based on emotion and ambitions, keeping in mind that we must be able to repay the loan back.

The hot money flows in and is invested in stocks and bonds, highly liquid investment often made for short terms. That money makes its way, eventually, into what

is called the real economy (real sector) - factories, real estate, roads, bridges and other long-term fixed investments of all sorts. But what happens when the investors all want to take their money and go home? When investors got jitters and took their money home, it left countries such as Indonesia without enough dollars in their reserves. To get the dollars they needed to pay their debt and to buy goods from overseas, they had to sell their own currency to get enough dollars. That caused their currencies to plunge. A currency crisis was born.

In fact, the countries that suffered most severely from the currency crisis were those that had been living beyond their means for several years - borrowing heavily for questionable projects that often went to benefit only a privileged few. That was called "crony capitalism".

We must behave rationally based on economic principles and end the kind of crony capitalism that so marred what was once dibbed the Asian miracle. It means forcing nations to live within their means and understanding that banks should lend money only for economic reasons - not for political reasons and power connections. Poor nations will never get rich by punishing capital.

5.4 Over-Investment

Bubble economy is actually identical to the newest fashion for designers, who realize that in a relatively short time the fashion will be out of date, but the next time will appear again with little bit modification or not at all. Some investors saw other investors got good return on a certain sectors they want to reap the fruit too from the sector by investing borrowed money. If too many investors invest in the same sector, sooner or

later the sector will experience an artificial boom. Therefore, investors should know whether their investment will create a bubble or not to avoid the crisis.

Alan Greenspan, the chairman of the Federal Reserve, said that it was very hard to definitely identify a bubble until after the fact - that is, when its bursting confirmed its existence (*New York Times*, August 31, 2002). He said that the Fed could not have prevented the bubble on Wall Street without damaging the economy. It seems reasonable to generalize from our recent experience that no low-risk, low cost, incremental monetary tightening exists that can reliably deflate a bubble.

Over investments by the private sector were mainly driven by two factors. First, the increasing dynamism of Indonesia's economy had created over-confidence to investors (domestic and foreign) as mentioned before and international institutions such as IMF and World Bank too. As a result, they overlooked prudence in extending loans to the business sector in Indonesia. Second, the domestic business sector, taking advantage of an interest rate differential, had attracted substantial capital inflows, especially in the form of short-term borrowing. They believed that the rupiah, which had remained stable in the past few years, provided an implicit guarantee of the strength of the economy to the business sector. The relatively easy access to capital also played a role in the failure to exercise prudence in conducting business by practicing a mismatch in the maturity of loans, a large share of short-term external debt financing long-term investment. These developments increased the vulnerability of the private sector to exchange rate shocks, which precipitated corporate bankruptcy.

5.5 The Impacts of The Crisis

The impact of the Asian crisis was aggravated by inappropriate policies suggested by the IMF. Now, it is known that the IMF cannot act until it is late, when capital flight has already become large, and the initial disbursements were too small. Moreover, the IMF's loan packages were "overloaded" with reforms and the comprehensive structural changes were hard to swallow.

Banks in Indonesia do not have deposit insurance like the FDIC in the U.S. to protect depositors. Therefore, government gives a blanket guarantee for depositors. If one bank collapses, the government is responsible to pay a bank's depositors. In the case of Asian crisis, the Indonesian government had issued bonds of $46 billion, or about 430,400 billion rupiah, in order to recapitalize through December 2000, just as the number of non-performing loan increased. As consequence, non-performing loans that feel into the government's hands increased dramatically, as reflected in Table 5.3.

Table 5.3: Non-Performing Loans (% of total credit)

	1995	1996	1997	1998	1999	2000
Non-Performing	10.60	9.81	19.80	48.23	34.95	24.68

Sources: Report for the financial Year 1997/98, 1998/99, 2000, Bank Indonesia

In the four years preceding the crisis (1993-1996), net private capital inflows averaged $10.90 billion per year, or an average of over 4 percent of GDP (see Table 5.4). In 1997, this pattern was reversed and net capital inflows averaged a negative $4.4 billion per year from 1998-2000. Indonesia's record exports in 2000 ($65 Billion) led to a CA surplus of approximately $8 billion, but the capital account deficit remained significant at about $6.8 billion. Economic growth of 4.5 percent in 2000 is only slightly more than

half than half of the 7.8 percent average GDP growth the country experienced from 1990-1996.

Table 5.4: Net Capital Inflows (US$ Billions)

	1993	1994	1995	1996	1997	1998	1999	2000
Private	5.20	3.70	10.30	11.50	-0.40	-13.80	-9.90	-8.50
FDI	2.00	2.10	4.30	6.20	4.70	-0.40	-2.70	-4.10
Other	3.20	1.60	5.90	5.30	-5.00	-13.50	-7.20	-4.40
Public	12.80	0.30	0.30	-0.50	2.90	10.00	5.40	3.80
Total	18.00	4.00	10.60	11.00	2.50	-3.90	-4.50	-4.70

Source: Bank Indonesia

The GOI borrowed abroad each year, primarily from the World Bank, Asian Development Bank, and a Group of bilateral donors grouped in the Consultative Group on Indonesia (CGI). The proceeds were used to fund the development budget. By long-established convention, the GOI avoided domestic borrowing, and Indonesia's debt/GDP was sustainable. Indonesia's debt management policies were an important part of what appeared to be prudent macroeconomic indicators.

The situation changed in 1998-1999 when Indonesia for the first time developed large domestic debt stemming from the costs of the country's banking sector bailout. As a result, Indonesia's official debt burden increased from 27 percent of GDP prior to the financial crisis to 100% of GDP at the end of 2000. Although Indonesia has shouldered high debt/GDP ratios in the past, the cost of servicing the country's public debt has placed a heavy burden on the budget. As a consequence, the government budget was used to pay interest on domestic debt that amounted to 34,000 billion rupiah and 37,998 billion rupiah or 2.8% and 4.2% of GDP in 1999 and 2000, respectively. Compared to government investment, these amounts represented 55% and 91% of

government investment, which reached 61,747 billion rupiah and 41,606 billion rupiah, respectively. Before the crisis government did not need to pay interest for domestic debt, as government did not issue bond. In 2001, interest payments on Indonesia's domestic and foreign debt were approximately 35 percent of government expenditures. Due to the crisis, the burden of government's budget increased dramatically, crowding out government investment. In order to reduce the short-term burden to the budget, Indonesia has concluded debt-rescheduling agreements with the Paris Club group.

In addition, Indonesia's corporations have approximately $65 billion in non-performing loans to domestic and foreign creditors. Most of these non-performing loans originate from the 1997-1998 crisis, when many corporations borrowed in dollars but were unable to service their loans when the rupiah depreciated. However, most of Indonesia's conglomerates remain un-restructured and addled with large non-performing loans.

The crisis caused massive unemployment and furthermore, Indonesia also experienced ethnic conflicts and social unrest, which ended in violence. As a result of the crisis, the rupiah is still weak compared to US dollar and other currencies and nowhere has the Asian economic crisis been felt with such devastating effect. A massive speculative attack on the rupiah following the collapse of Thai baht triggered a rush for dollars by domestic private sector corporations to cover their predominantly short-term and unhedged foreign debt (*Asian Wall Street Journal*, 31 December 1997). Even the rupiah is still very low now, around 9,000 rupiah/US$, compared to 2,400 rupiah/US$ before the crisis, and therefore, non-oil/gas export activities were disappointing.

Theoretically, when the rupiah depreciated, is should have resulted in increased competitiveness for Indonesia's product. The main obstacles appear to be that most of inputs still are imported and limited sources of funding for working capital and continuing low confidence on the part of foreign buyers, regarding the capability of exporters to fulfill supply contracts.

It seems that the "Dornbusch overshooting" model does not work in this case, as psychological factors determined how economic agents respond to foreign exchange fluctuations based on perceptions of political stability and safety in the country. In addition, a weak currency also reflects a weak economy, which has little to do with economic factors such as exports and growth. Only an improved socio-political situation will restore market confidence in the rupiah. At the time the crisis hit Indonesia, there was huge capital flight, amounting to $80 billion. Meanwhile, the IMF packet was only $43 billion, which did not channel immediately. If the capital flight had not occurred, Indonesia would not have needed the IMF's help.

There is evidence that the financial crisis spread around the world like a contagious disease, so that the collapse of one emerging market's currency will mean that others fall as well. The International Monetary Fund (IMF), in its report about Asian crisis, says that capital flows to emerging markets have basically dried up. Gross capital inflows to emerging markets were a tiny $2.5 billion in August 1998, down from $17.3 billion in July (*Investor's Business Daily*, September 22, 1998). That compares with a whopping $84.8 billion in the third quarter of 1997, when investors were still optimistic. For all of 1997, net capital flows to developing countries dropped to $173.7 billion from

$240.8 billion a year earlier. In Asia alone, where much of the crisis has been centered, the IMF reports that flows plunged to $13.9 billion from $110.4 billion.

The "collective behavior" of economic agents, especially lenders, has had an important role in the recovery of Indonesian economy. Before the crisis, many lenders had collective behavior to lend money to Indonesia's investors, believing in the future of impressive economic growth and looking for new places for their money. When the crisis hit Indonesia, many investors acted the same way, and they did not renew loans. If lenders wanted to save their money and to rescue the crisis from deepening, they should act collectively to roll over their loans. If nobody wanted to lend money, other lenders would act the same way. The key important factor was collective action to lend money. The intellectual trend has changed in every way since the crisis began. Emerging markets are now seen as risks, not opportunities.

5.6 The Role of Japan and Other Countries

Japan and other countries have an important role in spurring and shaping economic growth through comparative advantage recycling (CAR) and adaptive efficiency enhancement (AEE). Ozawa (2001b) states that it would not be amiss to argue that without the U.S. policy of assisting East Asia to develop industrially as a bastion against communism-and without Japan's rapid catch-up and industrial transformation-the "East Asian Miracle" (World Bank, 1993) would not have occurred. However, in the wake of Asian crisis, Japan had contributed to the crisis by aggressively investing in Indonesia and other Asian countries and exporting its bubble to Asia, as mentioned in Chapter 2.

A. Industrialization

East Asian countries including Indonesia (despite the 1997-1998 crisis) have experienced high economic growth rates mainly based on their successful industrialization through a sequential industrialization. These industrial changes have made it possible to maintain high economic growth. If the economy had relied on only one industry, the high growth might not have continued due to decreasing marginal productivity.

The sequential industrialization caused shifting the center of gravity of industry in East Asia from first mover of industrialization (Japan) to the second-tier countries (Korea, Singapore, Hong Kong, Taiwan), and then to third-tier countries (Indonesia, Malaysia, Thailand, Philippines). This sequence of industrialization is often called the "flying geese pattern"[9] (look at previous chapter). The key factor of this model is a sequential industrialization (industrial upgrading) from the lowest tier to the higher tier (from Heckscher-Ohlin endowment-driven industries up to McLuhan Internet-based industries) caused by mutual interactions between developing countries and advanced countries through comparative advantage recycling and adaptive efficiency enhancement (see Ozawa, 2001b, 2002).

Indonesia is one of beneficiaries of comparative advantage recycling from Japan, South Korea, Singapore, Hong Kong, US, and others. Once export industries (or industrial segments) from these countries began to lose competitiveness due to such changes as appreciation of their currency, they start to relocate production via FDI into

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9The phrase "Flying Geese" was coined by Akamatsu (1935) in which a rise and fall of output of particular industry in developing countries.

developing countries such as Indonesia. As long as the relocation of industries from other countries is in a comparative advantage industry sector (technology and factor endowments are still suitable for such industries) in host countries such as Indonesia, this activity will involve AEE. It means that the new industries in host countries can shift-out the production possibility frontier along the Rybczynski path due to dynamic adaptive efficiency (Ozawa 2001a). Mobile capital and management seek low-cost skilled labor in developing countries such as Indonesia and Malaysia.

The relocation of capital and technology (manufacturing) to developing countries also acts as an engine of growth for developing countries. Therefore, the East Asian miracle in the world economy was not the achievement of any single economy. It was the result of a continuous and extraordinary growth over four decades based on an evolutionary model of sequential catch-up through a teacher-learner relation among nations in the stages of industrial upgrading (Akamatsu 1962). The rapidly industrializing growth in a group of economies were led by Japan and followed by the newly industrialized economies (NIEs) of Hong Kong, South Korea, Singapore, and Taiwan, and then followed by Asean-4. Not all of these countries have relative abundance in natural resources to start with, for example Singapore and Hong Kong, have relatively few natural resources.

Ozawa explains more complete detail about growth clustering initiated by the Pax Britannica and then followed by the Pax Americana, which provided a climbable ladder of industrialization and propagated growth stimuli to the world, especially Japan, which spread over to other nations through comparative advantage recycling passed through

developing countries, especially in East Asia (Ozawa 2002). In the flying geese model, USA acted as the first lead goose and was followed by Japan as the second goose.

However, in the wake of the Asian crisis in 1997-1998, it became apparent that the FG model has so far neglected the financial sector. In other words, the FG model only concentrated on how to build strong manufacturing sectors without involving a financial sector, which supports the real sectors. Indonesia did not practice industrialization reflected in FG model persistently due to monopolies and political reasons, often at the expense of the nation's economy.

Actually, the flying geese pattern can give the "right direction" for the type of industries that should be promoted, given the stage of development. Many investments (projects) are often chosen based on an ambition of the leader, a power connection, family interests, or political reasons, which create rent seeking for the favored groups such as national aircraft industry, car projects, toll roads, power plants, airlines, and even birds' nests and cloves for cigarettes. If a country follows the FG development model to catch up with advanced economies, it is easy to identify which industries should be chosen to promote industrialization. A country's comparative advantage can be defined and technologies and capital can be imported through foreign loans or/and foreign direct investment. Building an aircraft industry did not reflect Indonesia's comparative advantage and consumed a lot of funds even though at that time Indonesia had an oil boom.

Indonesia moved up the industrial ladder from textiles to simple assembly of machines and then to electronics. Indonesia has experienced rapid changes in its

industrial structure as it sustained a high economic growth for decades. Indonesia has started the industrialization process with selected industries and benefited from building up physical and human capital through a combination of market forces and government policies. Table 5.5 shows the changes in the composition of GDP for period of 1970 up to 2000. It is also evident that there is a pattern of industrialization from agriculture to industry, and then to services.

Table 5.5: Sectoral Value Added (% of GDP)

Sectors	1970	1980	1990	1996	2000
Agriculture	44.94	23.97	20.42	16.67	16.92
Industry	18.69	41.72	37.64	43.46	47.25
Manufacturing[1)]	10.29	12.99	18.31	25.62	26.04
Service	36.37	34.31	41.94	39.87	35.83

Source: CD-ROM: 2002 World Development Indicators
1) Manufacturing is part of the industrial sector.

B. The Financing Revolution

Due to recession experienced by Japan and the US, Japanese banks/financial institutions had few good lending opportunities at home, so they began lending elsewhere in Asia, including in Indonesia. Japan has spent more than 10 years in an economic swamp, and its troubles have damaged other economies in the region (*Investor's Business Daily*, 15 October 15, 1998). Since Yen interest rates were extremely low, the loans were alluring to borrowers. In addition, Japan experienced a burst bubble, overcapacity, and bad loans at home. Initially, the loan created was highly profitable but ultimately catastrophic. It took many forms, but typically Indonesia's financial institutions borrowed Yen at around 2 percent interest rates, convert the proceeds into

rupiah, and reaped a huge profit by depositing in rupiah or lending to domestic investors with interest rate of around 15 percent and 20 percent, respectively.

At the same time, Japanese manufacturing companies aggressively built factories all over Asia through FDI due to fast industrialization and yen appreciation at home. Over all FDI inflows to Indonesia mounted to $4.48 billion during period of 1986-1991 or $746 million annually and $21.78 billion during 1992-1997 period or $3.63 billion annually and FDI inward stock reached 62.15 billion in 1997 (*World Investment Report* 1998). It means dramatic increase during 1990s before the crisis hit Indonesia. All this was in many ways wonderful for Asia, resulting in an investment boom and low interest rates. But the deluge of cheap loans and FDI resulted, not surprisingly, in a huge increase in capacity in certain sectors such as real estate, hotel, and golf courses, as well as increases in everything from steel to paper to cars. The world experienced a "financing revolution" in which the lenders experienced confusion to channel the money as suddenly the money is available in huge amount for them. This is different from the "industrial revolution", in which industrial invention could create a real sector supported by a financial sector.

Therefore, the model proposed by Akamatsu (1935) did not work as an evolutionary model but in practice it turned out to be a "revolutionary" model due to neglecting financial dimension. Akamatsu (1935, 1962) originally identified this model as an evolutionary model of sequential catch-up through teacher-learner relations among nations in the stages of industrial upgrading.

CHAPTER VI

Summary and Conclusions

Indonesia's success in achieving high economic growth rates is mainly based on its industrialization, supported by FDI inflows. There is a sequential industrialization from the agricultural sector to the industrial sector starting with light industry, to assembly, to heavy and petrochemical industries, and to electronic industries. These industrial changes have made it possible to maintain high economic growth. If the economy had relied on only one industry, the high growth might not have continued. Instead, the economy will experience a bubble or over investment in one sector quickly and burst or explode.

We also found that FDI has an important contribution to GDP and savings indicated by a positive sign of FDI's coefficient in GDP and savings equations. FDI flows induce the economy to save more by even sacrificing current consumption for future consumption. The study also reveals that FDI inflows also increase labor productivity and income. However, FDI inflows cause a decrease in marginal productivity of capital. These conditions indicate that Indonesia overall experienced over-production.

The process of Indonesia's industrialization is characterized by an increase in the share of manufacturing in export and GDP. The share of the primary sector began to decline in the early 1980s, whereas that of the tertiary sectors, especially the financial

industry, expanded. Meanwhile, labor-intensive production has sharply decreased since the 1970s, and capital-intensive and technology-intensive industries have increased significantly. In other word, the role of the primary processing sector has shrunken and the roles of non-differentiated and differentiated Smithian industries have increased dramatically. The role of Heckscher-Ohlin endowment industries remains relatively the same. Furthermore, the importance of non-oil also increased significantly. All this structural upgrading has been responsible for increases in factor productivity, especially labor productivity, and therefore, GDP.

We can also conclude that the changes in industrial composition have been consistent with the changes in the leaders of industrial structure (Japan, Korea, Singapore, and Taiwan). Japan and others have succeeded in passing the comparative advantage recycling (CAR) and AEE to the followers including Indonesia. Therefore, the growth pattern of the East Asian miracle can be duplicated if appropriate policies are adopted as is the case with China and other Asian countries. The Flying Geese model demonstrates the right industries, compatible for the level of economic development, to be promoted on the basis of developing countries' comparative advantages.

However, the flood of FDI especially hot money, in the early 1990s led to excessive investment in speculative projects ranging from small shops, golf courses, hotels, and malls to other real estate projects. Due mostly to yen appreciation, Japan in particular aggressively channeled their excess fund. Japan was experiencing an asset bubble and industrial overcapacity. As a consequence, the receivers including Indonesia were unprepared to digest excess capital. Some excess funds were just deposited in

rupiahs to earn interest differentials, while some were used for long-term lending without adequate collateral. The money they borrowed outweighed their capacity to repay. When the rupiah plummeted the debtors could not repay their loans, as they could not afford dollars or yen which had suddenly became very expensive on the foreign exchange market.

Originally, the Indonesian crisis came from the contagion effect from Thailand and then spread over to Indonesia, inducing people to exchange the rupiah for dollars. The Indonesian crisis was caused by lack of foreign exchange supply. Many people, including the companies which needed dollars to repay debt, wanted dollars, while at the same time there was a lack of coordination in rolling over loans from creditors to debtors. This condition was aggravated by capital flight, which mounted to $80 billion according to a 1999 Bank Indonesia report. Naturally, the rupiah plummeted.

In the wake of the Asian crisis and corporate scandals in US, the quality factor is an important ingredient to stable economic growth. And Indonesia should build good financial institutions to attract the flows of capital.

New farm subsidies and other barriers to the American market have led some of America's trading partners to doubt Washington's commitment to free trade. Farm subsidies may encourage American and European farmers to overproduce and that would depress the world prices for crops. Even Japan has high taxes and tariffs on many consumer goods and heavily regulated industries. The point here is that a country should protect its own interests even when such policies are unpopular to other countries.

In addition, the regional crisis should be treated as a "world crisis" to push other regions or nations to help as soon as possible when other crises occur in the future to keep the crisis from become deeper. The key element is fresh foreign exchange available to people who need it.

We should protect the Indonesian economy when the economy moves in the wrong direction as Japan once did to escape from the perilous CA-deficit phase and moved into the robust CA-surplus phase. (Ozawa 2001a). Regulations are not always bad things, as long as they can spur and stabilize economic growth. A Nobel Prize winner, Kahneman, argues that "Markets are more complicated animals than Adam Smith might have led you to believe. They can overshoot or break down when not regulated well." This observation is directly related to the underlying cause of the Asian crisis in which investors acted irrationally.

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