CORPORATE GOVERNANCE AND THE COST OF EQUITY CAPITAL OF MANUFACTURE COMPANY ON JAKARTA STOCK EXCHANGE 2000-2003
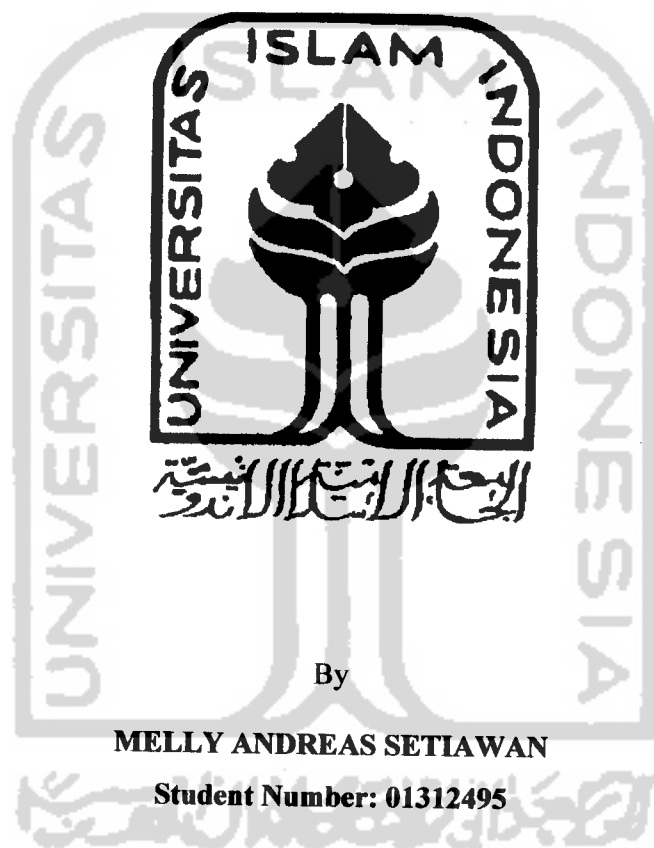
A THESIS

By

MELLY ANDREAS SETIAWAN
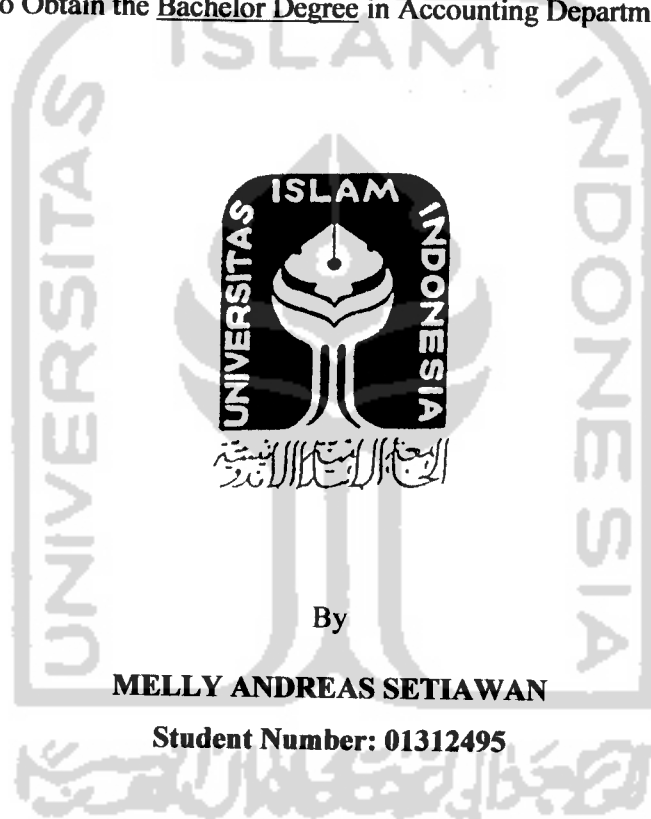
Student Number: 01312495

**DEPARTMENT OF ACCOUNTING
INTERNATIONAL PROGRAM
FACULTY OF ECONOMICS
ISLAMIC UNIVERSITY OF INDONESIA
YOGYAKARTA
2006**

CORPORATE GOVERNANCE AND THE COST OF EQUITY CAPITAL OF MANUFACTURE COMPANY ON JAKARTA STOCK EXCHANGE 2000-2003

A THESIS

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

By

MELLY ANDREAS SETIAWAN

Student Number: 01312495

**DEPARTMENT OF ACCOUNTING
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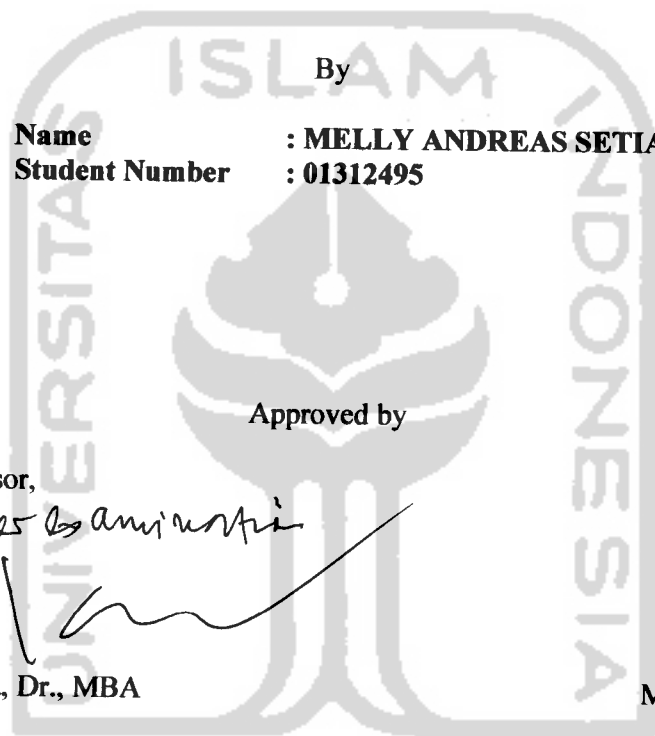# CORPORATE GOVERNANCE AND THE COST OF EQUITY CAPITAL OF MANUFACTURE COMPANY ON JAKARTA STOCK EXCHANGE 2000-2003

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Name   : MELLY ANDREAS SETIAWAN

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CORPORATE GOVERNANCE AND THE COST OF EQUITY CAPITAL OF MANUFACTURE COMPANY ON JAKARTA STOCK EXCHANGE 2000-2003

A BACHELOR DEGREE THESIS

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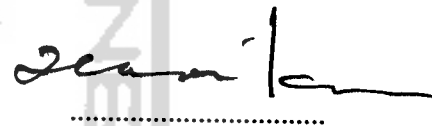
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STATEMENT OF FREE PLAGIARISM

Herein I declare the originality of this thesis; there is no other work which has never presented to obtain any university degree, and in my concern there is neither one else's opinion nor published written work, except acknowledgement quotation relevant to the topic of this thesis which have been stated or listed on the thesis bibliography.

If in the future this statement is not proven as it supposed to be, I am willing to accept any sanction complying to the determinated regulation for its consequence.

Yogyakarta, May 2006

Melly Andreas Setiawan

بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

"They say, "Life is too short, the here and the now"

And "You're only given one shot"

But could there be more, Have I lived before,

or could this be all that we've got?

I may never find all the answers

I may never understand why

I may never prove what I know to be true

But I know that I still have to try."

—Dream Theater : The Spirit Carries On—

Somebody might be there to help us, encourage us to take a step in our way. But the lessons we learn is always belongs to us.

—Melly Andreas Setiawan—

I dedicate this thesis to my families— Mami (Sri Andryastuty), Papi (Atmayani), Axlia and The Twin Sisters; Afriza and Afreza Especially gives to Wahyudi Pratna—Thank You for Loving Me

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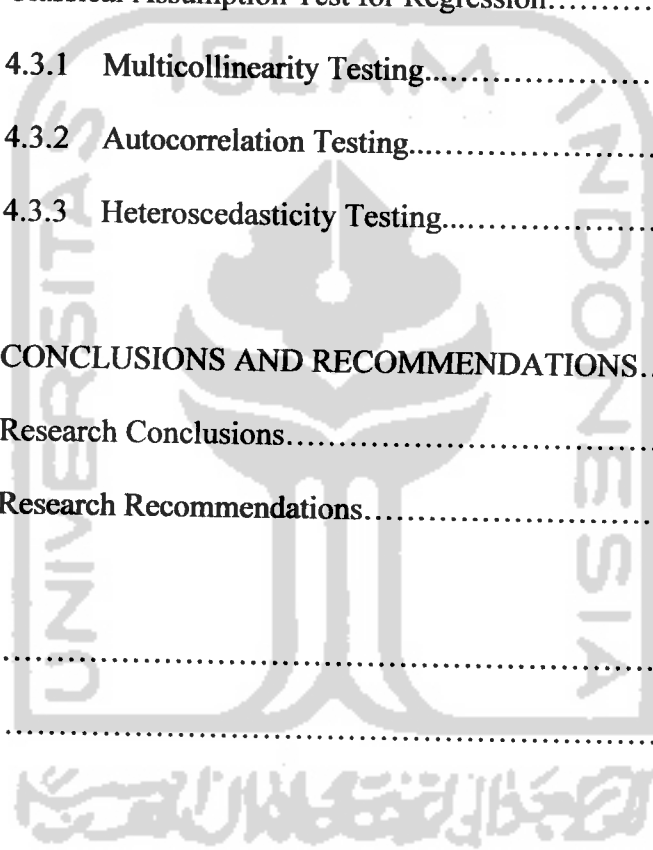
Yogyakarta, May 2006

Melly Andreas Setiawan

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ABSTRACT

Setiawan, Melly Andreas (2006). Corporate Governance and The Cost of Equity Capital of Manufacture Company on Jakarta Stock Exchange 2000-2003. Faculty of Economics, Islamic University of Indonesia, Yogyakarta.

Separation of ownership and control in corporate organizations creates information asymmetry problems between shareholders and managers that expose shareholders to agency risk. Information asymmetry creates a moral hazard problem when managers have incentives to pursue their own interests at shareholder expense. Imperfect information on the quality of management and the economic value of the firm result in greater agency risks being imposed on the shareholder. Thus, the corporate governance is used as a mechanism to reduce agency costs, and therefore, firms with better corporate governance implementation should have a higher valuation and a lower cost of equity capital.

This empirical study has a purpose to analyze whether the corporate governance mechanisms, consisting of the quality of firms' financial information, ownership structure, and board structure has an effect on the firms' cost of equity capital. The sample used consists of 301 Indonesian firms that are listed in Jakarta Stock Exchange for the period of 2000-2003.

The results show that the corporate governance mechanisms have a relation but not significantly affected to the cost of equity capital. Moreover, the result provides support the hypothesis that abnormal accruals positively affect significant the cost of equity capital. This result leads to the conclusion that although a firm has already implemented corporate governance mechanisms; it will not affect the cost of equity capital.

Keywords: Cost of Equity Capital, Earning Transparency, Abnormal Accrual, Institutional Ownership, Managerial Ownership, Board of Directors.

ABSTRAK

Setiawan, Melly Andreas (2006). *Corporate Governance* dan *Cost of Equity Capital* pada Perusahaan Manufaktur di Bursa Efek Jakarta 2000-2003. Fakultas Ekonomi, Universitas Islam Indonesia, Yogyakarta.

Pemisahan dari kepemilikan dan control dalam suatu organisasi menimbulkan asimetri informasi antara pemegang saham dan manajer yang mengungkapkan resiko agensi kepada pemegang saham. Asimetri informasi menimbulkan suatu masalah moral dimana manajer terdorong untuk mengejar kepentingannya sendiri terhadap pemegang saham. Ketidaksempuranaan informasi pada kualitas manajemen dan perekonomian perusahaan menghasilkan resiko agensi yang lebih besar yang dibebankan kepada pemegang saham. Mekanisme *corporate governance* digunakan untuk mengurangi biaya agensi, oleh karena itu, perusahaan yang mengimplementasikan *corporate governance* dengan baik akan memiliki penilaian yang tinggi dan *cost of equity capital* yang semakin rendah.

Studi empiris ini bertujuan untuk menganalisa apakah mekanisme corporate governance, yang terdiri dari kualitas informasi keuangan perusahaan, struktur kepemilikan, dan struktur dewan direksi mempengaruhi *cost of equity capital* perusahaan. Sampel yang digunakan terdiri dari 301 perusahaan Indonesia yang terdaftar di Bursa Efek Jakarta, dengan periode pengamatan 2000-2003.

Hasil penelitian ini menunjukkan bahwa mekanisme *corporate governance* memiliki hubungan, namun tidak terdapat pengaruh yang signifikan terhadap *cost of equity capital.* Selain itu, hasil yang mendukung hipotesis bahwa abnormal accrual memiliki pengaruh positif yang signifikan terhadap *cost of equity capital.* Hasil ini mengarah kepada sebuah kesimpulan, meskipun suatu perusahaan telah menerapkan mekanisme *corporate governance*, hal itu tidak akan mempengaruhi *cost of equity capital.*

Kata Kunci: *Cost of equity capital, Earnings* Transparansi, *Abnormal Accrual,* Kepemilikan Institusional, Kepemilikan Manajerial, Dewan Direksi.

CHAPTER I

INTRODUCTION

1.1 Study Background

The study of corporate governance, in the context of the agency theory shows that there is exits a separation between the owners of the firm (principals) and those who control the firm's daily operations (agents or managers). As a result, corporate governance is conceptualized around the corporate governance problem where principals risk bearing shareholders, interested in maximizing their investments; monitor agents, who might be shirking or working towards enhancing their individual interests. Thus, as Shelifer and Vishny (1997) state, "agency theorists aim to understand how investors get the managers to give them back their money and hence minimize agency costs."

In order to recover the economy, the government of Indonesia and the International Monetary Fund (IMF) introduced the concept of good corporate governance as management procedures of the healthy company. This concept is expected to protect the stockholders and creditors in order to get back their investment. Research conducted by Asian Development Bank (ADB) concluded the causes of economic crisis in Asian nations, including Indonesia, that are: (1) the mechanism of board of commissioner observation (board of directors) and the audit committee of a company do not function effectively in protecting the stockholder interests and (2) company management that is not yet professional. Thus, by applying the concept of good corporate governance in Indonesia, we can

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expect improved professionalism and stockholder prosperity without disregarding stakeholders' interests.

Good corporate governance definitively represents the system that arranges and controls a company to add value for all stakeholders. There are two points emphasized in this concept, first, the importance of stockholder rights to get the accurate financial information on time, and second, the company obligation to disclose accurate figures, and information about company performance in a timely and transparent fashion to the stakeholders. There are four principles which should be implemented in a company's governance; fairness, transparency, accountability, and responsibility. These principles are important because the application of good corporate governance has consistently been proven to improve the quality of financial statements. Chtourou Et al. (2001) also note "the principle of good corporate governance that applied consistently can become the constrain activity of the company performance resulting the financial statement that not depict the fundamental value of the company."

One of the major advantages that could be gained from implementing corporate governance is minimizing the cost of equity capital. A well-governed company could create a positive reference for creditors. Such a condition is a significant requirement in order to minimize the cost of capital that a corporation must bear when proposing a loan. As a result, the financial performance will improve, and the products released to the marketplace would be much more competitive. Information asymmetry creates a condition that will result in moral

hazard. When managers have incentives to pursue their own interests at shareholder expense it creates an adverse selection. This in turn, will disadvantage all participants in the market and distort the economic condition. The quality of management and the economic value of the firm will result in greater agency risk imposed on the shareholder if there were imperfect information. Rational investors demand a premium for bearing agency risk; effectively raising the firm's cost of equity capital.

The agency theory of Jensen and Meckling (1976) suggests that there are conflicts of interest between managers and shareholders. "Corporate governance is designed to establish the relations between managers and shareholders so that the interest of both can be aligned and outside investors can be protected against expropriation by insiders." That is, corporate governance is a mechanism that is used to reduce agency costs, and therefore firms with better corporate governance should have a higher valuation and a lower cost of capital. Recent empirical evidence seems to support this theory in terms of firm valuations.

The author analyzed the effects of corporate governance on the cost of equity capital based on previous research that explained several mechanisms of corporate governance that reduce agency problems (Bushman and Smith, 2001 and Shleifer and Vishny, 1997). Specifically, the author examines governance attributes that relate to financial information quality, ownership structure, and board structure. The proxies for the quality of a firm's financial information are uses the magnitude of abnormal accruals and the timeliness of earnings (transparent).

Cost of capital is another form of the impact of information asymmetry. Some researchers tested the effect of information asymmetry on the cost of capital; they are Handa and Linn (1993), Coles et al. (1995), and Clarkson et al. (1996). They pointed out that the increasing of disclosure will reduce the risk of estimation, so that the assets will increase. Previous researches indicate that fuller disclosure will reduce information asymmetry, and this reduces cost of capital. Verrecchia (1991) says that "the increasing of disclosure will increase the liquidity of market price, so that the cost of capital will decrease." Botosan (1997) tested directly the effect of information asymmetry to the cost of capital. The result showed that disclosure can reduce the cost of capital. According to Komalasari and Baridwan (2001), Mardiyah and Murni (2002), Khomsiyah and Susanti (2003), there is a positive relationship between information asymmetry and cost of capital.

The study of this issue is motivated based on prior research of Hollis Ashbaugh, Daniel W. Collins, and Ryan LaFond (2004) that investigates which governance attributes are intended to mitigate agency risk affect on firms' cost of equity capital. They found that firms reporting larger abnormal accruals have a higher cost of equity, whereas firms with more transparent earnings have a lower cost of equity. The institutional ownership in the form of the number of stockholders was positively related to the cost of equity. They also found a negative relation between managerial ownership, board of directors, and the cost of equity capital.

1.2 Problem Formulation

Based on the explanation above, the main problem of this research is whether the corporate governance mechanisms, those are the quality of firms' financial information, ownership structure, and board structure, affect firms' cost of equity capital.

1.3 Research Objectives

The objective of this research is to analyze whether the corporate governance mechanisms, consisting of the quality of firms' financial information, ownership structure, and board structure, affect firms' cost of equity capital.

1.4 Research Contributions

The findings of this research will hopefully contribute the following benefits:

1. For company management, this research will contribute information about the relation and affect of corporate governance mechanisms with the cost of equity capital. Management can then help the investor to understand and measure the company, in order to influence the investor to invest in the enterprise.

2. For the company, this research will give input and/or supporting opinions to be considered by companies in making decisions in the future.

3. For academics, this research hopefully can contribute to previous research conducted and could be utilized as a reference for future research.

1.5 Definition of Terms

CHAPTER 1 INTRODUCTION

Contain the background of the study, problem formulation, research objectives, research contributions, and the definition of terms.

CHAPTER 2 REVIEW OF RELATED LITERATURE

Describes related theoretical writing conducted by prior researchers on the same or related topics and describes the present state of knowledge that supports the topic research and the hypothesis formulation.

CHAPTER 3 RESEARCH METHOD

Contains the procedures to gather and analyze the data, sample, population, and the analysis method.

CHAPTER 4 RESEARCH FINDINGS AND DISCUSSIONS

Contain research description and research findings concerned with the research analysis based on the research method and technique of data analysis.

CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

This is the last chapter that contains the conclusion of research; its findings and recommendations for future research.

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 Corporate Governance

Corporate governance is an interesting topic for research at present. Poor corporate governance has been cited as one of the causes of the East Asian financial crisis of 1997-1998, including Indonesia. One of the impacts was company collapses, caused by a weak base of growth, against the healthy corporate governance. In other words, low corporate governance had caused companies failure to survive the crisis. Based on the Asian Development Bank (ADB) research, it can be concluded that Asian countries, including Indonesia, have some conditions that often occur in corporate governance implementations, such as: (1) ineffective control mechanism of Board of Commissioners and audit system that was supposed to protect the stockholder's interest; (2) less professional company management.

In advanced countries, such as Europe and the United States, the concept of good corporate governance, as the separation between the owner and the management, has been an issue for quite a long time. This concept got a lot of attention in America in the '80s when scandals such as corporate takeovers and management buyouts happened and shocked shareholders. In this case, the management, who receive a mandate from the shareholders, is responsible for company low performance. The misuse of authority occurs when company management puts their own interests above the shareholders' interest.

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Considering this condition and situation, activists and company observers began to arrange a system so that the company management would be accountable to the shareholders and stakeholders.

Corporate governance first introduced by Cadbury Committee, 1992, known as Cadbury Report. This report was a turning point for corporate governance practices in the world. In Indonesia, the discourse on corporate governance became a reality after the corporate sectors were knocked down by economic crisis. Moreover, this concept is also quite relevant, as one of the primary reasons for the collapse in the first place was poor corporate governance.

Before the economic crisis of Asia Pacific several years ago, corporate governance was an unfamiliar terminology in Indonesia. This is not surprising, given that even in a country such as the United States; this concept just rose in the late of 1980s. In a rating done by Booz Allen to evaluate the quality of corporate governance in Asian countries, Indonesia was the worst performer. Investors who expect to generate a real recovery will be unwilling to invest their funds in a company that is not properly governed. In the business community, a company that is not considered trustworthy by the community or its investors will be charged with a higher cost of capital in its business, because the creditors will have to bear a higher risk.

On the other hand, low corporate governance implementation raises the investment risk and will potentially cause investors and creditors to lose their interest in investment and crediting. This condition caused deadlocks for the real

sectors, directly affected new work fields and increased unemployment levels. In the end, this condition was the factor that made the economic recovery difficult.

Corporate governance is the effort to keep the balance between achieving the economic and social purposes, and the individual and public purposes. The main principles of corporate governance are transparency, accountability, responsibility and fairness. These principles have to be implemented not only as legal aspects, but also as the ethics of a more professional and civilized culture. The goal is to harmonize the individual interest, company interest, and public interest. The challenge in corporate governance is to find a way to maximize the welfare creation that would impose excess cost that might burden the third party or the public.

Corporate governance is the study of the distribution of rights and responsibilities among different participants in the corporation, such as, managers, shareholders, the board of directors and other stakeholders (e.g. employees, suppliers, and consumers). It can also be defined as a process and structure used to run the company, with the ultimate objective of enhancing shareholders' value, whilst taking into account the interest of the other stakeholders. There are many definitions of corporate governance according to many resources as follows:

1. The Indonesian Institute For Corporate Governance (IICG):

   A process and structure that applied in running the company, with the main objective to increase the value of stakeholders in long-term period, without neglecting other importance stakeholders.

2. Organization for Economic Cooperation and Development (OECD):

    The relationship between management company, board and stockholders, and other stakeholders that have interests to the company. Good corporate governance also requires a structure, tools to achieve the objective, and control of corporate performance.

3. Forum for Corporate Governance in Indonesia (FCGI):

    The rules that arrange the relationships between stockholders, official members, creditors, governments, employees, and the owner of internal and external importance referring to their rights and obligations, or in other word, system that instructing and controlling the company.

4. World Bank:

    The rules and organization standards in economic that arrange the behavior of owners, directors, and managers of the company and also the details and the conversion of duty, authority and also responsibility to investors.

From the above citations, we can see that corporate governance is a system arranging, managing and observing operation process in the effort to boost up the price of stocks whilst attending to the needs of stakeholders, employees, creditor, and society in order to make the balances among attainment of economics and targets of society.

2.2 Financial Reporting

Financial reporting is a media of information provided by the company about the condition of the company finances. This information then will be used by the investors, creditors, analysts, financial consultants, brokers, government and the management of the company itself to make a decision regarding the importance of the users itself.

The financial statement is a part of the financial report gives the real future condition about the result or performance that has been obtained by a company in the period of time. In general, financial statement consists of a balance sheet, income statement, owners' of equity and cash flow. The financial statement can be accurate if it is provided with the necessary information that can then be used by potential users in making investment decision, credit decision, valuation of cash flow, budget analysis and provide the information of financial position from the past, current and predicting the future earnings and cash flow.

According to Ikatan Akuntansi Indonesia (IAI) the objective of financial statement is to provide information concerning the financial position, performance, and also the changing of the financial position, which can be useful to a large amount of users in economic decision making. Financial statement aims to fulfill the needs of most users.

2.3 Financial Accounting Information

2.3.1 Qualitative Characteristics of Accounting Information

It is necessary for the preparers of conceptual frameworks to attempt to set out a series of definitions for the qualitative characteristics which are considered to be important. The qualitative characteristics are:

a. Primary Qualities—The Financial Accounting Standard Board (FASB) has indicated that relevance and reliability are the two primary qualities that make accounting information useful for decision making. As stated in *Concepts Statement No.2*, "the qualities that distinguish 'better' (more useful) information from 'inferior' (less useful) information are primarily the qualities of relevance reliability, with some other characteristics that those qualities imply."

1. Relevance—For information to be relevant, accounting information must be capable of making difference decision, it should have predictive or feedback value, and it must be presented on a timely basis;

   ▪ Predictive Value: helps users make predictions about the ultimate come of past, present, or future events.

   ▪ Feedback Value: helps users confirm or correct prior expectations.

   ▪ Timeliness: information still has capacity in influence the decision.

2. Reliability—Quality of financial information which exists when that information can be depended upon to represent faithfully, without bias or undue error, the transactions or events that either it purports to represent or could reasonably be expected to represent.

- Verifiability: is demonstrated when independent measures, using the same measurement methods, obtain similar results.

- Represent faithfulness: the numbers and descriptions represent what really existed or happened.

- Neutrality: information cannot be selected to favor one set of interest parties over another.

b. Secondary Qualities

1. Comparability—information about an enterprise is more useful if it can be compared with similar information about another enterprise.

2. Consistency—when an entity applies the same accounting treatment to similar events, from period to period, the entity is considered to be consistent in its use of accounting standards. Accounting reports for any given year are more useful if they can be compared with reports from other companies and with prior reports of the same entity.

2.3.2   Quality Financial Information

Quality financial information can be viewed as an element of corporate governance in that greater disclosure and financial transparency reduces information asymmetries between the firms and its shareholders. Transparent financial reporting is critical to reducing the information asymmetry between the firm and its capital suppliers. Sengupta (1998) in Hollis Ashbaugh, Daniel W. Collins, and Ryan LaFond (2004) conjectures that "firms with more timely and

informative disclosures are perceived to have a lower likelihood of withholding value-relevant unfavorable information, and, as a result, are expected to be charged a lower risk premium by creditors."

The author uses two proxies for financial information quality. The first proxy, TRANS, captures the timeliness or transparency of accounting earnings. The more transparent earnings are, the more current earnings reflect information about the firm's current economic activities. More transparent earnings result in less information asymmetry between the firm and its shareholders, leading to less information risk for shareholders which, in turn, should lead to lower cost of equity capital. TRANS is measured as the squared residual from regressing returns on earnings levels and changes allowing for separate intercepts and slopes for profit and loss firms. The second measure of financial information quality, ABNACCR, is a measure of discretionary or abnormal accruals.

2.4 Ownership Structure

Ownership structure is an important element of corporate governance, especially when there are large blockholders or significant institutional ownership in the firm. Jensen (1993) and Shleifer and Vishny (1997) argue that blockholders or institutional investors that hold large debt or equity positions in a company are important to a well functioning governance system because they have the financial interest and independence to view firm management and policies in an unbiased way, and they have the power to put pressure on management if they observe self-serving behavior.

Shareholders ownership is commonly divided into managerial holders and institutional holders. Agency theory describes that the interest of management might be in contradiction with individuals holders. This is because management tends to give priority to their interests and institutional holders do not like such attitudes. Such conflict needs to be reconciled in order to optimize company performance, which in turn, will invite more investment.

The different interests between managerial and institutional ownership usually is called by agency conflicts. These conflicts could be minimized through a certain monitoring that could be equal with those interests. The impact of this monitoring is the occurrence of one cost called by agency cost (Wahidahwati, 2001 in Delvy Erisandi, 2005).

There are corporate governance mechanisms that can lower the cost of equity by mitigating the agency problems between outside shareholders and corporate insiders. Shareholder rights reflect the shareholders' ability to replace managers by either internal or external takeovers. Shareholder rights can have both positive and negative effects on the cost of equity. On the one hand, weak shareholder rights enable managers to extract private benefits without fear of being disciplined and thus lead to high agency costs (Jensen and Ruback 1983; Holmstrom and Kaplan 2001 in Henry Huang, 2004). "Investors, in turn, demand higher rates of return for bearing such agency costs, which is an important source of the uncertainty of future cash flow to investors" (Jensen and Meckling 1976; Jensen 1986).

The importance of shareholder rights on the cost of equity capital is well recognized. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998) conclude that legal protection of shareholder rights affects the size and extent of a country's capital markets. Compared to other countries, the U.S. maintains a relatively high level of legal protection of shareholder rights (La Porta et al., 1997, 1998). However, the last two decades have witnessed a trend of restricting shareholder rights at the firm level in the U.S., resulting in there being considerable variation across firms in the strength of shareholder rights (Gompers, Ishii and Metrick, 2003 in Henry Huang, 2004). This deterioration in shareholder rights has raised concerns about whether it impairs the firms' ability to continuously raise equity capital.

2.5 Board Structure

Indonesia follows the Dutch civil law tradition, where companies have a two-tier board structure; a board of commissioners, elected by shareholders for up to a five year term, to supervise the board of directors, who are executives elected by the shareholders for up to a five year term to manage the company. Certain actions taken by the board of directors, if specified in the articles of association, are subject to approval by the board of commissioners. The board of directors is responsible for the management of the company and represents the company inside and outside of court, the board of commissioners, on the other hand, is responsible for supervising and giving advice to the board of directors. Directors and Commissioners must perform their duties in the best interests of the

company and may be personally liable for negligence or wrongdoing. Directors are not entitled to represent a company where they have a conflict of interest. The board of directors must prepare, and submit all proposals to shareholders for approval.

Common stockholders have the right to elect their representatives on the board of directors of a corporation. Members of the board of directors assume the responsibility of monitoring, directing and appointing the firm's managers. In this manner disperse shareholders are potentially empowered in setting direction, monitoring performance, and controlling distribution of profits of the corporation. In particular, this internal control mechanism is purported to integrate the interests of common stockholders and the executive managers of a corporation by rewarding good corporate performance.

The board of directors has the right and responsibility to remove poorly performing managers. Historically, dissatisfied shareholders have "walked away" from the corporation by selling their shares at depressed prices and thereby incurring losses. Alternatively, major shareholders either through hostile actions, "investor activism," or a friendly approach, "relationship investing," have pursued their objectives of monitoring corporate managers.

2.6 Corporate Governance and Cost of Equity Capital

La Porta et al. (2000) define corporate governance as a set of mechanisms through which outside investors protect themselves against expropriation by

insiders. The agency theory suggests that corporate insiders tend to expropriate outside investors, agency problem affects the cost of equity capital.

The cost of equity capital is the discount rate of future cash flow distributed to the shareholders. Hence, the cost of equity capital reflects both the risk of the firm's inability to generate the expected cash flow and the risk of the manager's unwillingness to distribute the cash to shareholders.

Literature by Fama and French (1992) reveals several risk factors that affect the cost of equity. These factors must be controlled in order for a correct inference to be obtained. Two approaches were used by Fama and French (1992) to estimate the cost of equity capital. The first approach used was average realized returns as a proxy for expected return. However, this approach has been proven to be very imprecise, thus the second approach, capital asset-pricing model, was used. Elton (1999) in Kevin Cheng (2003) also points out that realized returns are a poor proxy for expected returns. The Capital Asset Pricing Model (CAPM) suggests that a valid measure of the cost of equity capital should increase with the systematic risk measured by the market beta.

2.7 Previous Study and Hypothesis Formulation

This paper is most closely related to a study by Hollis Ashbaugh, Daniel W. Collins, and Ryan LaFond (2004), "Corporate governance and the cost of equity capital".

Theoretical work in finance posits that quality financial information reduces the cost of equity capital in one of two ways: either by (1) increasing

market liquidity, thereby reducing transactions costs or increasing the demand for a firm's securities; Copeland and Galai (1983), Glosten and Milgrom (1985), Amihud and Mendelson (1986) and Diamond and Verrecchia (1991); or by (2) reducing investors' information risk; Klein and Bawa (1976), Barry and Brown (1985), Coles and Lowenstein (1988), Coles, Lowenstein and Suay (1995), Easly and O'Hara (2003), and Leuz and Verrecchia (2004). It can be concluded that the increase of financial information will decrease estimation risk so that the assets return increase; increasing financial information will also increase market liquidity which will cause the cost of capital to decrease. In other words, the better the quality of financial information, the lower the cost of equity capital.

Consistent with theoretical predictions, there is considerable empirical evidence that disclosure quality or earnings transparency lowers firms' cost of capital. Botosan (1997), Botosan and Plumlee (2002), Bhattacharya, Daouk and Welker (2003), Barth and Landsman (2003), and Francis, LaFond, Olsson and Schipper (2004) find a negative relation between various proxies for disclosure quality or earnings transparency and cost of equity capital. Following Francis, et al. (2005), "higher abnormal accruals signal lower earnings quality and higher information risk for investors." Francis et al. (2005) find this measure to be positively related to firms' cost of equity capital.

Based on a review of the related literature, it would appear that the more transparent earnings are, the more current earnings reflect information about the firm's current economic activities. More transparent earnings result in less information asymmetry between the firm and its shareholders, leading to less

information risk for shareholders who, in turn, should lead to lower cost of equity capital, more transparent disclosure makes it easier for outside investors to observe any expropriation behavior on the part of controlling shareholders, and thus reduces the cost of information collection for outsider investors to monitor the controlling shareholders; and higher abnormal accruals signal lower earnings quality and higher information risk for investors, such measures tend to be positively related to firms' cost of equity capital. The hypotheses that are proposed by this research are:

H_1 : **There is a negative relation between earnings transparency and the cost of equity capital**

H_2 : **There is a positive relation between abnormal accrual and the cost of equity capital**

Cremers and Nair (2004) argue that "public pension funds face fewer conflicts of interest than other institutional investors and they tend to be aggressive shareholder activists that are effective in monitoring the activities of management". To the extent, the activist institutional investors provide effective monitoring of management that reduces opportunistic behavior, all shareholders benefit leading to a reduction of agency risk and a lower cost of equity. Furthermore, the results of Ashbaugh, Collins, and LaFond (2004) suggest that "the presence of ownerships results in greater agency risk between stockholders and other stakeholders, which may result in firms incurring greater agency problems".

To the extent that ownerships use their voting power to extract private benefits, the author expects a positive relation between institutional ownership and the cost of equity capital. Managerial ownership is expected to be negatively related to cost of equity under the assumption that as commissioners and directors hold greater ownership in the firm, their interests are more aligned with outside shareholder interests, thereby lowering the agency conflicts between managers and outside shareholders. Moreover, greater board shareholdings encourages better monitoring of management that reduces moral hazard problems, and consequently less agency risk, leading to a lower cost of equity for the firm.

Shareholder rights reflect the shareholders' ability to replace managers, either by taking adverse action directly or through external takeover, thus, shareholder rights is one solution to agency problem (Jensen, 1986, 1993; Holmstrom and Kaplan, 2001 in Henry Huang, 2004). On the other hand, weak shareholder rights place strong restrictions on the shareholders' ability to replace current managers and lead to an entrenchment effect, where managers could engage in rent-seeking activities without fear of being disciplined.

Based on this discussion, the author proposed the following hypotheses stated in the alternative form:

H₃ : There is a positive relation between institutional ownership and the cost of equity capital

H₄ : There is a negative relation between managerial ownership and the cost of equity capital

The number of directors is an important factor in the effectiveness of the board. Unfortunately, the literature provides no consensus about the direction of the relationship between board size and effectiveness. On the one hand, "a larger board is less likely to function effectively and is easier for the CEO to control" (Jensen, 1993). On the other hand, "a larger board provides better environmental links and more expertise" (Dalton, Daily, Johnson and Ellstrand 1999 in Chtourou et. al 2001).

Prior research examining the effects of board composition is inconclusive on whether board independence is positively related to firm performance. Baysinger and Butler (1985), Hermalin and Weisbach (1991), Bhagat and Black (2000) and Brown and Caylor (2004) find there is no relation between overall board independence and firm performance. In contrast, Agrawal and Knoeber (1996) find a significant negative relation between outside membership on the board and firm performance, leading them to conclude that boards that have too many outsiders lose the expertise associated with officers serving on the board. While the link between board structure and firm performance is unclear, there is considerable evidence that board structure can affect agency risks faced by shareholders. Richardson (2004) finds that firms with positive free cash flows exhibit less evidence of overinvestment when their boards are made up of a higher percentage of independent directors. Core, Holthausen, and Larcker (1999) show that firm with more independent boards' exhibit less evidence of CEO over-compensation.

Another element of board structure that reflects the incentives for directors to actively monitor management is board compensation. The key issue is whether board members are remunerated in ways that promote monitoring management to enhance the long-term success of the firm. Yermack (2004) finds that "director stock and option awards are positively related to firms' investment opportunities and subsequent firm performance, suggesting that tying directors' pay more closely to stock performance through the use of options and other equity awards generally leads to increased monitoring." As board member stockholdings increase, the author expects directors' interests to better align with shareholder interests and expect the board to more carefully monitor the actions of management. This should lead to shareholders facing less governance risk and, consequently, a lower cost of capital. These arguments lead to the following hypothesis:

H_5 : There is a negative relation between board of directors and the cost of equity capital

CHAPTER III

RESEARCH METHOD

3.1 Population and Sample

The population and data sample used in this research are manufacturing companies listed on the Jakarta Stock Exchange that published their financial statements between the years 2000 and 2003. The companies chosen for sampling have sources of data as follows:

1. Published company financial statement in the period of 2000-2003.

2. Data includes ownership structure, including institutional ownership and managerial ownership, and company's board structure, which are gathered from ICMD (Indonesia Capital Market Directory) and Jakarta Stock Exchange statistics.

3. The data that were used in this research include the information of discretionary accrual, earnings before extraordinary item, net income, and market adjusted returns.

The method used in this research is the purposive sampling methods. It involves finding the sample based on the core variable representing the research. Purposive sampling method is a technique of taking samples based on certain considerations, namely considerations on the basis of the purpose of the research (Sugiono, 1999 in Delvy Erisandi, 2005). The companies were chosen based on the availability and completeness of the data in order to fulfill the data requirements for this research.

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3.2 Data Collection

This research was conducted by using all relevant secondary data which was collected from various reliable sources, such as from ICMD (Indonesia Capital Market Directory), Capital Market Data Base PPA FE UGM Yogyakarta and also on the Jakarta Stock Exchange data base at Jakarta Stock Exchange corner FE UII Yogyakarta. Data collection and the sources of data are taken from companies listed on the Jakarta Stock Exchange with the considerations that Jakarta Stock Exchange is the biggest stock market in Indonesia. It was a useful tool for gathering the data required to complete the research.

3.3 Research Variables

The variables used in this research are as follows:

Independent Variable

1. Earnings Transparency (TRANS)

   Financial Information Quality is measured as the squared residual from regressing returns on earnings levels and changes allowing for separate intercepts and slopes for profit and loss firms. A high squared residual indicates that earnings are less transparent. To facilitate the interpretation of this variable, the squared residual multiplied by negative one. The measurement of transparency is a market-based measure derived from the following regression equation:

$$RET_{it} = \beta_0 + \beta_1 NIBE_{it} + \beta_2 LOSS_{it} + \beta_3 NIBE_{it}*LOSS_{it} + \beta_4 \Delta NIBE_{it} + \varepsilon_{it} \ldots\ldots (3.1)$$

Where:

RET_{it} : Market adjusted returns for firm i over fiscal year t

$NIBE_{it}$: Net income before extraordinary items scaled by beginning of period market value of equity for firm i in period t

$LOSS_{it}$: One if *NIBE* is negative and zero otherwise

$\Delta NIBE_{it}$: Change in net income before extraordinary items scaled by beginning of period market value of equity

$NIBE_{it}*LOSS_{it}$: Interaction term that allows for a differential market reaction for loss versus profit firms

2. Abnormal Accrual (ABNACCR)

The measurement of financial information quality, ABNACCR, is a measure of discretionary accruals. Discretionary accrual is defined as the absolute value of abnormal accruals where abnormal accruals are estimated using the Jones [1991] model as modified by Dechow, Sloan and Sweeney [1995]. This model is used Total Accrual (TA) which classified as the component of discretionary accrual and non discretionary accrual. The measurement of accrual in this research is explained as follows:

Total Accruals

Based on the findings of Eriskson and Wang (1999) in Hadri Kusuma and Wigiya Ayu Udiana Sari (2003), Total Accruals (TA) is equal to net income minus operating cash flow.

$$TA = \text{net income} - \text{operating cash flow} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.2)$$

Then, the total accruals estimated with the regression equation OLS (Ordinary Least Squares) is as follows:

$$TAC_t/TA_{t-1} = a_1[1/TA_{t-1}] + a_2[\Delta REV_t/TA_{t-1}] + a_3[PPE_t/TA_{t-1}] + \varepsilon \dots\dots(3.3)$$

Where:

TAC$_t$: Total Accrual in t period
TA$_{t-1}$: Total asset in year t-1
ΔREV$_t$: Revenue in year t less revenue in year t-1
PPE   : Gross property plant and equipment in year t
ε : Residual Error

Based on the parameter estimates from equation (3.3), to calculate non

discretionary accrual as follows:

$$NDAC = â_1[1/Ta_{t-1}] + â_2[(\Delta REV_t/Ta_{t-1})] + â_3[PPE_t/Ta_{t1}]\ldots\ldots\ldots(3.4)$$

Where:

NDAC : Non discretionary accrual
ΔREV : Changing of revenue in t period

Abnormal Accrual

A firm's abnormal accruals or discretionary accrual is calculated as:

$$ABNACCR_t = TAC/TA_{t-1} - NDAC \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.5)$$

3. Institutional Ownership (INST)

Institutional ownership use the percentage of shares held by largest

pension funds, to capture the potential benefits that accrue from the

monitoring role that activist institutional shareholders play in corporate

governance. Institutional ownership is from private ownership, insurance,

financial institutions, banks, and financial corporations. This data can be

obtained from ICMD.

4. Managerial Ownership (MGR)

Managerial ownership is the percentage of shares held by active management in making decisions (commissioners and directors). This data also can be obtained from ICMD.

5. Board of Directors (DIR)

The size of the board of directors is measured as the number of its member in the company.

Dependent Variable

1. Cost of Equity Capital

This research uses the Capital Asset Pricing Model (CAPM) in estimating the cost of equity capital. The author estimated the cost of equity capital by using market beta as risk proxies, which was included to capture the role hypothesized for market beta by the Capital Asset Pricing Model. Market beta can be obtained from PPA, UGM, or the Jakarta Stock Exchange corner, FE, UII Yogyakarta.

The Capital Asset Pricing Model (CAPM) approach:

According to this approach, there is a linear relationship between risk and expected return. When the investor expects a higher rate of return, he should be prepared to bear greater risk.

$$CEC_{it} = R_{ft} + \beta_i (R_{mt} - R_{ft}) \dots\dots\dots (3.6)$$

Where:

CEC_{it} : the estimation of cost of equity capital
R_{ft} : the risk-free rate of interest
β_i : the market beta of security
R_{mt} : the rate of return on the market portfolio

3.4 The Test of The Classical Assumption of Regression

The analysis method used in this research to know if independent variables affect dependent variables is Ordinary Least Square (OLS). In order to get the validity test result, the test must fulfill the classical assumptions, which are multicollinearity, heteroscedasticity, and autocorrelation. The test of the classical assumption is important to evaluate whether the regression equation used has fulfilled the best linear unbiased estimator.

3.5 Technique of Data Analysis

The data analysis method used in this research is Ordinary Least Square (OLS). The steps analysis is divided into some groups of framework based on the hypothesis, and then formed in the regression model and formulate the hypothesis testing. The steps analyses from the hypothesis are explained as follows:

- Testing the predictions regarding the effects of governance attributes on the cost of equity capital using the following OLS regression model:

$$CEC_{it} = \beta_0 + \beta_1 FIN\_TRANS + \beta_2 ABN\_ACCR + \beta_3 INST + \beta_4 MGR + \beta_5 DIR +$$

$$\sum_{2000}^{2003} \alpha_i YEAR + \varepsilon \dots\dots\dots\dots (3.7)$$

Where:

TRANS : Earnings Transparency
ACCR : Abnormal Accrual
INST : Institutional Ownership
MGR : Managerial Ownership
DIR : Board of Director
YEAR : Series of indicator variables identifying fiscal reporting periods

3.6 Formulated Hypothesis and Hypothesis Testing

3.6.1 Formulated Hypothesis

Based on the problem statements and the review of the related literature, the alternative hypothesis and the null hypothesis that are proposed in this research are:

1. H_{o1}: $\beta_1 \geq 0$: earnings transparency do not negatively affect the cost of equity capital

   H_{a1}: $\beta_1 < 0$: earnings transparency negatively affect the cost of equity capital

2. H_{o2}: $\beta_2 \leq 0$: abnormal accrual do not positively affect the cost of equity capital

   H_{a2}: $\beta_2 > 0$: abnormal accrual positively affect the cost of equity capital

3. H_{o3} : $\beta_3 \leq 0$: institutional ownership does not positively affect the cost of equity capital

   H_{a3}: $\beta_3 > 0$: institutional ownership positively affects the cost of equity capital

4. H_{o4}: $\beta_4 \geq 0$: managerial ownership does not negatively affect the cost of equity capital

   H_{a4}: $\beta_4 < 0$: managerial ownership negatively affects the cost of equity capital

5. H_{o5}: $\beta_5 \geq 0$: board of directors do not negatively affect the cost of equity capital

H_{a5}: $\beta_5 < 0$: board of directors negatively affect the cost of equity capital

3.6.2 Hypothesis Testing

The hypothesis was tested using the ordinary least square (OLS) in order to find the relationship between the dependent and independent variables that are used in this research.

This research used the significant level of 95% or $\alpha = 5\%$. The data, then, was processed by using computer software EViews 4.1. After finding the regression results, which all the hypothesis testing was done by using the equation (3.7), the author analyzed the significance of coefficient and variable. The characteristics of hypotheses testing are; $Ho1$, H_{o4}, H_{o5} which are rejected if β_1, β_4, β_5 are negative, and H_{o2}, H_{o3} are rejected if β_2, β_3 are positive with ρ-value of β, that is smaller than the significant level ($\alpha = 0.05$).

After analyzing and interpreting the data, we are able to draw some conclusions: the null hypothesis (H_o) was rejected, or in other words, the alternative hypothesis (H_a) was accepted; it was shown that the independent variables affect the dependent variables.

CHAPTER IV

RESEARCH FINDINGS, DISCUSSIONS AND IMPLICATIONS

4.1 Research Description

The author began this research by studying the literature, journals and websites to get the relevant topic to conduct research on. The secondary data used was manufacturing companies during the period between 2000 and 2003. The companies used were listed on the Jakarta Stock Exchange during the period between 2000 and 2003, and the appropriate complete data of which, for the research requirements, was available.

The author selected 301 companies to sample for the purposes of this research. The data obtained from the companies was listed over the period of 2000-2003, fulfilled the requirements of this research, and was complete in regard to the research variables. Each year throughout the period of this research from 2000-2003 had a different amount of companies. In 2000, the sample consisted of 71 companies, in 2001 the sample consisted of 75, in 2002 the sample consisted of 77 companies and in 2003 the sample consisted of 78 companies. The data used in this research is quantitative data that was gathered from the Capital Market Data Base PPA, FE, UGM, Yogyakarta, Capital Market Data Base of Jakarta Stock Exchange Corner at FE, UII, Yogyakarta, as well as from other relevant sources such as the Jakarta Stock Exchange Statistics, and Indonesian Capital Market Directory (ICMD).

4.2 Research Findings and Discussions

4.2.1 Descriptive Statistics

Descriptive statistics is needed to observe the sample characteristics used in this research. In detail, the sample characteristics are shown in table 4.1. From the table below, we find the sample amount, mean and the standard deviation of each variable used.

Table 4.1

Descriptive Statistics

	Mean	Std. Deviation	N
COC	.04977639	.775264090	301
TRANS	-.001662	.006218553	301
ABNACCR	-.0010600	2.61245564	301
MGR	.013085	.0532265	301
INST	.636394	.2221037	301
DIR	4.97	2.181	301
D01	.25	.433	301
D02	.26	.437	301
D03	.26	.439	301

4.2.2 The Hypothesis Testing Results of The Relation between Corporate Governance Mechanisms and The Cost of Equity Capital refers to The Equation 3.7

To test the hypothesis, the regression equation Ordinary Least Squares (OLS) was used to find the effect of corporate governance mechanisms consisting of the quality of firms' financial information that used the earnings transparency and abnormal accrual, managerial ownership, institutional ownership, and board of directors to the cost of equity capital.

The alternative hypothesis used in this equation was used to prove that earnings transparency, managerial ownership, and board of directors negatively affect the cost of equity capital, whether the abnormal accrual and institutional ownership positively affect the cost of equity capital.

Table 4.2

The Test Result of Corporate Governance and The Cost of Equity Capital

Variable	Coefficient	t-Statistic	Significant	Significance Level
C	1.028126	36.26507	0.0000	
ABNACCR	0.004360	4.278183	0.0000	Significant
DIR	-0.001591	-0.503273	0.6152	Not Significant
INST	-0.026931	-0.824835	0.4101	Not Significant
MGR	-0.087803	-0.833211	0.4054	Not Significant
TRANS	-1.577305	-1.059558	0.2902	Not Significant
D01	-2.137183	-92.88935	0.0000	Significant
D02	-0.720247	-52.34111	0.0000	Significant
D03	-0.918438	-40.68703	0.0000	Significant

Dependent Variable: COC

Testing the first hypothesis, table 4.2 shows the coefficient of transparency is -1.577305 with the significance level up to 0.05 which is 0.2902, indicates that the effect is not significant, and the negative coefficient indicates that transparency is negatively affecting the cost of equity capital. Therefore, since it was not significant, the null hypothesis (Ho) is failed to reject. It means that earning transparency has no effect on the cost of equity capital.

The second hypothesis, the coefficient of abnormal accrual is 0.004360 with the significance level of 0.0000. This means that the abnormal accrual is positively significant, affecting the cost of equity capital. Therefore, the null hypothesis (Ho) is rejected. This result leads to the conclusion that there is

sufficient evidence proving abnormal accrual positively affects the cost of equity capital, and it means that firms reporting larger abnormal accruals will cause an increase in the cost of equity capital by 0.004, which are hold by other variables constant. Following Francis, et al. (2005), "higher abnormal accruals signal lower earnings quality and higher information risk for investors." Francis et al. (2005) find this measure to be positively related to firms' cost of equity capital.

Testing the third hypothesis, the result for the regression equation 3.7 for the institutional ownership is -0.026931, having a significance level above 0.05, which is 0.4101. This means the institutional ownership is negatively affecting the cost of equity capital but is not significant. Therefore, according to hypothesis formulation; the null hypothesis (Ho) is failed to reject. Thus, it can be concluded that the greater institutional ownership does not affect the cost of equity capital. This result is not consistent with the theory of Ashbaugh, Collins, and LaFond (2004), in which they pointed out that institutional ownership is positively significant, affecting the cost of equity capital.

Testing the third hypothesis, the table shows that the coefficient of managerial ownership is -0.087803 with a significant level of 0.4054. This means that managerial ownership negatively but not significantly affects the cost of equity capital. Thus, according to hypothesis formulation; the null hypothesis (Ho) is failed to reject. This indicates that commissioners and directors holding greater ownership in a firm, thereby lowering the agency conflicts between managers and outside shareholders, does not affect the cost of equity for the firm.

Testing the fifth hypothesis, the table shows that the coefficient of board of directors is -0.001591, but does not significantly affect the cost of equity capital. According to hypothesis formulation; the null hypothesis (Ho) is failed to reject. This leads us to conclude that there is not enough proof that a board of directors has an effect on the cost of equity capital. Otherwise, the series of indicator variables identifying fiscal reporting periods; D01, D02, and D03 shows a significance level of under 0.05, that is 0.000, proving a significant effect on the cost of equity capital.

All of the evidence and analysis results show that there is not enough proof that corporate governance mechanisms can be used as an indicator for lowering the cost of equity capital, since the independent variables (corporate governance mechanisms) did not show a significant influence on the cost of equity capital. Therefore, from the independent variables, only abnormal accruals that could shows the significant influence on the cost of equity capital. Some additional variables (the series of indicator variables identifying fiscal reporting periods) also prove to have a significant effect on the cost of equity capital.

Table 4.3

The Summary of The Hypothesis Testing

Formulated Hypothesis		Hypothesis Testing
1.	H_{o1}: $\beta_1 \geq 0$: earnings transparency do not negatively affect the cost of equity capital H_{a1}: $\beta_1 < 0$: earnings transparency negatively affect the cost of equity capital	Null Hypothesis (H_{o1}) is Failed to Reject
2.	H_{o2}: $\beta_2 \leq 0$: abnormal accrual do not positively affect the cost of equity capital H_{a2}: $\beta_2 > 0$: abnormal accrual positively affect the cost of equity capital	Null Hypothesis (H_{o2}) is Rejected
3.	H_{o3}: $\beta_3 \leq 0$: institutional ownership does not positively affect the cost of equity capital H_{a3}: $\beta_3 > 0$: institutional ownership positively affects the cost of equity capital	Null Hypothesis (H_{o3}) is Failed to Reject
4.	H_{o4}: $\beta_4 \geq 0$: managerial ownership does not negatively affect the cost of equity capital H_{a4}: $\beta_4 < 0$: managerial ownership negatively affects the cost of equity capital	Null Hypothesis (H_{o4}) is Failed to Reject
5.	H_{o5}: $\beta_5 \geq 0$: board of directors do not negatively affect the cost of equity capital H_{a5}: $\beta_5 < 0$: board of directors negatively affect the cost of equity capital	Null Hypothesis (H_{o5}) is Failed to Reject

4.3 Classical Assumption Test for Regression

The result of the classical assumption below will describe the validity of the data that was used for this research.

4.3.1 Multicollinearity Testing

The regression equation in this research has five independent variables, for each multiple regression equation, the test of multicollinearity must be done. Multicollinearity testing among independent variables can be done with Tolerance and Variance Inflation Factor (VIF) tests. Multicollinearity test is based on VIF test which is shown in the table 4.3 below. The purpose of this test

is to identify whether the independent variables are significantly correlate. Gujarati (1995) uses a rule of thumb based on VIF and Tolerance, and states that a variable would have a collinearity if its VIF is more than 10 and its Tolerance tends to be close to 0 (zero). The result of multicollinearity testing for equations 3.7 can be seen in the table below:

Table 4.4

The Result of Multicollinearity Testing

Model		Collinearity Statistics	
		Tolerance	VIF
1	TRANS	.934	1.070
	ABNACCR	.977	1.023
	MGR	.979	1.022
	INST	.896	1.116
	DIR	.971	1.029
	D01	.625	1.600
	D02	.640	1.563
	D03	.631	1.586

Dependent Variable: COC

Table 4.3 shows that all of VIF is lower than 10 for the equations (the highest is 1.600) and the tolerance value is lower than 10 (the highest is 0.979), meaning that the multicollinearity among independent variables does not exist in the regression model that used.

4.3.2 Autocorrelation Testing

Autocorrelation is the relation of data from period to period that is correlated (like time series data). To test whether there is autocorrelation or not, the author uses the Durbin Watson test from the Eviews program.

The result of Durbin Watson shown in the Appendix 3 is 1.864; this means that there is no autocorrelation in this regression model.

4.3.3 Heterocedasticity Testing

The detection of the presence of heteroscedasticity in this research is conducted by using the regression analysis from the Eviews software. As it can be seen in the Appendix 3, it can be concluded that the result of this test shows that heteroscedasticity does not exist. This result proved that the data was valid and it will give a reliable estimated model parameter.
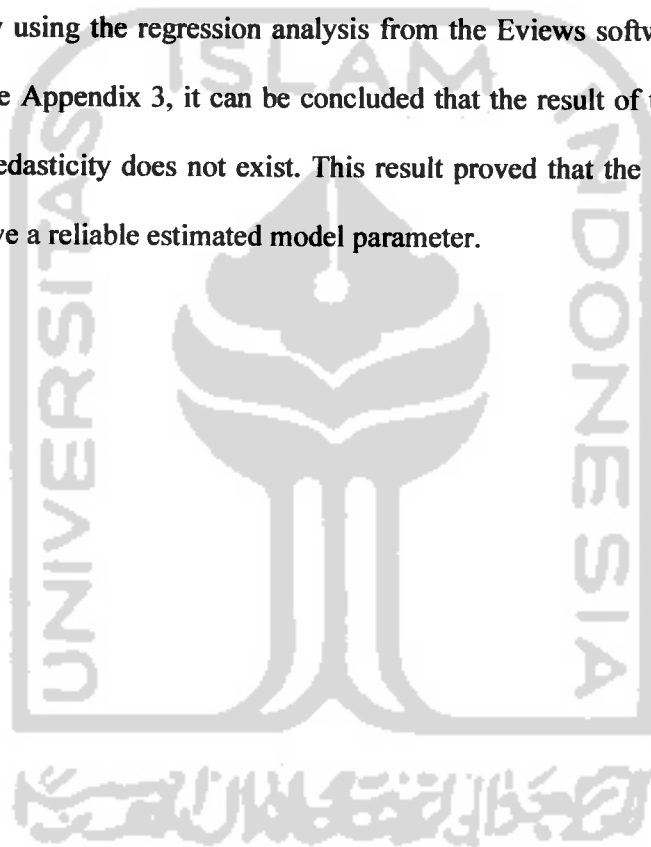
CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Research Conclusions

Based on the research purpose, the statistical test and analysis that have been described in the earlier chapters, some conclusions are drawn as follows:

- Using the regression equation Ordinary Least Squares (OLS), the analysis results referring to equation 3.7 shows that corporate governance mechanisms related to the earning transparency have negative relation but not significantly affected the cost of equity capital, which it states that hypothesis 1 is rejected. This evidence implies that earning transparency on Indonesian firms is not implementation well. Otherwise, the increasing of earning transparency will increase the liquidity of market price, reduce the information asymmetry, and these reduce the cost of equity capital.

- Conversely, there is sufficient evidence to prove hypothesis 2, which states that the abnormal accrual has a significant positive affect on the cost of equity capital. It means that every change of abnormal accruals will affect the cost of equity capital significantly. This result leads us to conclude that lower abnormal accruals signal higher earnings quality and lower information risk for investors; effectively it would lower the firm's cost of equity capital.

- The analysis results of corporate governance mechanisms related to institutional ownership affected the cost of equity capital, which it states

that hypothesis 3 is rejected, because it has a different sign of coefficient, which is negative sign, and not significantly affected the cost of equity capital. This analysis leads to a conclusion that greater institutional ownership of Indonesian firms will not affecting the cost of equity capital. On the other hand, managerial ownership and the board of directors have the same results, which it states that hypothesis 4 and 5 are rejected, because managerial ownership and the board of directors have negative relation but not significantly affected the cost of equity capital. This result implies that commissioners and directors hold greater ownership in the firm, not tends to lowering the agency conflicts between managers and shareholders, so that will not affecting the cost of equity for the firm. This result also implies that there is not enough proof to the board of directors, reminded that in Indonesia the amount of board of directors on the average, has a small amount, so that, the independence, the competence, and also motivation of board of directors are not sufficient affecting the cost of equity capital. These results conclude whether the firms already have implemented the corporate governance mechanisms, it still can not affect the cost of equity capital. It can be said that the implementation of corporate governance mechanism is only following the government regulation, not based on the importance of the company future especially to the investor or other external parties.

5.2 Research Recommendations

After completion this research, the following recommendations have been made:

1. Hopefully future researchers can utilize the sample of research to conduct research not only on manufacturing companies, but also on any company listed on the Jakarta Stock Exchange, except for service and finance companies.

2. For further research, it is suggested to observe other fundamental and additional variables that could affect the cost of equity capital in Indonesian firms.

3. The categorization of ownership structure can hopefully be used by future researchers conducting research about common categorization used in Indonesian firms, such as managerial ownership and institutional ownership. Therefore, if the agency conflict occurs, further researchers could describe more about the impact of the agency conflict on the cost of equity capital.

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Appendix 1.1 ORIGINAL DATA YEAR 2000

No	Company Name	Yr	Code	TRANS	ABN_ACCR	Managerial Ownership	Institut Ownership	Board of Directors	COC
1	Ades Alfindo Putra Setia	00	ADES	-0.000243672	0.66115	0	0.6916	5	1.055695368
2	Aneka Kimia Raya	00	AKRA	-0.00027225	-0.32237	0.0046	0.706	4	0.916946695
3	APAC Centertex Corporation	00	MYTX	-0.000964724	0.09886	0	0.5358	4	1.106365839
4	Argha Karya Prima Industri	00	AKPI	-0.000131103	-0.03397	0	0.5	5	1.044473049
5	Argo Pantes Tbk	00	ARGO	-0.000101003	0.08715	0.0236	0.3721	5	0.902663744
6	Asahimas Flat Glass	00	AMFG	-0.00036176	0.0398	0	0.12	12	1.047193611
7	Astra International	00	ASII	-0.000177422	0.13092	0	0.67	9	1.120648791
8	Barito Pacific Timber	00	BRPT	-0.017474196	0.04863	0.0795	0.6254	7	1.229131209
9	BAT Indonesia Tbk	00	BATI	-0.001153961	0.22939	0	0.85	6	0.88566023
10	Berlina Co. Ltd.	00	BRNA	-0.000162563	0.09591	0.1048	0.514	3	1.08290099
11	dankos Laboratories	00	DNKS	-0.000541958	0.15748	0	0.7146	5	0.961495902
12	Davomas Abadi Tbk	00	DAVO	-3.30625E-05	-0.04802	0	0.5677	3	1.007065319
13	Duta Pertiwi Nusantara	00	DPNS	-0.00039204	0.33183	0.0047	0.4967	3	1.124729634
14	Ekadharma Tape Industries	00	EKAD	-0.00013179	0.22476	0	0.3	3	1.055355298
15	Ever Shine Textile Industry	00	ESTI	-8.59329E-05	0.00083	0	0.8055	3	1.072698882
16	Fajar Surya Wisesa	00	FASW	-3.0625E-06	0.2502	0	0.777	5	0.940751615
17	Gudang Garam Tbk	00	GGRM	-0.001374185	0.64762	0.0175	0.7212	12	1.074739304
18	Hanson Industri Utama	00	MYRX	-0.00492804	0.04803	0.0053	0.1242	4	0.972718221
19	Hexindo Adi Perkasa	00	HEXA	-0.000180634	0.25669	0	0.8979	6	1.041412416
20	Indah Kiat Pulp	00	INKP	-0.00163216	0.22031	0	0.6129	3	0.896882549
21	Indal Aluminium Industri	00	INAI	-3.16969E-05	0.24256	0	0.6585	5	1.011486232
22	Indocement Tunggal Perkasa	00	INTP	-0.000395612	0.14059	0	0.7052	9	0.906744587
23	Indomobil Sukses International	00	IMAS	-0.000106709	0.40796	0	0.9488	7	0.737049519
24	Indospring	00	INDS	-0.000668013	0.15709	0	0.8746	3	0.907424728

No	Company	00	Ticker					
25	Intan Wijaya Chemical	00	INCI	-0.004820525	0.14703	0	0.3	3	0.936670771
26	Inter Delta	00	INTD	-0.00030976	-0.20778	0.0464	0.2436	3	1.012846513
27	Intraco Penta	00	INTA	-0.018482403	0.17663	0	0.6604	5	0.943132107
28	Jembo Cable Company	00	JECC	-0.000300676	0.06512	0	0.6927	5	0.993802578
29	Kabelindo Murni	00	KBLM	-5.38756E-05	-0.09691	0	0.6393	3	0.975438783
30	Karwell Indonesia	00	KARW	-9.604E-07	0.07782	0.002	0.5153	6	0.993462507
31	Kasogi International	00	GDWU	-0.000520752	-0.45562	0	0.6217	4	1.049914173
32	Keramika Indonesia Asosiasi	00	KIAS	-1.65649E-05	-0.24922	0	0.6827	4	0.966596956
33	Komatsu Indonesia	00	KOMI	-7.10649E-05	0.41555	0	0.1828	10	1.027809605
34	Kurnia Kapuas Utama Glue	00	KKGI	-5.29984E-05	0.18938	0	0.4	4	0.939051263
35	Langgeng Makmur Industry	00	LMPI	-0.000220226	0.24482	0.0006	0.6943	4	0.934290279
36	Lion Metal Works	00	LION	-0.021106278	0.19526	0.0018	0.3898	4	1.122009072
37	Metrodata Electronics	00	MTDL	-2.6896E-06	0.28772	0	0.992	3	0.968637377
38	Mulia Industrindo	00	MLIA	-0.000495063	0.0321	0	0.6725	6	1.030530168
39	Multi agro persada	00	TRPK	-0.001685103	-0.02011	0	0.3168	3	1.059096071
40	Multi Bintang Indonesia	00	MLBI	-0.000117723	0.20347	0	0.8337	9	1.003664616
41	Multipolar Corporation	00	MLPL	-0.001366042	0.28961	0	0.5013	7	0.994142648
42	Mustika Ratu	00	MRAT	-0.000540098	0.13096	0	0.7093	4	0.956394847
43	Pabrik Kertas Tjiwi Kimia	00	TKIM	-0.004584644	0.18699	0	0.634	7	1.177780597
44	Pan Brothers Tex	00	PBRX	-9.31225E-05	0.30715	0	0.21	4	0.979519626
45	Panasia Indoysentic	00	HDTX	-0.00123482	0.09851	0.0947	0.55	4	0.881239316
46	Perdana Bangun Pusaka	00	KONI	-0.00026569	0.24882	0.0558	0.7115	3	0.936670771
47	Pioneerindo Gourmet International	00	PTSP	-0.00091809	0.00614	0	0.8939	3	1.338293768
48	Polysindo Eka Perkasa	00	POLY	-0.000471324	-0.15482	0	0.03	3	1.235592544
49	Prasidha Aneka Niaga	00	PSDN	-2.52004E-05	-0.54212	0.117	0.7553	6	0.928509085
50	Prima Alloy Steel	00	PRAS	-0.00161604	-0.63375	0.097	0.7994	4	1.013866724
51	Primarindo Asia Infrastructure	00	BIMA	-0.000219929	0.01456	0	0.525	4	0.939731404
52	Sarasa Nugraha	00	SRSN	-6.8644E-06	0.33936	0.0017	0.9245	4	0.963196253
53	Sari Husada Tbk	00	SHDA	-0.000115133	0.37231	0	0.808	8	0.94687288

54	00	Schering plough Indonesia	SCPI	-0.000832323	0.30211	0	0.246	5	0.975098713
55	00	Sekar Laut Tbk	SKLT	-5.041E-07	0.99338	0.012	0.643	4	0.988361453
57	00	Semen Cibinong	SMCB	-0.000847974	-0.51145	0	0.4332	4	1.030530168
58	00	Sepatu Bata	BATA	-9.37024E-05	0.55488	0	0.76	7	1.012166373
59	00	Sinar Mas Argo Resources	SMAR	-0.001491504	0.05152	0	0.51	8	0.939051263
60	00	Suparma	SPMA	-0.003887523	-0.0589	0	0.6711	3	0.943812247
61	00	Supreme Cable Manufacturing	SCCO	-6.92224E-05	0.19521	0	0.5681	4	0.883279738
62	00	Surabaya Agung Industri Pulp	SAIP	-0.000872612	-0.00549	0	0.728	6	1.090722607
63	00	Surya Toto Indonesia	TOTO	-0.00168182	-0.05128	0	0.568	6	0.961155831
64	00	Teijin Indonesia Fiber Corporation	TFCO	-0.00225815	0.05041	0	0.033	7	0.997883421
65	00	Tembaga Mulia Semanan	TBMS	-0.01113236	0.10042	0	0.7825	5	0.944832458
66	00	Tempo Scan Pacific	TSPC	-0.000217268	0.22266	0	0.6604	11	1.061136492
67	00	Texmaco Perkasa Engineering	TPEN	-0.00020164	0.22878	0	0.7792	3	0.968297307
68	00	Tira Austenite	TIRA	-0.000104244	-0.21357	0	0.9352	3	0.915586414
69	00	Tunas Ridian	TURI	-0.000236237	1.25383	0	0.779	5	1.027469535
70	00	Unilever Indonesia	UNVR	-0.00016848	0.3641	0	0.85	10	1.035631222
71	00	United Tractor	UNTR	-4.99849E-05	0.16697	0	0.639	4	1.011826302
72	00	Wahana Jaya Perkasa	UGAR	-0.001206173	0.02073	0	0.7957	2	1.284902734

Appendix 1.2 ORIGINAL DATA YEAR 2001

No	Company Name	Yr	Code	TRANS	ABN_ACCR	Managerial Ownership	Institut Ownership	Board of Directors	COC
1	Ades Alfindo Putra Setia	01	ADES	-0.000127464	0.16844	0	0.6916	5	-1.058993878
2	Alakasa Industrindo Tbk	01	ALKA	-0.000101606	-3.35486	0	0.531	3	-0.934770602
3	Aneka Kimia Raya	01	AKRA	-0.016141703	1.13797	0.46	0.706	4	-1.064980542
4	APAC Citra Centertex	01	MYTX	-0.004111374	0.11922	0.0017	0.5758	4	-1.269026002
5	Argha Karya Prima Industri	01	AKPI	-0.000419021	0.15623	0	0.6731	5	-1.144303838
6	Argo Pantes Tbk	01	ARGO	-9.46729E-05	0.22374	0.0236	0.4799	5	-0.968695031
7	Asahimas Flat Glass	01	AMFG	-1.21E-08	0.07862	0	0.8398	11	-0.987153911
8	Astra International	01	ASII	-0.00098596	0.15159	0.0002	0.3925	7	-1.218139359
9	Barito Pacific Timber	01	BRPT	-0.000113849	-0.00245	0.0795	0.6503	7	-1.071964983
10	BAT Indonesia Tbk	01	BATI	-0.000516653	0.01978	0	0.89	6	-1.13632162
11	Berlina Co. Ltd.	01	BRNA	-0.003620429	0.16738	0.1057	0.5642	3	-1.244081569
12	Cahaya Kalbar Tbk	01	CEKA	-0.000157252	0.23675	0.0534	0.7762	4	-1.159769386
13	Dankos Laboratories	01	DNKS	-0.004202929	0.2358	0	0.7146	4	-1.157274943
14	Davomas Abadi Tbk	01	DAVO	-0.000635544	0.16512	0	0.8398	3	-0.904338394
15	Duta Pertiwi Nusantara	01	DPNS	-0.00048356	0.16256	0.019	0.5067	3	-1.101399414
16	Ekadharma Tape Industries	01	EKAD	-0.000684346	0.123	0	0.728	3	-1.256553786
17	Eterindo Wahanatama	01	ETWA	-6.06841E-05	0.19658	0.0033	0.6898	3	-1.174237157
18	Ever Shine Textile Industry	01	ESTI	-0.000636553	-0.98479	0	0.8055	3	-1.160767164
19	Fajar Surya Wisesa	01	FASW	-0.00657721	0.30127	0	0.777	5	-0.945247264
20	GT Petrochem Industries	01	ADMG	-0.000613553	-41.74499	0	0.6921	5	-1.292473769
21	Gudang Garam Tbk	01	GGRM	-0.000375972	0.37014	0.0175	0.7212	10	-1.198183813
22	Hanson Industri Utama	01	MYRX	-0.000318266	0.17152	0.0055	0.1179	4	-1.020579451
23	Hexindo Adi Perkasa	01	HEXA	-0.000633026	0.30881	0.0014	0.7929	7	-1.20666492
24	Indah Kiat Pulp	01	INKP	-0.002841956	0.24539	0	0.6515	8	-1.018583897

25	Indal Aluminium Industri	01	INAI	-0.000943718	0.04152	0	0.5958	5	-1.056000546
26	Indocement Tunggal Perkasa	01	INTP	-0.00017161	0.24961	0	0.7707	9	-1.185212708
27	Indomobil Sukses International	01	IMAS	-0.000911436	0.19279	0	0.9488	6	-1.145301615
28	Indospring	01	INDS	-0.000500864	0.21557	0	0.8746	3	-1.161764941
29	Intan Wijaya International	01	INCI	-0.000279224	0.37919	0	0.6773	3	-1.342861523
30	Inter Delta	01	INTD	-0.00040884	0.1401	0.0431	0.5746	3	-1.296464878
31	Inti Keramik Alamasri Industry	01	IKAI	-0.000110881	0.24741	0.0706	0.6353	3	-1.203172699
32	Intraco Penta	01	INTA	-0.003028301	0.23704	0	0.6978	5	-1.150789391
33	Kabelindo Murni	01	KBLM	-0.0002256	0.23111	0	0.7339	3	-1.134326065
34	Karwell Indonesia	01	KARW	-0.000257924	0.017	0.002	0.5968	6	-1.284990439
35	Kasogi International	01	GDWU	-0.000825413	-2.73301	0	0.6217	4	-1.093417195
36	Keramika Indonesia Asosiasi	01	KIAS	-0.000186323	0.0722	0	0.683	4	-1.092419418
37	Komatsu Indonesia	01	KOMI	-0.000467857	-0.02727	0	0.8049	10	-1.035047222
38	Langgeng Makmur Industry	01	LMPI	-0.000416976	0.25067	0.0005	0.5177	4	-1.591806963
39	Lion Metal Works	01	LION	-0.003221698	0.30526	0.18	0.577	4	-1.122851626
40	Metrodata Electronics	01	MTDL	-0.000348569	0.49028	0.0041	0.1326	3	-1.035546111
41	Mulia Industrindo	01	MLIA	-0.0022553	0.18089	0	0.6725	6	-1.381774838
42	Multi Bintang Indonesia	01	MLBI	-0.000561216	0.36565	0	0.8337	7	-1.134824954
43	Multi Prima Sejahtera	01	LPIN	-0.000414937	-0.02415	0	0.2971	3	-1.179724933
44	Multipilar Corporation	01	MLPL	-0.00004489	0.32953	0	0.9937	6	-1.070468317
45	Mustika Ratu	01	MRAT	-0.000502208	0.26204	0	0.8038	4	-0.973683918
46	Pabrik Kertas Tjiwi Kimia	01	TKIM	-0.001270923	0.22317	0	0.634	7	-1.011100567
47	Perdana Bangun Pusaka	01	KONI	-0.000451138	0.22402	0.0558	0.7115	3	-1.049514993
48	Pioneerindo Gourmet International	01	PTSP	-0.000446477	0.44051	0	0.8222	3	-0.761656239
49	Polysindo Eka Perkasa	01	POLY	-0.019496537	0.34716	0	0.6443	3	-1.360322626
50	Prasidha Aneka Niaga	01	PSDN	-0.001356449	-0.27161	0.117	0.7553	6	-1.623735837
51	Prima Alloy Steel	01	PRAS	-0.000443524	0.12033	0.097	0.7994	4	-1.103893857
52	Primarindo Asia Infrastructure	01	BIMA	-0.000843322	0.07678	0	0.9085	4	-1.088927197
53	Resource Alam Indonesia/KKGI	01	KKGI	-0.000274896	0.22323	0.0388	0.4433	4	-0.88388396

54	Sarasa Nugraha	01	SRSN	-0.000778968	0.3147	0.0015	0.8287	4	-1.489035899
55	Sari Husada Tbk	01	SHDA	-0.00080089	0.24331	0	0.808	6	-1.213150473
57	Schering plough Indonesia	01	SCPI	-0.000172923	0.30446	0	0.892	5	-1.092419418
58	Sekar Laut Tbk	01	SKLT	-0.00006561	-0.34754	0.012	0.643	4	-1.135822731
59	Semen Cibinong	01	SMCB	-0.000470022	0.46612	0	0.7733	5	-1.070468317
60	Semen Gresik (Persero)	01	SMGR	-1.23201E-05	0.22621	0	0.2553	6	-1.247074901
61	Sepatu Bata	01	BATA	-0.001329332	0.12944	0	0.806	7	-1.300455987
62	Siwani Makmur	01	SIMA	-0.000635544	-15.5442	0	0.5768	5	-1.260046006
63	Sorini Corporation	01	SOBI	-0.001273062	1.13594	0	0.6513	4	-1.278504887
64	Suparma Tbk	01	SPMA	-0.002232563	0.05979	0	0.671	3	-1.090423863
65	Supreme Cabe Manufacturing	01	SCCO	-0.000395214	-0.17642	0	0.5753	10	-1.092419418
66	Surabaya Agung Industri Pulp	01	SAIP	-0.00002704	0.07926	0	0.728	6	-0.592532984
67	Surya Dumai Industri	01	SUDI	-0.00028866	0.0672	0.0467	0.7156	3	-1.230611576
68	Surya Toto Indonesia	01	TOTO	-0.00045625	0.21203	0	0.9006	7	-1.116366073
69	Teijin Indonesia Fiber Corporation	01	TFCO	-0.000674441	0.33016	0	0.9674	7	-1.289979326
70	Tembaga Mulia Semanan	01	TBMS	-0.00031684	0.26176	0	0.837	5	-0.746689579
71	Tempo Scan Pacific	01	TSPC	-0.003449213	0.21373	0	0.744	11	-1.28449155
72	Texmaco Perkasa Engineering	01	TPEN	-0.000174504	0.1453	0	0.7792	3	-1.09541275
73	Tira Austenite	01	TIRA	-0.000561216	0.43748	0.0089	0.9728	3	-1.083938311
74	Tunas Ridian	01	TURI	-0.001681	0.60217	0	0.8893	5	-1.016089453
75	Unilever Indonesia	01	UNVR	-0.00065025	0.58931	0	0.85	11	-1.223128246
76	United Tractor	01	UNTR	-0.00117649	0.1377	0	0.5537	4	-1.163760496

Appendix 1.3 ORIGINAL DATA YEAR 2002

No	Company Name	Yr	Code	TRANS	ABN_ACCR	Managerial Ownership	Institut Ownership	Board of Directors	COC
1	Ades Alfindo Putra Setia	02	ADES	-1.90969E-05	0.20366		0.481	2	0.35008905
2	Alakasa industrindo	02	ALKA	-1.71396E-05	2.13013	0	0.1123	3	0.362055545
3	Aneka Kimia Raya	02	AKRA	-0.010233346	0.32078	0.0046	0.7335	4	0.3826067
4	Apac Citra Centertex	02	MYTX	-0.000146652	0.2848	0.0017	0.5757	4	0.142886586
5	Argha karya prima industri	02	AKPI	-3.5344E-06	0.39677	0	0.6731	4	0.271136197
6	Asahimas Flat Glass	02	AMFG	-2.04304E-05	0.2792	0	0.842	11	0.239659112
7	Astra International	02	ASII	-0.00045796	0.20548	0	0.3921	7	0.346056862
8	Barito pacific timber	02	BRPT	-0.001395023	0.20948	0.0274	0.2559	4	0.231984946
9	BAT Indonesia	02	BATI	-0.000105473	0.43937	0	0.86	5	0.279200574
10	Berlina Tbk.	02	BRNA	-0.000958522	0.23878	0.1051	0.5142	3	0.253966878
11	Cahaya Kalbar	02	CEKA	-5.8564E-06	0.26993	0.0534	0.5008	4	0.312498647
12	Dankos labarotories	02	DNKS	-0.00207116	0.15555	0	0.7146	5	0.264892808
13	Davomas Abadi	02	DAVO	-1.92721E-05	0.14779	0	0.3246	2	0.356462509
14	Duta Pertiwi Nusantara	02	DPNS	-3.04704E-05	0.22225	0.0181	0.4967	3	0.271526408
15	Ekadharma tape industri	02	EKAD	-0.000189338	0.20148	0	0.7908	3	0.321213377
16	Eterindo Wahanatama	02	ETWA	-0.000116208	0.25761	0.0029	0.3842	3	0.238878688
17	Ever Shine Indonesia	02	ESTI	-4.23801E-05	0.18839	0	0.7259	3	0.236277276
18	Fajar surya wisesa	02	FASW	-3.01401E-05	0.32903	0	0.777	4	0.279720856
19	Gudang Garam	02	GGRM	-2.00704E-05	0.23097	0.0174	0.7212	10	0.276859303
20	Hanson Textile Manufacture	02	MYRX	-5.14089E-05	0.19805	0.0055	0.1076	3	0.252015819
21	Hexindo Adi Prakasa Tbk.	02	HEXA	-0.002813242	0.31736	0.0021	0.84	8	0.376363311
22	Indah kiat pulp	02	INKP	-0.000127916	0.21877	0	0.651	9	0.346837285
23	Indocement tunggal perkasa	02	INTP	-0.001064064	0.19121	0	0.7517	9	0.356462509
24	Indomobil sukses International	02	IMAS	-5.4756E-06	0.81297	0	0.9488	6	0.340854038

52

No	Name							
25	Indospring	02	-2.6896E-06	0.37599	0	0.8746	3	0.369989852
26	Intan Wijaya international	02	-3.00304E-05	0.20025	0	0.6873	4	0.323164436
27	Inter Delta Tbk.	02	-0.00014884	-0.12471	0.0464	0.6802	3	0.26749422
28	Inti Keramik Alamasri Indonesia	02	-4.16025E-05	0.29853	0.0533	0.48	3	0.237838123
29	Jakarta kyoei steel	02	-8.48241E-05	0.29052	0	0.6534	3	0.257088572
30	Jembo cable company	02	-8.96809E-05	0.20332	0	0.8839	7	-0.103740244
31	Kabelindo murni	02	-6.30436E-05	-1.62648	0	0.9314	3	0.203499485
32	Kageo igar jaya	02	-0.004644423	0.14877	0	0.6113	3	0.26099069
33	Karwell Indonesia	02	-0.00017161	0.26835	0.002	0.5675	6	0.281151633
34	Kasogi international	02	-0.000139949	0.17428	0	0.358	3	0.342675026
35	Keramika Indonesia asosiasi	02	-0.000138533	0.26986	0	0.9565	3	0.270225702
36	Komatsu indonesia	02	-0.00001225	0.25551	0	0.2536	10	0.257999066
37	Langgeng Makmur Industry	02	-0.00013924	0.12867	0.0004	0.4041	4	0.311588153
38	Lautan Luas Tbk.	02	-3.00304E-05	0.28638	0.0364	0.6303	6	0.302613282
39	Lion Metal Works Tbk.	02	-6.1009E-06	0.21499	0.0018	0.577	4	0.297410458
40	Metrodata Electronic Tbk.	02	-0.006428832	0.3904	0.0041	0.1456	3	0.322123871
41	Mulia industrindo	02	-4.3264E-06	0.34207	0	0.6725	6	0.28063135
42	Multi agro persada	02	-2.01601E-05	0.35791	0	0.9837	3	0.293898551
43	Multi Bintang Indonesia	02	-2.00704E-05	0.2306	0	0.089	7	0.27399775
44	Multi prima sejahtera	02	-5.1984E-06	0.54687	0.0156	0.7328	4	0.279980997
45	Multipolar corporation	02	-0.001120241	0.18969	0	0.4924	6	0.271396338
46	Mustika ratu	02	-3.06916E-05	0.3317	0	0.7093	4	0.292467775
47	Pabrik kertas tjiwi kimia	02	-0.001156	0.25329	0	0.633	7	0.298581093
48	Pan Brothers tex	02	-0.00151944	0.36215	0	0.4725	4	0.247593418
49	Perdana bangun pusaka	02	-0.000133172	0.26138	0.0558	0.5586	3	0.301702787
50	Pioneerindo Gourmet International	02	-2.601E-07	0.16495	0	0.743	3	0.256308148
51	Prasidha aneka niaga	02	-0.000207072	-0.49929	0	0.6959	6	0.270225702
52	Prima Alloy Steel Tbk.	02	-0.000175298	0.26284	0.0914	0.3711	4	0.26099069
53	Primarindo asia infrastructure	02	-1.98025E-05	-0.63343	0	0.525	3	0.249284336

No	Name		Code						
54	Resources alam Indonesia	02	KKGI	-0.000199374	0.21262	0	0.2357	4	0.323554648
55	Ricky putra globalindo	02	RICY	-0.007087956	0.17187	0	0.4505	4	0.247853559
57	Sarasa nugraha	02	SRSN	-0.009399303	0.24736	0.0015	0.8287	4	0.439707693
58	Sekar Laut	02	SKLT	-2.64196E-05	0.61054	0.012	0.643	4	0.258389278
59	Semen cibinong	02	SMCB	-0.000176093	0.51963	0	0.7733	8	0.263982314
60	Semen gresik	02	SMGR	-8.02816E-05	0.3308	0	0.2553	5	0.29142721
61	Sepatu bata	02	BATA	-0.00155946	0.43259	0	0.076	7	0.31965253
62	Sierad produce	02	SIPD	-6.22521E-05	0.19022	0	0.0276	4	0.384167547
63	Sinar mas agro resources	02	SMAR	-1.14244E-05	0.30774	0	0.51	8	0.310027306
64	Siwani makmur	02	SIMA	-1.99809E-05	0.22863	0	0.5643	5	0.285443962
65	Sorini corporation	02	SOBI	-6.3504E-06	0.2122	0	0.6513	4	0.368168863
66	Suba indah	02	SUBA	-0.02386407	0.11694	0	0.4564	3	0.287655163
67	Suparma	02	SPMA	-0.000147866	0.12146	0	0.671	3	0.285443962
68	Suprame kabel manufaktur	02	SCCO	-1.19716E-05	0.49139	0	0.5753	5	0.274387962
69	Surabaya Agung	02	SAIP	-0.00000064	0.32739	0	0.728	5	0.276989374
70	Surya Dumai Industri	02	SUDI	-0.000147866	0.00309	0.0592	0.6393	3	0.275038315
71	Surya toto Indonesia	02	TOTO	-1.20409E-05	0.3039	0	0.518	7	0.270225702
72	Teijin Indonesia fiber cup	02	TFCO	-2.97025E-05	0.30661	0	0.036	7	0.28921601
73	Tempo scan pacifik	02	TSPC	-0.000238085	0.21684	0	0.8097	9	0.261250831
74	Tira Austenite Tbk.	02	TIRA	-1.21104E-05	0.22458	0.0089	0.9728	3	0.270225702
75	Tunas ridean	02	TURI	-0.000317196	0.18183	0	0.0887	4	0.334350508
76	Unilever Indonesia	02	UNVR	-1.20409E-05	0.17466	0	0.9017	10	0.281932056
77	United tractors	02	UNTR	-1.99809E-05	0.27151	0	0.5	4	0.293248198
78	Wahana jaya perkasa	02	UGAR	-1.8496E-06	0.47256	0	0.9499	3	0.314059494

Appendix 1.4 ORIGINAL DATA YEAR 2003

No	Company Name	Yr	Code	TRANS	ABN_ACCR	Managerial Ownership	Institut Ownership	Board of Directors	COC
1	Alakasa industrindo	03	ALKA	-4.30336E-05	0.2374	0	0.9519	3	0.083719795
2	Aneka Kimia Raya	03	AKRA	-3.03601E-05	0.33309	0.0047	0.7335	6	0.063316853
3	Apac Citra Centertex	03	MYTX	-0.00015675	0.28243	0	0.8453	3	0.285552297
4	Argha karya prima industri	03	AKPI	-4.6225E-06	0.47612	0	0.8308	4	-0.070390369
5	Argo Pantes	03	ARGO	-0.000163073	0.24132	0.0236	0.375	3	-0.107039277
6	Asahimas Flat Glass	03	AMFG	-0.000421892	0.29627	0	0.8459	13	-0.154740888
7	Astra International	03	ASII	-4.7089E-06	0.32088	0	0.4194	6	0.109931847
8	Astra otoparts	03	AUTO	-3.50464E-05	0.34692	0	0.8668	7	-0.069546538
9	Barito pacific timber	03	BRPT	-0.000246176	0.25773	0.0274	0.5966	4	0.226931218
10	BAT Indonesia	03	BATI	-2.4025E-06	0.05981	0	0.87	5	0.278792767
11	Berlina Tbk.	03	BRNA	-0.000147137	0.0695	0.1051	0.5142	3	0.109123546
12	Dankos labarotories	03	DNKS	-8.76096E-05	0.17679	0	0.8009	4	0.10530114
13	Davomas Abadi	03	DAVO	-1.764E-07	0.26749	0	0.9252	3	0.001915574
14	Duta Pertiwi Nusantara	03	DPNS	-1.89225E-05	0.13289	0.019	0.5067	3	-0.145014627
15	Ekadharma tape industri	03	EKAD	-0.000303108	0.23508	0	0.7282	3	0.334148073
16	Eterindo Wahanatama	03	ETWA	-0.001206173	0.18725	0.0029	0.7378	6	-0.056791369
17	Ever Shine Indonesia	03	ESTI	-0.000150553	0.16777	0	0.7258	5	0.147776921
18	Fajar surya wisesa	03	FASW	-0.001207563	0.33466	0	0.777	8	0.078567986
19	Goodyear Indonesia	03	GDYR	-5.7121E-06	0.18991	0	0.0626	5	-0.119374011
20	Gudang Garam	03	GGRM	-0.000141134	0.22938	0.0174	0.7212	10	0.011028947
21	Hanson Textile Manufacture	03	MYRX	-0.057806585	0.23225	0.0055	0.1076	4	0.0538333378
22	Hexindo Adi Prakasa Tbk.	03	HEXA	-0.005002733	0.10587	0	0.8128	9	-0.09868387
23	Indah kiat pulp	03	INKP	-0.001567368	0.20527	0	0.6095	7	0.266839977
24	Indal Aluminium industri	03	INAI	-0.006440063	-0.02074	0	0.6585	4	-0.116863244

No		Code						
25	Indocement tunggal perkasa	03	INTP	-2.52004E-05	0.24618	0	0.7817	9	0.167048834
26	Indomobil sukses International	03	IMAS	-6.8644E-06	0.56669	0	0.9488	6	0.067278417
27	Indospring	03	INDS	-0.001952756	0.25499	0	0.8746	3	0.272086533
28	Intan Wijaya international	03	INCI	-9.3025E-06	0.3144	0	0.9615	4	-0.066141607
29	Inter Delta Tbk.	03	INTD	-0.027139268	1.03078	0.0464	0.5806	3	0.18745473
30	Inti Keramik Alamasri Indonesia	03	IKAI	-8.9401E-06	0.17522	0.0533	0.7244	3	-0.160976354
31	Jakarta kyoei steel	03	JKSW	-0.00000625	0.30727	0.0133	0.6534	3	0.076397712
32	Jembo cable company	03	JECC	-0.000296528	0.17109	0	0.9015	7	-0.177509517
33	Kabelindo murni	03	KBLM	-0.002825986	0.14508	0	0.2787	3	0.014102268
34	Kageo igar jaya	03	IGAR	-2.76676E-05	0.12012	0	0.631	4	-0.039414374
35	Karwell Indonesia	03	KARW	-0.000139712	0.16499	0.002	0.5698	3	0.100098997
36	Kasogi international	03	GDWU	-4.95616E-05	-0.33362	0	0.3637	4	0.14418842
37	Keramika Indonesia asosiasi	03	KIAS	-0.00016129	0.09201	0	0.9611	2	-0.013205283
38	Komatsu indonesia	03	KOMI	-1.62409E-05	0.17409	0	0.3513	7	0.151898369
39	Langgeng Makmur Industry	03	LMPI	-1.82329E-05	0.14597	0.0004	0.6943	4	0.338775819
40	Lautan Luas Tbk.	03	LTLS	-0.0001921	0.29939	0.0364	0.6303	4	0.30292633
41	Lion Metal Works Tbk.	03	LION	-3.8025E-06	0.23277	0.0018	0.577	4	0.389497456
42	Metrodata Electronic Tbk.	03	MTDL	-6.1504E-06	0.1306	0.004	0.136	3	-0.14053196
43	Mulia industrindo	03	MLIA	-0.000957903	0.18793	0	0.6725	6	0.296036525
44	Multi agro persada	03	TRPK	-8.3521E-06	0.31421	0	0.8487	3	0.235579744
45	Multi Bintang Indonesia	03	MLBI	-2.56E-08	0.23545	0	0.8337	7	-0.135572603
46	Multipolar corporation	03	MLPL	-0.002658434	-0.33777	0	0.5013	6	0.377079819
47	Mustika ratu	03	MRAT	-4.2025E-06	0.216	0	0.8071	5	0.116564062
48	Pabrik kertas tjiwi kimia	03	TKIM	-4.00689E-05	0.26462	0	0.6335	3	-0.068788571
49	Pan Brothers tex	03	PBRX	-1.92721E-05	0.15046	0	0.3463	4	0.117934917
50	Perdana bangun pusaka	03	KONI	-1.24609E-05	0.21433	0	0.6416	3	-0.024773168
51	Pioneerindo Gourmet International	03	PTSP	-0.000150798	0.03114	0.6931	0.6931	4	0.090230617
52	Prasidha aneka niaga	03	PSDN	-6.70761E-05	2.77475	0.0109	0.7553	6	0.300140208

No	Name		Ticker						
53	Prima Alloy Steel Tbk.	03	PRAS	-4.6656E-06	0.2153	0.0591	0.8743	4	-0.173879564
54	Primarindo asia infrastructure	03	BIMA	-0.000152276	0.1078	0	0.684	4	0.274632829
55	Resources alam Indonesia	03	KKGI	-0.00012905	0.21328	0	0.3985	4	0.203697741
57	Ricky putra globalindo	03	RICY	-0.00023994	0.1871	0	0.4505	3	0.313366147
58	Sarasa nugraha	03	SRSN	-0.000589033	-0.03692	0	0.7108	7	-0.165846886
59	Sari Husada	03	SHDA	-6.4E-09	0.13823	0	0.8085	5	-0.179922577
60	Schering plough Indonesia	03	SCPI	-2.601E-07	0.14761	0	0.892	5	0.374006498
61	Sekar Laut	03	SKLT	-7.3441E-06	0.36262	0.012	0.643	3	-0.056131108
62	Semen cibinong	03	SMCB	-2.13444E-05	0.30309	0	0.7733	7	0.150423886
63	Sepatu bata	03	BATA	-0.00000625	0.17103	0	0.842	3	0.180650796
64	Sierad produce	03	SIPD	-0.070654956	0.19726	0	0.0276	4	0.392476031
65	Sinar mas agro resources	03	SMAR	-1.92721E-05	0.20901	0	0.51	8	0.170829789
66	Siwani makmur	03	SIMA	-0.015138842	-0.33473	0	0.4785	4	-0.127258649
67	Sorini corporation	03	SOBI	-7.7841E-06	0.27486	0	0.6462	5	0.341467195
68	Suba indah	03	SUBA	-0.000764523	0.34316	0	0.4564	3	0.028781964
69	Suparma	03	SPMA	-0.00001681	1.01924	0	0.671	5	0.0031135427
70	Suprame kabel manufaktur	03	SCCO	-1.30321E-05	0.31855	0	0.5753	5	0.189864837
71	Surabaya Agung	03	SAIP	-0.000166152	0.28997	0	0.728	4	-0.07847042
72	Surya Dumai Industri	03	SUDI	-1.25316E-05	0.39354	0.0467	0.7152	4	0.047535735
73	Surya toto Indonesia	03	TOTO	-1.86624E-05	0.23681	0	0.906	7	0.183490213
74	Teijin Indonesia fiber cup	03	TFCO	-8.2944E-06	0.35156	0	0.966	4	-0.097739372
75	Tempo scan pacifik	03	TSPC	-0.000504452	0.23504	0	0.8097	9	0.286304343
76	Tira Austenite Tbk.	03	TIRA	-1.3924E-06	-0.16614	0.0089	0.9539	3	-0.024959699
77	Tunas ridean	03	TURI	-3.1329E-06	0.45635	0	0.8187	4	0.179611551
78	Unilever Indonesia	03	UNVR	-1.39129E-05	0.25006	0	0.85	10	0.050034659
79	United tractors	03	UNTR	-0.000370563	0.33621	0	0.5302	5	0.243846326

Appendix 2 DATA PROCESS REFERS TO THE EQUATION 3.7

No	Yr	D01	D02	D03	MGR	INST	DIR	ABNACCR	COC	TRANS
1	00	0	0	0	0	0.6916	5	0.66115	1.055695368	-0.000243672
2	01	1	0	0	0	0.6916	5	0.16844	-1.058993878	-0.000127464
3	02	0	1	0	0	0.481	2	0.20366	0.35008905	-1.90969E-05
4	01	1	0	0	0	0.531	3	-3.35486	-0.934770602	-0.000101606
5	02	0	1	0	0	0.1123	3	2.13013	0.362055545	-1.71396E-05
6	03	0	0	1	0	0.9519	3	0.2374	0.083719795	-4.30336E-05
7	00	0	0	0	0.0046	0.706	4	-0.32237	0.916946695	-0.00027225
8	01	1	0	0	0.46	0.706	4	1.13797	-1.064980542	-0.016141703
9	02	0	1	0	0.0046	0.7335	4	0.32078	0.3826067	-0.010233346
10	03	0	0	1	0.0047	0.7335	6	0.33309	0.063316853	-3.03601E-05
11	00	0	0	0	0	0.5358	4	0.09886	1.106365839	-0.000964724
12	01	1	0	0	0.0017	0.5758	4	0.11922	-1.269026002	-0.004111374
13	02	0	1	0	0.0017	0.5757	4	0.2848	0.142886586	-0.000146652
14	03	0	0	1	0	0.8453	3	0.28243	0.285552297	-0.00015675
15	00	0	0	0	0	0.5	5	-0.03397	1.044473049	-0.000131103
16	01	1	0	0	0	0.6731	5	0.15623	-1.144303838	-0.000419021
17	02	0	1	0	0	0.6731	4	0.39677	0.271136197	-3.5344E-06
18	03	0	0	1	0	0.8308	4	0.47612	-0.070390369	-4.6225E-06
19	00	0	0	0	0.0236	0.3721	5	0.08715	0.902663744	-0.000101003
20	01	1	0	0	0.0236	0.4799	5	0.22374	-0.968695031	-9.46729E-05
21	03	0	0	1	0.0236	0.375	3	0.24132	-0.107039277	-0.000163073
22	00	0	0	0	0	0.12	12	0.0398	1.047193611	-0.00036176
23	01	1	0	0	0	0.8398	11	0.07862	-0.987153911	-1.21E-08
24	02	0	1	0	0	0.842	11	0.2792	0.239659112	-2.04304E-05
25	03	0	0	1	0	0.8459	13	0.29627	-0.154740888	-0.000421892
26	00	0	0	0	0	0.67	9	0.13092	1.120648791	-0.000177422
27	01	1	0	0	0.0002	0.3925	7	0.15159	-1.218139359	-0.00098596
28	02	0	1	0	0	0.3921	7	0.20548	0.346056862	-0.00045796
29	03	0	0	1	0	0.4194	6	0.32088	0.109931847	-4.7089E-06
30	03	0	0	1	0	0.8668	7	0.34692	-0.069546538	-3.50464E-05
31	00	0	0	0	0.0795	0.6254	7	0.04863	1.229131209	-0.017474196
32	01	1	0	0	0.0795	0.6503	7	-0.00245	-1.071964983	-0.000113849
33	02	0	1	0	0.0274	0.2559	4	0.20948	0.231984946	-0.001395023
34	03	0	0	1	0.0274	0.5966	4	0.25773	0.226931218	-0.000246176
35	00	0	0	0	0	0.85	6	0.22939	0.88566023	-0.001153961
36	01	1	0	0	0	0.89	6	0.01978	-1.13632162	-0.000516653
37	02	0	1	0	0	0.86	5	0.43937	0.279200574	-0.000105473
38	03	0	0	1	0	0.87	5	0.05981	0.278792767	-2.4025E-06
39	00	0	0	0	0.1048	0.514	3	0.09591	1.08290099	-0.000162563
40	01	1	0	0	0.1057	0.5642	3	0.16738	-1.244081569	-0.003620429
41	02	0	1	0	0.1051	0.5142	3	0.23878	0.253966878	-0.000958522
42	03	0	0	1	0.1051	0.5142	3	0.0695	0.109123546	-0.000147137
43	01	1	0	0	0.0534	0.7762	4	0.23675	-1.159769386	-0.000157252
44	02	0	1	0	0.0534	0.5008	4	0.26993	0.312498647	-5.8564E-06

45	00	0	0	0	0	0.7146	5	0.15748	0.961495902	-0.000541958
46	01	1	0	0	0	0.7146	4	0.2358	-1.157274943	-0.004202929
47	02	0	1	0	0	0.7146	5	0.15555	0.264892808	-0.00207116
48	03	0	0	1	0	0.8009	4	0.17679	0.10530114	-8.76096E-05
49	00	0	0	0	0	0.5677	3	-0.04802	1.007065319	-3.30625E-05
50	01	1	0	0	0	0.8398	3	0.16512	-0.904338394	-0.000635544
51	02	0	1	0	0	0.3246	2	0.14779	0.356462509	-1.92721E-05
52	03	0	0	1	0	0.9252	3	0.26749	0.001915574	-1.764E-07
53	00	0	0	0	0.0047	0.4967	3	0.33183	1.124729634	-0.00039204
54	01	1	0	0	0.019	0.5067	3	0.16256	-1.101399414	-0.00048356
55	02	0	1	0	0.0181	0.4967	3	0.22225	0.271526408	-3.04704E-05
56	03	0	0	1	0.019	0.5067	3	0.13289	-0.145014627	-1.89225E-05
57	00	0	0	0	0	0.3	3	0.22476	1.055355298	-0.00013179
58	01	1	0	0	0	0.728	3	0.123	-1.256553786	-0.000684346
59	02	0	1	0	0	0.7908	3	0.20148	0.321213377	-0.000189338
60	03	0	0	1	0	0.7282	3	0.23508	0.334148073	-0.000303108
61	01	1	0	0	0.0033	0.6898	3	0.19658	-1.174237157	-6.06841E-05
62	02	0	1	0	0.0029	0.3842	3	0.25761	0.238878688	-0.000116208
63	03	0	0	1	0.0029	0.7378	6	0.18725	-0.056791369	-0.001206173
64	00	0	0	0	0	0.8055	3	0.00083	1.072698882	-8.59329E-05
65	01	1	0	0	0	0.8055	3	-0.98479	-1.160767164	-0.000636553
66	02	0	1	0	0	0.7259	3	0.18839	0.236277276	-4.23801E-05
67	03	0	0	1	0	0.7258	5	0.16777	0.147776921	-0.000150553
68	00	0	0	0	0	0.777	5	0.2502	0.940751615	-3.0625E-06
69	01	1	0	0	0	0.777	5	0.30127	-0.945247264	-0.00657721
70	02	0	1	0	0	0.777	4	0.32903	0.279720856	-3.01401E-05
71	03	0	0	1	0	0.777	8	0.33466	0.078567986	-0.001207563
72	03	0	0	1	0	0.0626	5	0.18991	-0.119374011	-5.7121E-06
73	01	1	0	0	0	0.6921	5	-41.74499	-1.292473769	-0.000613553
74	00	0	0	0	0.0175	0.7212	12	0.64762	1.074739304	-0.001374185
75	01	1	0	0	0.0175	0.7212	10	0.37014	-1.198183813	-0.000375972
76	02	0	1	0	0.0174	0.7212	10	0.23097	0.276859303	-2.00704E-05
77	03	0	0	1	0.0174	0.7212	10	0.22938	0.011028947	-0.000141134
78	00	0	0	0	0.0053	0.1242	4	0.04803	0.972718221	-0.00492804
79	01	1	0	0	0.0055	0.1179	4	0.17152	-1.020579451	-0.000318266
80	02	0	1	0	0.0055	0.1076	3	0.19805	0.252015819	-5.14089E-05
81	03	0	0	1	0.0055	0.1076	4	0.23225	0.053833378	-0.057806585
82	00	0	0	0	0	0.8979	6	0.25669	1.041412416	-0.000180634
83	01	1	0	0	0.0014	0.7929	7	0.30881	-1.20666492	-0.000633026
84	02	0	1	0	0.0021	0.84	8	0.31736	0.376363311	-0.002813242
85	03	0	0	1	0	0.8128	9	0.10587	-0.09868387	-0.005002733
86	00	0	0	0	0	0.6129	3	0.22031	0.896882549	-0.00163216
87	01	1	0	0	0	0.6515	8	0.24539	-1.018583897	-0.002841956
88	02	0	1	0	0	0.651	9	0.21877	0.346837285	-0.000127916
89	03	0	0	1	0	0.6095	7	0.20527	0.266839977	-0.001567368
90	00	0	0	0	0	0.6585	5	0.24256	1.011486232	-3.16969E-05
91	01	1	0	0	0	0.5958	5	0.04152	-1.056000546	-0.000943718
92	03	0	0	1	0	0.6585	4	-0.02074	-0.116863244	-0.006440063

93	00	0	0	0	0	0.7052	9	0.14059	0.906744587	-0.000395612
94	01	1	0	0	0	0.7707	9	0.24961	-1.185212708	-0.00017161
95	02	0	1	0	0	0.7517	9	0.19121	0.356462509	-0.001064064
96	03	0	0	1	0	0.7817	9	0.24618	0.167048834	-2.52004E-05
97	00	0	0	0	0	0.9488	7	0.40796	0.737049519	-0.000106709
98	01	1	0	0	0	0.9488	6	0.19279	-1.145301615	-0.000911436
99	02	0	1	0	0	0.9488	6	0.81297	0.340854038	-5.4756E-06
100	03	0	0	1	0	0.9488	6	0.56669	0.067278417	-6.8644E-06
101	00	0	0	0	0	0.8746	3	0.15709	0.907424728	-0.000688013
102	01	1	0	0	0	0.8746	3	0.21557	-1.161764941	-0.000500864
103	02	0	1	0	0	0.8746	3	0.37599	0.369989852	-2.6896E-06
104	03	0	0	1	0	0.8746	3	0.25499	0.272086533	-0.001952756
105	00	0	0	0	0	0.3	3	0.14703	0.936670771	-0.004820525
106	01	1	0	0	0	0.6773	3	0.37919	-1.342861523	-0.000279224
107	02	0	1	0	0	0.6873	4	0.20025	0.323164436	-3.00304E-05
108	03	0	0	1	0	0.9615	4	0.3144	-0.066141607	-9.3025E-06
109	00	0	0	0	0.0464	0.2436	3	-0.20778	1.012846513	-0.00030976
110	01	1	0	0	0.0431	0.5746	3	0.1401	-1.296464878	-0.000408848
111	02	0	1	0	0.0464	0.6802	3	-0.12471	0.26749422	-0.00014884
112	03	0	0	1	0.0464	0.5806	3	1.03078	0.187454737	-0.027139268
113	01	1	0	0	0.0706	0.6353	3	0.24741	-1.203172699	-0.000110881
114	02	0	1	0	0.0533	0.48	3	0.29853	0.237838123	-4.16025E-05
115	03	0	0	1	0.0533	0.7244	3	0.17522	-0.160976354	-8.9401E-06
116	00	0	0	0	0	0.6604	5	0.17663	0.943132107	-0.018482403
117	01	1	0	0	0	0.6978	5	0.23704	-1.150789391	-0.003028301
118	02	0	1	0	0	0.6534	3	0.29052	0.257088572	-8.48241E-05
119	03	0	0	1	0.0133	0.6534	3	0.30727	0.076397712	-0.00000625
120	00	0	0	0	0	0.6927	5	0.06512	0.993802578	-0.000300676
121	02	0	1	0	0	0.8839	7	0.20332	-0.103740244	-8.96809E-05
122	03	0	0	1	0	0.9015	7	0.17109	-0.177509517	-0.000296528
123	00	0	0	0	0	0.6393	3	-0.09691	0.975438783	-5.38756E-05
124	01	1	0	0	0	0.7339	3	0.23111	-1.134326065	-0.0002256
125	02	0	1	0	0	0.9314	3	-1.62648	0.203499485	-6.30436E-05
126	03	0	0	1	0	0.2787	3	0.14508	0.014102268	-0.002825986
127	02	0	1	0	0	0.6113	3	0.14877	0.26099069	-0.004644423
128	03	0	0	1	0	0.631	4	0.12012	-0.039414374	-2.76676E-05
129	00	0	0	0	0.002	0.5153	6	0.07782	0.993462507	-9.604E-07
130	01	1	0	0	0.002	0.5968	6	0.017	-1.284990439	-0.000257924
131	02	0	1	0	0.002	0.5675	6	0.26835	0.281151633	-0.00017161
132	03	0	0	1	0.002	0.5698	3	0.16499	0.100098997	-0.000139712
133	00	0	0	0	0	0.6217	4	-0.45562	1.049914173	-0.000520752
134	01	1	0	0	0	0.6217	4	-2.73301	-1.093417195	-0.000825413
135	02	0	1	0	0	0.358	3	0.17428	0.342675026	-0.000139949
136	03	0	0	1	0	0.3637	4	-0.33362	0.14418842	-4.95616E-05
137	00	0	0	0	0	0.6827	4	-0.24922	0.966596956	-1.65649E-05
138	01	1	0	0	0	0.683	4	0.0722	-1.092419418	-0.000186323
139	02	0	1	0	0	0.9565	3	0.26986	0.270225702	-0.000138533
140	03	0	0	1	0	0.9611	2	0.09201	-0.013205283	-0.00016129

141	00	0	0	0	0	0.1828	10	0.41555	1.027809605	-7.10649E-05
142	01	1	0	0	0	0.8049	10	-0.02727	-1.035047222	-0.000467857
143	02	0	1	0	0	0.2536	10	0.25551	0.257999066	-0.00001225
144	03	0	0	1	0	0.3513	7	0.17409	0.151898369	-1.62409E-05
145	00	0	0	0	0	0.4	4	0.18938	0.939051263	-5.29984E-05
146	00	0	0	0	0.0006	0.6943	4	0.24482	0.934290279	-0.000220226
147	01	1	0	0	0.0005	0.5177	4	0.25067	-1.591806963	-0.000416976
148	02	0	1	0	0.0004	0.4041	4	0.12867	0.311588153	-0.00013924
149	03	0	0	1	0.0004	0.6943	4	0.14597	0.338775819	-1.82329E-05
150	02	0	1	0	0.0364	0.6303	6	0.28638	0.302613282	-3.00304E-05
151	03	0	0	1	0.0364	0.6303	4	0.29939	0.30292633	-0.0001921
152	00	0	0	0	0.0018	0.3898	4	0.19526	1.122009072	-0.021106278
153	01	1	0	0	0.18	0.577	4	0.30526	-1.122851626	-0.003221698
154	02	0	1	0	0.0018	0.577	4	0.21499	0.297410458	-6.1009E-06
155	03	0	0	1	0.0018	0.577	4	0.23277	0.389497456	-3.8025E-06
156	00	0	0	0	0	0.992	3	0.28772	0.968637377	-2.6896E-06
157	01	1	0	0	0.0041	0.1326	3	0.49028	-1.035546111	-0.000348569
158	02	0	1	0	0.0041	0.1456	3	0.3904	0.322123871	-0.006428832
159	03	0	0	1	0.004	0.136	3	0.1306	-0.14053196	-6.1504E-06
160	00	0	0	0	0	0.6725	6	0.0321	1.030530168	-0.000495063
161	01	1	0	0	0	0.6725	6	0.18089	-1.381774838	-0.0022553
162	02	0	1	0	0	0.6725	6	0.34207	0.28063135	-4.3264E-06
163	03	0	0	1	0	0.6725	6	0.18793	0.296036525	-0.000957903
164	00	0	0	0	0	0.3168	3	-0.02011	1.059096071	-0.001685103
165	02	0	1	0	0	0.9837	3	0.35791	0.293898551	-2.01601E-05
166	03	0	0	1	0	0.8487	3	0.31421	0.235579744	-8.3521E-06
167	00	0	0	0	0	0.8337	9	0.20347	1.003664616	-0.000117723
168	01	1	0	0	0	0.8337	7	0.36565	-1.134824954	-0.000561216
169	02	0	1	0	0	0.089	7	0.2306	0.27399775	-2.00704E-05
170	03	0	0	1	0	0.8337	7	0.23545	-0.135572603	-2.56E-08
171	01	1	0	0	0	0.2971	3	-0.02415	-1.179724933	-0.000414937
172	02	0	1	0	0.0156	0.7328	4	0.54687	0.279980997	-5.1984E-06
173	00	0	0	0	0	0.5013	7	0.28961	0.994142648	-0.001366042
174	01	1	0	0	0	0.9937	6	0.32953	-1.070468317	-0.00004489
175	02	0	1	0	0	0.4924	6	0.18969	0.271396338	-0.001120241
176	03	0	0	1	0	0.5013	6	-0.33777	0.377079819	-0.002658434
177	00	0	0	0	0	0.7093	4	0.13096	0.956394847	-0.000540098
178	01	1	0	0	0	0.8038	4	0.26204	-0.973683918	-0.000502208
179	02	0	1	0	0	0.7093	4	0.3317	0.292467775	-3.06916E-05
180	03	0	0	1	0	0.8071	5	0.216	0.116564062	-4.2025E-06
181	00	0	0	0	0	0.634	7	0.18699	1.177780597	-0.004584644
182	01	1	0	0	0	0.634	7	0.22317	-1.011100567	-0.001270923
183	02	0	1	0	0	0.633	7	0.25329	0.298581093	-0.001156
184	03	0	0	1	0	0.6335	3	0.26462	-0.068788571	-4.00689E-05
185	00	0	0	0	0	0.21	4	0.30715	0.979519626	-9.31225E-05
186	02	0	1	0	0	0.4725	4	0.36215	0.247593418	-0.00151944
187	03	0	0	1	0	0.3463	4	0.15046	0.117934917	-1.92721E-05
188	00	0	0	0	0.0947	0.55	4	0.09851	0.881239316	-0.00123482

189	00	0	0	0	0.0558	0.7115	3	0.24882	0.936670771	-0.00026569
190	01	1	0	0	0.0558	0.7115	3	0.22402	-1.049514993	-0.000451138
191	02	0	1	0	0.0558	0.5586	3	0.26138	0.301702787	-0.000133172
192	03	0	0	1	0	0.6416	3	0.21433	-0.024773168	-1.24609E-05
193	00	0	0	0	0	0.8939	3	0.00614	1.338293768	-0.00091809
194	01	1	0	0	0	0.8222	3	0.44051	-0.761656239	-0.000446477
195	02	0	1	0	0	0.743	3	0.16495	0.256308148	-2.601E-07
196	03	0	0	1	0.6931	0.6931	4	0.03114	0.090230617	-0.000150798
197	00	0	0	0	0	0.03	3	-0.15482	1.235592544	-0.000471324
198	01	1	0	0	0	0.6443	3	0.34716	-1.360322626	-0.019496537
199	00	0	0	0	0.117	0.7553	6	-0.54212	0.928509085	-2.52004E-05
200	01	1	0	0	0.117	0.7553	6	-0.27161	-1.623735837	-0.001356449
201	02	0	1	0	0	0.6959	6	-0.49929	0.270225702	-0.000207072
202	03	0	0	1	0.0109	0.7553	6	2.77475	0.300140208	-6.70761E-05
203	00	0	0	0	0.097	0.7994	4	-0.63375	1.013866724	-0.00161604
204	01	1	0	0	0.097	0.7994	4	0.12033	-1.103893857	-0.000443524
205	02	0	1	0	0.0914	0.3711	4	0.26284	0.26099069	-0.000175298
206	03	0	0	1	0.0591	0.8743	4	0.2153	-0.173879564	-4.6656E-06
207	00	0	0	0	0	0.525	4	0.01456	0.939731404	-0.000219929
208	01	1	0	0	0	0.9085	4	0.07678	-1.088927197	-0.000843322
209	02	0	1	0	0	0.525	3	-0.63343	0.249284336	-1.98025E-05
210	03	0	0	1	0	0.684	4	0.1078	0.274632829	-0.000152276
211	01	1	0	0	0.0388	0.4433	4	0.22323	-0.88388396	-0.000274896
212	02	0	1	0	0	0.2357	4	0.21262	0.323554648	-0.000199374
213	03	0	0	1	0	0.3985	4	0.21328	0.203697741	-0.00012905
214	02	0	1	0	0	0.4505	4	0.17187	0.247853559	-0.007087956
215	03	0	0	1	0	0.4505	3	0.1871	0.313366147	-0.00023994
216	00	0	0	0	0.0017	0.9245	4	0.33936	0.963196253	-6.8644E-06
217	01	1	0	0	0.0015	0.8287	4	0.3147	-1.489035899	-0.000778968
218	02	0	1	0	0.0015	0.8287	4	0.24736	0.439707693	-0.009399303
219	03	0	0	1	0	0.7108	7	-0.03692	-0.165846886	-0.000589033
220	00	0	0	0	0	0.808	8	0.37231	0.94687288	-0.000115133
221	01	1	0	0	0	0.808	6	0.24331	-1.213150473	-0.00080089
222	03	0	0	1	0	0.8085	5	0.13823	-0.179922577	-6.4E-09
223	00	0	0	0	0	0.246	5	0.30211	0.975098713	-0.000832323
224	01	1	0	0	0	0.892	5	0.30446	-1.092419418	-0.000172923
225	03	0	0	1	0	0.892	5	0.14761	0.374006498	-2.601E-07
226	00	0	0	0	0.012	0.643	4	0.99338	0.988361453	-5.041E-07
227	01	1	0	0	0.012	0.643	4	-0.34754	-1.135822731	-0.00006561
228	02	0	1	0	0.012	0.643	4	0.61054	0.258389278	-2.64196E-05
229	03	0	0	1	0.012	0.643	3	0.36262	-0.056131108	-7.3441E-06
230	00	0	0	0	0	0.4332	4	-0.51145	1.030530168	-0.000847974
231	01	1	0	0	0	0.7733	5	0.46612	-1.070468317	-0.000470022
232	02	0	1	0	0	0.7733	8	0.51963	0.263982314	-0.000176093
233	03	0	0	1	0	0.7733	7	0.30309	0.150423886	-2.13444E-05
234	01	1	0	0	0	0.2553	6	0.22621	-1.247074901	-1.23201E-05
235	02	0	1	0	0	0.2553	5	0.3308	0.29142721	-8.02816E-05
236	00	0	0	0	0	0.76	7	0.55488	1.012166373	-9.37024E-05

237	01	1	0	0		0	0.806	7	0.12944	-1.300455987	-0.001329332
238	02	0	1	0		0	0.076	7	0.43259	0.31965253	-0.00155946
239	03	0	0	1		0	0.842	3	0.17103	0.180650796	-0.00000625
240	02	0	1	0		0	0.0276	4	0.19022	0.384167547	-6.22521E-05
241	03	0	0	1		0	0.0276	4	0.19726	0.392476031	-0.070654956
242	00	0	0	0		0	0.51	8	0.05152	0.939051263	-0.001491504
243	02	0	1	0		0	0.51	8	0.30774	0.310027306	-1.14244E-05
244	03	0	0	1		0	0.51	8	0.20901	0.170829789	-1.92721E-05
245	01	1	0	0		0	0.5768	5	-15.5442	-1.260046006	-0.000635544
246	02	0	1	0		0	0.5643	5	0.22863	0.285443962	-1.99809E-05
247	03	0	0	1		0	0.4785	4	-0.33473	-0.127258649	-0.015138842
248	01	1	0	0		0	0.6513	4	1.13594	-1.278504887	-0.001273062
249	02	0	1	0		0	0.6513	4	0.2122	0.368168863	-6.3504E-06
250	03	0	0	1		0	0.6462	5	0.27486	0.341467195	-7.7841E-06
251	02	0	1	0		0	0.4564	3	0.11694	0.287655163	-0.02386407
252	03	0	0	1		0	0.4564	3	0.34316	0.028781964	-0.000764523
253	00	0	0	0		0	0.6711	3	-0.0589	0.943812247	-0.003887523
254	01	1	0	0		0	0.671	3	0.05979	-1.090423863	-0.002232563
255	02	0	1	0		0	0.671	3	0.12146	0.285443962	-0.000147866
256	03	0	0	1		0	0.671	5	1.01924	0.003135427	-0.00001681
257	00	0	0	0		0	0.5681	4	0.19521	0.883279738	-6.92224E-05
258	01	1	0	0		0	0.5753	10	-0.17642	-1.092419418	-0.000395214
259	02	0	1	0		0	0.5753	5	0.49139	0.274387962	-1.19716E-05
260	03	0	0	1		0	0.5753	5	0.31855	0.189864837	-1.30321E-05
261	00	0	0	0		0	0.728	6	-0.00549	1.090722607	-0.000872612
262	01	1	0	0		0	0.728	6	0.07926	-0.592532984	-0.00002704
263	02	0	1	0		0	0.728	5	0.32739	0.276989374	-0.00000064
264	03	0	0	1		0	0.728	4	0.28997	-0.07847042	-0.000166152
265	01	1	0	0	0.0467	0.7156	3	0.0672	-1.230611576	-0.00028866
266	02	0	1	0	0.0592	0.6393	3	0.00309	0.275038315	-0.000147866
267	03	0	0	1	0.0467	0.7152	4	0.39354	0.047535735	-1.25316E-05
268	00	0	0	0		0	0.568	6	-0.05128	0.961155831	-0.00168182
269	01	1	0	0		0	0.9006	7	0.21203	-1.116366073	-0.00045625
270	02	0	1	0		0	0.518	7	0.3039	0.270225702	-1.20409E-05
271	03	0	0	1		0	0.906	7	0.23681	0.183490213	-1.86624E-05
272	00	0	0	0		0	0.033	7	0.05041	0.997883421	-0.00225815
273	01	1	0	0		0	0.9674	7	0.33016	-1.289979326	-0.000674441
274	02	0	1	0		0	0.036	7	0.30661	0.28921601	-2.97025E-05
275	03	0	0	1		0	0.966	4	0.35156	-0.097739372	-8.2944E-06
276	00	0	0	0		0	0.7825	5	0.10042	0.944832458	-0.01113236
277	01	1	0	0		0	0.837	5	0.26176	-0.746689579	-0.00031684
278	00	0	0	0		0	0.6604	11	0.22266	1.061136492	-0.000217268
279	01	1	0	0		0	0.744	11	0.21373	-1.28449155	-0.003449213
280	02	0	1	0		0	0.8097	9	0.21684	0.261250831	-0.000238085
281	03	0	0	1		0	0.8097	9	0.23504	0.286304343	-0.000504452
282	00	0	0	0		0	0.7792	3	0.22878	0.968297307	-0.00020164
283	01	1	0	0		0	0.7792	3	0.1453	-1.09541275	-0.000174504
284	00	0	0	0		0	0.9352	3	-0.21357	0.915586414	-0.000104244

285	01	1	0	0	0.0089	0.9728	3	0.43748	-1.083938311	-0.000561216
286	02	0	1	0	0.0089	0.9728	3	0.22458	0.270225702	-1.21104E-05
287	03	0	0	1	0.0089	0.9539	3	-0.16614	-0.024959699	-1.3924E-06
288	00	0	0	0	0	0.779	5	1.25383	1.027469535	-0.000236237
289	01	1	0	0	0	0.8893	5	0.60217	-1.016089453	-0.001681
290	02	0	1	0	0	0.0887	4	0.18183	0.334350508	-0.000317196
291	03	0	0	1	0	0.8187	4	0.45635	0.179611551	-3.1329E-06
292	00	0	0	0	0	0.85	10	0.3641	1.035631222	-0.00016848
293	01	1	0	0	0	0.85	11	0.58931	-1.223128246	-0.00065025
294	02	0	1	0	0	0.9017	10	0.17466	0.281932056	-1.20409E-05
295	03	0	0	1	0	0.85	10	0.25006	0.050034659	-1.39129E-05
296	00	0	0	0	0	0.639	4	0.16697	1.011826302	-4.99849E-05
297	01	1	0	0	0	0.5537	4	0.1377	-1.163760496	-0.00117649
298	02	0	1	0	0	0.5	4	0.27151	0.293248198	-1.99809E-05
299	03	0	0	1	0	0.5302	5	0.33621	0.243846326	-0.000370563
300	00	0	0	0	0	0.7957	2	0.02073	1.284902734	-0.001206173
301	02	0	1	0	0	0.9499	3	0.47256	0.314059494	-1.8496E-06

Appendix 3 STATISTICAL CALCULATION OF EQUATION 3.7

Dependent Variable: COC				
Method: Least Squares				
Date: 04/17/06 Time: 15:20				
Sample: 1 301				
Included observations: 301				
White Heteroskedasticity-Consistent Standard Errors & Covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.028126	0.028350	36.26507	0.0000
ABNACCR	0.004360	0.001019	4.278183	0.0000
DIR	-0.001591	0.003161	-0.503273	0.6152
INST	-0.026931	0.032650	-0.824835	0.4101
MGR	-0.087803	0.105379	-0.833211	0.4054
TRANS	-1.577305	1.488644	-1.059558	0.2902
D01	-2.137183	0.023008	-92.88935	0.0000
D02	-0.720247	0.013761	-52.34111	0.0000
D03	-0.918438	0.022573	-40.68703	0.0000
R-squared	0.972121	Mean dependent var		0.049776
Adjusted R-squared	0.971357	S.D. dependent var		0.775264
S.E. of regression	0.131207	Akaike info criterion		-1.194644
Sum squared resid	5.026825	Schwarz criterion		-1.083800
Log likelihood	188.7939	F-statistic		1272.741
Durbin-Watson stat	1.864812	Prob(F-statistic)		0.000000