

**DETERMINANTS OF FOREIGN DIRECT INVESTMENT
IN INDONESIA (1997 – 2003)**

A THESIS

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



By

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2004

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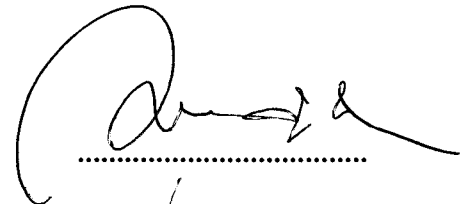
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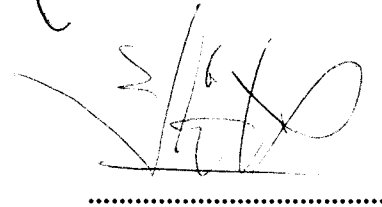
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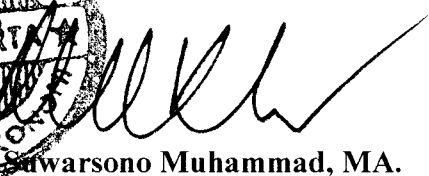
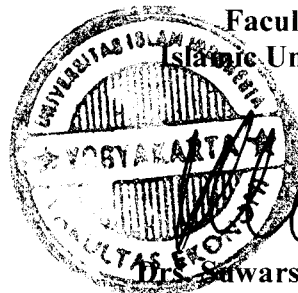


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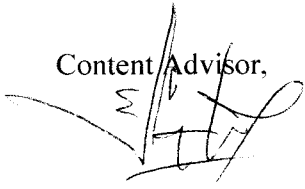
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ABSTRACT

Sriharto, Sigit (2004). Determinants of Foreign Direct Investment in Indonesia (1997-2003), Yogyakarta, Department of Economics, Faculty of Economics, Islamic University of Indonesia.

This research is intended to analyze the affect of Gross Domestic Product, Rate of return, Inflation, and Corruption as the determination of Foreign Direct Investment in Indonesia.

The data employed in this research are secondary time series data on the basis of quarterly data for the period of 1997:1-2003:1, or about 25 series. Picted from several reputable publication. Method of nalysis used in this research is Ordinary Least Square Methods.

The result of OLS estimation give information that level of Indonesia FDI are determined significantly by the GDP, Rate of return, Inflation, and Corruption at difference level of α .

ABSTRAKSI

Sriharto, Sigit (2004). Determinants of Foreign Direct Investment in Indonesia (1997-2003), Yogyakarta, Ekonomi Pembangunan, Fakultas Ekonomi, Universitas Islam Indonesia.

Penelitian ini ditujukan untuk menganalisa pengaruh dari Pendapatan Nasional Bruto, Tingkat keuntungan, Inflasi, dan Korupsi sebagai penentu dari Penanaman Modal Asing di Indonesia.

Data yang digunakan dalam penelitian ini adalah data sekunder dalam bentuk kuartal runtun waktu dengan periode 1997:1-2003:1, atau sekitar 25 data. Diambil dari beberapa terbitan yang resmi. Metode yang digunakan dalam menganalisis penelitian ini adalah metode kuadrat terkecil.

Hasil dari analisis menunjukkan bahwa tingkat PMA di Indonesia dipengaruhi secara signifikan oleh PDB, tingkat keuntungan, inflasi, dan korupsi, pada tingkat α yang berbeda.

CHAPTER I

INTRODUCTION

1.1. Background of the Study

Foreign Direct Investment (FDI) has proved to be resilient during financial crises. For instance, in East Asian countries, such investment was remarkably stable during the global financial crises of 1997-1998. The fluctuation of Foreign Direct Investment during financial crises may lead many developing countries to regard it as the private capital inflow of choice.

In sharp contrast, other form of private capital flows—portfolio equity and debt flows, and particularly short term flows—were subject to large reversals during the same period (Dadush, et.al. 2000; and Lipsey, 2001).

This resilience could lead many developing countries to favor FDI over other forms of capital flows, furthering a trend that has been in evidence for many years (see Figure 1.1).

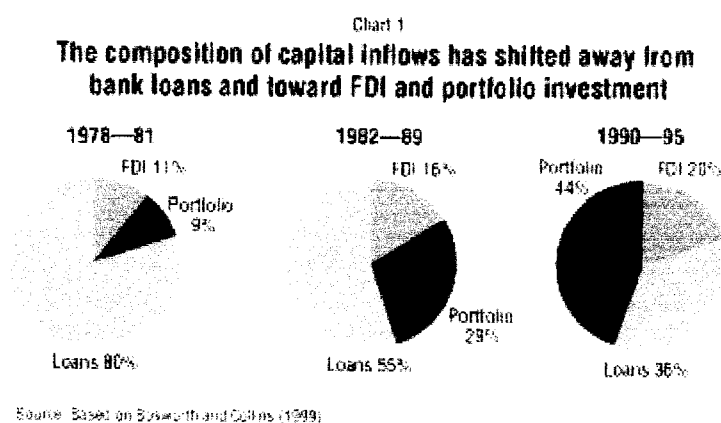


Figure 1.1: The compositions of capital inflows.
Source: Barry P. Bosworth and Susan M. Collins.

Economists tend to favor the free flow of capital across national borders because it allows capital to seek out the highest rate of return. Unrestricted capital flows may also offer several other advantages, as noted by Feldstein (2000). First, international flows of capital reduce the risk faced by owners of capital by allowing them to diversify their lending and investment. Second, the global integration of capital markets can contribute to the spread of best practices in corporate governance, accounting rules, and legal traditions. Third, the global mobility of capital limits the ability of governments to implement bad policies that can take an effect on less investment.

In addition to these advantages, which in principle apply to all kinds of private capital inflows, Feldstein (2000) note that the gains to host countries from FDI can take several other forms:

- FDI allows the transfer of technology—particularly in the form of new varieties of capital inputs—that cannot be achieved through financial investments or trade in goods and services. FDI can also promote competition in the domestic input market.
- Recipients of FDI often gain employee training in the course of operating the new businesses, which contributes to human capital development in the host country.
- Profits generated by FDI contribute to corporate tax revenues in the host country.

Despite the strong theoretical case for the advantages of free capital flows, the conventional wisdom now seems to be that many private capital flows pose countervailing risks. Hausmann and Fernández-Arias (2000) suggest why many host countries, even when they are in favor of capital inflows, view international debt flows, especially that of the short-term variety, as "bad cholesterol":

It (short-term lending from abroad) is driven by speculative considerations based on interest rate differentials and exchange rate expectations, not on long-term considerations. Its movement is often the result of moral hazard distortions such as implicit exchange rate guarantees or the willingness of governments to bailout the banking system. It is the first to run for the exits in times of trouble and is responsible for the boom-bust cycles of the 1990s. In contrast, FDI is viewed as "good cholesterol" because it can confer the benefits enumerated earlier. An additional benefit is that FDI is thought to be "bolted down and cannot leave so easily at the first sign of trouble." Unlike short-term debt, direct investments in a country are immediately reprised in the event of a crisis.

Meanwhile, if we talk about the Indonesian FDI condition based on the statistical data, the trend of foreign investment in Indonesia tends to decrease. Since 1997 the number of the Foreign Direct Investment approved by the government have had the decrease trend. In year 1997 the amount of FDI coming to Indonesia is around 33 million USD, but in year 2000 it is only around 15 million USD.

There are some factors affecting the trend of decreasing in FDI in Indonesia. The decrease of the FDI of Indonesia can occur since there is no guarantee for the securities, in one of the big issues, like corruption.

Corruption is a complex phenomenon. Its roots lie deep in bureaucratic institution, and its effect on development varies with country conditions. However

while costs may vary and systemic corruption may coexist with strong economic performance, experience suggests that corruption is bad for economy.

Mostly Indonesian's opinion about corruption is still in relative manner and condition. Kwik Kian Gie wrote,

in Airport, we are serviced by immigration officer without standing in line by entering his office and give him some amount of money. Is it included as corruption activity? The immigration officer does not feel and considered that what he did is corruption at all. No one being suffered from such kind of transaction. Even the queue becomes short in which benefits for others who do not want to pay. Meanwhile the one who pays the extra money does not have to stand in line, and the paid money to the officer is meaningless for him. He pays sincerely and willingly to enjoy additional service. (Kian Gie, 1999: 505-510)

Regardless the perceptions about corruption, the huge issues of corruption in our governmental environment will disturb our position as a country that needs capital inflow to foster our economic growth through foreign investment.

Most investors consider any form of corruption as extra cost for their business, whereas in fact the principle of business is profit maximization and cost minimization. When an investor invests his money in corrupt country, he will be burdened by extra cost since he must bribe for business license beside production cost. The extra cost increases the price of produced goods and services that automatically will not have competitive price in the market

The data published by Badan Koordinasi Penanaman Modal (BKPM) of Indonesia shows the decline trend of foreign investment in Indonesia. The following data indicates the decrease of foreign investment in Indonesia.

Year	Foreign Investment*	
	Project	Value (Million US\$.)
1997	783	33,816.1
1998	1,034	13,585.5
1999	1,174	10,892.2
2000	1,524	15,420.0
2001	1,320	15,043.4
2002	1,028	7,162.4

Table 1.1: Indonesia Foreign Direct Investment 1997-2002

Source: adapted from <http://www.bkpm.go.id/bkpm/subfigure.php>

* All investment exclude Oil & Gas, Bank, Financial Institution, Insurance and Leasing and exclude East Timor area of investment

TREND OF FOREIGN INVESTMENT VALUE APPROVALS PERIOD OF 1997 - NOVEMBER, 30 2002

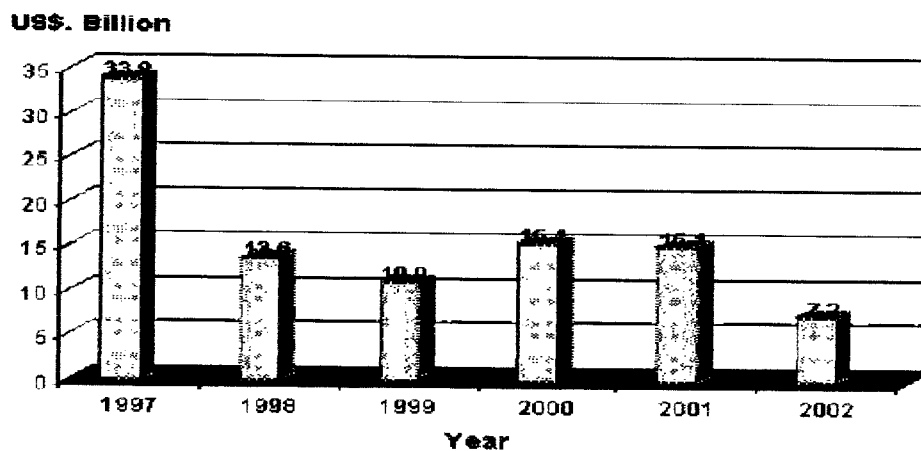


Figure 1.2: Trend of Foreign Investment

Source: Adapted from <http://www.bkpm.go.id/bkpm/subfigure.php>

The decrease on the FDI of Indonesia can occur because the condition and situation of the country that can effect the braveness of foreign investor to invest

in Indonesia, specially the guarantee to political and social stability. GDP, level of inflation, and rate of return in capital may also be the part of it.

Gross Domestic Product can be regarded as a tool on measurement of wealth in countries. What means for Investors is that The GDP has a relatively high importance to the markets. GDP indicates the pace at which a country's economy is growing (or shrinking). If GDP growth fails to meet or beat the market expectations stocks can temporarily pay the price.

What effect does inflation have on the economy and on investment in particular? Inflation causes many distortions in the economy. It hurts people who are retired and living on a fixed income. When prices rise these consumers cannot buy as much as they could previously. This discourages savings due to the fact that the money is worth more presently than in the future. This expectation reduces economic growth because the economy needs a certain level of savings to finance investments which boosts economic growth.

Moreover, inflation makes it harder for businesses to plan for the future. It is very difficult to decide how much to produce, because businesses cannot predict the demand for their product at the higher prices they will have to charge in order to cover their costs. High inflation does not only disrupts the operation of a nation's financial institutions and markets, but it also discourage their integration with the rest of the worlds markets.

Inflation causes uncertainty about future prices, interest rates, and exchange rates, and this in turn increases the risks among potential trade partners, discouraging trade. As far as commercial banking is concerned, it erodes the

value of the depositor's savings as well as that of the bank's loans. The uncertainty associated with inflation increases the risk associated with the investment and production activity of firms and markets.

In doing investment, investors always look for the countries which have the high return in capital they invested, in this case level of rate of return can be stated as Discount Rate. Different with the Discount Rate term of Monetary, the Discount Rate in the Investment can be defined as the number of the return in capital invested. Still the problems of set up for the right level of return occurs because lack of data in some less developing countries, like Indonesia, therefore some numbers here use as the proxy to those Rate of Return level.

However investment and economic activity always ask for the availability of political, social and economical stability.

1.2. Problem Formulation

Based on the background of the study above, various question appear and are thus formulated as follows:

1. How the Gross Domestic Product, Level of inflation, Rate of Return, and Corruption level influence the FDI in Indonesia.
2. How changing in each level of variables give an effect to the Foreign investment in Indonesia, and how much the changing is.

1.3. Problem Limitation

To achieve the objective, the problem will be restricted onto three variables that are predicted as the consideration to the foreign investors before they invest in Indonesia. The variables are:

- Indonesia's Foreign Direct Investment, year 1997:1—2003:1.
- Indonesia's Gross Domestic Product, year 1997:1—2003:1.
- Indonesia's Inflation, year 1997:1—2003:1.
- Indonesia's Rate of Return, year 1997:1—2003:1.
- Indonesia's Corruption Perception Index Level, year 1997:1—2003:1.

1.4. Research Objectives

The main purpose and motivation on this research project is to have boarder and deeper knowledge about factors affecting Indonesian FDI. This research specifically aims to:

- a. Analyze the factors affecting FDI level in Indonesia and to measure the roles of those factors to the FDI.
- b. Examine the relationship between independent variables and dependent variable, whether those variables affects significantly on the Indonesia's FDI.
- c. Have and enhance a convincing understanding of the corruption types and terms based on international institution.

1.5. Research Contributions

There are some advantages that are expected to be the result of this research, by testing some macro economic variables that predict—from some certain theory related to the Foreign Direct Investment—whether those variables are really affecting Indonesia's FDI. Since there is a limitation on reliable data, the writer will study about the impact of several factors to the FDI, by using other explanation variables, especially those of the Indonesian FDI in the beginning of monetary crisis until recent year (1997-2003), the writer uses some additional variables, such as Corruption Index as the risk measurement to the foreign investor.

1.6. Definition of Terms

1.6.1. Foreign Direct Investment

There are three main sources of private foreign investment of a country which follow open economic system, namely debt, foreign direct investment and portfolio investment.

Private foreign investment is investment done by foreign capital owners in domestic in order to get a benefit from the investment. The characteristic of private foreign investment requires cover identification of opportunities economically, productive project formulation and efficient implementation.

The investor is given freedom to run the business where capital is invested. In other word, the investor has power on the capital. Private foreign investment used to run the company in Indonesia.

1.6.2. Gross Domestic Product

GDP is a gross measure of market activity. It represents the monetary value of all the goods and services produced by an economy over a specified period. This includes consumption, government purchases, investments, and the trade balance (exports minus imports). The GDP is perhaps the greatest indicator of the economic health of a country.

1.6.3. Rate of Return

Rate of return is the measurement of return in capital invested or in other words, the investor return is a measure of the growth in wealth resulting from that investment. This growth measure is expressed in percentage terms to make it comparable across large and small investors. It is often expressed by the percent return over a specific time interval, say, one year.

1.6.4. Inflation

Inflation is defined as a sustained increase in the general level of prices for goods and services. It is measured as an annual percentage increase.

1.6.5. Corruption Perception Index

Corruption Perception Index relates to perceptions of the degree of corruption as seen by business people, academics and risk analysts, and ranges between 10 (highly clean) and 0 (highly corrupt).

There are many definition of corruption. The general definition of corruption can be defined as the act of, a minimum of two individuals from one or more communities, and either exchange or the promise of an exchange of money or services takes place; typically secret, the pact benefits the dyad to the detriment of everyone else.

Other explanations and definitions will be explained in this research.

1.7. Writing Organizations

Chapter I Introduction

This chapter covers the background of the study, problem formulation, limitation, research objectives, research objectives, contribution, and definition of terms.

Chapter II Review on Related Literature

This chapter briefly explain some previous empirical finding about Foreign Direct Investment that will be considered as basis of thinking whether this research—that is conducted based on the Indonesia condition—contrary or fit with the theory available.

Chapter III Theoretical Background

It presents the investment theory, the decision to investment, Foreign Direct Investment terms, motives to FDI, the variables used to explain the trend of FDI Indonesia, as well as the effect of those variables to FDI level. This chapter also explains about the hypotheses conduct in the research.

Chapter IV Economic Description

This chapter will concern with the brief theory, and current information of the development of variables applied in this research.

Chapter V Research Methods

This chapter describe about data estimation method used in this research, and the several tests tested to the results of the estimation.

Chapter VI Data Analysis

This chapter presents the data that will be analyzed, regression analysis, various test in time series, research findings, and also the weaknesses of the research.

Chapter VII Conclusions and Policy Implications

The last part of this research will present several conclusions and suggestions related to the research analysis result.

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1. **Andrez Banjak, Jacek Cukrowski, and Jan Herczynski (2002)**

They observe about Foreign Direct Investment which brings host countries capital, productive facilities and technology transfer, as well as new jobs and management expertise. It is important to understand why in many countries FDI inflow is lower than expected. The goal of the study is to explore some important factors determining flow of FDI into transition countries, in particular the paper analyze the legal environment for FDI in some transition economies.

The transition economics countries here refers to the countries that have centrally planned economies rule over decades by means of the plan, which set output goals for all sectors of the economy. This system assumes to be the causes of all related countries to serious economic crisis.

The analysis presented in this paper are focused on the links between macroeconomic and legal stability, and the inflow of FDI. The relation is important when multinational enterprises have to choose an investment location, and when several countries offer similar conditions to attract FDI. Furthermore, they intend to show that increased macroeconomic and legal instability leads to adverse selection of the investors and to prove that in order to expect significant inflow of long-term, and non-speculative, foreign capital a stable economic and legal environment are needed.

To sum of, they show that:

- a. Higher variability of basic macroeconomic fundamentals reduces the flow of FDI.
- b. High volatility of fiscal and business regulations makes the inflow of FDI smaller.
- c. Macroeconomic and legal instability leads to adverse selection of the investors.

2.2. Edwards (1990)

He addresses the problem of data coverage and decides to use two different indicators of foreign direct investment for 58 LDCs. The first variable $DFISH_j$ is defined as the 1971-81 average ratio of OECD total direct foreign investment into country j relative to total OECD foreign direct investment in LDCs. $DFISH$ tells how total OECD direct foreign investment is distributed across countries. The second variable DFI/GDP tells about the average level of DFI relative to the average GDP during 1971-81 in a specific country. Both variables exhibit considerable variability across countries.

Edwards uses two groups of variables to explain $DFISH$ and DFI/GDP . The first group relates to economic variables that summarize the structure of each country. The second group captures political and institutional characteristics of each country.

Edwards postulates that FDI is affected by:

- (-) Real per capita income as a proxy for (the inverse) return on capital. According to the theory, DCs will invest in LDCs that have higher return on capital. Therefore, countries with

lower income per capita will tend to receive a higher share of FDI.

- (+) The ratio of foreign trade to GDP as a measure of degree of openness of the host country.
- (+) Country's real GDP as a proxy for large markets. It was included in the DFISH regressions to account for size of the economy and potential extent of economies of scale.
- (+) Domestic investment ratio which is assumed to complement FDI.
- (-) The share of government consumption in GDP as a proxy for size of government. This variable reflects the host country's stance towards the private initiative.
- (+) The Summer and Heston measure of the real exchange rate as a proxy of the country's degree of international competitiveness.

2.3. Alvin G Wint, Densil A Williams (2002)

This study examines the efforts of many developing countries to promote their economies as sites for foreign direct investment. It develops a model of determinants of foreign direct investment flows to test the extent to which countries are able to differentially attract foreign direct investment through promotional activities. The statistical study lends support to the concept that the convergence of policy and promotional activities around the developing world is leading to a movement toward the maturity phase of the life cycle of the

differential effectiveness of special attraction efforts. While this trend does not support a discontinuation of these special attraction efforts, it does make it critical that promotional organizations in developing countries emphasize "functional" rather than "selective" policy reforms and promotional activities that are non-discriminatory in relation to local investors.

2.4. Fredrik Sjöholm (2000)

Indonesia has been severely hurt by the recent economic crisis, which has been accompanied by social tensions. For a sustainable long-term recovery, it is essential that Indonesia attracts FDI inflows, and manages to achieve a reasonably equal spatial development. FDI is important since other capital funds are scarce and an equal spatial development is important to avoid social tensions. However, there is a possible contradiction between FDI and even regional development since FDI tends to locate in clusters. This paper discusses FDI and an even spatial development in Indonesia, and offers some policy suggestions for a sustainable long-term recovery.

FDI is required since other capital funds may not be available and because of the bad historical experience of relying on foreign loans. Even spatial development is required for political reasons: if a recovery is not felt throughout the whole country, it is likely to result in social and regional tensions.

2.5. Mohsin Habib, Leon Zurawicki (2002)

This study examines the impact of corruption on foreign direct investment. First, the level of corruption in the host country is analyzed. Second, the absolute

difference in the corruption level between the host and home country is examined. The analysis provides support for the negative impacts of both. The results suggest that foreign investors generally avoid corruption because it is considered wrong and it can create operational inefficiencies.

The study examines the relationship between corruption and FDI based on the recent three-year data. The findings are consistent with the arguments presented in the literature and suggest that corruption is a serious obstacle for investment. The data for this study are obtained from international statistics on FDI, aggregated by countries of origin and destination. As such, it generalizes the individual experiences of thousands of investment projects and adds to our understanding of the pattern of investors' reactions to corruption.

The theoretical arguments against corruption derive from both ethics and economics. Foreign investors may shun corruption because they believe it is morally wrong. They may also try to avoid corruption because it can be difficult to manage, risky, and costly. The negative effect of corruption on FDI found in this study suggests that firms, as a whole, do not support corruption. However, in addition, the study also found a negative effect due to the difference in corruption levels between the home and host countries. This further suggests that foreign firms are unwilling to deal with the planning and operational pitfalls related to an environment with a different corruption level. This important fine point is worth emphasizing, as it has not yet been empirically tested in the literature.

2.6. Rose-Ackerman (1997)

Corruption occurs throughout the world but is of special concern in poor countries. Widespread corruption is a symptom that the state is functioning poorly, and ineffective states can retard and misdirect economic growth. The economic costs and causes of corruption are reflected in the empirical evidence and the theoretical literature. It is useful to distinguish between corruption that is concentrated at the top and centralized corruption involving many payers and recipients. The policy options are explored for developing countries with leaders who are committed to reform. Structural reform is often necessary in such areas as tax and customs collection, regulation of private business, and development of state-sponsored infrastructure projects. Furthermore, basic government reform is often required to increase the transparency and accountability of the public sector and to facilitate the organization of independent oversight groups. Most developing countries must also face the difficult task of civil service reform and improvement of enforcement capabilities. The World Bank can assist in such anticorruption efforts as part of its growing interest in the creation of institutional structures favorable to shared growth.

CHAPTER III

THEORETICAL FRAMEWORK

3.1. Investment Theory

Investment has a broad meaning. The different perspectives and point of view results in different concepts in defining the terms of investment. In macroeconomics perspective, macroeconomists use the term of investment to mean additions to the stock of productive assets like capital goods being equipment, structures, or inventories. When PT Indofood Tbk. builds a new factory or when Mr. Udin builds a new house are actions representing investments. Many people speak of “investing” when buying a piece of land, an old security, or any title to property. In economics, these purchases involve financial transactions or portfolio changes, because what one person is buying, someone else is selling. There is investment, only when real capital is created (Samuelson and Nordhaus, 1995: 433). This concept has limited concept of investment, which distinguishes between investing in real assets and financial assets.

The material of wealth of a society is ultimately determined by the productive capacity of its economy, that is, the goods and services its members can create. This capacity is a function of the real assets of the economy: the land, buildings, machines, and knowledge that can be used to produce goods and services.

In contrast to such real assets are financial assets, such as stocks and bonds. Such securities are no more than sheets of paper (or entries in a computer) and do not contribute directly to the productive capacity of the economy. Instead, these assets are the means by which individuals in well-developed economies hold their claims on real assets.

Financial assets are claims to the income generated by real assets (or claims on income from the government). We cannot own our own auto plant; but we can still buy shares in Astra Internasional Tbk. and, thereby, share in the income derived from the production of automobiles. While real assets generate net income to the economy, financial assets simply define the allocation of income or wealth among investors.

Investment term in this research deals with the investment in additions to the stock of productive assets like capital goods being equipment, structures, or inventories. This research studies about one type of investment, which is called Foreign Direct Investment.

Why do people invest? Actually it is a basic question. Stated in the simplest terms, investors wish to earn a return on their money. Cash has an opportunity cost: by holding cash, we forego the opportunity to earn a return on the cash. Furthermore, in an inflationary environment, the purchasing power of cash diminishes, with high rates of inflation bringing a relatively rapid decline in purchasing power.

In investment it is critical to distinguish between an expected return (the anticipated return for some future period) and a realized return (the actual return

over some past period). Investors invest for the future – for the return they expect to earn – but when the investing period is over, they are left with their realized returns. What investors actually earn from their holdings may turn out to be more or less than what they expected to earn when they initiated the investment. This point is the essence of the investment process: investors must always consider the risk involved in investing.

Investors would like their returns to be as large as possible; however this objective is subject to constraints, primarily risk. The investment decision therefore must always be considered in terms of both risk and return. The two are inseparable.

There are different types, and therefore different definitions, of risk. Risk is defined here as the chance that the actual return on an investment will be different from its expected return (risk involves chances, or probabilities) (Jones 1998: 10). In general terms, risk refers to the possibility of loss.

Do investors dislike risk? In economics in general, and investments in particular, the standard assumption is that investors are rational. Rational investors prefer certainty to uncertainty. It is easy to say that investors dislike risk, but more precisely, we should say that investors are risk averse. A risk-averse investor is one who will not assume risk simply for its own sake and will not incur any given level of risk unless there is an expectation of adequate compensation for having done so. Note carefully that it is not irrational to assume risk, even very large risk, as long as we expect to be compensated for it. In fact, investors cannot reasonably expect to earn larger returns without assuming larger risks.

Investors deal with risk by choosing (implicitly or explicitly) the amount of risk they are willing to incur. Some investors choose to incur high level of risk with the expectation of high levels of return. Other investors are unwilling to assume much risk, and they should not expect to earn large return.

3.2. Decision to Investment

There are two approaches in determining the decision to go or not to go in investment project (Soediyono 1985:172).

3.2.1. Present Value

Investment project will give benefits and can be accepted if net present value of the project is greater than zero. Mathematically it can be formulated as:

$$NPV = -C + R_1 / (1 + r) + R_2 / (1 + r)^2 + \dots + R_n / (1 + r)^n > 0$$

Where:

NPV = Net Present Value

R = Net benefit predict from the investment project per period, this value is the amount of benefit after it is reduced by costs.

1,2,...,n= periods of investment.

r = discount rate, the rate of return on the capital invested.

C = amount of capital invested.

3.2.2. Marginal Efficiency of Capital (MEC)

This is another way in doing investment evaluation. In applying this approach, the first steps are determining the value of MEC in investment project.

After the value is founded, next step is comparing the value to the level of market interest rate, the decision:

$MEC > r$, investment project can be accepted.

$MEC < r$, investment project can be rejected.

Marginal Efficiency of Capital can be defined as discount level which consider the same present value of the investment with the amount of capital needs to be invested in those project. In another words MEC can be defined as discount level that results in zero value of project net present value.

Based on this definition, MEC value can be determine by the formulation bellow:

$$C = R_1 / (1 + MEC) + R_2 / (1 + MEC)^2 + \dots + R_n / (1 + MEC)^n$$

Or

$$NPV = -C + R_1 / (1 + MEC) + R_2 / (1 + MEC)^2 + \dots + R_n / (1 + MEC)^n = 0$$

The difference between those formula to the NPV formula in the present value approach is on 'r' value, in PV the value of r has already known, but in MEC we have to find the variable.

If R_n has different value, we can give certain value to the MEC, so that we can define the NPV value. If value of $NPV > 0$; the value of MEC can be increased. If the NPV result on negative sign, value of MEC should be decreased. Do this way repeatedly until we find the MEC value which results on $NPV = 0$.

3.3. Foreign Direct Investment

Generally the terms of Foreign Direct Investment can be defined as a capital flows from foreign company created in form of company in other country, usually in form of branch company. In other words, it is a market enter strategy in which a company in subsidiary or partnership is set up in foreign market, and its entails some degree are controlled by the investor.

3.4. Nature of Foreign Direct Investment

Investment in foreign markets may take several forms. An important distinction is made between portfolio investment and foreign direct investment (FDI). Portfolio investment refers to the purchase of a shareholding in companies, usually through various stock exchanges, with the purpose of obtaining a return on the funds invested. Since it is not directly concerned with the control and management of the foreign enterprise, the researcher will not include such investment here. Foreign direct investment refers to a participation in management and effective control of the enterprise in addition. It also means the establishment of international operations by a firm on the expansion of existing operations. More important, it is the transfer of technology, management skills, production processes, manufacturing and marketing, and other resources.

Classical investment theory suggest that the reason for foreign direct investment is profit maximization, i.e. the factors of production move to where the highest rate of return can be earned; it is concerned with mobile factors of production. Behind classical investment theory is a classical trade theory; the former is an extension of the latter: capital-rich countries tend to export capital

intensive products and to invest capital abroad. Labor-rich countries tend to export labor intensive product and experience a migration of workers to better of countries. Classical investment theory is a macro economic theory which does little to explain the investment decision of individual firms.

3.5. Theories of Foreign Direct Investment.

In classical economic theory, the issue of geographical horizons for the business enterprise does not arise. The firm is assumed to have perfect and attractive opportunities wherever they exist. The firm is usually born with a geographical horizon limited to a locality, a region or a home country.

However, this views is changed, since there are influences from other factors such as the development of a new technology or product, observed for a larger market, or it may be the result of external forces such as costumers, governments, the foreign expansion of a competitor, etc.

3.5.1. International firm and market imperfections.

This approach assumes that the firm has a complete global horizon, that is, it is constantly aware of foreign opportunities. The firm's decision to invest abroad is explained as a move to take advantage of certain capabilities not shared by competitors in foreign countries (Hymer, 1970).

To operate successfully abroad, the firm must have certain compensating advantages that more than offset the innate advantages of local firms. The compensating competitive advantages of foreign firms are explained by imperfections in market for products for factor of production. Firms can acquire

competitive advantages through product differentiation, brand names, economic of scale and other factor.

The market imperfections approach attempts to explain both horizontal and vertical investments. The objective of horizontal investments in international markets is to produce in foreign locations the same products manufactured in the home market. Vertical investments are supply oriented, intended to produce abroad raw materials or other production inputs which are then supplied to the firm at home or to other subsidiaries.

This framework helps to identify the industries which firms are likely to expand their direct operations, either domestically or internationally by assuming that the firm is constantly aware of foreign opportunities.

3.5.2. Internationalization Approach

This theory is concerned with the firm's incentive to create its own internal markets whenever transactions can be carried out at lower cost within a firm. This internationalization involves extending the direct operations of the firm and bringing under common ownership and control the activities carried out by intermediate markets which link the firm to consumers.

The theory focuses on the motives and decision processes within the firm but gives only such limited attention to the potential of public policies and other external factors as they can affect the benefit and cost of internationalization.

3.5.3. International Production Theory

This theory help to explain which firms go international, which firms have competitive advantage and the motivation for engaging in foreign production. The

theory addresses the issue of where foreign production takes place by integrating location theory in to theories of the multinational enterprises.

An example for this theory is “Ectec theory of international production” (Dunning and Mc Queen, 1981), which argues that the propensity of a particular enterprise to engage in foreign production will also depend on the location attraction of its home country endowments compared with those offered by other countries, including financial and other inducement to locate there.

Fayerweather (1982) expand the concepts of resources embodied in the trade theory to include technological, managerial and entrepreneurial skills, as well as, natural resources, capital and labor. He then argues that differential in the supply- demand relationship of resources among countries generate basic economic pressures for the international flow of resources and create opportunities open to the multinational firm.

To sum up, three groups of factors: resource differentials; governmental actions; and characteristics of the business enterprises determine the way in which the international firm plays a role in the international exchange of resources. This aspect of direct investment theory assigns a major role to governments in influencing international business patterns through actions that affect resource differential relationship and the entry conditions for foreign enterprise.

3.5.4. Product Cycles in International Markets

The product cycle model relates trade and direct investment as sequential stages that follow the life cycle of a product. The model suggests that firms innovate new products at home for the market. Production may be located

wherever costs and other factors are advantageous. The life cycle framework does not address the strategy issue of why multinational firms undertake investment abroad instead of, say, licensing. Nor does it seem to explain supply-oriented raw materials foreign direct investments. The life cycle model fails to recognize that many new products are launched simultaneously in numerous markets; global roll-outs are common feature in many product-market.

Most of the above explanations are partial in that they focus only one method by which international business patterns change. Foreign direct investment theories also have a limited view of the international strategies that may be adopted by the firm and most theories are one way; they offer explanations of investment and not of divestment, which also an important and growing feature.

3.6. Motives in Foreign Direct Investment

Many firms that internationalize through the direct investment mode do so to gain better access to scarce raw materials or intermediate products. Sometimes the reason for foreign direct investment is to develop foreign source of components. More common is the situation where the firm's intention is to assemble final products for sale in local foreign markets. Investment of this form is often chosen as an alternative to export for several reasons, many of which related to the market imperfections.

The specific reasons behind a firm's decision to invest abroad are operating efficiency, risk reduction, market development and host government policy (Figure: 3.1)

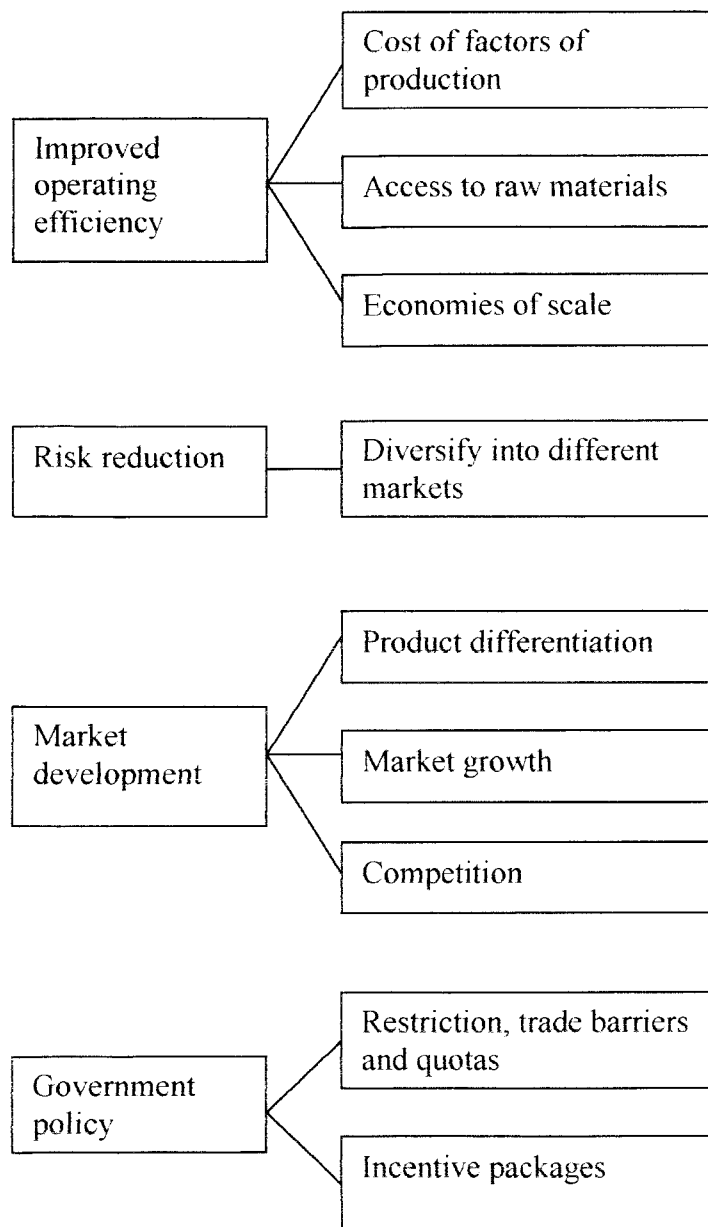


Figure 3.1: Reasons for Foreign Direct Investment

Source: Bradley (1991:420)

It is frequently possible to manufacture products more efficiently outside the domestic market. A firm increases the efficiency of the production process if it

is located where the factors of production are the cheapest. Sometimes firms internationalize through investment to guarantee access to raw materials or cheaper labor. In the latter situation firms are known to twin plants in their network, e.g. a capital-intensive factory in one country twinned with a labor-intensive one in other.

Risk reduction is further enhanced through diversification since it is unlikely that the entire firm's investment will perform at the same level of profitability.

Foreign direct investment may also be explained by the firms desire to exploit the market. Some firms possess certain advantages in the design and development products and services. The sources of these advantages lie in the ability of the firm to differentiate its product and services. Product differentiation is a strong motive for foreign direct investment (Hymer, 1976).

Sometimes foreign markets grow faster than domestic markets, or better prices are available due to less competition. There are many markets throughout the world where only a few well known brands share the market. Foreign markets may also open up to foreign competition due to income growth, population growth or the reduction of ownership barriers.

Governments frequently impose tariffs and quotas which force a firm to locate behind the barrier. In such circumstances foreign direct investment may be the only way for the firm to gain access markets.

The basic motives for foreign direct investment are thus numerous. For some firms they include: securing market positions in foreign markets;

overcoming tariff and non tariff barriers to trade; exploiting new markets; benefiting from government financial incentives; securing supplies; and lowering wage labor. In addition, firms engage in foreign direct investment because they have superior marketing skills. Firm-specific competitive advantages frequently reside in their excellent marketing skills. Their network of distributors and their well-established relationship with customers.

3.7. Variables Used and Variables Influence to Indonesia FDI

There are four variables used in this research that are predicted to be the factors affecting Indonesia Foreign Direct Investment. Those factors are Gross Domestic Product of Indonesia, level of discount rate, level of inflation, and corruption phenomenon in Indonesia.

3.7.1. Gross Domestic Product

In general, economists judge macroeconomic performance by looking at a few key variables, the most important being gross domestic product (GDP) beside the inflation and unemployment. Gross Domestic Product (GDP) is the value of all final goods and services produced in the economy in a given time period (quarter or year). It is the basic measure of economic activity (Dornbusch and Fischer, 1994: 8).

GDP can be computed in two ways. One is to add up the amount spent on all final goods during a given period. This is the expenditure approach to calculating GDP. The other is to add up the income (wages, rents, interests, and profits) received by all factors of production in producing final goods. This is the

income approach to calculating GDP. These two methods lead to the same value for GDP for the reason: *every payment (expenditure) by a buyer is at the same time a receipt (income) for the seller*. We can measure either income received or expenditures made, and we will end up with the same total output.

Gross Domestic Product is the key concept in national income accounting as the total market value of all final goods and services produced within a given period by factors of production located within a country. It represents the welfare and economic growth of a country. The level of welfare is determined by the value of a country's national income divided by the number of its population that is called per capita income.

What it means for Investors, GDP figures have a relatively high importance to the markets. GDP indicates the pace at which a country's economy is growing (or shrinking). GDP is considered the broadest indicator of the economic output and growth, as well as measurement level of consumer changing in demand. Increasing in GDP is the sign of wealth in nations and will impact on the expansion of the market, a good sign for investor to invest.

3.7.2. Rate of Return

3.7.2.1. Definition

Rate of return can be defined as the level of return in the capital invested if whole positive net benefit of the project (Benefit-Cost) is assumed to be reinvested in the next year. In the other words, it also can be defined as the opportunity cost that can be earned if the capital not to be invested in the main

project, but to be invested in alternative projects, in which the alternative projects can earn a different benefits.

3.7.2.2. The determinant of rate of return

The determination of rate of return was is conducted when there is inefficiency in capital using, meanwhile in the field the using of interests rate were so various. In choosing the right level of discount rate, one should know how much the opportunity cost if the capital is not used for the project but those capitals are used for other investment projects. Those things make level of current opportunity cost of capital for each investors of the project are not the same. Opportunity cost of capital usually can be considered as the same as benefit level result by the project which is set between the range (margin) in setting the budget of project.

The simple approach in determining rate of return is by using the Marginal Capital Productivity (MCP). MCP is the benefit that comes from one additional unit of investment in the sector. MCP can be reflected by current real interest rate in capital market. These values are considered relevant as the estimator of discount rate based on the assumption that each investment unit is replaced by another unit in the same type of investment (Clive Gray 1997:115).

The increase in rate of return will attract more investors, because they see that the level rate of return to their capital is increasing too.

3.7.3. Inflation Rate

Inflation rate means the rate of growth or decline of the price level from one year to the next (Samuelson and Nordhaus, 1995: 387). It is also defined as

the rate of change of prices from one year period to the next. Meanwhile Parkin (1990: 567) defined inflation as an upward movement in the average level of prices. It happens when many prices increase simultaneously. Inflation is measured by looking at a large number of goods and services and calculating the average increase in their prices during some period of time. The opposite of inflation is deflation, that is a downward movement in the average level of prices that occurs when many prices decrease simultaneously. In general inflation is stated on percentage, meaning the percentage of change in the price level.

There are many ways to categorize the kinds of inflation. Boediono (1997: 156) categorizes the kinds of inflation which are based on the level of condition, reason, and origin of inflation:

a. Kinds of Inflation which based on the Level of Condition:

1. Minor inflation. The level of inflation is below 10% a year.
2. Moderate inflation. The level of inflation is between 10 – 30% a year.
3. Serious inflation. The level of inflation is between 30 – 100% a year.
4. Hyper inflation. The level of inflation is more than 100% a year

b. Kinds of Inflation based on the Reason:

1. Demand-Pull inflation it means the inflation that arises caused by the force of society's demand for goods.
2. Cost-Push inflation, it means the inflation that arises caused by the increase of production costs.

c. Kinds of Inflation based on the Origin:

1. Domestic inflation. This kind of inflation caused domestically like deficit expenditure which is financed by printing new money by government.
2. Imported inflation. It means the inflation that arises caused by the increase of prices in foreign countries, where our imported goods come from.

The effect of Inflation causes many distortions in the economy. It hurts people who are retired and living on a fixed income. When prices rise these consumers cannot buy as much as they could previously. This discourages savings due to the fact that the money is worth more presently than in the future. This expectation reduces economic growth because the economy needs a certain level of savings to finance investments which boosts economic growth. Also, inflation makes it harder for businesses to plan for the future. It is very difficult to decide how much to produce, because businesses cannot predict the demand for their product at the higher prices they will have to charge in order to cover their costs. High inflation not only disrupts the operation of a nation's financial institutions and markets, it also discourages their integration with the rest of the world's markets. Inflation causes uncertainty about future prices, interest rates, and exchange rates, and this in turn increases the risks among potential trade partners, discouraging trade. As far as commercial banking is concerned, it erodes the value of the depositor's savings as well as that of the bank's loans. The uncertainty associated with inflation increases the risk associated with the investment and production activity of firms and markets.

The effect of inflation on investment occurs directly and indirectly. Inflation increases transactions and information costs, which directly inhibits economic development. For example, when inflation makes nominal values uncertain, investment planning becomes difficult. Individuals may be reluctant to enter into contracts when inflation cannot be predicted making relative prices uncertain. This reluctance to enter into contracts over time will inhibit investment which will affect economic growth. In this case inflation will inhibit investment and could result in financial recession. In an inflationary environment intermediaries will be less eager to provide long-term financing for capital formation and growth. Both lenders and borrowers will also be less willing to enter long-term contracts.

3.7.4. Corruption

3.7.4.1. Types and Definition of Corruption

The definition of corruption adopted by the World Bank was chosen because it is concise and broad enough to include most forms of corruption; “the abuse of public office for private gain”. Like other definitions, it places the public sector as the center of phenomenon. Public office is abused for private gain when an official accepts, solicits, or extorts a bribe. It is also abused when private agents actively offer bribes to circumvent public policies and processes for competitive advantage and profit. Public office can also be abused for personal benefit even if no bribery occurs, through patronage and nepotism, the theft of state assets, or the diversion of state revenues. This definition is both simple and sufficiently broad to cover most of the corruption that the World Bank encounters. Bribery occurs in

the private sector, but bribery in the public sector, offered or extracted, should be the Bank's main concern, since the Bank lends primarily to governments and supports government policies, programs, and projects.

As learned from www.worldbank.org, World Bank categorizes the forms of corruption and its types as bribery, theft, political and bureaucratic, isolated and systemic corruption (further detailed explanation are attached in appendix 7).

3.7.4.2. Corruption and Private Investment

A large portion of how corruption hampers growth, however, is through its deterring effect on private investment. When investment deterred there will be a decline in business activity that produce goods and services.

Levels of investment, both, foreign and domestic depend on the quality of the business environment of a country. The business environment among others is a function of law, in particular the stability of rules and regulations governing business transaction, political stability and transparency. Corruption increases the uncertainty of doing business because it erodes the rule of law and is associated with high levels of bureaucratic red tape. Red tape not only delays business transaction but also bears uncertainty since often, the price of grease money is unknown and (depending on the culture of bribing in that specific country) bribing is not necessarily a guarantee for delivery. Some describe corruption as a tax that adds to the cost of doing business.

A study examining the impact of corruption on foreign direct investment found that an increase in corruption comparable to the difference between

Singapore (which is widely perceived to have low corruption) and Mexico (which typically ranks around the middle of countries in the world rankings of corruption perceptions) would have the same negative effect on foreign direct investment as a 50 percentage point increase in marginal tax rates on foreign investment income (World Development Report, 2002).

Paolo Mauro (1997), analyzes the relationship between corruption and the level of investment and economic growth and find that the amount of corruption is negatively linked to the level of investment and economic growth. The more corruption, the less investment and the less economic growth. Analysis further shows that if the corruption index improves by one standard deviation (equal to 2.38 in this case--a standard deviation measures variation from the "normal" index), the investment rate increases by more than 4 percentage points and the annual growth rate of per capita GDP increases by over a half percentage point. As a result, a country that improves its standing on the corruption index from, say, 6 to 8 (recall that 0 is most corrupt, 10 least), will enjoy the benefits of an increase of 4 percentage points of investment, with consequent improvement in employment and economic growth.

Foreign investment in the countries in which corruption is systemic may still flow if bribery is affordable and the results are predictable. Even so, corruption can have a negative effect on foreign investment. Where corruption is large and systemic, investment may be concentrated in extractive industries in which operations can be enclave, or in light manufacturing or trading operations that can be relocated if corruption costs become unbearable. Or foreign investors

may shun the country altogether. For most foreign firms, corruption is a cost of doing business to be recouped from revenues (Wei, 1997). If the costs become too high or unpredictable, foreign firms will disengage unless global marketing or sourcing considerations require them to maintain a presence in that country. High levels of corruption add to the risk of a country being marginalized in the international economy.

Beside those consequences, corruption also may be able to affect small entrepreneurs especially in developing and transition economies. Evidence from private sector assessments suggests that corruption increases the costs of doing business, that small firms bear a disproportionately large share of these costs, and that bribes can prevent firms from growing.

3.8. Hypotheses

The hypotheses are made based on the several theories described before, and can be stated as follows:

- The level of GDP positively influences the FDI in Indonesia, increasing in GDP will increase the level of Foreign Direct Investment.
- Level of SBI as the measurement of investment rate of return, influence the FDI positively to Indonesia's FDI. The assumption of this is the higher the rate of return the higher the investment.
- Inflation levels affect FDI in negative ways. It means the higher the inflation occurs in Indonesia the lower the level of FDI.

- That level of corruption negatively influences the private foreign investment in Indonesia. The assumption of this hypothesis is the increase in level of corruption will lower the trust of foreign investor and therefore lower the value of their investment.

CHAPTER IV

ECONOMIC DESCRIPTION

4.1. Foreign Direct Investment

Related to the situation in domestic country, the Indonesia's foreign direct investment has fluctuated from year to year. Since the beginning of REPELITA V the amount of this investment have an increasing trends, and reach its peaks on year 1996 by the value of US\$ 6.546 million. This means that the government policies related to the foreign direct investment—such as Paket 6 Mei 1986, Pakto 1993, PP No.20 1994—had succeeded in attracting the foreign investors.

The crisis that hit Indonesian economy since the mid of 1997 has a negative impact to the capital traffic flows in Indonesia, especially in private capital. This can be observed from sharp decrease on value of FDI, from US\$ 6.546 million in 1996 become about US\$ 3068.1 million in 1997, and continued by small increase on the next year, becoming US\$ 4793.2 million in 1998, but in year 2001 the FDI value decreased again, reached the lowest value about US\$ 2788.9 million.

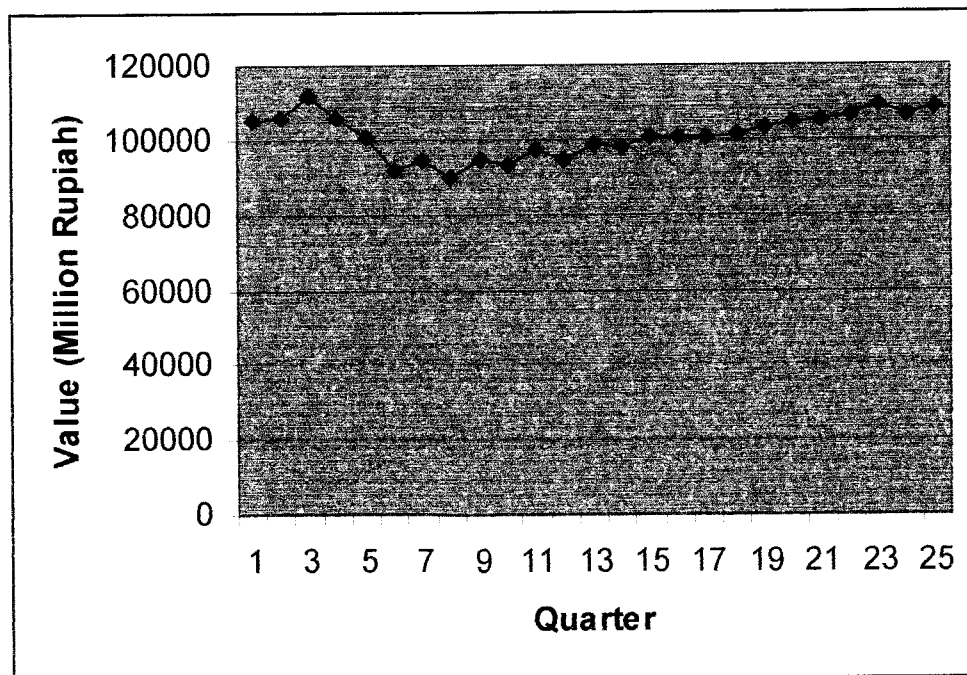
Those numbers indicate that foreign investors are very sensitive to any situation changes in Indonesia. They worried about economic, politic, social instability, and also important to notes about the security guarantee in Indonesia.

4.2. Gross Domestic Product

GDP is value of good and services produced by country in one given periods. In counting the GDP the value of good and services have been adjusted with the inflation rate. The changes of GDP from year to next year usually become the tools to measuring the economic growth.

For the developing countries, where their citizens works more in foreign than in domestic, having more GNP than the GDP. Contrary to the Less Developing Countries (LDCs) which is more of the foreigner works inside, and less citizens work in foreign country, the GDP is more than GNP. Therefore it is better to use GDP as basic to measuring the economic output in Indonesia.

Picture 4.1 below shows the fluctuation of GDP from beginning of 1997 until end of 2002.



Picture 4.1: GDP of Indonesia
Source: Bank Indonesia data

The picture shows the condition of Indonesian GDP starting first quarter of 1997 until the beginning of 2003. From the picture it can be seen that Indonesian GDP reached its peak value in the middle quarter of 1997 (112,212.70 million Rupiah), after several months of monetary crisis, the Indonesian GDP reached its lowest value that is 94,653.60 million Rupiah. After some policy released by the government, GDP value started to increase, became Rp 100,717.50 million in the end of 2000, and Rp 108,461.39 million in March 2003, almost reaching the same value of GDP 1997.

4.3. Rate of Return

4.3.1. Definition

Rate of return can be defined as the level rate of return in the capital invested if whole positive net benefit of the project (Benefit-Cost) are assumed to be reinvested in the next year. In other words, it also can be defined as the opportunity cost that can be earned if the capital not to be invested in the main project, but to be invested in alternative projects, in which the alternative projects can earn a different benefits.

4.3.2. The determinant of rate of return

The determination of rate of return was caused because there was inefficiency in capital using, meanwhile in the field the using of interests rate were so various. In choosing the right level of rate of return, one should know how much the opportunity cost if the capital is not used for the project but those capitals are used for other investment projects. Those things make level of current opportunity cost of capital for each investors of the project are not the same.

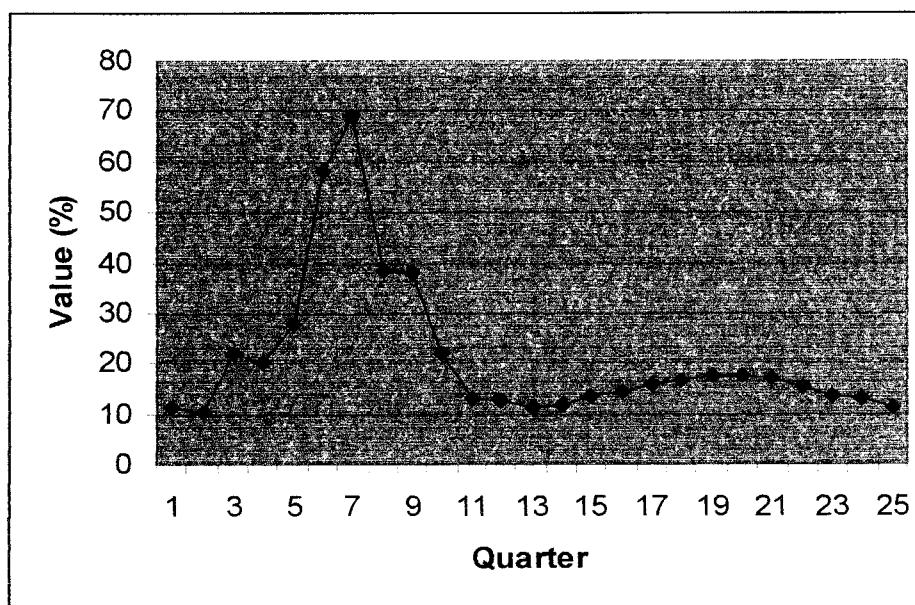
Opportunity cost of capital usually can be considered as the same as benefit level result by the project which is set between the range (margin) in setting the budget of project.

The variation of opportunity cost of capital which is also caused by the difference in economic development in region. For example Enex Consortium 346 who becomes the consultant for Ditjen Bina Marga in evaluating the project of constructing the roads in Indonesia year 1976-1979 used The Tentative Incremental IRR Threshold per Province that has a range between 15,0% - 25,0% as follows:

- 15,0% (DI Aceh, West Sumatera, Riau, Jambi, Bengkulu, whole Kalimantan, whole Sulawesi and whole Nusa Tenggara)
- 20,0% (South Sumatera, Lampung, East Java and Bali)
- 25,0% (West Java, Center Java and DI Yogyakarta)

If the result of rate of return accounting in West Java has a value of 20.0%, the proposal for the project can be rejected, it is said not proper, because the rate of return in West Java is 25.0% (Clive Gray:1997, pp 44-46).

This research will use Bank Indonesia Certificates rates as a proxy to the rate of return in Indonesia, since there is no data available. The SBI rate were so fluctuated in the beginning quarter of 1997, reached the peak on second quarter of 1998 (having value of 68.76%), and after that the fluctuation of the SBI rate were relatively stable. The fluctuation can be observed from the picture 4.2 below:

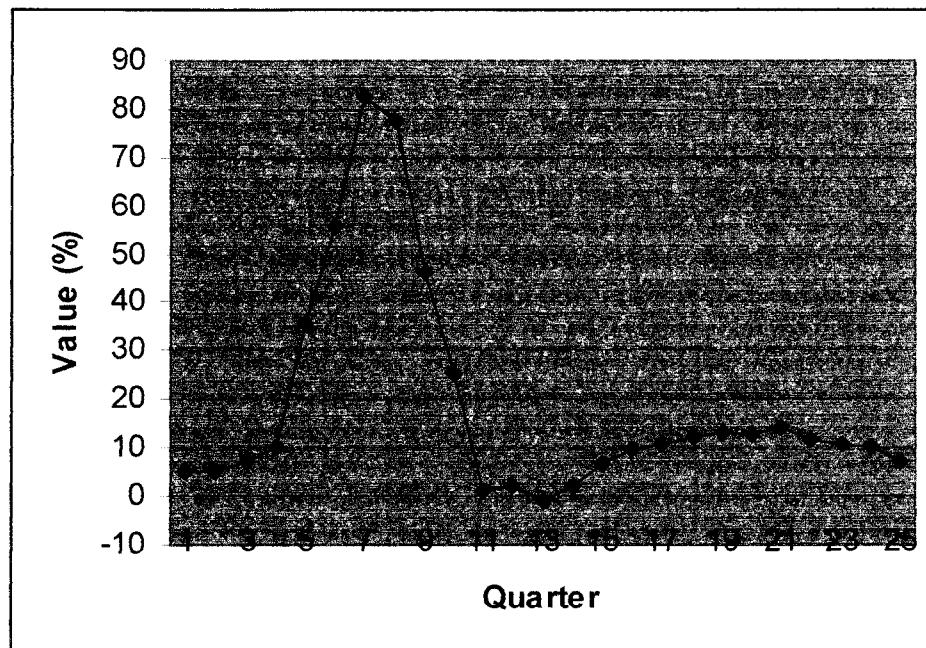


Picture 4.2: The fluctuation on SBI rate
Source: Indonesian Central Bank

4.4. Inflation

Inflation is defined as a sustained increase in the general level of prices for goods and services. It is measured as an annual percentage increase. As inflation rises, every Rupiah we own buys a smaller percentage of a good or service.

Inflation reflects a situation where the demand for goods and services exceeds their supply in the economy. Its causes could be triggered by the private sector and the government spending more than their revenues, or by shortfalls in output. Price increases could also be triggered by increases in costs of production. For instance increases in prices of imported raw materials will cause inflation if not managed. Whatever the initial cause, inflation will not persist unless accompanied by sustained increase in money supply. In this sense, inflation is a monetary phenomenon.



Picture 4.3: Indonesia inflation rate
Source: Indonesian Bank

The picture 4.3 shown that the fluctuation of inflation rate in Indonesia reach its peak on third quarter in 1998 during the crises, by value of 82.6%, and relatively stable after middle quarter of 1999.

4.5. Corruption Perception Indexes

In this research the researcher puts Corruption Perception Indexes (CPI) as a tools in measuring the level of corruption in Indonesia. The CPI are taken from Transparency International (TI) Organization official website at <http://www.transparency.org>

Below are some brief explanations about the Corruption Perception Index:

4.5.1. Definition of CPI

The TI (Transparency International) Corruption Perceptions Index (CPI) ranks 130 countries in terms of the degree to which corruption is perceived to exist among public officials and politicians. It is a composite index, drawing on 17 different polls and surveys from 13 independent institutions carried out among business people and country analysts, including surveys of residents, both local and expatriate. The sample of survey source of CPI can be observe in appendix 6, which provides the survey source for CPI 2003. The large increase in coverage relates to the fact that more valid and reputable sources have been found that can be incorporated.

4.5.2. Corruption definition based on CPI

The CPI focuses on corruption in the public sector and defines corruption as the abuse of public office for private gain. The surveys used in compiling the CPI tend to ask questions in line with the misuse of public power for private benefit, with a focus, for example, on bribe-taking by public officials in public procurement. The sources do not distinguish between administrative and political corruption.

4.5.3. Why is the CPI based only on perceptions?

It is difficult to base comparative statements on the levels of corruption in different countries on hard empirical data, e.g. by comparing the number of prosecutions or court cases. Such cross-country data do not reflect actual levels of corruption; rather it highlights the quality of prosecutors, courts and/or the media in exposing corruption. The only method of compiling comparative data is

therefore to build on the experience and perceptions of those who are most directly confronted with the realities of corruption.

4.5.4. The uses of CPI

Because the CPI is derived from 17 different surveys that garner the perceptions of both residents and expatriates, both business people, academicians and risk analysts, the index provides a snapshot of the views of decision-makers, who take key decisions on investment and trade. The CPI builds public awareness of the corruption issue, and it draws the attention of governments to the negative image of their nation that low rankings in the CPI reflect, adding another reason for them to address the problem.

It is not right to conclude that the country with the lowest score is the world's most corrupt country because:

- The country with the lowest score is the one perceived to be the most corrupt of those included in the index. The CPI is based on polls, which snapshots in time and reflect both opinions and experience.
- There are more than 200 sovereign nations in the world and the CPI 2003 ranks only 130.

The index will be set from 0 – 10, where 0 is most corrupt; 10 is least corrupt. The bigger the number, means the better the condition if country in combating the corruption.

4.5.5. Recent fact of Indonesia CPI

Year	Country Rank	CPI Score	Number of Participant
1997	43	2.0	48
1998	49	2.0	60
1999	81	1.9	89
2000	87	1.6	99
2001	85	2.0	89
2002	86	2.0	92
2003	121	1.7	130

Table 4.1: Indonesia CPI score

Source: adapted from <http://www.transparency.org>

Notes:

- A Country Rank
It shows the rank of Indonesia among the Number of Country that participated in the surveys.
- A CPI Score
It relates to perceptions of the degree of corruption as seen by business people, academics and risk analysts, and ranges between 10 (highly clean) and 0 (highly corrupt).
- Number of Participant
It shows the number of the countries included in the surveys.

Table 4.1 shows how the corruption phenomena occurs in Indonesia, the indexes decreased from 1999 to 2000, from 2,0 in 1998 became 1.6 in 2000, which means Indonesia is regarded as to become more corrupt than before. Indonesian ranks also move as the changing in CPI score, the lowest rank is at year 2001 where Indonesia gets 4 from 89 countries used.

CHAPTER V

RESEARCH METHOD

5.1. Research Method and Operational Definition

The research method used in this research is quantitative analysis. The quantitative analysis is a characteristic of variables where the mark is stated on the numerical form. The characteristics of the measurement variable make the mark being placed in an interval.

The researcher also conducts library research, it is aimed to get theories and books related to the analysis and problem research, which are later used to solve the problems in the research.

This research is designed to forecast of how much dependent variable result after it is affected by independent variables.

5.2. Research Subject

This research concentrates on the phenomenon growth of Foreign Direct Investment in Indonesia. The growth of FDI and factors that effect its growth become the subject of this thesis.

5.3. Data Gathering

The data was gathered from secondary data by searching from any government, websites, and private publication. Such additional data in the books, journals, and other reports considered as supporting data.

5.4. Research Variables

Based on the data used in this research, the variables in this thesis categorized into two variables; dependent variable and independents variables.

Both are described as follows:

1. Dependent variable

The dependent variable used in this research is the growth of Foreign Direct investment.

2. Independent variables

The independent variables in this research consist of four variables, they are:

- The value of Gross Domestic Product at 1993 constant price.
- The value of SBI as a proxy of rate of return.
- The Inflation rate.
- The Corruption Perception Indexes.

5.6. Types and Sources of Data

The type of data obtained in this research are the nominal data in term of time series data. Time series data are a set observation on the values that a variable collectedesd at regular time intervals, such as daily, monthly, quarterly, or annually.

The researcher obtains the data from sources that are relevant and representative with the research. The sources of the data are:

- International Financial Statistics published by IMF.
- Official website of Bank Indonesia. <http://www.bi.go.id>

- Official website of BKPM. <http://www.bkpm.go.id>
- Official website of Transparency International.
<http://www.transparency.org>
- Economic Indicator. Weekly report of Biro Pusat Statistik, and the website at www.bps.go.id.

5.6. Data Limitation

The data obtained in this research are limited from 1997 quarter 1, until 2003 quarter 1.

5.7. Technique of Data Analysis

The quantitative analysis is used to analyze the data, through the regression method. Those analysis methods are used to see the relationship between dependent variable with independent variables.

This research will use Eviews computer program, using Ordinary Least Square (OLS) method. By using this method, it is expected that the Best Linear Unbiased Estimator (BLUE), will be obtained by the researcher.

The regression model can be formed as follows:

$$Y = f (X_1, X_2, X_n)$$

The relation between dependent variable (Y), and independent variables is linear so that can be written as:

$$Y_t = \beta_0 + \beta_1 X1_t + \beta_2 X2_t + \beta_3 X3_t + \beta_4 X4_t + \mu_t \quad (5-1)$$

Concerning to the equation (5-1) then the estimation of Indonesian Foreign Direct Investment can be written as follow:

$$Y_t = \beta_0 + \beta_1 \text{GDP}_t + \beta_2 \text{DISC}_t + \beta_3 \text{INF}_t + \beta_4 \text{CPI}_t + \mu_i$$

Where Y_t = Private Foreign Investment

β_0 = Constant

$\beta_1 \dots \beta_4$ = regression coefficient of each variable

GDP = amount of Gross Domestic Product (Rupiah)

DISC = level of Rate of return (%)

INFL = level of Inflation (%)

CPI = index of corruption (Corruption Perception Index)

μ_i = disturbance error

The researcher also applies statistical test, which include testing about individual partial regression coefficient and testing the overall significance of the sample regression. Beside this statistical test, writer also analyzes the, R^2 , R , stationarity, classical assumption that cover: multicollinearity, autocorrelation, and heteroscedasticity.

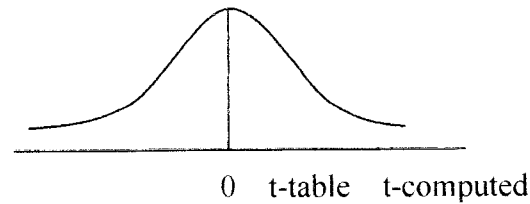
5.7.1. T-test

This T-test is used to detect the correlation between dependent variable and independent variables individually. In this research, the researcher uses one tail test since this research has a strong theoretical expectation.

There are some steps in using T-test:

1. Determine the null (H_0) and alternative hypothesis (H_a), then define the alternative test.

2. Determine the level of significance (α).
3. Determine the critical value or t-table and t-computed or t-test.



4. Compare between t-table with t-computed.
5. Decide under the assumption of one tail test caused by the specific information in the hypotheses. If the t-computed is greater than t-table one may reject H_0 and accept H_a or vice versa.

5.7.2. F-test

This test is used to detect the correlation between dependent variable and independent variables jointly. The testing of F-test is as the same as the testing for T-test:

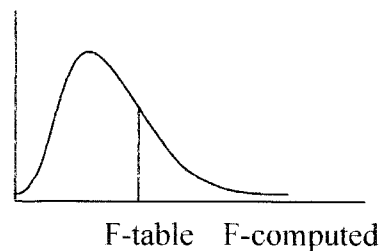
1. Determine the null (H_0) and alternative hypotheses (H_a), for example in this research the hypotheses is formulated as follows:

$H_0 = \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$; hence the independent variables do not affect the dependent variable jointly.

$H_a \neq \beta_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$; hence the independent variables affect the dependent variable jointly.

2. Determine the level of significance (α).
3. Determine the critical value of F-table and F-computed.

4. Compare between F-table and F-computed.



5. Decide if the F-computed greater than F-table, we may reject H_0 and accept H_a or vice versa.

5.7.3. Goodness of Fit (R^2)

The important property of R^2 is that it is a nondecreasing function of the number of explanatory variables or regressors present in the model; as the number of the regressor increase. R^2 almost invariably increases and never decreases. R^2 is used to detect how far the independent variables influence the dependent variable in the model (Gujarati, 1995: 207). R^2 is being a measure of the goodness of fit of a sample least squares linear regression in a body of data.

5.7.4. Classical Assumption

Basically this test is used to know whether the model in this research is a valid model or not. The model can be regarded a valid model if there is no multicollinearity, autocorrelation, and heteroscedasticity problems in the model.

5.7.4.1. Multicollinearity

Multicollinearity means the existence of a perfect or exact linear relationship among some or all explanatory variables of a regression model (Gujarati, 1995: 320). The consequences of multicollinearity are as follows:

- If there is perfect collinearity between the X 's, their regression coefficient are indeterminate and their standard errors are not defined.
- If collinearity is high but not perfect, estimation of regression coefficient is possible but their standard errors tend to be large.
- As a result, the population values of coefficients cannot be estimated precisely. However, if the objective is to estimate linear combination of these coefficients, the estimable function, this can be done even in the presence of perfect multicollinearity (Gujarati, 1995: 345)

To detect multicollinearity, the correlation method is considered the best one. The multicollinearity is predicted to happen when R^2 is high, say in excess of 0.8. If R^2 is high, the F-test in most cases will reject the hypotheses that the partial slope coefficients are simultaneously equal to zero.

5.7.4.2. Autocorrelation

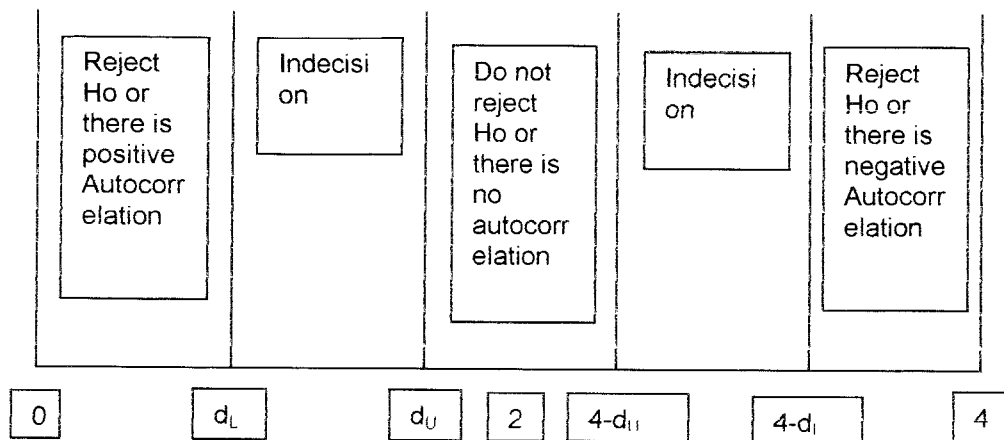
The term autocorrelation may be defined as correlation between members of series of observations ordered in time (as in time series data) or space (as in cross-sectional data) (Gujarati, 1995: 400).

Detecting the autocorrelation with Durbin Watson d-test.

Durbin Watson d-test decision rule:

Null Hypotheses	If	Decision
No positive autocorrelation	$0 < d < d_L$	Reject
No positive autocorrelation	$d_L \leq d \leq d_U$	No decision
No negative correlation	$4 - d_U < d < 4$	Reject

No negative correlation	$4-d_U \leq d \leq 4-d_L$	No decision
No autocorrelation	$d_U \leq d \leq 4-d_U$	Do not reject



5.7.4.3. Heteroscedasticity

It is the situation where there is correlation between independent variables and residual value in the model. The researcher will use White test to detect whether in this research the problem or heteroscedasticity will occur or not.

The outcomes of the test is rejecting the hypothesis stating that there is no heteroscedasticity, if the value of X^2 are less than X^2 table. Accept hypotheses if X^2 is bigger than X^2 , means that the problem of heteroscedasticity occurs in this model.

CHAPTER VI

DATA ANALYSIS

6.1. Gathering the Data

All of the data used in this model are described in the table 6.1 as follows.

Year	Month	FDI ¹	GDP ²	Rate of Return ³	Inflation Level ⁴	CPI ⁵
1997	Mar.	412.70	105261.10	11.07	1.96	2.0
	Jun.	857.30	105867.10	10.50	2.54	2.5
	Sept.	876.70	112212.70	22.00	5.37	2.5
	Dec.	921.40	105905.00	20.00	11.05	2.7
1998	Mar.	764.50	100353.70	27.75	25.13	2.0
	Jun.	1536.20	91741.90	58.00	14.4	2.3
	Sept.	2058.09	94258.10	68.76	18.61	2.3
	Dec.	434.40	89839.10	38.44	1.23	2.0
1999	Mar.	624.30	94371.10	37.84	4.05	1.9
	Jun.	561.70	93387.90	22.05	-1.3	1.8
	Sept.	3835.10	96939.90	13.02	-2.66	2.0
	Dec.	766.90	94653.60	12.51	2.04	1.7
2000	Mar.	1385.50	98244.50	11.03	0.94	1.6
	Jun.	764.70	98191.90	11.74	1.9	1.6
	Sept.	4956.30	100862.90	13.62	1.73	1.7
	Dec.	1599.50	100717.50	14.35	4.42	1.5
2001	Mar.	188.20	100856.20	15.58	2.09	2.0
	Jun.	247.80	101443.50	16.65	3.26	1.7
	Sept.	387.60	103011.25	17.57	2.55	1.9
	Dec.	1965.30	104546.35	17.62	4.01	2.2
2002	Mar.	2682.30	104917.30	16.76	3.47	2.0
	Jun.	1402.10	106277.73	15.11	0.92	1.9
	Sept.	2343.80	109199.63	13.22	1.64	2.0
	Dec.	3086.80	106345.89	12.93	3.59	2.0
2003	Mar.	1231.40	108461.39	11.04	0.77	1.7

Table 6.1: Data used

Notes:

1. Foreign Direct Investment in Million USD
Source: Badan koordinasi Penanaman Modal
2. Gross Domestic Product at 1993 Constant Prices in Billions of Rupiah
Source: <http://www.bi.go.id>
3. Rate of Return, rate of Sertifikat Bank Indonesia, in percent.
Source: International Financial Statistics (IFS), IMF various edition.
4. Inflation level in percent
Source: Statistic Year Book, Biro Pusat Statistik various edition.
5. Corruption Perception Indexes.

Source: <http://www.transparency.org>

6.2. Program Used

It is too difficult to calculating the data manually; there will be so many miscalculating occurs. The researcher will use computer as a tools in doing the calculation, and the programs that will used was Eviews ver.4. This program will help the researcher to process the data which gives the tools to regress and forecast.

6.3. Regression Analyses

6.3.1. Regression result

OLS estimation result is provided in table 6.2 below:

Variable	Coefficient	T-statistic
C	-815.2420	-0.814313
GDP	0.010057	0.935660
DIS	13.86038	2.651797
INF	22.82701	2.540140
CPI	0.248896	1.353569
R-squared	0.647126	F-statistic 6.823859
D-W stat	1.326043	

Table 6.2: OLS regression result
Source: Appendix 2

6.3.2. OLS estimation

The estimation of OLS model can be show as follows.

$$FDI_t = -815.24 + 0.01 GDP_t + 13.86 DISC_t + 22.83 INF_t + 0.25 CPI_t + \mu_t$$

$$(-0.814) \quad (0.936) \quad (2.652) \quad (2.540) \quad (1.353)$$

$$R^2 = 0.647126$$

$$F\text{-stat} = 6.823859$$

$$\text{Durbin Watson stat} = 1.326$$

Source: Appendix 2

6.4. Research Finding

The estimation of FDI is less satisfying, from the coefficient of determination result on 0.6472, in which one can conclude that the variation of the dependent variable can be explained by the independent variables used by 64.72%. Other factor affecting the Indonesia's FDI is explained by variables outside of the model.

$$6 - 64.72 = 33.28 \text{ out}$$

6.4.1. Constant or intercept

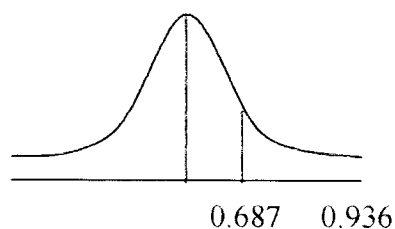
The constant value is -182.242, indicates the average level of FDI in Indonesia is -182.242 when other variable is zero. The sign is negative, means kept other variable constant, the Indonesian FDI tends to decrease.

6.4.2. Gross Domestic Product

Ho: GDP = 0; GDP does not influence FDI significantly.

Ha: GDP > 0; GDP does influence FDI significantly.

$\alpha = 0.25$; $n = 25$; $k = 5$; $n-k = 20$; T-table = 0.687; T-computed = 0.936



Decision, given α at 25% the T-computed 0.936 more than T-table. Hence H_0 is rejected, and accept H_a ; GDP does effect FDI significantly.

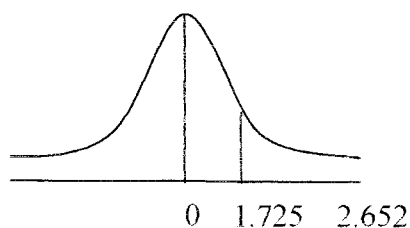
The coefficient of GDP has a value of 0.01, means if there is an increasing of GDP value of 1 Billions Rupiah, will make an increase on FDI value by 0.01 Million USD . The result is fit to the hypothesis proposed, where the increase on value of GDP will increase in Value of FDI. This is happen because the increase in GDP is the sign of wealth in nations and will impact on the expansion of the market.

6.4.3. Rate of Return

H_0 : Rate of return = 0; Rate of return does not influence FDI significantly.

H_a : Rate of return > 0; Rate of return does influence FDI significantly.

$\alpha = 0.05$; $n = 25$; $k = 5$; $n-k = 20$; T-table = 1,725; T-computed = 2.652



Decision, given α at 5% the T-computed 2.652 more than T-table. Hence H_0 is rejected, and accept H_a ; Rate of return does effect FDI significantly.

The coefficient Rate of return has a value of 13.86, means if there is an increasing in rate of return about 1 percent will make an increase on FDI value

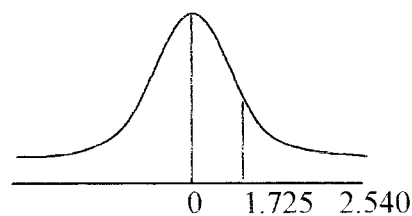
about 13.86 Million USD. The result is fit to the hypothesis before, that values of rate of return have a positive impact to the FDI in Indonesia. The increase on rate of return will attract more investor, because they see that the level rate of return to their capital is increasing too.

6.4.4. Inflation level

Ho: Inflation = 0; Inflation does not influence FDI significantly.

Ha: Inflation > 0; Inflation does influence FDI significantly.

$\alpha = 0.05$; $n = 25$; $k = 5$; $n-k = 20$; T-table = 1,725; T-computed = 2.540



Decision, given α at 5% the T-computed 2.540 more than T-table. Hence Ho is rejected, and accept Ha; Inflation does effect FDI significantly.

The coefficient of Inflation has a positive value of 22.83, means if there is an increasing of Inflation value about 1 percent will make an increase on FDI around 22.83 Million USD. The result of this regression is contrary to the hypothesis before, state that inflation value will have negative impact to the FDI. This could be because the increase in inflation value as the impact of increasing in output price will tend to attract the investors. Inflation affects different people in different ways. It also depends on whether inflation is anticipated or unanticipated. If the inflation rate corresponds to what the majority of people are expecting (anticipated inflation), then we can compensate and the cost isn't high.

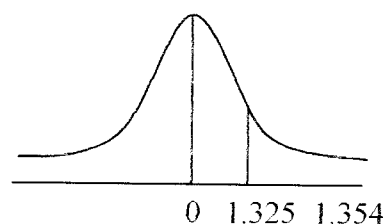
For example, banks can vary their interest rates and workers can negotiate contracts that include automatic wage hikes as the price level goes up.

6.4.5. Corruption Perception Index

H_0 : CPI = 0; CPI does not influence FDI significantly.

H_a : CPI > 0; CPI does influence FDI significantly.

$\alpha = 0.1$; $n = 25$; $k = 5$; $n-k = 20$; T-table = 1.325; T-computed = 1.354



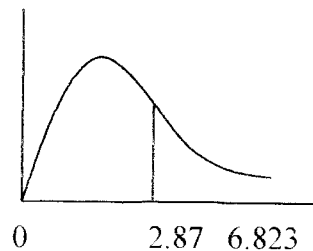
Decision, given α at 10% the T-computed 1.354 more than T-table. Hence H_0 is rejected, and accepts H_a ; CPI does affecting FDI significantly. The coefficient values of CPI have a positive sign around 0.2489. Means if there is an increasing value of CPI of 1 point (means less corrupt), will impact on the increase of Indonesian FDI of 0.25 Million USD. This positive sign is fit to the first hypothesis that increases in value of CPI (that describes the phenomena in decreasing of corruption happen in Indonesia), will make investor more invest of their capital in Indonesia.

6.4.6. F-test

$H_0 = \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$; hence the independent variables do not affect the dependent variable jointly.

$H_0 \neq \beta_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$; hence the independent variables affect the dependent variable jointly.

$\alpha = 0.05$; $n = 25$; $k-1 = 4$; $n-k = 20$; $F\text{-table} = 2.87$; $F\text{-computed} = 6.823$



Decision, the $F\text{-computed}$ (6.823) is greater than $F\text{-table}$, then we accept H_a , so that most of the variable used, are significantly affecting the Indonesia's FDI.

6.4.7. Classical assumption

6.4.7.1. Multicollinearity

In this research the researcher use Correlation Matrix methods, and after run the Eviews computer program, the result of correlation matrix is as follows.

	GDP	DISC	INF	CPI
GDP	1.000	-0.562	-0.132	0.253
DISC	-0.562	1.000	0.637	0.358
INF	-0.132	0.637	1.000	0.404
CPI	0.253	0.358	0.404	1.000

Table 6.3: Correlation matrix result.

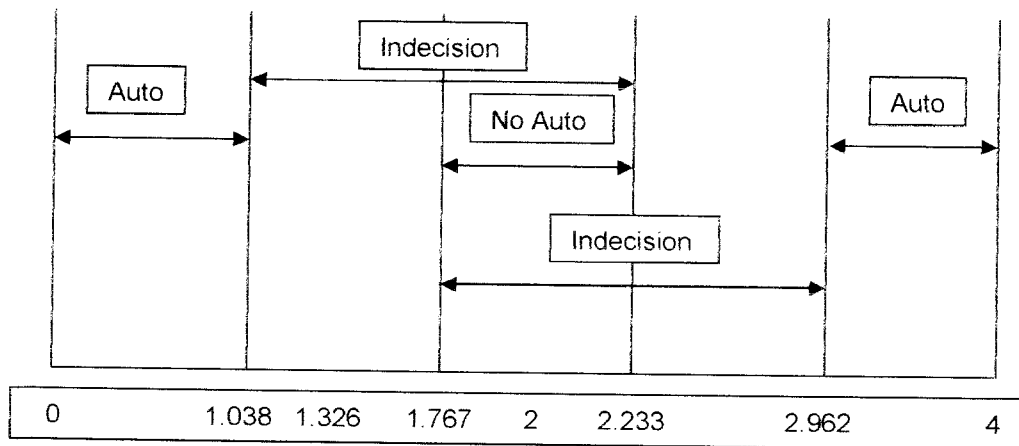
Source: Appendix 3

Result of multicollinearity by correlation matrix showed that there is no multicollinearity occurs in this model, since all of the value of X^2 are less then 0.8.

6.4.7.2. Autocorrelation

To test the autocorrelation, the researcher used the Durbin Watson d-test.

$n = 25$; $k = 4$; $\alpha = 5\%$; $d_L = 1.038$; $d_U = 1.767$; $4-d_U = 2.233$; $4-d_L = 2.962$



Decision, the Durbin Watson statistic lies on the area of indecision, close to the area of no autocorrelation. One can suggest that there is no autocorrelation. Therefore the classical assumption can be satisfied.

6.4.7.3. Heteroscedasticity

To test the autocorrelation, the researcher used the White test, $\alpha = 0.05$; $df= 20$; complete result showed at table 6.4

Observation	X^2 Table	X^2 Computed	Decision
Obs * R^2	31.4104	7.738650	No Heteroscedasticity

Table 6.5: White test
Source: Appendix 4

Result of heteroscedasticity test at table shows that there is no heteroscedasticity, since X^2 table is greater from X^2 computed.

6.4.8. The Weaknesses of the Research

The weaknesses of this research lies on the several things bellows:

- Lack of data to determine about Rate of return make a researcher use the Sertifikat Bank Indonesia rate as an proxy to the rate of return. This kind

of data has two ways in affecting FDI, in investment and also in monetary impact.

- The Corruption Perception Indexes (CPI) data are taken from the website of Transparency International (TI) in May 2003, in which could be TI has changed the outline of their website. There is no further information related to the formed of CPI on their website, and also the research methodology in doing the surveys on their website.

CHAPTER VII

CONCLUSION AND POLICY IMPLICATION

7.1. Conclusion

Research finding can be use to answer the question state on problem formulation before. Than, based on the regression analyses one may conclude that GDP, Rate of return, Inflation and Corruption, in different level of α , gives a significant effect to the Indonesian Foreign Direct Investment.

From the examination and discussion of the previous chapter, for the Indonesia Gross Domestic Product test is fit to the hypothesis proposed that GDP does affect Indonesia Foreign Direct Investment positively by the value of 0.01 Million USD. Rate of return regression result was affect FDI significantly, and has no contrary to the hypothesis that it has positive value of 13.86 Million USD. Inflation level has significant effect to the FDI, but also the regression result is in contradiction to the hypothesis, inflation has a positive impact to FDI in value of 22.82 Million USD. Last, for the Corruption Perception Index is having a positive value of 0.24 Million USD, fit to the hypothesis proposed, and this value has significant effect to Indonesia FDI.

Related to the classical assumptions test result, it can conclude that this research was free from the problems of Multicollinearity, Autocorrelation, and Heteroscedasticity.

7.2. Policy Implication

Governments of Indonesia should giving more attention refers to the potential factor that affecting Foreign Direct Investment in Indonesia.

Based on the finding in econometrical regression and coefficient, show that rate of return and inflation give significant effect for the Indonesian FDI, on high degree of trust, so this variable have more effect in determining Indonesia FDI.

Researcher proposes for the policy makers to give more attention to those factors. Set the value of inflation in expected value (anticipated inflation), will attract more foreign investors. Since this research use rate of SBI as a proxy to the rate of return, that have two side effects in investment and also monetary, researcher suggest for the policy maker to be careful in decide the appropriate level of SBI, so it won't reduce the investment.

For the GDP and Corruption level, even though these variables not too significant in determining the level of Indonesian FDI, they should be give an attention to. Policy makers should care to the distribution of GDP among the citizens, in order to spread the market and increasing their purchasing power. Law enforcement, cut the bureaucracy in doing business license, in order to reduce the corruption by public officers in Indonesia should be applied well, so that it will attract more foreign investors.

Of course, the policies proposed are not fully enough in determining the level of Indonesia FDI. Factors other than rate of return and inflation still inherent affecting the Indonesia FDI. Therefore other policies related to the FDI should be handled together as effective as possible to attract foreign investors.

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APPENDICES

Appendix: 1**DATA USED**

Year	Month	FDI	GDP constant	Discount Rate	Inflation Level	CPI
1997	Mar.	412.70	105261.10	11.07	1.96	2.0
	Jun.	857.30	105867.10	10.50	2.54	2.5
	Sept.	876.70	112212.70	22.00	5.37	2.5
	Dec.	921.40	105905.00	20.00	11.05	2.7
1998	Mar.	764.50	100353.70	27.75	25.13	2.0
	Jun.	1536.20	91741.90	58.00	14.4	2.3
	Sept.	2058.09	94258.10	68.76	18.61	2.3
	Dec.	434.40	89839.10	38.44	1.23	2.0
1999	Mar.	624.30	94371.10	37.84	4.05	1.9
	Jun.	561.70	93387.90	22.05	-1.3	1.8
	Sept.	3835.10	96939.90	13.02	-2.66	2.0
	Dec.	766.90	94653.60	12.51	2.04	1.7
2000	Mar.	1385.50	98244.50	11.03	0.94	1.6
	Jun.	764.70	98191.90	11.74	1.9	1.6
	Sept.	4956.30	100862.90	13.62	1.73	1.7
	Dec.	1599.50	100717.50	14.35	4.42	1.5
2001	Mar.	188.20	100856.20	15.58	2.09	2.0
	Jun.	247.80	101443.50	16.65	3.26	1.7
	Sept.	387.60	103011.25	17.57	2.55	1.9
	Dec.	1965.30	104546.35	17.62	4.01	2.2
2002	Mar.	2682.30	104917.30	16.76	3.47	2.0
	Jun.	1402.10	106277.73	15.11	0.92	1.9
	Sept.	2343.80	109199.63	13.22	1.64	2.0
	Dec.	3086.80	106345.89	12.93	3.59	2.0
2003	Mar.	1231.40	108461.39	11.04	0.77	1.7

Appendix: 2**REGRESSION ESTIMATION****OLS result**

Dependent Variable: FDI
Method: Least Squares
Date: 07/10/04 Time: 10:38
Sample: 1997:1 2003:1
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-815.2420	1001.141	-0.814313	0.4251
GDP	0.010057	0.010749	0.935660	0.3606
DISC	13.86038	5.226866	2.651757	0.0153
INF	22.82701	8.986516	2.540140	0.0195
CPI	0.248896	0.767051	1.353569	0.1910
R-squared	0.647126	Mean dependent var		491.0760
Adjusted R-squared	0.562551	S.D. dependent var		280.7117
S.E. of regression	199.9662	Akaike info criterion		13.61103
Sum squared resid	799729.5	Schwarz criterion		13.85481
Log likelihood	-165.1379	F-statistic		6.823859
Durbin-Watson stat	1.326043	Prob(F-statistic)		0.001238

Appendix 3

MULTICOLLINEARITY

Correlation Matrix result

	GDP	DIS	INF	CPI
GDP	1.000000	-0.562099	-0.132202	0.253111
DIS	-0.562099	1.000000	0.636576	0.357733
INF	-0.132202	0.636576	1.000000	0.403680
CPI	0.253111	0.357733	0.403680	1.000000

HETEROSCEDASTICITY

White Test result

White Heteroskedasticity Test:

F-statistic	0.896645	Probability	0.541564
Obs*R-squared	7.738650	Probability	0.459407

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/10/04 Time: 11:17

Sample: 1997:1 2003:1

Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5690633.	3854563.	-1.476337	0.1593
GDP	103.0484	76.51101	1.346844	0.1968
GDP^2	-0.000494	0.000373	-1.324969	0.2038
DIS	3441.630	4329.489	0.794927	0.4383
DIS^2	-33.19380	43.78044	-0.758188	0.4594
INF	2255.124	7993.084	0.282134	0.7815
INF^2	-203.7196	280.8674	-0.725323	0.4787
CPI	334378.1	448030.4	0.746329	0.4663
CPI^2	-86108.05	107603.1	-0.800237	0.4353
R-squared	0.309546	Mean dependent var	31989.18	
Adjusted R-squared	-0.035681	S.D. dependent var	42156.15	
S.E. of regression	42901.64	Akaike info criterion	24.44492	
Sum squared resid	2.94E+10	Schwarz criterion	24.88372	
Log likelihood	-296.5615	F-statistic	0.896645	
Durbin-Watson stat	2.466298	Prob(F-statistic)	0.541564	

Appendix 6

Forms of Corruption and its Types

(Adapted from World Bank Institution on <http://www.worldbank.org>)

Bribery. Bribes are one of the main tools of corruption. They can be used by private parties to "buy" many things provided by central or local governments, or officials may seek bribes in supplying those things.

Government contracts. Bribes can influence the government's choice of firms to supply goods, services, and works, as well as the terms of their contracts. Firms may bribe to win a contract or to ensure that contractual breaches are tolerated.

Government benefits. Bribes can influence the allocation of government benefits, whether monetary benefits (such as subsidies to enterprises or individuals or access to pensions or unemployment insurance) or in-kind benefits (such as access to certain schools, medical care, or stakes in enterprises being privatized).

Lower taxes. Bribes can be used to reduce the amount of taxes or other fees collected by the government from private parties. Such bribes may be proposed by the tax collector or the taxpayer. In many countries the tax bill is negotiable.

Licenses. Bribes may be demanded or offered for the issuance of a license that conveys an exclusive right, such as a land development concession or the exploitation of a natural resource. Sometimes politicians and bureaucrats deliberately put in place policies that create control rights which they profit from by selling.

Time. Bribes may be offered to speed up the government's granting of permission to carry out legal activities, such as company registration or construction permits. Bribes can also be extorted by the threat of inaction or delay.

Legal outcomes. Bribes can change the outcome of the legal process as it applies to private parties, by inducing the government either to ignore illegal activities (such as drug dealing or pollution) or to favor one party over another in court cases or other legal proceedings.

Appendix 6

The government benefits purchased with bribes vary by type and size. Contracts and other benefits can be enormous (grand or wholesale corruption) or very small (petty or retail corruption), and the impact of misinterpretation of laws can be dramatic or minor. Grand corruption is often associated with international business transactions and usually involves politicians as well as bureaucrats. The bribery transaction may take place entirely outside the country. Petty corruption may be pervasive throughout the public sector if firms and individuals regularly experience it when they seek a license or a service from government. The bribes may be retained by individual recipients or pooled in an elaborate sharing arrangement. The sums involved in grand corruption may make newspaper headlines around the world, but the aggregate costs of petty corruption, in terms of both money and economic distortions, may be as great if not greater.

Theft. Theft of state assets by officials charged with their stewardship is also corruption. An extreme form is the large-scale "spontaneous" privatization of state assets by enterprise managers and other officials in some transition economies. At the other end of the scale is petty theft of items such as office equipment and stationery, vehicles, and fuel. The perpetrators of petty theft are usually middle- and lower-level officials, compensating, in some cases, for inadequate salaries. Asset control systems are typically weak or nonexistent, as is the institutional capacity to identify and punish wrongdoers.

Theft of government financial resources is another form of corruption. Officials may pocket tax revenues or fees (often with the collusion of the payer, in effect combining theft with bribery), steal cash from treasuries, extend advances to themselves that are never repaid, or draw pay for fictitious "ghost" workers, a pattern well documented in the reports of audit authorities. In such cases, financial control systems typically have broken down or are neglected by managers.

Political and bureaucratic corruption. Corruption within government can take place at both the political and the bureaucratic levels. The first may be independent of the second, or there may be collusion. At one level, controlling political corruption involves election laws, campaign finance regulations, and conflict of interest rules for parliamentarians. These types of laws and regulations

Appendix 6

lie beyond the mandate and expertise of the Bank but nevertheless are part of what a country needs to control corruption. At another level corruption may be intrinsic to the way power is exercised and may be impossible to reduce through lawmaking alone. In the extreme case, state institutions may be infiltrated by criminal elements and turned into instruments of individual enrichment.

Isolated and systemic corruption. Corruption in a society can be rare or widespread. If it is rare, consisting of a few individual acts, it is straightforward (though seldom easy) to detect and punish. In such cases, noncorrupt behavior is the norm, and institutions in both the public and private sectors support integrity in public life. Such institutions, both formal and informal, are sufficiently strong to return the system to a noncorrupt equilibrium. In contrast, corruption is systemic (pervasive or entrenched) where bribery, on a large or small scale, is routine in dealings between the public sector and firms or individuals. Where systemic corruption exists, formal and informal rules are at odds with one another; bribery may be illegal but is understood by everyone to be routine in transactions with the government. Another kind of equilibrium prevails, a systemic corruption "trap" in which the incentives are strong for firms, individuals, and officials to comply with and not fight the system. And there may be different degrees of coordination between those taking bribes, ranging from uncontrolled extortion by multiple officials to highly organized bribe collection and distribution systems. Antibribery laws notwithstanding, there are many countries in which bribery characterizes the rules of the game in private-public interactions. Systemic corruption may occur uniformly across the public sector, or it may be confined to certain agencies—such as customs or tax authorities, public works or other ministries, or particular levels of government.

Corruption in the private sector. Fraud and bribery can and do take place in the private sector, often with costly results. Unregulated financial systems permeated with fraud can undermine savings and deter foreign investment. They also make a country vulnerable to financial crises and macroeconomic instability. Entire banks or savings and loan institutions may be taken over by criminals for the purpose of wholesale fraud. Popular support for privatization or the deepening

Appendix 6

of financial markets can be eroded if poor regulation leads to small shareholders or savers withdrawing when confronted by insider dealings and the enrichment of managers. And a strong corporate focus on profitability may not prevent individual employees soliciting bribes from suppliers. Furthermore, when corruption is systemic in the public sector, firms that do business with government agencies can seldom escape participating in bribery (World Bank, 1998).