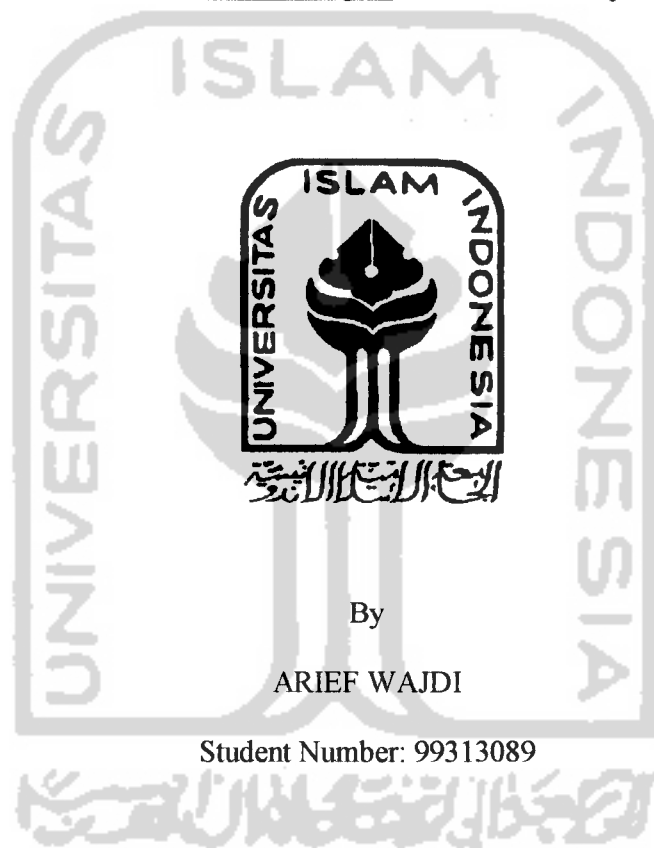


**THE ANALYSIS OF CAUSALITY
BETWEEN FOREIGN DIRECT INVESTMENT (FDI)
AND ECONOMIC GROWTH IN INDONESIA
FOR THE PERIOD OF 1974-2001**

A THESIS

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



By

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**DEPARTMENT OF ECONOMICS
INTERNATIONAL PROGRAM
FACULTY OF ECONOMICS
ISLAMIC UNIVERSITY OF INDONESIA
YOGYAKARTA
2004**

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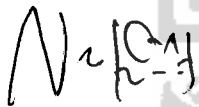
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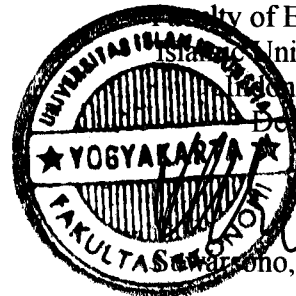
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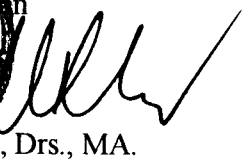
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Finally, writer hopes that this thesis will be useful for the development of economics and can be used as reference for other researcher.

Yogyakarta, July 10, 2004

Writer

Arief Wajdi

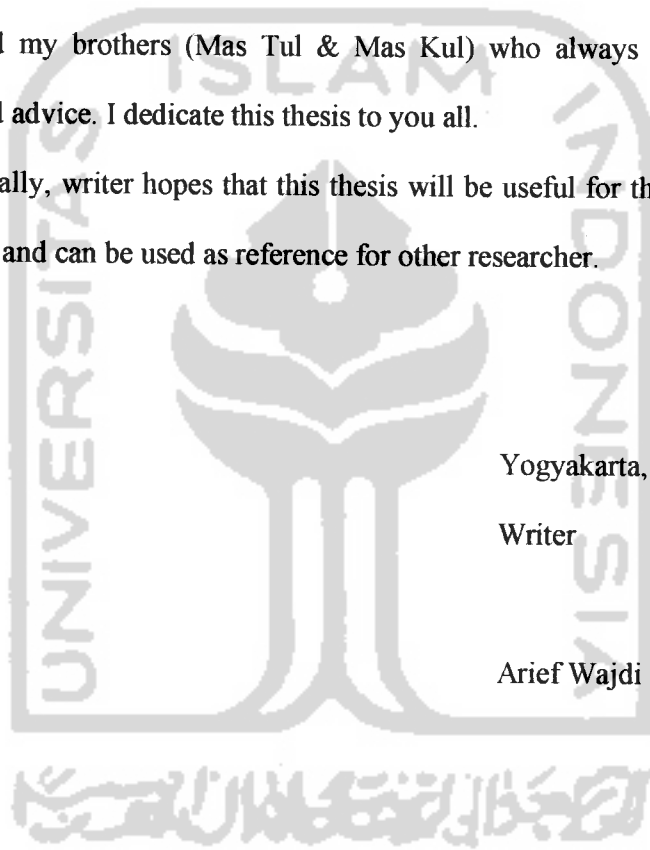


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ABSTRACT

THE ANALYSIS OF CAUSALITY BETWEEN FOREIGN DIRECT INVESTMENT (FDI) AND ECONOMIC GROWTH FOR THE PERIOD OF 1974-2001

Indonesia as less developed country (LDC) still needs much investment to stimulate the economic growth. Because of the investment from domestic was limited, then, the presence of foreign investment was needed. It was proved that in the beginning of developed countries' development, the presence of foreign investment had positive influence to the economic growth.

The objective of this research is to know what the relationship between the foreign direct investment and the economic growth in Indonesia. Is there bidirectional causality or unidirectional causality between FDI and the economic growth? To answer this question, writer was applying the Granger causality test combined with the Final Prediction Error by Hsio. The data used in this research were foreign direct investment and economic growth taken from International Financial Statistics and Bank Indonesia for the period of 1974-2001.

The result was that there was unidirectional causality from FDI to the economic growth. It means that only FDI causes the economic growth, on the other hand, the economic growth not causes FDI. From the result can be concluded that the presence of FDI in Indonesia had positive influence to the economic growth.

ABSTRAK

ANALISIS KAUSALITAS ANTARA PENANAMAN MODAL ASING LANGSUNG DAN PERTUMBUHAN EKONOMI DI INDONESIA PERIODE 1974-2001

Indonesia sebagai negara sedang berkembang masih memerlukan banyak investasi untuk merangsang pertumbuhan ekonomi. Karena keterbatasan investasi dari dalam negeri maka keberadaan investasi asing sangat diperlukan. Sudah terbukti bahwa keberadaan investasi asing di negara-negara maju pada awal pembangunannya sangat berpengaruh positif terhadap pertumbuhan ekonominya.

Tujuan dari penelitian ini adalah untuk mengetahui hubungan antara penanaman modal asing langsung dan pertumbuhan ekonomi di Indonesia. Apakah ada hubungan satu arah atau dua arah antara penanaman modal asing langsung dan pertumbuhan ekonomi? Untuk menjawab pertanyaan ini, pada penelitian ini digunakan metode kausalitas *Granger* dikombinasikan dengan *Final Prediction Error* dari Hsio. Data yang digunakan dalam penelitian ini adalah data penanaman modal asing langsung dan pertumbuhan ekonomi periode 1974-2001 diambil dari *International Financial Statistics* dan Bank Indonesia.

Hasil dari penelitian ini menyatakan bahwa ada hubungan kausalitas satu arah dari penanaman modal asing langsung ke pertumbuhan ekonomi. Ini berarti hanya penanaman modal asing langsung yang berpengaruh terhadap pertumbuhan ekonomi, sebaliknya pertumbuhan ekonomi tidak berpengaruh terhadap penanaman modal asing langsung. Dari hasil penelitian dapat disimpulkan bahwa keberadaan penanaman modal asing langsung di Indonesia mempunyai pengaruh positif terhadap pertumbuhan ekonomi.

CHAPTER I

INTRODUCTION

1.1. Study Background

Indonesia as one of less developed countries (LDCs) generally has some common problems in its development process. One of the common problems is lack of capital in the development process. The lack of capital will restrict the process of development because, capital is the main factor that takes an important role. One of factor which supporting development is investment. The lack of capital in LDCs such as Indonesia will cause bad impacts on the investment and slow down the economic activity.

LDCs such as Indonesia usually get difficulties in accumulating capital from domestic people's savings because most of them live in poverty. So, they do not have enough money to save. Beside the inadequate supply of capital, its formation is also very slow. In average, gross investment in LDCs is only 5 to 6 percents of gross national product. Meanwhile, in developed countries the investment is 15 to 16 percents. Low-savings and low-investment depict the capital lack and therefore, less developed countries have left behind in technological progression from developed countries. The lack of technology can be seen on its high average production cost and low productivity on labor and capital. As a consequence, the output ratio is high, means that needs more capital to produce one unit output.

Less developed countries lack the economic overhead capital that is directly needed to make the investment flows easy. The railway project, road project, canal, and energy resources are infrastructure needed in the process of development. However, those things need huge capital. And, less developed countries are not able to handle it yet. Therefore, they need foreign capital.

The idea to import capital to support economy development is not a new thing for less developed countries. Even, developed countries, in the beginning of their development, depend on foreign capital. In the 17th and 18th centuries, England was getting capital from Dutch. In the 19th centuries, United States was growing rapidly because of huge labor and capital from Europe. Russia also got capital in the process of its development from West Europe during 1890-1914.

Less developed countries are unable to start building basic industries and main industries by themselves. Through foreign capital, they can build steel industry, machinery, electronic, chemical industry, etc. Besides, private companies in less developed countries dislike building a risky business, such as handling natural resources and opening a new area in mining sector. Foreign capital handles all of the risks and the loss in the beginning of the project. It means that, foreign capital starts new projects and explores new resources. As a consequence of building new industries, exploring new resources, and opening new mining area are increasing labor market in the economy. This shows that foreign capital tends to increase productivity and income. If a new industry starts to import technology, management, machinery and sophisticated equipment, it will supply a huge amount of new quality products with cheap prices.

Table 1.1

Foreign Direct Investment in Developing Countries
1970-1997 and Major 1997 Recipients

Foreign Direct Investment		Major Recipients, 1997	
<u>Year</u>	<u>Total Net FDI (billions of US \$)</u>	<u>Recipient</u>	<u>FDI Received (% of total)</u>
1970	3.1	1. China	31
1980	10.9	2. Brazil	13
1990	23.7	3. Mexico	7
1991	35.1	4. Indonesia	5
1992	42.5	5. Poland	4
1993	53.2	6. Malaysia	3
1994	78.1	7. Argentina	3
1995	96.3	8. India	3
1996	118.9	9. Venezuela	2
1997	119.4	Other developing countries	29

Sources: United Nations Development Program, *Human Development Report*, 1994

World Bank, *World Development Indicators*, 1998

Quoted from: Todaro, *Economic Development*, (page 579)

Because of this condition, many of LDCs try to find some alternatives to get capital from abroad in order to solve that problem. There are some alternatives that can be done by LDCs to get capital such as foreign aid and foreign investment. The foreign aid may be in the form of a loan, assistance, and donation from government organization and international organization. And, the foreign investment can be direct or indirect investment. Direct investment means companies from abroad invest their money and have right to control and manage their capital dependently. Indirect investment is usually in the form of portfolio and securities that the investors do not have right to control and manage their money.

On the other hand, the presence of foreign aid may be useless because a poor country usually has problems in managing the capital. As a result, the allocation of capital from foreign aid is no longer effective. Facing this condition, the government of the country suggests to choose foreign direct investment (FDI) as the alternative in accumulating capital from abroad. Indonesia also applies this strategy as well.

Foreign direct investment (FDI) is usually in the form of multinational corporation (MNC). MNC is most simply defined as a corporation or enterprise that conducts and controls productive activities in more than one country. These huge firm, are mostly from North America, Europe, and Japan (but also increasingly from newly industrializing countries like South Korea, Taiwan, and Brazil) (Todaro, 2000). These MNCs do not only bring capital but also technology, human resources, managerial, and organizational skill. All those kinds of capital are very important for Indonesia, because the transfer of technology and skill can increase the domestic's technology and skill. In addition, the presence of MNCs will absorb domestic employment. It means that such condition will widen labor market and reduce the domestic unemployment. Hopefully, it can accelerate the development process in domestic economy.

Table 1.2

Approved Foreign Direct Investment Projects in Indonesia
(Millions US \$)

Year	FDI
1980	875.5
1985	859.0
1990	8,751.1
1995	39,914.7
2000	15,413.1
2002	9,744.1

Sources: International Financial Statistics (IFS)
Annual Report Bank Indonesia

In 1990s FDI that entered Indonesia tended to be increased, especially from the newly industrializing countries from East Asia (South Korea, Taiwan, Hong Kong, and Singapore). This condition was different from Indonesia in the 1970s and early 1980s. At that time, the capital from FDI entered Indonesia was very little. It was because the government applied the wrong foreign capital policy. In 1970s, the government was very restrictive to the capital inflow from abroad, and also to the import substitution policy. It was not surprised that the capital inflow from foreign investment since 1974, and especially in early 1980s, tended to decline. In addition, government revenue from oil tended to reduce in 1982, and especially in 1986. It caused the government lack of capital in funding some projects. Therefore, in 1983 government applied some steps of deregulation that might improve the scene of private foreign investment. Some of deregulation programs were simplifying the process of getting permits, eliminating restrictive regulation, and making the list of priority scale of the sectors that may open or

close for domestic or foreign investment. Since the government applied new policy, then, capital inflow from abroad tended to increase until 1990s.

Table 1.3

Approved Foreign Investment from
Korea and Taiwan 1972-1990

Year \$)	Korea		Taiwan	
	Project	Amount (million US \$)	Project	Amount (million US \$)
1972 - 1982	9	374.7	-	-
1985	2	48.7	6	195
1987	5	16.8	-	-
1988	26	196.4	19	916
1989	67	416.1	50	158
1990	86	722.9	94	618.3
Total	197	1,834.4	169	2,055.3

Sources: Korea Trade Center, Jakarta Office, April 1990

Taipei Economic and Trade Office, Jakarta Office, July 1990

BKPM: Laporan Perkembangan Penanaman Modal 1990

Quoted from: Thee Kian Wee, *Industrialisasi di Indonesia*, 1994

In 1997, Indonesia was suffering from economic crisis that also affected the foreign investment. The economic crisis did not only happen in Indonesia but also in some countries in Asia. This resulted the scene of investment became low and worse. The effect of the crisis to the foreign investment happens until now. Because of the crisis has not covered yet up to now, it causes some unrest conditions in the economy. The condition makes the atmosphere to start business

become worse. As a consequence, the investors are afraid of investing their money in Indonesia since it will be risky. Even, some MNCs in Indonesia had closed their companies and removed to the other country because Indonesia's government did not give good climate to their business activities.

This condition should not occur in a long time, and it is a must to find some ways to solve the problem soon. In accordance with this, the government needs to improve the policy in order to attract the foreign investors. Otherwise, the economic activity in Indonesia becomes slow-down and the economic growth becomes low. The data of the economic growth can be seen in the table below.

Table 1.4

Economic Growth in Indonesia

Year	Economic growth (%)
1975	5.0
1980	3.35
1985	4.35
1990	7.3
1995	8.2
1998	-13.1
2000	1.0
2002	3.5

Source: Annual Report of Bank Indonesia

Based on the study background above, the writer is interested to do a research in some cases related to the causality relationship between foreign direct

investment and economic growth in Indonesia. In this research, the writer will analyze the causality between the foreign direct investment and the economic growth in Indonesia during the period of 1974-2001. Hopefully, this research will be useful as a consideration and a reference to make better policy in order to attract the foreign investors.

1.2. Problem Identification

The focus of this research is analyzing the causality relationship between the foreign direct investment (FDI) and the economic growth in Indonesia. Those two variables have important roles in the process of development. Therefore, it is a need to know the relation of the two variables in the development process.

1.3. Problem Formulation

Based on the study background above, hence, there is a question proposed for this research i.e. whether FDI causes economic growth or vice versa, economic growth causes FDI.

1.4. Limitation of Research

There are so many factors influencing the economic growth and the foreign direct investment in Indonesia. However, the research is only focusing on the causality relationship between economic growth and FDI. It is not concerned with the factors that influence both economic growth and FDI. This research uses

data of the economic growth and FDI of Indonesia during the period of 1974-2001.

1.5. Research Objectives

The purposes of this research are:

1. To analyze the causality relationship between the foreign direct investment and the economic growth.
2. To make sure and prove whether it is fit or contradicts with the theory and the previous research.

1.6. Research Contribution

The final result of this research can be used :

1. As a reference for other researchers and students who concern with foreign direct investment and economic growth.
2. As a consideration and reference for the government in making foreign direct investment policy.

1.7. Hypothesis

There is a feedback or bilateral causality between foreign direct investment and economic growth. It means that the foreign direct investment causes the economic growth and vice versa, the economic growth causes the foreign direct investment.

1.8. Guide Book Organization

CHAPTER I INTRODUCTION

This chapter explains about study background, problem identification, problem formulation, limitation of research, research objectives, research contributions, hypothesis, and guide book organization.

CHAPTER II REVIEW OF RELATED LITERATURE

This chapter describes some empirical findings from the previous research about the foreign direct investment and the economic growth and the previous research used the same method that is causality analysis.

CHAPTER III THEORETICAL BACKGROUND

This chapter gives some understanding about the basic concept of economic growth, economic growth theories, kinds of foreign investment, benefits and costs of foreign investment, and foreign direct investment policy.

CHAPTER IV ECONOMIC DESCRIPTION

This chapter contains some information about the recent economic condition in Indonesia related to the economic growth and the foreign direct investment and the supported economic data appropriate with the real condition and situation.

CHAPTER V RESEARCH METHOD

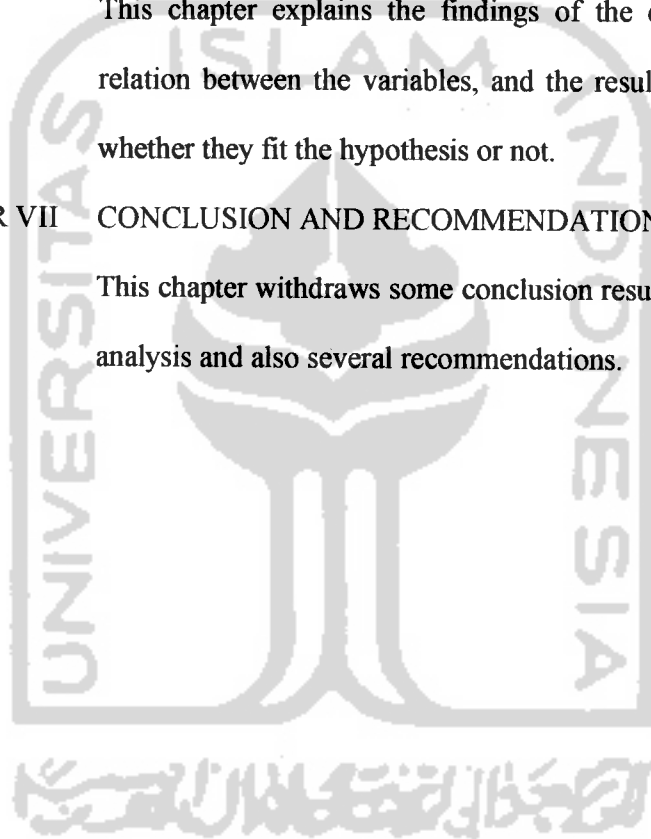
This chapter explains about the technical method and the steps of data regression until the result can be used to describe the relation between the economic growth and the foreign direct investment.

CHAPTER VI DATA ANALYSIS

This chapter explains the findings of the data analysis, the relation between the variables, and the results of the research whether they fit the hypothesis or not.

CHAPTER VII CONCLUSION AND RECOMMENDATION

This chapter withdraws some conclusion resulted from the data analysis and also several recommendations.



CHAPTER II

REVIEW OF RELATED LITERATURE

2.1. Theoretical Review

Suryawati (2000); analyzed the role of foreign direct investment (FDI) to the economic growth in East Asia countries (Malaysia, Thailand, Korea, Singapore, Indonesia, and Philippines) for the period of 1969-1996. The objectives of this research are to answer some questions such as: what factors are influencing the amount of foreign capital especially in Indonesia and generally in East Asia countries, and what the influences of export and import to the FDI in those countries are; whether export and import are influencing foreign direct investment; whether foreign aid, foreign investment, and export are influencing economic growth; whether foreign direct investment influencing net export. Hypotheses in this research are the increases of foreign direct investment has significant influence to the economic growth, the increases of foreign direct investment has significant influence to the trade, the amount of foreign aid has significant influence to the foreign direct investment and economic growth.

This research used three kinds of methods: *first*, error correction model, *second*, Granger causality, and *third*, static estimation analysis model using OLS. Variables which are analyzed with granger causality are FDI and export, FDI and GDP, FDI and import, FDI and debt.

Based on the result of Granger causality test, the writer found that the foreign direct investment has causality relationship with the export of East Asia

countries, except Malaysia. In Thailand, FDI supports the export, but in other countries such as Korea, Singapore, Indonesia, and Philippines, export support FDI. FDI also influences the growth of GDP in East Asia countries, but in Malaysia and Thailand, there is no causality relationship between FDI and GDP. The relationship between FDI and import in East Asia countries generally has one-direction causality to the FDI. It means that import affects FDI, and FDI does not affect import. There is no clear indicator between FDI and foreign aid, whether debt affects FDI or vice versa. However, in Thailand and Philippines, there is a causality relationship between FDI and debt. In those two countries, foreign aid is significantly affecting the growth of FDI. Meanwhile in Malaysia and Korea, FDI support the foreign aid.

Based on the OLS regression, it has found that in East Asia countries (Malaysia, Indonesia, Thailand, Korea, Singapore, and Philippines), FDI has positive effect on the economic growth. Based on the error correction model analysis, it has been found that in Malaysia, Thailand, Singapore, and Korea, FDI does not influence the economic growth, but in Philippines and Indonesia, FDI influences the economic growth.

Agus Widarjono (1999); analyzed population and economic growth in Indonesia for the period of 1967-1995. The data used to measure the economic growth is the growth of real GDP per capita based on the base year 1990. This research uses Granger Causality test mixed with the method of lag-decisions, namely Final Prediction Error (FPE) by Hsiao. This method is called Vector

Autoregressive Model (VAR). The model of Granger Causality is formulated as follow:

$$P_t = \sum_{j=1}^m a_j P_{t-j} + \sum_{j=1}^n b_j Y_{t-j} \quad (2-1)$$

$$Y_t = \sum_{j=1}^m c_j Y_{t-j} + \sum_{j=1}^n d_j P_{t-j} \quad (2-2)$$

Because of the weaknesses of the Granger causality test, then, this study uses Final Prediction Error by Cheng Hsiao in order to decide the lag length. The model is formulated as follow:

$$P_t = \Psi_{11}(L) P_t + \Psi_{12}(L) Y_t + u_t \quad (2-3)$$

$$Y_t = \Psi_{21}(L) Y_t + \Psi_{22}(L) P_t + v_t \quad (2-4)$$

Where

$$\Psi_{ij}(L) = \sum_{k=1}^{M_{ij}} \Psi_{ijk} L^k$$

L is a lag operator, and M is the maximum lag of Ψ_{ij}

The result shows that the calculation of the causality relationship between population and economic growth is the bidirectional causality. It means that the population growth causes the economic growth and vice versa, the economic growth causes population growth.

Aliman and Budi Purnomo (2001); analyzed the causality between export and economic growth in Indonesia. Data is used in this research is the real national income and export for the period of 1969-1997. They used two methods of analysis. *First*, the error correction causality test and *second*, the Granger Causality test mixed with the Final Prediction Error (FPE) formulated by Hsiao.

The empirical result using error correction causality test shows that there is bidirectional pattern of causality between national income and export. It means that the export causes economic growth and vice versa, economic growth causes export. The result will be different when Granger Causality test mixed with the Final Prediction Error (FPE) are used. This method shows that there is unidirectional (one-direction) causality from national income to real export. It means that the increase of national income or economic growth causes the increase of export.



CHAPTER III

THEORETICAL BACKGROUND

3.1. Basic Concept of Economic Growth

The concepts of economic growth and economic development are closely related, although they are quite different. Many economists often define growth as the same as development. While economic growth involves an increase in an economy's real gross domestic product (GDP) and income over time, economic development involves economic growth itself in addition to the process of broad structural changes and transformation of the economy. Economic growth must precede and usher in economic development.

In its closest association to the concepts of economic development, economic growth is defined in terms of increases in per capita real output or per capita income. Economic development is the process through which the economy raises per capita output and income by improving and increasing the productivity, and how these factors may increase income per capita.

Development involves growth plus structural changes. For economic development to occur, there must be positive economic growth accompanied by structural transformation in the economy. Achievement and maintenance of structural transformation is the sufficient condition for economic development.

Schumpeter and Ursula Hicks, had differentiated between growth and development (Jhingan, 2000: 4). When economic development concerns the problem of underdeveloped country, economic growth concerns the problem of

developed country. According to Schumpeter, development is spontaneous and definitely growth in a stationer condition that tends to change and substitute the previous equilibrium conditions while growth is slowly long-term changes that happen through the increases of saving and population. According to Professor Bonne "Studies in Economic Development", development need and involve directing, arranging, and guiding the process of creating power of enlargement and maintenance, while the spontaneous growth is the characteristic of developed economy and freedom in doing business. The most simply difference made by A. Maddison in "Economic Progress and Policy in Developing Countries", he wrote "In developed countries an increases on the level of income called growth, while in poor countries it is called development".

Collins Economic Dictionary (1997) makes this difference simpler: "Economic development is economic transition process involving structural transformation through industrialization and the increase of gross national product and income per capita. Economic growth is real output growth along the time, usually measured with the increases of gross national product or gross domestic product or per capita income along the time".

3.1.1. Characteristics of Modern Economic Growth

Prof. Simon Kuznets in "Modern Economic Growth" defines that the economic growth is as a long term increase of a country in offering its citizen many kind of goods. The ability to fulfill many kinds of goods

grows in line with the progress in technology, institution, and ideology adjustment. (Jhingan: 2000)

Modern economic growth is an important sign in the economy. Professor Simon Kuznets pointed six characteristics of modern economic growth, they are:

1. The Growth of Population and Per Capita Product

Modern economic growth, as shown from the experience of advanced countries since the end of eighteenth centuries and the beginning of nineteenth centuries, was signed with the significant increase in per capita product and in population. This spectacular increase is at least five times for population and ten times for production.

2. Increase on Productivity

Modern economic growth can be seen from the increasing of per capita product, especially as the result of input quality improvement which increase efficiency or productivity per unit input. This can be seen from the extent of the resources and capital or the extent of the efficiency, or both. The increase in efficiency means the use of more output for one unit of input. The growth of national product is a consequence of a spectacular population growth, then, it will extent the amount of the labor. The growth of national product can accelerate the growth of capital accumulation and capital that can be reproduced.

3. High Structural Changes

Structural changes in modern economic growth involves a transition from agriculture to non agriculture, from industry to service, as well as changes in productive units scale, and transition from individual company to corporation-and also changes on the worker status.

4. Urbanization

Modern economic growth is also signed with the huge amount of people in advanced country who move from rural area to the city. Generally, urbanization is the product of industrialization. The changes on technology and non agriculture sector are causing huge amount movement of people and labor from rural areas to the city. Because transportation infrastructure, communication, and organization grow more effective, so the population will spread thoroughly.

5. Advanced Country Expansion

The expansion of advanced country that started from European nation is the result of technology revolution in transportation and telecommunication. This case then, emerged the direct politic domination to the colony of the nation, the open region that previously closed such as Japan and Sub-Sahara Africa. The threat power of advanced country is causing growth in Japan and Soviet United. So, politic or power in international relationship is an important factor in modern economic growth. However, modern economic growth can not be spread out to the poor countries because of two factors: First,

because the poor countries do not have stable social and politics framework. Second, the policy of the advanced countries binds the economic and politic freedom of the less developed countries.

6. The Flows of Good, Capital, and People Among Nations

The cumulative volume of international migration tends to increase since the late of 1840 and continued until World War I have closed relationship with the pattern of modern economic growth. The factor that causes migration, in this case among continents migration, is the ease of the transportation among continents by ship and train.

The trade among countries is the dominant factor of the expansion of the advanced countries. Besides that, the flows of capital also have important role in the modern economic growth. The flow of foreign international capital investment grew rapidly since the second quarter of nineteenth century until World War I.

3.1.2. Factors of Economic Growth

The process of the economic growth is influenced by two factors, economic and non-economic. The economic growth of a country depend on its natural resources, capital, organization, technological progress, division of labor and production scale. However, the economic growth can not occur if there is no support from the social institutions, good political condition, and morality of the nation. In the economic growth those factors are called non-economic factor.

3.1.2.1. The Economic Factors

Natural resource is the main factor which influence the economy. In economy, natural resources consist of land, geographical location and condition, forest, water source, sea, etc. A country without natural resource can not develop rapidly. The less developed countries rarely use the natural resources maximally. It is one of the factors that make less developed countries develop more slowly. Second, the economic factor is the capital accumulation. Capital is the supply of production that physically can be produced. Capital accumulation which is the main factor of economic growth has important role for the less developed country. The process of capital accumulation produces the increase of national output. Investment in the capital good is not only increasing the product but also the employment. Capital accumulation also increases the progress in technology. Technological progression makes specialization in production and efficiency in the large scale of production. Capital accumulation gives maximal exploitation to natural resources, brings industrialization and market expansion that resulting the economic progression and economic growth. Third, organization is the important thing in the process of economic growth. Organization is related with the using of factor of production in the economic activity. Organization is a complement of capital and employee in supporting its productivity. In the developed country, the benefit of organization made a private company become a multinational company after World War II. It also gave benefit to the

developed and developing country. Fourth, technological progressions also influence the process of the economic growth. Progression in technology brings changes in the method of production. It will increase employee productivity, capital and others factor of production. Some countries such as India, Argentina, Mexico, and Brazil apply the technology from developed country in order to increase their productivity. Fifth, division of labor and specialization can increase productivity. Both of them bring the large economic scale that can expand industry. Adam Smith is concern to the labor division in the process of economic growth. It can increase labor productivity. Each labor becomes more efficient than before.

3.1.2.2. Non-economic Factors

Non-economic factor and economic factor influence each other in the process of economic growth. In fact, non-economic factor such as social, cultural, and political generally are the important role in an economic growth process. In the process of development, social, cultural, and psychological factors are as important as the economic factor. Therefore, there are several non-economic factors that must be kept in a good condition in order to make development process run well.

First, social and cultural condition is the important factor in the process of economic growth. The power of this factors are resulting the changes in the view, hope, structure, and social values. Peoples are encouraged to save and invest their money, then enjoy a risk to get profit.

In a less developed country, there are social and cultural traditions that discourage economic growth. Most of them are influenced by tradition such as having leisure time, wasting the time for fun, and gathering in religious party. Thus, their time is used for a non-economic activity. Second, human resource is the most important factor in the economic growth. Economic growth not only depends on the amount of human resources but also their efficiency. Third, political and administrative factors are also important in the economic growth. Economic growth in England, Germany, United State, Japan, and French, are the result of their stability in political and administration since the nineteenth century. The weak in political and administration structure in less developed country is a barrier of its economic growth. Good administration, efficient, and incorrupt government is the important factor for the process of development.

3.1.3. Internal Measurement of Growth

Growth in economy reflects the increases in productivity capacity (expansion of GDP) and changes in the rate of utilization of this capacity (percentage increases). GDP measures the total output of final goods and services produced by the residents of the country over a given period of one year. The GDP (Y) may be defined in terms of the annual gross national expenditure of the economy. The economy's total gross national expenditure is made up of its total domestic expenditure and its net foreign

trade transaction. The total domestic sector expenditure comprises the individual and household private sector expenditure (consumption, C), the total business sector-sector expenditure (Investment, I) and the total public sector expenditure (government expenditure, G). The net foreign trade transaction is total volume of exports (X) minus total volume of imports (M). The GDP then expressed as

$$Y = C + I + G + X - M \quad (3-1)$$

3.1.4. External Measurement of Growth

For the purposes of international comparisons of economic performance, a growth index that takes into account of a nation's ability to expand its output relative to (or, rather, at a rate faster than) the growth of its population is often used. In the connection, levels and rates of the growth of the "real" per capita GDP are normally used to measure the population's overall economic state of being. The term "real" indicates the nominal or monetary value minus the rate of inflation. This index suggests how much real goods and services should be available to the nation's average citizen. By using this index, it is easy to carry out a straightforward comparison of economic "well-being" or "welfare" across nations, a parameter that give quantitative measure of standards of living.

A measure of growth in productive capacity per capita (output per men-hour, or average output per men-hour employed) is generally referred to as productivity. However, the most widely used measure of economic

growth is output (GDP) per capita. This approach focuses on the growth of material living standards rather than on the growth of productivity. The per capita income (PCI) is given as:

$$PCI = GDP/population \quad (3-2)$$

3.2. Economic Growth Theory

3.2.1. Adam Smith Theory

Adam Smith used a nature law in his economic theory. Each people will do business and maximize their welfare if they were freely to do that thing, therefore, if people was free to do it they will try to maximize their welfare aggregately. Basically Smith opposed government intervention in industries and trade. He believed on free trade and encouraged free market system in the economy. The power of invisible hand-perfect market competition, as a mechanism that brings to equilibrium automatically, tends to maximize national welfare.

Division of labor is a starting point of economic growth, that increasing labor productivity. The increasing productivity of labor are related to: (1) the increasing in labor skill; (2) the effectiveness on time allocation to produce goods; (3) machinery that save people energy. However, the last causes of increasing in productivity do not come from the labor, but from the capital. Technology is the emerging division of labor and market enlargement. However, division of labor depends on the market size. There is a saying that “division of labor bound by market

size". It means that the division of labor increase fit with market growth. Therefore, trade enlargement and international trade are very beneficial. The increases of population and transportation facility will support division of labor and capital accumulation.

Smith emphasize, that capital accumulation must be done first than division of labor. Smith consider that capital accumulation is an absolute requirement for the economic development, then, the problem of economic development generally lays on the people ability to save and invest capital much more. So, the investment will be depend on the level of saving. Capital owners invest their money because they want to get benefit from the money they have invested, and future wishes to get profit depend on today condition of investment and real profit.

Smith wrote in his writing that the role of interest rate in the economic development is that when welfare and population growth increase, the level of interest rate would decrease. As a consequence there is excess supply of capital. The reason is when the level of interest rate low, usurer would lend their money much more in order to get more interest rate. So, when interest rate decrease, the amount of capital lend will increase. However, when interest rate decrease, usurer will face excess demand of money because so many demand on money, so that usurer will get difficulties to supply it. In this condition they will choose to invest their money and become an entrepreneur. So, although the interest

rate decrease, finally there is some increases on capital accumulation and economic growth.

According to Smith, farmers, producers, and entrepreneurs are agent of economic growth. Free trade and competition encourage them to enlarge the market, which finally can support the development economic. The functions of those three agents have closed relationship. The development in agriculture will support the construction project and trade. When there is agriculture surplus as a consequence of economic development, then the demand on trade services and goods industries will increase as well. On the other hand, the development on that sector will increase agriculture production if farmer use sophisticated production technology. So, capital accumulation and economic development occur because the role of farmers, producers, and entrepreneurs.

When there is welfare as the result of progression in agriculture, manufacture industry, and trade, this welfare will cause capital accumulation, technical progress, increase on population, market enlargement, division of labor, and continuously increase on profit. However, this process will end and finally the scarcity of resources will stop the growth.

3.2.2. The Marxian Theory of Economic Determinism

The Theories of Karl Marx (1818-1883) basically sought to replace classical economic analysis with historically based evolutionary economic

dynamism. The Marxian model of economic growth and development treats the developmental process as a social phenomenon by examining where it was and where it is going, as well as its processes of change over time. It believes that the economy move from one stage to another. Thus, the classical system of “capitalist” production relations would be simply one of the series of stages in the evolution of the society that began at the Primitive economy and would end at the socialist state.

Marx draw a distinction between the “forces of production” and the existing of “production relations” in the society at any point in time. Production relation are defined as the appropriation and distribution of output within a given societal mode of thinking, ideology, and global vision. The former is defined as the organization of production, the state of science and technology, and the development of human skill. According Marxian theory, there is always a bound to be a constant conflict between the forces of production and the relations of production in society, the interaction of which would shape the society’s political, legal, moral, religious, cultural, and ideological positions in the world.

In Marxian thinking, the system of the free-enterprise economic relationship that is govern by private ownership of the means of production and self-seeking profit pursuits is merely one of a series of stages in the evolution of society toward the highest (utopian socialist) state. This state would be inevitable final stage of economic, social, and political organization. The summary of Marxian theory of economic

growth and development is: it states that every society would undergo a metamorphosis of transition from a primitive society to a communist utopian and highly developed state economy.

The evolution of the state will take the form of self-transformation of the economic and social arrangements. Each stage of the economy will have its own peculiar characteristic technology and organizational styles, and this will give rise to its own particular kind of “class struggle” that will result in its decay and “breakdown” from within. From that breakdown, the next and “higher” order of organization will emerge, until the highest order of economic and social relations has been reached: socialism. At this “highest” form, poverty will disappear and unemployment would not exist. The society would be without “conflict” in a utopian economy in which each individual would contribute to the national income and output according to his or her abilities and receive from it according to his or her needs.

3.2.3. Keynes Theory

Total income is a function of total labor in a country. The greater national income, is the greater the volume of work done, and vice versa. The volume of labor depends on the effective demand. The effective demand determines the equilibrium level of labor and income. The effective demand is determined at by point when the aggregate demand price is same as the aggregate supply price. The effective demand consists

of consumption demand and the investment demand. Consumption demand does not increase rapidly as fast as income. The gap between income and consumption can be secured by investment. If the target of investment does not fulfilled, then aggregate demand price will decrease lower than aggregate supply price. Thus, the gap between labor and income will mostly depend on investment.

Interest rate, the factor of investment, depends on quantity. Now investment can be increased by the increases of marginal efficiency from capital and interest rate. Although the increases of investment usually resulting a labor, this would not happen when, at the same time, the preference of consumption was decrease. The increase of investment causes the increase of income; and when income increase, there is more demand on consumption of goods, that finally, causing the increases of income and labor. The relation between the increases of investments and income is called multiplier (K). It means when aggregate investment increase, income also increase, as much as the amount of K times the increase of investment. The formula is:

$$\Delta Y = K * \Delta Y \quad (3-3)$$

In his book, "Economic Possibilities for Our Grand Children", Keynes stated some requirements on economic progress: (i) the ability to manage population; (ii) the ability to prevent war and civil crush; (iii) the ability to believe science; and (iv) the level of accumulation that is decided by margin between production and consumption.

3.2.4. The Harrod-Domar Growth Model

The Harrod-Domar growth model is based on the Keynesian framework. The basic of Harrod-domar model assumes that the economy's potential level of GDP is a function of the level of net investment spending, under a given state of the productivity of capital. It also assumes that the economy's level of total savings is the ultimate generator of the capacity to invest: that is *ex-ante* savings (a savings level generated for purposes of freeing investment) equals *ex-post* investment (actual level investment realized). In symbols, letting S = savings and I = investment, so, the equality is:

$$I = S \quad (3-4)$$

As long as the economy maintains this equality, there will be no tendency for instability to occur; that is, neither severe inflation nor chronic unemployment will be imminent. However, should investment demand in the economy exceed the amount of saving generated (possibly, say, due to excessive foreign investment or an unexpected increase in autonomous investment), excess demand will occur in the economy and inflation will be the result. If, on the other hand, savings become greater than investment, deficient demand will obtain, resulting in unemployment.

The Harrod-Domar model also assumes a given state of the productivity of capital in the economy. The productivity of capital, defined as the average product of capital (under a given state of technology) is given by

$$a = Y / K = I / v \quad (3-5)$$

where: a = average product of capital

Y = GDP

K = level of capital stock

$v = K/Y$ = capital-output ratio (a measure of how much capital units it takes to produce one unit of output)

As a net investment spending adds to the economy's capital stock and raises productive capacity and potential output, then any changes in productive capacity, being dependent on investment level, would be given by

$$\Delta Y = \sigma \cdot I = (1/v)I \quad (3-6)$$

For the economy to remain in steady-state growth equilibrium, $I = S$. But total savings in the economy is generated ex-post (that is, the amount of savings out of total GDP). Presumably, it is this volume of ex-post savings that gives rise to the next period's ex-ante savings required for investment in that period. Thus,

$$I = s \cdot Y \quad (3-7)$$

where: s = marginal propensity to save (out of GDP).

Substituting Equation (3-7) into (3-6), we obtain

$$\Delta Y = (1/v)sY \quad (3-8)$$

from which it follows that

$$\Delta Y = g = s/v \quad (3-9)$$

The left-hand side of Equation (3-9) defines the growth rate of GDP, or economic growth, g . This indicates that the rate of growth is given by the ratio of the savings rate and the capital-output ratio. Equation (3-9) is termed the *warranted growth rate* of the economy. This term is used because this is the growth rate that is warranted by the economy's capacity to save (as the measured by the savings rate, s).

The policy implications of the Harrod-Domar model are very clear from its underlying assumption and analysis. Since investment spending is the source of increase in aggregate demand needed to raise income from one period to another, investment spending in the new period must exceed investment spending of the preceding period in order for the economy to realize the added potential income arising from that preceding period.

The model implies that the rate of savings is the principal determinant of the growth rate of an economy under given levels of productivity of capital (capital-output ratio) and state technology. Thus, the capacity to grow depends on the ability to save, a conclusion that is analogous to that reached by classical theories. Also, falling capital-output ratio is needed for the increased growth. This implies that the economy must increase its productivity of capital over time, a technological requirement.

3.2.5. Solow's Growth Theory

Solow's theory is actually the alternative of Harrod-Domar theory, which implied that an economy's growth path is inherently unstable because when investment demand in the economy exceed the amount of savings generated, excess demand will occur in the economy and inflation will result. Solow's theory supported the neoclassical view that the economy adjust internally to achieve stable equilibrium growth. The solow's growth theory contains several key elements, i.e. production, labor force, and balanced investment.

Solow begins his analysis by establishing an aggregate production function in which technology is constant and total output depends on the capital stock and the labor input. In the short run, an increase in labor, given a fixed stock of capital, yields diminishing returns, as does an increase in capital, given a fixed number of workers. In the long run, the production function exhibits constant return to scale. If both capital and labor increase by 1 percent, output (and income) will also rise by 1 percent.

Supposed that the growth of the labor force increases at a constant rate n each year. The labor force thus expands by nN , where N is the labor force size at the start of the year. For example, if n is 0.01 and N is 200million, then the labor force will grow by 2 million (0.01×200 million) over the year and will be 202 million at the start of the next year. If the amount of *capital per worker* is to remain constant, the rate of

growth of the capital stock, K , must equal the rate of growth of the labor force, n . The growth of the capital stock, of course, is net investment (gross investment minus depreciation). Net investment must therefore rise by nK , each year to equal the growth of the labor force nN . For example, if n is 0.01, and the capital stock is \$30 trillion, then net investment is \$300 billion ($0.01 \times \30 trillion). The addition of 300 billion to the capital stock is just sufficient to keep the amount of capital per worker constant.

Solow assumes that saving is proportional to income. Each year the participants in the economy save a fraction of income, s , and consume a fraction of income, $1 - s$. The saving rate, s , and the level of income, Y , together determine total saving, sY . For example, if s is 0.2 and income is \$2 trillion, then total saving is \$400 billion ($0.2 \times \2 trillion). Because net investment absorbs all savings in the economy, *actual investment* is also sY . Actual investment is the amount of net investment actually forthcoming in a year and is always the same as the amount of saving.

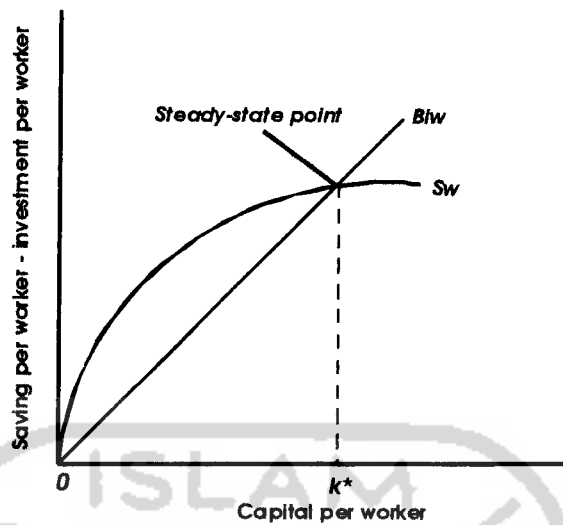


Figure 3.1 Solow's Growth Theory

According to Solow (in figure 3.1), the economy tends toward a steady-state point at which actual investment (as measured along S_w) equals balanced investment (as measured along Bl_w). Balanced investment is that amount of investment needed to keep the capital stock growing at the same rate as the labor force. If actual investment exceed balanced investment, capital per worker decrease. At capital per worker (k^*), the growth rates of the capital stock, the labor force, and output are equal.

3.3. The Essence of Capital and Foreign Investment

Perhaps foreign investment is the most critical source of capital formation in the economy. The experiences of DCs indicate that the foreign sector could actually be the most important source of capital for development. Capital has always recognized as the single critical factor determining a nation's ability to

develop. In fact, it is regarded as the prime mover of the development of land and natural resources, construction of residential and industrial buildings, physical plants and equipment, and raw materials.

In the 1920s, most of private foreign capital from Europe to LDCs is in the form of indirect investment. Foreign direct investment only focus in the export production sector, meanwhile, in manufacturing sector is not much. However, since world war II, more than a half of private investment are direct investment, mostly concerned to the raw material exploitation such as iron, oil, cooper, electricity, etc. When the economy conditions take off, direct investment suddenly go to the manufacturing sector. Because of that, why direct investment on the manufacturing company flows to the country that its industry is not good enough yet.

Within the internal aspects of a country's development circumstances, capital formation, entrepreneurial ability, and technological know-how together constitute the most essential requirements in generating and sustaining growth. More capital would increase capital-labor ratio, productivity, leading to higher incomes, higher savings ability, and higher investment and capital accumulation for further growth.

Higher capital formation would enable the economy to be capable of making higher capital consumption allowance, and to facilitate more effective utilization of capital stock, resulting in higher productivity. This is especially essential in the creation and maintenance of the infrastructural base of the economy, especially transportation, communication system, and utilities.

Moreover, capital formation is a prerequisite for forming not only an industrial base for the economy, but also for the development of agriculture.

3.4. Kind of Foreign Investment

Foreign capital flows to a country in the form of private capital and/or government capital. There are two kinds form of foreign private capital; direct investment and indirect investment.

1) Direct Investment

Direct investment refers to a movement of capital that involves ownership and control. It means that the company from the origin country has right (de jure or de facto) to control its asset in the capital importer country. For example, when U.S. citizens purchase common stock in a French firm, they become owners and have an element of control because common stockholders have voting rights. The building of plant in Sweden by a U.S. company is also FDI, because clearly there is ownership and control of the new facility (a branch plant by the U.S.). Direct investment can be in some forms, i.e. in the form of branch in an importer country; build a company that the major shareholder is the investor; build a company which is just funded by investor; and put fixed assets in other country. In addition, foreign direct investment can be in the form of multinational corporations (MNCs). A multinational is an enterprise that produces in more than one country and considers overseas operations to be

central to its profitability. Multinational enterprises come in all sizes and from all regions of the world.

2) Indirect Investment

Indirect investment is also called portfolio investment, and shareholders have no right to control the assets as in a direct investment. They only get interest from its capital which is invested into capital importer country. Basically, portfolio investment consists of foreign purchases of the stocks (equity), bonds, certificates of deposit, and commercial paper. From the perspective of the recipient, private portfolio flows in local stock and bonds market are potentially welcome the vehicle for rising capital for domestic firms. Well-functioning local stock and bonds markets also help domestic investors diversify their assets and can acts improve the efficiency of the whole financial sector by serving as a screening and monitoring device for allocating funds to industries and firms with the highest potential returns.

Table 3.1

World's Largest Corporations by Sales
1995 (in billions of dollars)

No	Corporations	Country	Sales
1	Mitsubishi	Japan	184.4
2	Mitsui	Japan	181.5
3	Itocha	Japan	169.2
4	General Motors	U.S.	168.8
5	Sumitomo	Japan	167.5
6	Marubeni	Japan	161.1
7	Ford Motor	U.S.	137.1
8	Toyota Motor	Japan	111.1
9	Exxon	U.S.	110.0
10	Royal Dutch/ Shell Group	U.K. , Netherlands	109.8

Sources: "The World's Largest Corporations," *Fortune*, Aug 5, 1996
Quoted from: Appleyard, *International Economics*, 1998, (page.228)

3.5. Benefits of Foreign Direct Investment

Foreign direct investment is more popular than portfolio investment or indirect investment because direct investment has some benefits, such as:

- 1) Direct investment transfer capital, science, technology, and managerial skill to the less developed countries.
- 2) Then, it will support domestic company to invest by itself in the form of supporting company and cooperation with foreign company. In fact, foreign company supports domestic company through two ways: *first*, directly help the growth of domestic company by human skill, money, raw material, training, and experience. *Second*, indirectly create demand of additional services (such as transportation agents) which becomes inefficient if foreign company handle this sector by itself.

- 3) Direct investment has more additional benefit than portfolio investment. Most of profits from direct investment reinvested in order to expand the company, modernization, and build related industries.
- 4) Direct investment directs or allocates to productive sector. Therefore, it adds production capacity of host country and creates labor market.
- 5) Usually direct investment focuses on manufacturing industries that produce primary goods for export. As a consequence, it will increase export and foreign exchange. In the development context, the additional of foreign currency can be used to import capital equipments and materials to assist in achieving the country's development plan, or can be used to pay interest or repay some principal on the country's external debt. It means that the direct investment automatically will relieve host country.
- 6) Increased tax revenue. If the host country is in the position to implement effective tax measures, the profits and other increased income flowing from the foreign investment project which can provide a source of the new tax revenue to be used for the development projects. However, the country must spend such revenue wisely and refrain from imposing too high a rate of taxation on the foreign firm, as this might cause the firm to leave the country.
- 7) Weakening the power of domestic monopoly. This situation could result if, prior to the capital foreign capital inflow, a domestic firm or a small number of firms dominated a particular firm in the host country. With the

flow of the direct investment, a new competitor provided, will result in a possible increase in output and fall in price in the industry.

- 8) The other very important benefit is access to the world markets. Less developed countries that are capable of producing at the competitive costs often find it difficult to penetrate foreign markets. Many multinationals, particularly in natural resources, chemicals, and other heavy industries, are vertically integrated, oligopoly firms for which many transactions take place within the firm.

3.6. Cost of Foreign Direct Investment

When FDI brings so many benefits to the host country, it is possible that FDI also has much cost to the host country. It means that FDI does not always give good impacts to the host country but sometimes also has bad impacts for host country. Some alleged disadvantages to the host country from a foreign capital inflow are listed and discussed briefly below.

- 1) Adverse impact on the host country's commodity terms of trade. A country's commodity terms of trade are defined as the price of a country's export divided by the price of its imports. In the context of FDI, the allegation sometimes made the term of trade will deteriorate because of the inflow of foreign capital. This could occur if the investment goes into production of export goods and the country is a large country in the sale of its exports. Thus, the increased exports will drive down the price of export relative to the price of imports.

- 2) Foreign direct investment can reduce domestic savings. The allegation, in the context of developing country, is that the inflow of foreign capital may cause the domestic government to relax its efforts to generate greater domestic savings. If tax mechanisms are difficult to put into place, the local government may decide there is no need to collect more taxes from the low-income population to finance of investment projects if a foreign firm is providing investment capital.
- 3) Foreign direct investment also decreased domestic investment. Often the foreign firm may partly finance the direct investment by borrowing funds in the host country's capital market. This action can drive up interest rates in the host country and lead to decline in domestic investment through a "crowding-out" effect. In a related argument, suppliers of funds in developing country may provide financial capital to the MNC rather than to local enterprise because of perceived lower risk.
- 4) It might also create instability in the balance of payments and the exchange rate. When the foreign direct investment comes into the country, it usually provides foreign exchange, thus improving the balance of payments or rising the value of host country's currency in exchange markets. However, when imported inputs need to be obtained or when profits are sent to the home country, a strain is placed on the host country's balanced of payments and the home currency can then depreciate in value. A certain degree of instability will exist that makes it difficult to engage in long-term economic planning.

- 5) Loss of control over domestic policy is probably the most emotional of the various charges levied against foreign direct investment. The argument is that a large foreign investment sector can exert enough power in various ways so that the host country is no longer truly sovereign. For example, this charge was levied forcefully against U.S. direct investment in Western Europe in the 1960s and it is often raised against U.S. FDI into developing countries.
- 6) Although the benefits of FDI increase employment but it is also suspected of increasing unemployment. This argument is usually made in the context of developing countries. The foreign firm may bring its own capital-intensive techniques into the host country; however, these techniques may be inappropriate for the labor-abundant country. The result is that the foreign firm hires relatively few workers and displaces many others because it drives local firms out of business.
- 7) The FDI can also establish local monopoly. This is the converse of the presumed "benefit" that FDI would break up a local monopoly. On the "cost" side, a large foreign firm may undercut a competitive local industry because of some particular advantages (such as technology) and drive domestic firms from industry. Then the foreign firm will exist as a monopolist, with all accompanying disadvantages of a monopoly.
- 8) Inadequate attention to the development of local education and skill. First propounded by Stephen Hymer (1972), this argument has the multinational company reserving the jobs that require expertise and entrepreneurial skills

for the head office in the home country. Jobs at the subsidiary operations in the host country are at lower levels of skill and ability (e.g., routine management operations rather than creative decision making). The labor force and the managers in the host country do not acquire new skills.

3.7. Barriers of Foreign Direct Investment

Inhibiting factors of foreign investment in less developed countries are not only in the economic factor but also in the political, law enforcement, and cultural factor. Those factors are: (i) Rate of Return on capital is low because of small domestic market; (ii) lack of infrastructure facilities such as transportation, energy resources, banking system, and skill labor; (iii) afraid of acquisition-nationalization, or government ownership, and reservation of certain product for domestic company; (iv) regulate foreign company tightly in order to get national purpose such as tax discrimination and require company to give labor market in certain amount not only in the staff level but also in the managerial level; (v) bad administration in foreign exchange system; (vi) discrimination in local court because of the difference in law concept; (vii) instability of domestic economy and politic. (Jhingan, 2000)

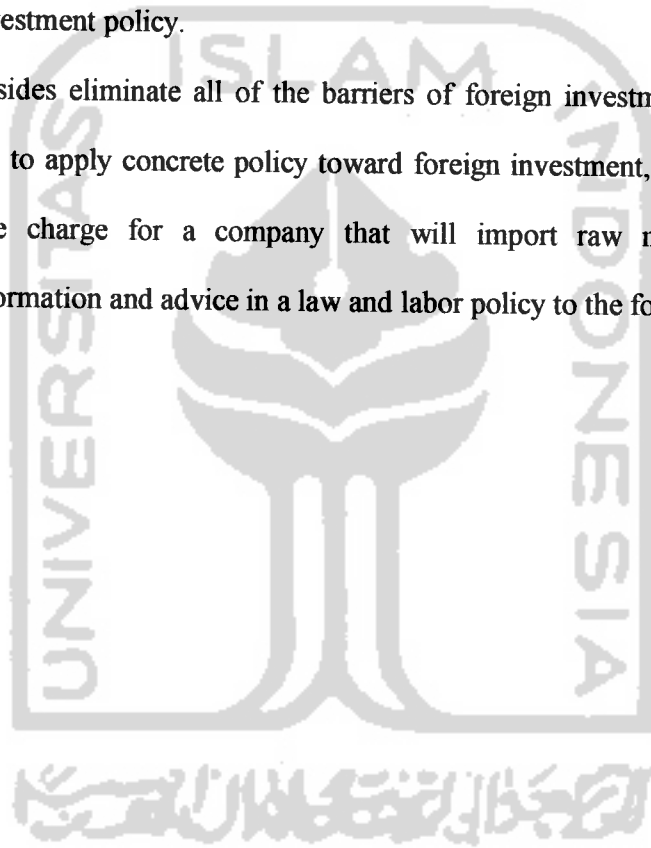
3.8. Steps to Encourage Foreign Direct Investment

In order to attract foreign investment, host country's government should apply regulations that will make foreign investors are interested to invest their money. There are several steps that can be done to attract foreign investor:

- 1) Political stability and safe condition are the main requirement to attract investors. However, the problem of political stability is not the responsibility of the economist; but the existence of good life insurance and assets insurance can be as a good consideration for investors. Therefore, host government should build good insurance company.
- 2) Host country should give good information to foreign company related to the investment scene. It can be informed through their trade counselor who is pointed at the developed country.
- 3) Host country can reduce production cost of foreign company by providing good infrastructure (transportation, energy resources, road, etc.), and also supply skilled labor.
- 4) Host country should guarantee that they will not change foreign company become host country's state own company for certain period. If there was changes of foreign company become host country's state own company, host country should pay the amount of money have agreed before.
- 5) Tax stimulation has strong interest to attract foreign investment. Tax holiday is one of the most common tax strategies to attract foreign investment. Tax holiday means foreign company exempt from paying tax, usually for three to six years.
- 6) Joint ventures partnership is also a good strategy to encourage the foreign investment. Through joint venture companies, host government expect to receive appropriate technology, limit the repatriation of profits, and

maintain local control. In the case of net capital, foreign investor maximally can only hold 49 percent assets.

- 7) All of steps above will not benefit to foreign investment if there is no enough facilities for the inflows of foreign investment. Government has to simplifying procedures and regulations for foreign investment to enter the host country. Therefore, government should apply clear foreign investment policy.
- 8) Besides eliminate all of the barriers of foreign investment, host country has to apply concrete policy toward foreign investment, such as to give a free charge for a company that will import raw materials or give information and advice in a law and labor policy to the foreign company.



CHAPTER IV

ECONOMIC DESCRIPTION

4.1. Economic Growth

Before economic crisis in the middle of 1997, economic growth in Indonesia is high enough. In the period of 1990 until 1996 the economic growth in Indonesia always above 5 percents. Even in 1995, the economic growth reach 8.22 percents. It means that the economic condition before the crisis was sustainable. However, the crisis causes Indonesia have been suffering in worse economic condition until now. In 1997 the economic growth decreased to 4.91 percents and getting worse in 1998 experienced significant decreased to -13.1 percents.

Several economic actions and policies were applied during the crisis by the government to recover the economic condition, resulting the economic progression. The economic growth in 1999 became positive though it is still only 1 percent. This increase, because of the increase in household or private consumption as the result of the increase in real income. Moreover, it is supported by the trust of consumer with the market because of better the political and safety condition. As a consequence, the contribution of private consumption to the GDP increased from 66 percents to 74 percents, on the other hand, the contribution of government consumption increased from 5.43 percents to 6.58 percents. There was also a negative growth of export, and as the consequence of a contribution of export to GDP decreased from 50.51 percents in 1998 to 35.04 percents in 1999.

Table 4.1

The Growth of GDP at Constant Market Price 1993
By Expenditure (percent)

Expenditures	1996	1997	1998	1999	2000
Private consumption	9.27	7.82	-3.2	1.48	3.63
Government consumption	2.69	0.06	-15.37	0.69	6.49
Gross domestic & fixed capital formation	14.51	8.57	-35.54	-20.78	17.91
Export of goods and services	7.56	7.80	11.18	-32.06	16.06
Import of goods and services	-6.86	-14.72	-5.29	-40.90	18.18
GDP	7.82	4.70	-13.20	0.23	4.77

Source: *BPS*

Quoted from: Faisal Basri, *Perekonomian Indonesia*, 2002 (page 69)

Entering the year of 2000, it is shown that the economic recovery became better though it is still in weak condition. Even, when the economic growth could reach 4.8 percents, it was beyond the government targets that predicted around 3-4 percents. This growth supported by the investment spending that increased 17.9 percents and export demand increased 16.1 percents. From the demand side, economic growth which was mostly supported by private consumption in the beginning, then supported by export and investment. In the second quarter of the year 2000, the contribution of export, investment, and private consumption to the GDP was 5.67 percents, 4.05 percents, and 2.01 percents. Generally, economic condition from 1999 to 2003 experienced positive growth. It was shown in the macro condition such as stable foreign exchange rate, interest rate decrease, export increase, controllable inflation rate, decrease on budget deficit, and capital outflow decrease. On the other hand, in the micro condition also showed the economic recovery such as banking recovery, and the better intermediation

function of the bank to allocate credit especially to the middle micro business scales.

During the first semester of the 2003, in the middle of more optimistic global economic, the macroeconomic indicator of Indonesia showed better signal. Indonesia experienced balanced payment surplus that contributed by capital inflow. From the demand side, GDP in the second quarter of the year 2003, which was estimated reaching 3.56 percents year on year (yoy), reach a little higher than the previous quarter 3.43 (yoy). Those higher growth was caused by the increases of investment and private consumption. Investment in the second quarter of the year 2003 increased as a consequence of the decrease in the interest rate that encourage business sectors to invest their money than to save it.

Meanwhile, the economic activity based on sectors, during the first semester of the year 2003, was supported by positive growth that occurred in all sector that formed GDP. The greater contribution was from manufacture sector, trade sector and transportation sector.

Table 4.2

Gross Domestic Product by Sector at 1993 Constant Prices
(Billions of Rp)

Sectors	2000	2001	2002	2003
Agriculture, livestock, forestry, fishery	66,208.9	66,858.2	68,669.66	70,374.36
Mining and quarrying	38,896.4	38,894.8	40,404.83	40,590.79
Manufacturing industry	104,987	109,290	111,982.5	115,900.7
Electricity, gas, water supply	6,574.8	7,078.30	7,538.35	8,052.23
Construction	23,278.7	24,259.1	25,488.35	27,196.18
Trade, hotel, restaurant	63,498.3	66,888.1	68,333.28	70,891.34
Transportation and communication	29,072.1	31,207.1	33,855.05	37,475.50
Financial, ownership, business services	27,449.4	28,388.6	30,590.82	32,512.47
Services	38,051.6	38,826.9	40,080.08	41,459.91

Sources: *BPS*

4.2. Foreign Direct Investment

Contribution of foreign direct investment to the economic growth is still low. The investment activity in Indonesia still faces some problems. Based on the data of ADB (Asian Development Bank), foreign direct investment that entered Indonesia from 1999 to 2003 was not increase significantly. In 1999, foreign direct investment 10.9 billion US dollars, in 2002, 9.8 billion US dollars, and in 2003, 13.6 billion US dollars. Loosely words, the investment growth in Indonesia increase but not too significant. Percentage of investment growth in Indonesia from 2002 to 2003 increased but just a little. In 2002 the growth of investment was 0.2 percents, and in 2003 increased to 1.4 percents.

Table 4.3

FDI Cumulative Recognized in Indonesia from
The Most 10 Important of Origin Countries
1967-Februari 2000

Countries	No. Project	amount (billions US \$)	%
Japan	1,145	41.3	18.4
UK	353	34.2	15.2
Singapore	999	21.0	9.3
Hong Kong	396	19.2	8.5
Taiwan	780	16.9	7.5
USA	397	15.8	7.0
Dutch	255	11.8	5.3
South Korea	815	10.6	4.7
Australia	406	10.0	4.5
Germany	183	9.8	4.4
Others	2,124	109.6	15.2
Total	7,835	225.2	100

Source: Office of Minister of State for Investment and
State-Owned Enterprises

Quoted from: Faisal Basri, *Perekonomian Indonesia*, 2002, (page. 75)

Table 4.3 shows Indonesia's top investors on a cumulative basis from 1967 to February 2000. Hong Kong was in the fourth position after Japan, UK, and Singapore. It means that Japan is the most important country in Indonesia because its investment is in the first position.

In 2003, investment from Japan increased 143 percents. In 2002 Japan's investment in Indonesia is 510.5 million US dollars, and in 2003 increase to 1,140.3 million US dollars. According to Japan External Trade Organization (Jetro), this increase because of the investment increases in automotive industries. In 2003 there were few countries that increased their investment in Indonesia. Hong Kong's investment in Indonesia even decreased from 1,711.9 million US

dollars in 2002 to only 1327.7 in 2003. From this condition, it can be seen that foreign countries were not too interested to invest in Indonesia.

Table 4.4
Approved Foreign Investment Projects by Sector
(Millions US \$)

Sectors	2000	2001	2002	2003 Jan-Oct
Agriculture, hunting, forestry, fishery	536.2	392.0	458.9	100.8
Mining and quarrying	58.6	119.7	49.3	14.8
Manufacturing	10,760.1	5,148.3	3,252.6	5,555.1
Electricity, gas, water	1.2	37.3	90.2	362.9
Construction	194.9	47.6	282.1	495.0
Wholesale retail trade, hotels, restaurants	2,258.6	7,232.6	1,130.5	783.9
Transportation, storage, communication	1,163.4	376.4	3,713.3	1,988.4
Financing, insurance, real estate, business services	174.7	177.5	7.3	9.4
Community, social and personal services	928.2	1,524.5	804.9	187.8
Total	16,075.9	15,055.9	9,789.1	9,498.1

Source: BPS

4.3. Indonesia Investment Year 2003

Government had appointed that the year of 2003 as the investment year. The main purpose of the investment year 2003 is to make good image that Indonesia is the interesting destination country for investment. The good image of Indonesia as the interesting country to invest depend on how far government can create conducive situation for investment. Therefore, the conducive situation such as political stability, safety situation, and law enforcement are needed. The factors

that influence those conditions are interest rate level, services procedure, services system, interested fiscal incentives/facilities, and infrastructures. The conducive situation must be created by the government seriously if Indonesia wants to attract foreign investment because foreign investment is so important to cover resources gap in Indonesia. Hopefully, investment can be as the spur of economic growth, creates labor market, and increasing the ability to compete in international market.

The 1945 Constitution stated government should create welfare society, therefore, it becomes an obligation to encourage investment in order to create labor market to spur the economic growth. Likewise, to face globalization Indonesia has to be able to compete in domestic, regional, and global region. Bureaucratic procedure to get investment permits will cause the investors are not interested to invest their money to Indonesia. Therefore, the procedures need to be reformed to get investment permits. Thus, investor gets easiness and good services to get the investment permits. Besides that, the conducive political and law enforcement have to be created by the government.

4.4. Investment Barriers and Its Solutions

1. Indonesia still faces many problems in increasing investment. It is not only internal problem such as infrastructure, low productivity of labor, inefficiency of production, scarcity of skilled labor, uninteresting incentives and facilities, complicated bureaucracies to get investment permits, but also external problem such as competitor of neighbor countries such as Thailand, Malaysia, Vietnam that that have more

interesting things for investors than Indonesia. Therefore, it is an urge situation that has to be solved by government. Government has to reform all policy related to the investment such as administration procedures, investment protection, incentives facilities, taxation system, etc.

2. There are many complaints from investors that to get investment permits must face many institutions. It is the time for *Badan Koordinasi Penanaman Modal (BKPM)* to give “one stop service” to the investor to get investment permits from pre-investment, on-going investment, until post investment.
3. The authority between central and province government has to be manage as well. There must be strict differences between the authority of central and province government. In this case, the authority to give incentives and facilities is the authority of the central government.
4. The problem of infrastructure also makes investors get difficulties. The problem of telecommunication, transportation, and electricity causes high cost of production. Therefore, government should concern with the development on the infrastructure.

Table 4.5

Problems Faced by Japan Investing in Indonesia
1996-1997 (number of company, its part in %)

	1996	n = 200	1997	n = 204
1. Unexpected cost and Complex tax system	120	(60%)	1. Fluctuating exchange rate	170 (83.0)
2. Rising wages	91	(45%)	2. Unforeseen costs and complicated taxation system	76 (37.3)
3. Tariff duties and red tape	87	(43.5%)	3. Rising Funds	74 (36.3)
4. Competition with other companies	80	(40%)	4. Market condition	73 (35.8)
5. Labor problems	77	(38.5%)	5. Labor problems	69 (33.8%)

Sources: 1. JETRO: The Current State of Japanese Affiliate Manufacturers in Asia, 1996 Overseas Research Dept. Japan external trade organization, August 1997, Table 3, page 15.

2. JETRO: The Current State of Japanese Affiliate Manufacturers in Asia, 1996 Overseas Research Dept. Japan external trade organization, September 1998, Table 2, page 20.

Quoted from: Faisal Basri, *Perekonomian Indonesia*, 2002 (page. 336)

Table 4.5 shows that Japan actually face many problems in investing its capital in Indonesia. In 1996, from 200 companies there are 120 companies (60%) that faced problem in unexpected cost and complex tax system, 77 companies (38.5%) faced labor problems, 91 companies (45%) faced rising wages. Unexpected cost is money utilize to bribe government official. In 1997, the most important problem came from fluctuating exchange rate, it is because monetary

crisis. However, the problem in unexpected cost and complicated taxation system and labor still dominated in 1997.



CHAPTER V

RESEARCH METHOD

5.1. Gathering Data

This research used the secondary data, that is data collected by others and published in some form that is fairly readily accessible. (Sharp, Howard, 1996) The data taken from International Financial Statistics (IFS) published by International Monetary Fund (IMF), Annual Report of Bank Indonesia, Indonesian Financial Statistics published by Bank Indonesia, and *BPS*. The data of economic growth and FDI are taken from the period of 1974-2001.

5.2. Quantitative Method

Researcher use quantitative method in this research. Quantitative method is a survey design provides a quantitative or numeric description of some fraction of the population-the sample-through the data collection process of asking questions of people (Fowler, 1998). In quantitative research, the objective is to test a theory, rather than to develop it. The writer begins the study by advancing a theory, collecting data to test it, and reflecting on whether the theory was confirmed or disconfirmed by the results in the study. The theory becomes the framework for the entire study, an organizing model research question or hypotheses and for the data collection procedure. (Creswell, 1994)

5.3. Technique of Data Analysis

To analyze the causality relationship between FDI and economic growth are used Granger causality test. The model formulated as follows:

$$Y_t = \sum_{j=1}^m a_j Y_{t-j} + \sum_{j=1}^n b_j I_{t-j} + u_t \quad (5-1)$$

$$I_t = \sum_{j=1}^m c_j I_{t-j} + \sum_{j=1}^n d_j Y_{t-j} + v_t \quad (5-2)$$

Where:

- Y_t = economic growth
- Y_{t-j} = lag of economic growth
- I_t = foreign direct investment
- I_{t-j} = lag of foreign direct investment
- a,b,c,d = coefficient
- $u_t; v_t$ = disturbances term (assumed uncorrelated)

5.4. Final Prediction Error by Hsiao

Granger Causality test has weaknesses in deciding the lag length, because the way to decide the length of lag using arbitrary way. This test very sensitive to the lag length, if the lag length too short then the result will bias and give misleading result, and vice versa if lag length too long the result unbiased but inefficient. (Aliman, 1999)

Therefore, it should be find out the optimum lag length. Cheng Hsiao, is person who find the technique in deciding the optimum lag length. The model from Hsiao can be formulated as follows:

$$Y_t = \Psi_{11}(B) Y_t + \Psi_{12}(B) X_t + U_t \quad (5-3)$$

$$X_t = \Psi_{21}(B) X_t + \Psi_{22}(B) Y_t + V_t \quad (5-4)$$

Where $\Psi_{ij}(B) = \sum_{k=1}^{m_{ij}} \Psi_{ijk} B^k$

and B is a lag operator.

Based on the equation (5-3) and (5-4), then, it can be found that the optimum lag through Final Prediction Error (FPE) with steps as follows:

- 1) Do estimation using one dimension autoregressive process. Decide the optimum time-lag for Y, based on the equation (5-3), just take (B)Y_t as the independent variable. The optimum time-lag is calculated using criteria minimum FPE with doing trial and error calculation for the regression from time lag 1 until m, with the formula:

$$FPE(m,0) = \left(\frac{T+m+1}{T-m-1} \right) * \left(\frac{SSR}{T} \right) \quad (5-5)$$

Where:

m = time-lag for y, from 1 to m

T = the amount of observation/data

SSR = sum of squared residual

The same step can be done to find the optimum time-lag of X. Based on the first step, then can be find the optimum length of time-lag of Y and X. This called as the optimal time-lag of each variable.

- 2) Determine the optimal time-lag of Y based on the equation (5-3), include $(B)X_t$ as the independent variable (that determine the value of Y) with remain the optimum time-lag of Y as the optimum time-lag that has determined in the first step. The optimal time-lag in this step decided using criteria minimum FPE with the trial and error calculation as done in the first step, using the formula:

$$FPE(m,n) = \left(\frac{T+m+n+1}{T-m-n-1} \right) * \left(\frac{SSR}{T} \right) \quad (5-6)$$

Where:

n = time-lag for x, from 1 to n

- 3) Comparing $FPEy(m,0)$ with $FPEy(m,n)$, with the guidance as follows:
- a. If $FPEy(m,0) < FPEy(m,n)$, than the best model is the model without variable X as the independent variable of Y, that means X not causes Y.
 - b. If $FPEy(m,0) > FPEy(m,n)$, than X causes Y, and the best model to predict Y is the model with independent variable Y, with optimum time-lag as much as m, and independent variable X with optimum time-lag as much as n. It means X causes Y.
- 4) The same steps can be done to test whether Y causes X, based on the equation (5-4).

The computer software program-Eviews.03 was used in this research as a tool of simplifying the data regression and analysis.

CHAPTER VI

DATA ANALYSIS

The data will be analyzed are economic growth and foreign direct investment for the period of 1974-2001. Some the data of foreign direct investment (FDI) have negative sign. This is the result of the foreign direct investment comes to Indonesia deducted by the foreign direct investment goes to abroad. It means that when foreign direct investment has negative sign, the foreign direct investment go to abroad greater than the foreign direct investment come to Indonesia.

6.1. Research Findings

This chapter explains the result of regression and calculation done based on the technique of data analysis. The result of the FPE calculation in one dimension autoregressive process for FDI and economic growth can be seen in table 6.1 and 6.2.

Table 6.1

The Result of Calculating FPE for FDI
In One Dimension Autoregressive Process

Time Lag	SSR for FDI	FPE for FDI
1	44793935	1924480.17
2	19958775	924017.36
3	19305446	965272.30
4	19269628	1034850.39
5	18351731	435003.99*
6	16033782	1009534.42
7	13613395	927727.66
8	9296397	688611.00
9	6892143	556476.73
10	6499485	572917.57

Note: * Minimum FPE

Table 6.2

The Result of Calculating FPE for EG
In One Dimension Autoregressive Process

Time Lag	SSR for EG	FPE for EG
1	363.4134	15.61
2	357.4360	16.55
3	351.5805	17.58
4	330.6991	17.76
5	310.2789	7.35*
6	298.6481	18.80
7	293.2743	19.98
8	273.0000	20.22
9	269.1297	21.73
10	156.3700	13.78

Note: * Minimum FPE

Based on the first step, the regression of FDI and economic growth in one dimension autoregressive process and FPE calculation to find out the optimum time lag, are shown in the table 6.1 and 6.2. The optimum time-lag for FDI is 5 and the optimum time-lag for economic growth is also 5.

The next step is determining the optimum time-lag for FDI and economic growth with maintain the optimum time-lag on the first step based on the equation (5-3) and (5-4), then, calculating the optimum FPE based on the equation (5-7). The result of calculation in the second step can be seen in table 6.3 and 6.4.

Table 6.3
The Result of FPE for FDI in Second Step

Time Lag	SSR for FDI	FPE for FDI
1	62682257	3946660.63
2	41489426	2827427.55
3	30267851	2242063.04
4	30121451	2432028.27
5	29143290	2568927.04
6	24190985	2329502.26
7	21311269	2257415.90
8	20741771	2419873.28
9	19000812	2463068.23
10	14189032	2049526.84*

Note: * Minimum FPE

Table 6.4The Result of FPE for EG in Second Step

Time Lag	SSR for EG	FPE for EG
1	229.27	14.44
2	224.72	15.31
3	179.68	13.09
4	178.83	14.44
5	88.40	7.79
6	69.47	6.69
7	48.49	5.14
8	23.05	2.69
9	18.48	2.39
10	15.07	2.18*

Note: * Minimum FPE

Based on the result of the second step, it can be seen that the optimum time-lag for FDI is 10 and the optimum time-lag for EG is 10. The minimum value of FPE for FDI is 2049526.84 and the minimum value of FPE for EG is 2.18. Comparison of minimum FPE for FDI and EG between the first step and the second step can be seen in table 6.5. The result of calculation in the second step shows that there is unidirectional causality from FDI to EG. It means that FDI causes EG. This is because the result of FPE for EG in the second step is less than the result of FPE in the first step. The result of FPE for EG in the second step is 2.18, less than the result of FPE for EG in the first step 7.35. The result of FPE for FDI in the second step is greater than in the first step. It is 2049526.84, greater than the result in the first step 435003.99. Based on this result concluded that EG does not influence FDI. It means that EG does not cause FDI.

The result shows that there is unidirectional causality from FDI to EG. It means that only FDI causes EG, on the other hand, EG does not causes FDI. It doesn't fit with the hypothesis that tells there is bidirectional causality between FDI and economic growth. Why economic growth does not influence FDI? This is because in Indonesia so many problems such as political stability, law enforcement, high cost economy, unpredictable safety condition, and complicated bureaucratic make investor dislike to invest in Indonesia. Thus, even though the economic growth in Indonesia is high, it does not guarantee that investors will be interested to invest in Indonesia. Because of the problems above, there will be some risks when the investors invest their money here, so that they will not take a risk of getting loss.

Table 6.5

The Optimum Time Lag for Manipulated Variable and FPE for Controlled Variable

Model	Controlled Variable	Manipulated Variable	Optimum Lag for Manipulated Variable	FPE (1 st Step)	FPE (2 nd Step)	Note
1	FDI (-5)	EG	10	435003.99	2049526.84	Increase
2	EG (-5)	FDI	10	7.35	2.18	Decreases

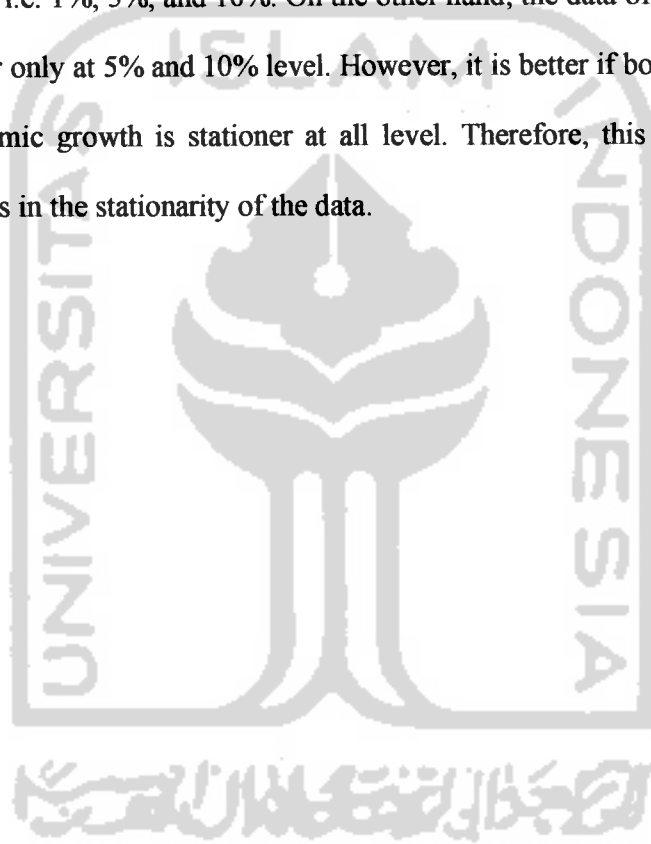
Note:

$$FPE_{FDI}(m, 0) = 435003.99 < FPE_{FDI}(m, n) = 2049526$$

$$FPE_{EG}(m, 0) = 7.35 > FPE_{EG}(m, n) = 2.18$$

6.2. Weaknesses of the Research

Requirement for the causality test is that the data must be stationer. If the data are not stationer, the researcher frequently will face spurious regression. Since the Dickey Fuller test is the best known and most popular tests for stationarity, writer apply this test to know whether the data are stationer or non-stationer. Based on the result of the Dickey Fuller test, the data of FDI is stationer at all level i.e. 1%, 5%, and 10%. On the other hand, the data of economic growth is stationer only at 5% and 10% level. However, it is better if both the data of FDI and economic growth is stationer at all level. Therefore, this research still has weaknesses in the stationarity of the data.



CHAPTER VII

CONCLUSION AND RECOMMENDATION

7.1. Conclusion

The result of the analysis shows that in Indonesia, the foreign direct investment give positive contribution to the economic growth. On the other hand, the economic growth does not influence the foreign direct investment. This does not fit with the hypothesis that between the foreign direct investment and the economic growth influence each other. This influenced by the condition and situation in Indonesia, not only the economic condition, but also the political condition that does not support the investment. So, when the economic growth in Indonesia is high, still the investors dislike to invests their money. However, the result shows that the foreign direct investment influences the economic growth. It means that the inflows of the foreign direct investment in Indonesia will support the economic growth.

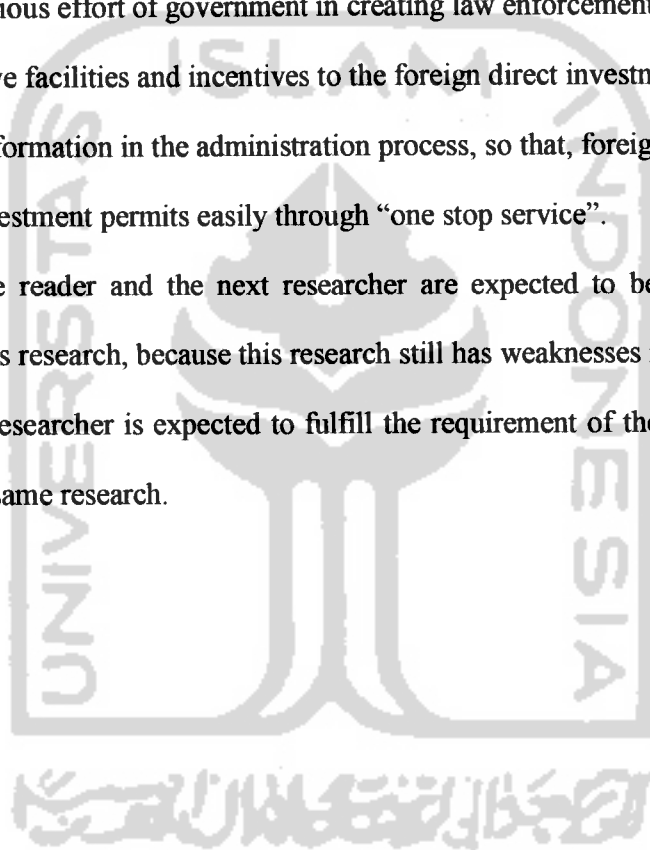
7.2. Recommendations

The existence of the foreign direct investment in Indonesia is needed, because it gives positive influence to the economic growth. However, the inflow of the foreign direct investment in Indonesia is still low. Since Indonesia is in the crisis, foreign investors are not interested to invest in Indonesia. Because there are so many problems in Indonesia, both politic and economic problems that makes foreign investor unwilling to invest here they more interested to invest in another

country such as China, Malaysia, and Thailand. To make the condition and situation better so that investors are interested to invest in Indonesia, the government needs to reform the foreign direct investment policy. Therefore, in order to attract the investment, government has to focus on the efforts to give a good condition and situation for foreign direct investment. Some steps might be done by the government as soon as possible, are:

1. Serious effort of government in creating law enforcement.
2. Give facilities and incentives to the foreign direct investment.
3. Reformation in the administration process, so that, foreign investor can get investment permits easily through “one stop service”.

The reader and the next researcher are expected to be more careful in reading this research, because this research still has weaknesses in the stationarity. The next researcher is expected to fulfill the requirement of the data stationer in doing the same research.



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obs	FDI	EG
1974	-49.00000	7.600000
1975	476.0000	5.000000
1976	344.0000	6.700000
1977	235.0000	7.000000
1978	279.0000	6.800000
1979	226.0000	4.900000
1980	183.0000	3.350000
1981	133.0000	3.620000
1982	225.0000	3.770000
1983	292.0000	4.000000
1984	222.0000	4.250000
1985	310.0000	4.350000
1986	258.0000	4.610000
1987	385.0000	4.840000
1988	576.0000	5.120000
1989	682.0000	5.500000
1990	1093.000	5.900000
1991	1482.000	6.340000
1992	1777.000	6.750000
1993	2004.000	7.250000
1994	2109.000	7.540000
1995	4346.000	8.220000
1996	6194.000	7.980000
1997	4677.000	4.910000
1998	-356.0000	-13.10000
1999	-2745.000	1.000000
2000	-4550.000	4.800000
2001	-3277.000	3.300000

One Dimension Autoregressive Process for FDI

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 10:13
 Sample(adjusted): 1975 2001
 Included observations: 27 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.450365	276.0137	-0.023370	0.9815
FDI(-1)	0.853237	0.128599	6.634876	0.0000
R-squared	0.637794	Mean dependent var		651.1111
Adjusted R-squared	0.623306	S.D. dependent var		2180.948
S.E. of regression	1338.565	Akaike info criterion		17.30777
Sum squared resid	44793935	Schwarz criterion		17.40376
Log likelihood	-231.6549	F-statistic		44.02158
Durbin-Watson stat	0.900829	Prob(F-statistic)		0.000001

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 10:13
 Sample(adjusted): 1976 2001
 Included observations: 26 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	359.7855	209.6011	1.716524	0.0995
FDI(-1)	1.428853	0.140021	10.20455	0.0000
FDI(-2)	-0.869627	0.163504	-5.318682	0.0000
R-squared	0.838571	Mean dependent var		657.8462
Adjusted R-squared	0.824534	S.D. dependent var		2223.853
S.E. of regression	931.5433	Akaike info criterion		16.61973
Sum squared resid	19958775	Schwarz criterion		16.76489
Log likelihood	-213.0565	F-statistic		59.73874
Durbin-Watson stat	1.855025	Prob(F-statistic)		0.000000

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 10:14
 Sample(adjusted): 1977 2001
 Included observations: 25 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	371.8919	244.1116	1.523450	0.1426
FDI(-1)	1.484781	0.216404	6.861163	0.0000
FDI(-2)	-0.976002	0.351253	-2.778630	0.0113
FDI(-3)	0.071120	0.251871	0.282365	0.7804
R-squared	0.843726	Mean dependent var		670.4000
Adjusted R-squared	0.821401	S.D. dependent var		2268.770
S.E. of regression	958.8050	Akaike info criterion		16.71490
Sum squared resid	19305446	Schwarz criterion		16.90992
Log likelihood	-204.9362	F-statistic		37.79304
Durbin-Watson stat	2.002834	Prob(F-statistic)		0.000000

Dependent Variable: FDI

Method: Least Squares

Date: 07/09/04 Time: 10:15

Sample(adjusted): 1978 2001

Included observations: 24 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	383.4710	289.4823	1.324679	0.2010
FDI(-1)	1.477437	0.231007	6.395639	0.0000
FDI(-2)	-0.959967	0.425078	-2.258332	0.0359
FDI(-3)	0.053372	0.434504	0.122834	0.9035
FDI(-4)	0.005226	0.266632	0.019598	0.9846
R-squared	0.843766	Mean dependent var	688.5417	
Adjusted R-squared	0.810875	S.D. dependent var	2315.714	
S.E. of regression	1007.070	Akaike info criterion	16.85053	
Sum squared resid	19269628	Schwarz criterion	17.09596	
Log likelihood	-197.2064	F-statistic	25.65309	
Durbin-Watson stat	1.992045	Prob(F-statistic)	0.000000	

Dependent Variable: FDI

Method: Least Squares

Date: 07/09/04 Time: 10:16

Sample(adjusted): 1979 2001

Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	412.7314	312.7516	1.319678	0.2044
FDI(-1)	1.398803	0.253215	5.524177	0.0000
FDI(-2)	-0.577769	0.612334	-0.943552	0.3586
FDI(-3)	-0.709317	0.961526	-0.737700	0.4708
FDI(-4)	1.127177	1.274991	0.884067	0.3890
FDI(-5)	-0.809133	0.889126	-0.910032	0.3755
R-squared	0.850997	Mean dependent var	706.3478	
Adjusted R-squared	0.807172	S.D. dependent var	2366.078	
S.E. of regression	1038.996	Akaike info criterion	16.94936	
Sum squared resid	18351731	Schwarz criterion	17.24557	
Log likelihood	-188.9176	F-statistic	19.41827	
Durbin-Watson stat	1.853663	Prob(F-statistic)	0.000002	

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 10:16
 Sample(adjusted): 1980 2001
 Included observations: 22 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	398.7600	334.5221	1.192029	0.2518
FDI(-1)	1.588352	0.320298	4.958980	0.0002
FDI(-2)	-1.043137	0.828224	-1.259486	0.2271
FDI(-3)	-0.512526	1.128502	-0.454165	0.6562
FDI(-4)	1.394488	1.404643	0.992770	0.3366
FDI(-5)	-2.190055	1.297592	-1.687783	0.1121
FDI(-6)	1.634617	1.365467	1.197112	0.2498
R-squared	0.869561	Mean dependent var	728.1818	
Adjusted R-squared	0.817386	S.D. dependent var	2419.385	
S.E. of regression	1033.885	Akaike info criterion	16.97341	
Sum squared resid	16033782	Schwarz criterion	17.32056	
Log likelihood	-179.7075	F-statistic	16.66609	
Durbin-Watson stat	1.739922	Prob(F-statistic)	0.000007	

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 10:16
 Sample(adjusted): 1981 2001
 Included observations: 21 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	579.8182	423.7097	1.368433	0.1944
FDI(-1)	1.472886	0.390104	3.775621	0.0023
FDI(-2)	-0.747457	0.987513	-0.756909	0.4626
FDI(-3)	-0.541138	1.165178	-0.464425	0.6500
FDI(-4)	1.886259	1.438049	1.311679	0.2123
FDI(-5)	-2.016321	1.539545	-1.309686	0.2130
FDI(-6)	2.254570	1.715162	1.314494	0.2114
FDI(-7)	-2.794454	2.012091	-1.388830	0.1882
R-squared	0.888970	Mean dependent var	754.1429	
Adjusted R-squared	0.829185	S.D. dependent var	2475.990	
S.E. of regression	1023.320	Akaike info criterion	16.98182	
Sum squared resid	13613395	Schwarz criterion	17.37974	
Log likelihood	-170.3092	F-statistic	14.86942	
Durbin-Watson stat	1.894901	Prob(F-statistic)	0.000028	

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 10:17
 Sample(adjusted): 1982 2001
 Included observations: 20 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1180.272	476.6276	2.476298	0.0308
FDI(-1)	1.348942	0.360454	3.742344	0.0033
FDI(-2)	-0.865878	0.888692	-0.974328	0.3508
FDI(-3)	0.245199	1.111165	0.220668	0.8294
FDI(-4)	1.523198	1.309470	1.163217	0.2694
FDI(-5)	-1.379851	1.460366	-0.944867	0.3650
FDI(-6)	3.606089	1.653887	2.180372	0.0518
FDI(-7)	-5.236122	2.252536	-2.324546	0.0403
FDI(-8)	-1.973202	1.937873	-1.018231	0.3304
R-squared	0.923928	Mean dependent var	785.2000	
Adjusted R-squared	0.868603	S.D. dependent var	2536.112	
S.E. of regression	919.3079	Akaike info criterion	16.78728	
Sum squared resid	9296397.	Schwarz criterion	17.23536	
Log likelihood	-158.8728	F-statistic	16.70001	
Durbin-Watson stat	2.284416	Prob(F-statistic)	0.000040	

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 10:17
 Sample(adjusted): 1983 2001
 Included observations: 19 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1694.074	566.5025	2.990408	0.0152
FDI(-1)	1.182628	0.368510	3.209218	0.0107
FDI(-2)	-0.712984	1.051044	-0.678358	0.5146
FDI(-3)	0.008427	1.198397	0.007032	0.9945
FDI(-4)	2.092600	1.434548	1.458717	0.1786
FDI(-5)	-1.424666	1.430683	-0.995794	0.3454
FDI(-6)	4.057484	1.723275	2.354519	0.0430
FDI(-7)	-4.754996	4.118664	-1.154500	0.2780
FDI(-8)	-2.059004	3.642069	-0.565339	0.5857
FDI(-9)	-3.417642	1.930273	-1.770549	0.1104
R-squared	0.943449	Mean dependent var	814.6842	
Adjusted R-squared	0.886898	S.D. dependent var	2602.084	
S.E. of regression	875.0964	Akaike info criterion	16.69196	
Sum squared resid	6892143.	Schwarz criterion	17.18904	
Log likelihood	-148.5736	F-statistic	16.68320	
Durbin-Watson stat	2.172812	Prob(F-statistic)	0.000137	

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 10:17
 Sample(adjusted): 1984 2001
 Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2065.269	885.1305	2.333293	0.0524
FDI(-1)	1.106243	0.428506	2.581629	0.0364
FDI(-2)	-0.660558	1.180519	-0.559549	0.5932
FDI(-3)	-0.260665	1.541367	-0.169113	0.8705
FDI(-4)	2.232225	1.776626	1.256440	0.2493
FDI(-5)	-1.423224	1.800064	-0.790652	0.4551
FDI(-6)	3.814187	1.959353	1.946657	0.0926
FDI(-7)	-3.724502	4.923632	-0.756454	0.4741
FDI(-8)	-0.849691	5.949806	-0.142810	0.8905
FDI(-9)	-5.125685	4.095216	-1.251628	0.2509
FDI(-10)	-1.238172	2.524654	-0.490432	0.6388
R-squared	0.946544	Mean dependent var	843.7222	
Adjusted R-squared	0.870179	S.D. dependent var	2674.352	
S.E. of regression	963.5859	Akaike info criterion	16.85696	
Sum squared resid	6499485.	Schwarz criterion	17.40108	
Log likelihood	-140.7126	F-statistic	12.39499	
Durbin-Watson stat	1.996645	Prob(F-statistic)	0.001499	



One Dimension Autoregressive Process for EG

Dependent Variable: EG

Method: Least Squares

Date: 07/09/04 Time: 09:40

Sample(adjusted): 1975 2001

Included observations: 27 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.225885	1.165888	2.766892	0.0105
EG(-1)	0.291481	0.189636	1.537060	0.1368
R-squared	0.086343	Mean dependent var		4.618519
Adjusted R-squared	0.049796	S.D. dependent var		3.911309
S.E. of regression	3.812681	Akaike info criterion		5.585729
Sum squared resid	363.4134	Schwarz criterion		5.681717
Log likelihood	-73.40735	F-statistic		2.362553
Durbin-Watson stat	1.913972	Prob(F-statistic)		0.136840

Dependent Variable: EG

Method: Least Squares

Date: 07/09/04 Time: 09:42

Sample(adjusted): 1976 2001

Included observations: 26 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.651115	1.391549	2.623777	0.0152
EG(-1)	0.331963	0.207313	1.601263	0.1230
EG(-2)	-0.125034	0.205181	-0.609385	0.5482
R-squared	0.101029	Mean dependent var		4.603846
Adjusted R-squared	0.022857	S.D. dependent var		3.988010
S.E. of regression	3.942169	Akaike info criterion		5.689506
Sum squared resid	357.4360	Schwarz criterion		5.834671
Log likelihood	-70.96358	F-statistic		1.292399
Durbin-Watson stat	1.967052	Prob(F-statistic)		0.293817

Dependent Variable: EG

Method: Least Squares

Date: 07/09/04 Time: 09:43

Sample(adjusted): 1977 2001

Included observations: 25 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.583926	1.691378	2.118938	0.0462
EG(-1)	0.336894	0.217518	1.548805	0.1364
EG(-2)	-0.147082	0.227901	-0.645376	0.5257
EG(-3)	0.010854	0.219760	0.049389	0.9611
R-squared	0.105475	Mean dependent var		4.520000
Adjusted R-squared	-0.022314	S.D. dependent var		4.046789
S.E. of regression	4.091690	Akaike info criterion		5.801440
Sum squared resid	351.5805	Schwarz criterion		5.996460
Log likelihood	-68.51800	F-statistic		0.825382
Durbin-Watson stat	2.007274	Prob(F-statistic)		0.494595

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 09:44
 Sample(adjusted): 1978 2001
 Included observations: 24 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.329234	4.104774	1.785539	0.0901
EG(-1)	0.269302	0.230234	1.169692	0.2566
EG(-2)	-0.174855	0.235461	-0.742607	0.4668
EG(-3)	0.088038	0.245378	0.358785	0.7237
EG(-4)	-0.661097	0.662418	-0.998004	0.3308
R-squared	0.144661	Mean dependent var		4.416667
Adjusted R-squared	-0.035410	S.D. dependent var		4.099996
S.E. of regression	4.171956	Akaike info criterion		5.877699
Sum squared resid	330.6991	Schwarz criterion		6.123127
Log likelihood	-65.53239	F-statistic		0.803354
Durbin-Watson stat	2.065711	Prob(F-statistic)		0.538078

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 09:44
 Sample(adjusted): 1979 2001
 Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.560278	4.725041	2.023322	0.0591
EG(-1)	0.233219	0.240213	0.970886	0.3452
EG(-2)	-0.215521	0.244165	-0.882686	0.3897
EG(-3)	0.018405	0.305953	0.060157	0.9527
EG(-4)	-0.281291	1.236382	-0.227512	0.8227
EG(-5)	-0.668721	1.100749	-0.607514	0.5515
R-squared	0.184982	Mean dependent var		4.313043
Adjusted R-squared	-0.054729	S.D. dependent var		4.159885
S.E. of regression	4.272201	Akaike info criterion		5.961593
Sum squared resid	310.2789	Schwarz criterion		6.257809
Log likelihood	-62.55832	F-statistic		0.771689
Durbin-Watson stat	2.068975	Prob(F-statistic)		0.583104

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 09:45
 Sample(adjusted): 1980 2001

Included observations: 22 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.36543	5.498307	2.067079	0.0564
EG(-1)	0.203382	0.254189	0.800119	0.4361
EG(-2)	-0.233225	0.258869	-0.900939	0.3819
EG(-3)	-0.144593	0.402583	-0.359163	0.7245
EG(-4)	0.406852	1.796360	0.226487	0.8239
EG(-5)	-0.918800	1.934662	-0.474915	0.6417
EG(-6)	-0.599443	1.165744	-0.514214	0.6146
R-squared	0.214790	Mean dependent var		4.286364
Adjusted R-squared	-0.099293	S.D. dependent var		4.255763
S.E. of regression	4.462048	Akaike info criterion		6.082464
Sum squared resid	298.6481	Schwarz criterion		6.429614
Log likelihood	-59.90711	F-statistic		0.683864
Durbin-Watson stat	2.034782	Prob(F-statistic)		0.665594

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 09:45
 Sample(adjusted): 1981 2001

Included observations: 21 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.66322	6.833689	1.853058	0.0867
EG(-1)	0.182888	0.282651	0.647045	0.5289
EG(-2)	-0.246878	0.277012	-0.891217	0.3890
EG(-3)	-0.126257	0.477403	-0.264465	0.7956
EG(-4)	0.261568	2.740986	0.095428	0.9254
EG(-5)	-0.791929	3.695099	-0.214319	0.8336
EG(-6)	-0.197084	2.296444	-0.085822	0.9329
EG(-7)	-0.612913	1.255864	-0.488041	0.6336
R-squared	0.227053	Mean dependent var		4.330952
Adjusted R-squared	-0.189150	S.D. dependent var		4.355591
S.E. of regression	4.749691	Akaike info criterion		6.236368
Sum squared resid	293.2743	Schwarz criterion		6.634281
Log likelihood	-57.48186	F-statistic		0.545534
Durbin-Watson stat	2.034587	Prob(F-statistic)		0.785894

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 09:45
 Sample(adjusted): 1982 2001
 Included observations: 20 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.91080	8.061917	1.973575	0.0741
EG(-1)	0.183438	0.297905	0.615762	0.5506
EG(-2)	-0.332220	0.306233	-1.084861	0.3012
EG(-3)	-0.297589	0.536403	-0.554786	0.5901
EG(-4)	1.498468	3.186120	0.470311	0.6473
EG(-5)	-3.711688	5.167449	-0.718282	0.4876
EG(-6)	2.694946	4.448073	0.605868	0.5569
EG(-7)	-1.371331	2.419348	-0.566818	0.5822
EG(-8)	-0.848936	1.376597	-0.616692	0.5500
R-squared	0.279479	Mean dependent var	4.366500	
Adjusted R-squared	-0.244536	S.D. dependent var	4.465615	
S.E. of regression	4.981785	Akaike info criterion	6.351617	
Sum squared resid	273.0000	Schwarz criterion	6.799696	
Log likelihood	-54.51617	F-statistic	0.533342	
Durbin-Watson stat	2.055597	Prob(F-statistic)	0.809161	

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 09:46
 Sample(adjusted): 1983 2001
 Included observations: 19 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.64030	10.54851	1.672303	0.1288
EG(-1)	0.149982	0.348003	0.430978	0.6766
EG(-2)	-0.320579	0.337763	-0.949124	0.3673
EG(-3)	-0.323280	0.647775	-0.499062	0.6297
EG(-4)	1.270631	4.147044	0.306394	0.7663
EG(-5)	-2.940386	6.861066	-0.428561	0.6783
EG(-6)	1.163103	6.645783	0.175014	0.8649
EG(-7)	0.112626	4.969406	0.022664	0.9824
EG(-8)	-1.383368	2.953753	-0.468343	0.6507
EG(-9)	-0.263626	1.773789	-0.148623	0.8851
R-squared	0.288991	Mean dependent var	4.397895	
Adjusted R-squared	-0.422018	S.D. dependent var	4.585715	
S.E. of regression	5.468391	Akaike info criterion	6.541263	
Sum squared resid	269.1297	Schwarz criterion	7.038336	
Log likelihood	-52.14200	F-statistic	0.406452	
Durbin-Watson stat	2.056124	Prob(F-statistic)	0.901978	

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 09:46
 Sample(adjusted): 1984 2001
 Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.20569	11.68972	1.044139	0.3311
EG(-1)	0.712099	0.414235	1.719070	0.1293
EG(-2)	-0.774800	0.355712	-2.178165	0.0658
EG(-3)	-4.104935	1.919889	-2.138110	0.0698
EG(-4)	28.52344	13.62882	2.092877	0.0747
EG(-5)	-36.08451	16.55937	-2.179100	0.0657
EG(-6)	17.05496	9.117515	1.870571	0.1036
EG(-7)	-14.74384	7.969002	-1.850149	0.1067
EG(-8)	14.91535	7.705225	1.935744	0.0941
EG(-9)	-12.69787	6.217925	-2.042139	0.0805
EG(-10)	4.924837	3.253201	1.513843	0.1738
R-squared	0.586706	Mean dependent var	4.420000	
Adjusted R-squared	-0.003713	S.D. dependent var	4.717620	
S.E. of regression	4.726370	Akaike info criterion	6.221953	
Sum squared resid	156.3700	Schwarz criterion	6.766069	
Log likelihood	-44.99757	F-statistic	0.993711	
Durbin-Watson stat	2.093458	Prob(F-statistic)	0.520100	



Second Step Regression for FDI

Dependent Variable: FDI

Method: Least Squares

Date: 07/09/04 Time: 11:06

Sample(adjusted): 1979 2001

Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-80.31929	651.8336	-0.123221	0.9032
FDI(-5)	-0.550051	0.257598	-2.135308	0.0453
EG(-1)	303.5506	92.37469	3.286080	0.0037
R-squared	0.491063	Mean dependent var	706.3478	
Adjusted R-squared	0.440170	S.D. dependent var	2366.078	
S.E. of regression	1770.343	Akaike info criterion	17.91684	
Sum squared resid	62682257	Schwarz criterion	18.06495	
Log likelihood	-203.0437	F-statistic	9.648807	
Durbin-Watson stat	0.995146	Prob(F-statistic)	0.001166	

Dependent Variable: FDI

Method: Least Squares

Date: 07/09/04 Time: 11:09

Sample(adjusted): 1979 2001

Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1531.351	716.2257	-2.138084	0.0457
FDI(-5)	-0.163835	0.248199	-0.660095	0.5171
EG(-1)	252.7999	78.80803	3.207793	0.0046
EG(-2)	280.2749	89.96668	3.115319	0.0057
R-squared	0.663134	Mean dependent var	706.3478	
Adjusted R-squared	0.609945	S.D. dependent var	2366.078	
S.E. of regression	1477.719	Akaike info criterion	17.59116	
Sum squared resid	41489426	Schwarz criterion	17.78864	
Log likelihood	-198.2983	F-statistic	12.46744	
Durbin-Watson stat	1.175001	Prob(F-statistic)	0.000098	

Dependent Variable: FDI
 Method: Least Squares
 Date: 08/02/04 Time: 21:31
 Sample(adjusted): 1979 2001
 Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3200.508	901.3982	-3.550604	0.0023
FDI(-5)	0.235349	0.267050	0.881290	0.3898
EG(-1)	298.2282	71.35736	4.179361	0.0006
EG(-2)	275.7589	78.96793	3.492037	0.0026
EG(-3)	223.3767	86.47003	2.583285	0.0187
R-squared	0.754246	Mean dependent var		706.3478
Adjusted R-squared	0.699634	S.D. dependent var		2366.078
S.E. of regression	1296.745	Akaike info criterion		17.36276
Sum squared resid	30267851	Schwarz criterion		17.60961
Log likelihood	-194.6718	F-statistic		13.81099
Durbin-Watson stat	1.466981	Prob(F-statistic)		0.000025

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 11:11
 Sample(adjusted): 1979 2001
 Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2855.524	1515.436	-1.884292	0.0767
FDI(-5)	0.358644	0.509045	0.704542	0.4906
EG(-1)	293.5553	75.03063	3.912472	0.0011
EG(-2)	282.7052	84.58598	3.342223	0.0039
EG(-3)	263.6590	165.8831	1.589426	0.1304
EG(-4)	-120.9852	420.8953	-0.287447	0.7772
R-squared	0.755435	Mean dependent var		706.3478
Adjusted R-squared	0.683504	S.D. dependent var		2366.078
S.E. of regression	1331.109	Akaike info criterion		17.44487
Sum squared resid	30121451	Schwarz criterion		17.74109
Log likelihood	-194.6160	F-statistic		10.50221
Durbin-Watson stat	1.496827	Prob(F-statistic)		0.000100

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 11:12
 Sample(adjusted): 1979 2001
 Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2500.220	1611.185	-1.551789	0.1403
FDI(-5)	0.348813	0.516296	0.675607	0.5089
EG(-1)	294.9778	76.09844	3.876266	0.0013
EG(-2)	276.9875	86.11604	3.216445	0.0054
EG(-3)	221.4415	177.7821	1.245578	0.2309
EG(-4)	117.3789	536.5758	0.218755	0.8296
EG(-5)	-254.9107	347.8503	-0.732817	0.4743
R-squared	0.763377	Mean dependent var		706.3478
Adjusted R-squared	0.674643	S.D. dependent var		2366.078
S.E. of regression	1349.613	Akaike info criterion		17.49881
Sum squared resid	29143290	Schwarz criterion		17.84440
Log likelihood	-194.2364	F-statistic		8.602997
Durbin-Watson stat	1.552419	Prob(F-statistic)		0.000276

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 11:12
 Sample(adjusted): 1980 2001
 Included observations: 22 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2724.347	1724.033	-1.580217	0.1364
FDI(-5)	0.393808	0.503597	0.781990	0.4472
EG(-1)	297.7347	75.09157	3.964955	0.0014
EG(-2)	302.4604	85.21827	3.549244	0.0032
EG(-3)	335.4658	189.8585	1.766925	0.0990
EG(-4)	-501.1902	649.0671	-0.772170	0.4529
EG(-5)	499.5228	570.9303	0.874928	0.3964
EG(-6)	-213.0006	343.5724	-0.619958	0.5452
R-squared	0.803200	Mean dependent var		728.1818
Adjusted R-squared	0.704801	S.D. dependent var		2419.385
S.E. of regression	1314.507	Akaike info criterion		17.47560
Sum squared resid	24190985	Schwarz criterion		17.87234
Log likelihood	-184.2316	F-statistic		8.162623
Durbin-Watson stat	1.996046	Prob(F-statistic)		0.000483

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 11:12
 Sample(adjusted): 1981 2001
 Included observations: 21 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3737.484	2214.769	-1.687528	0.1173
FDI(-5)	0.034205	0.595125	0.057475	0.9551
EG(-1)	324.1624	81.48311	3.978278	0.0018
EG(-2)	270.1824	90.05757	3.000107	0.0111
EG(-3)	153.1363	249.3028	0.614258	0.5505
EG(-4)	490.5649	1089.963	0.450075	0.6607
EG(-5)	-688.3379	1175.898	-0.585372	0.5691
EG(-6)	574.6341	710.1178	0.809210	0.4341
EG(-7)	-152.8155	352.4637	-0.433564	0.6723
R-squared	0.826187	Mean dependent var	754.1429	
Adjusted R-squared	0.710312	S.D. dependent var	2475.990	
S.E. of regression	1332.644	Akaike info criterion	17.52524	
Sum squared resid	21311269	Schwarz criterion	17.97290	
Log likelihood	-175.0151	F-statistic	7.129981	
Durbin-Watson stat	2.032631	Prob(F-statistic)	0.001430	

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 11:13
 Sample(adjusted): 1982 2001
 Included observations: 20 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4105.371	2827.930	-1.451723	0.1772
FDI(-5)	-0.279402	0.897975	-0.311147	0.7621
EG(-1)	327.9850	88.43089	3.708942	0.0040
EG(-2)	249.4545	106.1096	2.350914	0.0406
EG(-3)	33.37215	353.5415	0.094394	0.9267
EG(-4)	889.8133	1412.752	0.629844	0.5429
EG(-5)	-788.1466	1541.520	-0.511279	0.6203
EG(-6)	369.8030	1306.810	0.282981	0.7830
EG(-7)	223.4472	898.7494	0.248620	0.8087
EG(-8)	-218.9652	463.2652	-0.472656	0.6466
R-squared	0.830271	Mean dependent var	785.2000	
Adjusted R-squared	0.677515	S.D. dependent var	2536.112	
S.E. of regression	1440.200	Akaike info criterion	17.68980	
Sum squared resid	20741771	Schwarz criterion	18.18767	
Log likelihood	-166.8980	F-statistic	5.435284	
Durbin-Watson stat	1.978857	Prob(F-statistic)	0.007084	

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 11:14
 Sample(adjusted): 1983 2001
 Included observations: 19 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8964.741	6436.663	-1.392762	0.2012
FDI(-5)	-2.048844	2.370846	-0.864183	0.4126
EG(-1)	397.1161	124.6456	3.185963	0.0129
EG(-2)	119.1331	194.3288	0.613049	0.5569
EG(-3)	-491.3472	733.8088	-0.669585	0.5220
EG(-4)	2798.259	2694.343	1.038568	0.3294
EG(-5)	-1848.856	2194.895	-0.842344	0.4241
EG(-6)	1741.024	2195.148	0.793123	0.4506
EG(-7)	-988.9302	1711.885	-0.577685	0.5794
EG(-8)	589.7798	1209.607	0.487580	0.6389
EG(-9)	-21.89932	527.1470	-0.041543	0.9679
R-squared	0.844096	Mean dependent var	814.6842	
Adjusted R-squared	0.649216	S.D. dependent var	2602.084	
S.E. of regression	1541.136	Akaike info criterion	17.81133	
Sum squared resid	19000812	Schwarz criterion	18.35811	
Log likelihood	-158.2076	F-statistic	4.331364	
Durbin-Watson stat	1.928862	Prob(F-statistic)	0.024398	

Dependent Variable: FDI
 Method: Least Squares
 Date: 07/09/04 Time: 11:14
 Sample(adjusted): 1984 2001
 Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-11254.29	12188.53	-0.923351	0.3914
FDI(-5)	-1.818644	4.132076	-0.440128	0.6753
EG(-1)	520.5735	169.5666	3.070024	0.0219
EG(-2)	66.72445	252.9141	0.263823	0.8007
EG(-3)	-1251.988	1150.699	-1.088023	0.3183
EG(-4)	8480.116	4947.159	1.714138	0.1373
EG(-5)	-8508.711	5520.278	-1.541356	0.1742
EG(-6)	4154.198	2984.458	1.391944	0.2133
EG(-7)	-3012.153	2699.117	-1.115977	0.3071
EG(-8)	3320.780	2571.835	1.291210	0.2441
EG(-9)	-2724.828	2114.406	-1.288697	0.2450
EG(-10)	1489.126	1068.433	1.393748	0.2128
R-squared	0.883301	Mean dependent var	843.7222	
Adjusted R-squared	0.669353	S.D. dependent var	2674.352	
S.E. of regression	1537.803	Akaike info criterion	17.74882	
Sum squared resid	14189032	Schwarz criterion	18.34240	
Log likelihood	-147.7394	F-statistic	4.128581	
Durbin-Watson stat	2.066579	Prob(F-statistic)	0.047262	

Second Step Regression for EG

Dependent Variable: EG

Method: Least Squares

Date: 07/09/04 Time: 11:15

Sample(adjusted): 1979 2001

Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.950690	3.454561	2.880450	0.0092
EG(-5)	-0.933964	0.576438	-1.620235	0.1208
FDI(-1)	-0.000351	0.000395	-0.888761	0.3847
R-squared	0.135094	Mean dependent var	4.313043	
Adjusted R-squared	0.048603	S.D. dependent var	4.159885	
S.E. of regression	4.057534	Akaike info criterion	5.760135	
Sum squared resid	329.2716	Schwarz criterion	5.908243	
Log likelihood	-63.24156	F-statistic	1.561947	
Durbin-Watson stat	1.633939	Prob(F-statistic)	0.234256	

Dependent Variable: EG

Method: Least Squares

Date: 07/09/04 Time: 11:16

Sample(adjusted): 1979 2001

Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.024376	3.089063	2.273950	0.0348
EG(-5)	-0.251254	0.539856	-0.465410	0.6469
FDI(-1)	0.001012	0.000568	1.782884	0.0906
FDI(-2)	-0.002009	0.000676	-2.973078	0.0078
R-squared	0.409709	Mean dependent var	4.313043	
Adjusted R-squared	0.316506	S.D. dependent var	4.159885	
S.E. of regression	3.439132	Akaike info criterion	5.465086	
Sum squared resid	224.7249	Schwarz criterion	5.662563	
Log likelihood	-58.84849	F-statistic	4.395844	
Durbin-Watson stat	2.098652	Prob(F-statistic)	0.016465	

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 11:17
 Sample(adjusted): 1979 2001
 Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.676613	2.942500	2.948721	0.0086
EG(-5)	-0.715437	0.541955	-1.320105	0.2033
FDI(-1)	0.002078	0.000724	2.871286	0.0102
FDI(-2)	-0.004159	0.001187	-3.502803	0.0025
FDI(-3)	0.001979	0.000931	2.124326	0.0478
R-squared	0.528035	Mean dependent var		4.313043
Adjusted R-squared	0.423154	S.D. dependent var		4.159885
S.E. of regression	3.159448	Akaike info criterion		5.328332
Sum squared resid	179.6780	Schwarz criterion		5.575178
Log likelihood	-56.27582	F-statistic		5.034608
Durbin-Watson stat	2.615124	Prob(F-statistic)		0.006684

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 11:17
 Sample(adjusted): 1979 2001
 Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.330762	3.256651	2.558076	0.0204
EG(-5)	-0.622373	0.645596	-0.964028	0.3485
FDI(-1)	0.002092	0.000745	2.809933	0.0121
FDI(-2)	-0.004347	0.001386	-3.135565	0.0060
FDI(-3)	0.002280	0.001428	1.596868	0.1287
FDI(-4)	-0.000291	0.001023	-0.284145	0.7797
R-squared	0.530266	Mean dependent var		4.313043
Adjusted R-squared	0.392109	S.D. dependent var		4.159885
S.E. of regression	3.243352	Akaike info criterion		5.410550
Sum squared resid	178.8287	Schwarz criterion		5.706766
Log likelihood	-56.22133	F-statistic		3.838140
Durbin-Watson stat	2.663689	Prob(F-statistic)		0.016444

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 11:18
 Sample(adjusted): 1979 2001
 Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.122756	2.368308	3.852013	0.0014
EG(-5)	-0.754053	0.469016	-1.607735	0.1274
FDI(-1)	0.001306	0.000573	2.277995	0.0368
FDI(-2)	-0.000402	0.001400	-0.286947	0.7778
FDI(-3)	-0.005545	0.002194	-2.527709	0.0224
FDI(-4)	0.011222	0.002941	3.815998	0.0015
FDI(-5)	-0.008157	0.002016	-4.045525	0.0009
R-squared	0.767791	Mean dependent var		4.313043
Adjusted R-squared	0.680712	S.D. dependent var		4.159885
S.E. of regression	2.350565	Akaike info criterion		4.792979
Sum squared resid	88.40250	Schwarz criterion		5.138564
Log likelihood	-48.11925	F-statistic		8.817235
Durbin-Watson stat	1.628328	Prob(F-statistic)		0.000240

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 11:19
 Sample(adjusted): 1980 2001
 Included observations: 22 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.795651	2.518860	3.094913	0.0079
EG(-5)	-0.449159	0.535049	-0.839472	0.4153
FDI(-1)	0.001642	0.000701	2.342074	0.0345
FDI(-2)	-0.001173	0.001805	-0.649641	0.5264
FDI(-3)	-0.005667	0.002469	-2.295749	0.0377
FDI(-4)	0.012468	0.003034	4.109174	0.0011
FDI(-5)	-0.011790	0.002796	-4.216764	0.0009
FDI(-6)	0.003484	0.003008	1.157948	0.2663
R-squared	0.817336	Mean dependent var		4.286364
Adjusted R-squared	0.726004	S.D. dependent var		4.255763
S.E. of regression	2.227663	Akaike info criterion		4.715070
Sum squared resid	69.47473	Schwarz criterion		5.111813
Log likelihood	-43.86577	F-statistic		8.949072
Durbin-Watson stat	1.467399	Prob(F-statistic)		0.000297

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 11:19
 Sample(adjusted): 1981 2001
 Included observations: 21 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.019780	2.275656	3.524162	0.0042
EG(-5)	-0.320819	0.495919	-0.646917	0.5299
FDI(-1)	0.001023	0.000797	1.283831	0.2234
FDI(-2)	0.000361	0.002005	0.180287	0.8599
FDI(-3)	-0.006252	0.002353	-2.657447	0.0209
FDI(-4)	0.014136	0.002843	4.972475	0.0003
FDI(-5)	-0.010283	0.003045	-3.376570	0.0055
FDI(-6)	0.003922	0.003505	1.118702	0.2852
FDI(-7)	-0.008970	0.003995	-2.244962	0.0444
R-squared	0.872181	Mean dependent var	4.330952	
Adjusted R-squared	0.786968	S.D. dependent var	4.355591	
S.E. of regression	2.010338	Akaike info criterion	4.532010	
Sum squared resid	48.49750	Schwarz criterion	4.979662	
Log likelihood	-38.58610	F-statistic	10.23535	
Durbin-Watson stat	1.797940	Prob(F-statistic)	0.000259	

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 11:20
 Sample(adjusted): 1982 2001
 Included observations: 20 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.797378	2.028972	2.857298	0.0170
EG(-5)	0.549544	0.479216	1.146757	0.2782
FDI(-1)	0.000413	0.000632	0.653561	0.5281
FDI(-2)	0.000907	0.001530	0.592908	0.5664
FDI(-3)	-0.005235	0.001858	-2.818252	0.0182
FDI(-4)	0.013935	0.002179	6.396009	0.0001
FDI(-5)	-0.008576	0.002432	-3.526849	0.0055
FDI(-6)	0.006175	0.002746	2.248922	0.0483
FDI(-7)	-0.018461	0.004390	-4.205307	0.0018
FDI(-8)	-0.002259	0.003253	-0.694295	0.5033
R-squared	0.939162	Mean dependent var	4.366500	
Adjusted R-squared	0.884408	S.D. dependent var	4.465615	
S.E. of regression	1.518257	Akaike info criterion	3.979856	
Sum squared resid	23.05105	Schwarz criterion	4.477722	
Log likelihood	-29.79856	F-statistic	17.15234	
Durbin-Watson stat	2.716286	Prob(F-statistic)	0.000059	

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 11:20
 Sample(adjusted): 1983 2001
 Included observations: 19 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.791632	3.705108	2.372841	0.0450
EG(-5)	-0.008889	0.880125	-0.010100	0.9922
FDI(-1)	0.000315	0.000641	0.491952	0.6360
FDI(-2)	0.000995	0.001927	0.516690	0.6193
FDI(-3)	-0.005604	0.002237	-2.504922	0.0367
FDI(-4)	0.014964	0.002840	5.269114	0.0008
FDI(-5)	-0.008841	0.002486	-3.556456	0.0074
FDI(-6)	0.006956	0.003017	2.305310	0.0501
FDI(-7)	-0.016730	0.007554	-2.214715	0.0577
FDI(-8)	-0.001449	0.008233	-0.176031	0.8646
FDI(-9)	-0.005995	0.004606	-1.301589	0.2293
R-squared	0.951186	Mean dependent var	4.397895	
Adjusted R-squared	0.890169	S.D. dependent var	4.585715	
S.E. of regression	1.519742	Akaike info criterion	3.967855	
Sum squared resid	18.47692	Schwarz criterion	4.514636	
Log likelihood	-26.69463	F-statistic	15.58879	
Durbin-Watson stat	2.361726	Prob(F-statistic)	0.000339	

Dependent Variable: EG
 Method: Least Squares
 Date: 07/09/04 Time: 11:20
 Sample(adjusted): 1984 2001
 Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.297263	13.82108	-0.383274	0.7147
EG(-5)	3.158670	3.040721	1.038790	0.3389
FDI(-1)	0.000568	0.000758	0.749671	0.4818
FDI(-2)	0.000125	0.002185	0.057244	0.9562
FDI(-3)	-0.006947	0.002622	-2.649541	0.0381
FDI(-4)	0.014858	0.002994	4.962368	0.0025
FDI(-5)	-0.014309	0.005631	-2.541287	0.0440
FDI(-6)	0.006257	0.003234	1.934648	0.1012
FDI(-7)	-0.013509	0.008527	-1.584339	0.1642
FDI(-8)	0.004401	0.010062	0.437409	0.6771
FDI(-9)	-0.009935	0.006797	-1.461753	0.1941
FDI(-10)	0.008792	0.009691	0.907246	0.3992
R-squared	0.960166	Mean dependent var	4.420000	
Adjusted R-squared	0.887136	S.D. dependent var	4.717620	
S.E. of regression	1.584893	Akaike info criterion	3.993632	
Sum squared resid	15.07131	Schwarz criterion	4.587213	
Log likelihood	-23.94269	F-statistic	13.14766	
Durbin-Watson stat	2.816151	Prob(F-statistic)	0.002465	