An Empirical Analysis of the Motives for and Effects of Fixed Assets Revaluation of Indonesian Publicly Listed Companies

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ABSTRACT

The harmonization of international accounting standards has been implemented by more than 120 countries throughout the world. Although these standards have been criticised for disregarding local values and accounting systems, the IFRS and IAS provide many more benefits including enhancing the quality and transparency of financial statements. Unlike previous standards, the revised IFASS 16 – 2007 offers two options, the cost or revaluation models for fixed asset measurement. Therefore, conflict of interests may arise due to these options. The cost model favours reliability of its value (completeness, neutrality and freedom from error characteristics) while the revaluation model provides relevant information (predictive value and confirmatory value characteristics) to the public. This study first proposed a conceptual model that can help Indonesian CFOs in deciding to revalue or not to revalue fixed assets using decision support criteria such as motives, effects, primary decision criteria, business outcomes and impacts. The research then applied stratified random sampling for data gathering over the period of 2008-2012. Three categories were used such as companies' age (young, middle, and old), size (small, medium, and large), and nine IDX industry classifications. A deterministic model was then developed using nine variables which were broken down into 17 proxies. The natural logarithm scenario provided the highest prediction power The R2 of -2 Log likelihood, Nagelkerke, and Cox Snell were 57.69, 56.4, and 75.2 per cent consecutively. These scenarios also found the most significant variables among other scenarios with six proxies such as CMS, fixed asset intensity, DER, operating income, DER level, and export sales. Based on those significant proxies, this study concluded that companies' internal benefits from asset revaluation decision making were more dominant than for external benefits. The internal benefits include four proxies (FAI, CMS, DER, and operating income) from three motives such as to gain efficiency/ economics, to reduce debt contracting costs, and to reduce political costs. The external benefits include two proxies (DER level and export sales) from motives such as to provide signals for

stakeholders; and to reduce information asymmetry. The results found that as of 31st December 2012, only 2.83 per cent of the total 460 Indonesian PLCs applied revaluation model. This figure cited is lower than other countries who have applied IAS 16 earlier than Indonesia such as South Korea, New Zealand, and England and Wales. The research confirms that Indonesian PLCs are cautious in applying the revaluation model because historically, previous IFASS 16 – 1994 only allowed PLCs to apply the cost model only. Furthermore, the revaluation model incurs more costs paid such as for the appraisal fees, auditor fees, and tax agency costs. Furthermore, the having more PLCs applied the revaluation model, external parties such as investors, creditors and consumer. They will enjoy a lower company's business risk. This circumstance can reduce their expected return and decrease the product and service prices.

Keywords: International Accounting Harmonization, Fixed Assets, Revaluation Model, Cost Model, Motives.

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TABLE OF CONTENTS

Chapter 3 Conceptual Model for Asset Revaluation Decision Making

Chapter 4 Research Methodology

Chapter 5 Analysis and Results

Chapter 6 Discussion of Findings

Chapter 7 Conclusions, Implications, Limitations, and Recommendations

INDEX OF TABLES

INDEX OF FIGURES

INDEX OF ACRONYMS AND ABBREVIATIONS

1. ADB (Asian Development Bank)
2. AFA (Asian Federation of Accountants)
3. AICPA (American Institute of Certified Public Accountants)
4. APB (Accounting Principles Board)
5. APEC (Asian Pacific Economic Community)
6. ARB (Accounting Research Bulletins)
7. ASB (Accounting Standards Board)
8. ASC (Accounting Standards Committee)
9. ASEAN (Association of South East Asian Nations)
10. ASSC (Accounting Standards Steering Committee)
11. Bapepam-LK (Badan Pengawas Pasar Modal dan Lembaga Keuangan)
12. BKPM (Badan Koordinasi Pasar Modal)
13. BLUE (Best Linear Unbiased Estimation)
14. CAP (Committee on Accounting Procedure)
15. CAPA (Confederation of Asia-Pacific Accountants)
16. CEO (Chief Executive Officer)
17. CFFO (Cash Flow From Operations)
18. CFO (Chief Financial Officer)
19. CMS (Cash and Marketable Securities)
20. CPA (Certified Public Accountant)
21. DER (Debt-to-Equity Ratio)
22. DSAK (Dewan Standar Akuntansi Keuangan)
23. DTA (Debt-to-Total Assets)
24. EPS (Earning Per Share)
25. EU (European Union)
26. FAF (Financial Accounting Foundation)
27. FAI (Fixed Asset Intensity)
28. FASB (Financial Accounting Standards Board)
29. FCF (Free Cash Flow)
30. FICD (Foreign Investment Coordinating Board)
31. FRC (Financial Reporting Council)
32. FRSSE (Financial Reporting Standards for Smaller Entities)
33. FTSE (Financial Times and the London Stock Exchange)
34. G20 (Group of Twenty)
35. GAAP (Generally Accepted Accounting Principles)
36. GASC (German Accounting Standards Committee)
37. GDP (Gross Domestic Product)
38. IAS (International Accounting Standards)
39. IASB (International Accounting Standards Board)
40. IASC (International Accounting Standards Committee)
41. ICMFISA (Indonesian Capital Market and Financial Institution Supervisory Agency)
42. ICML (Indonesia Capital Market Library)
43. IDV (Individualism Index)
44. IDX (Indonesian Stock Exchange)
45. IFAC (International Federation of Accountants)
46. IFASB (Indonesian Financial Accounting Standards Board)
47. IFRIC (International Financial Reporting Interpretation Committee)

48. IFRS (International Financial Reporting Standards)
49. IFRSS (International Financial Reporting Standards Statement)
50. IIA (Indonesian Institute of Accountants)
51. IOSCO (International Organization of Securities Commissions)
52. IPO Initial Public Offering
53. ISA (Indonesian Association of Appraisers)
54. IVSC (International Valuation Standards Council)
55. JATS (Jakarta Automated Trading System)
56. MAS (Masculinity Index)
57. MBR (Market-to-Book Ratio)
58. MNC (Multinational Corporation)
59. MNE (Multinational Enterprises)
60. MOFA (Ministry of Foreign Affairs
61. NYSE (New York Stock Exchange)
62. OECD (Organization for Economic Cooperation and Development)
63. PBV (Price-to-Book Ratio)
64. PDI (Power Distance Index)
65. PER (Price Earnings Ratio)
66. PLC (Public Listed Companies
67. PPP (Purchasing Power Parity)
68. PSAK (Pernyataan Standar Akuntansi Keuangan)
69. ROA (Return on Assets)
70. ROE (Return on Equity)
71. SAK ETAP (Standar Akuntansi Keuangan Entitas Tanpa Akuntanbilitas Publik)
72. SFAC (Statement of Financial Accounting Concepts)
73. SFAS (Statement of Financial Accounting Standards)
74. SME (Small and Medium Enterprises)
75. SPSS (Statistical Package for the Social Sciences)
76. UAI (Uncertainty Avoidance Index)
77. WTO (World Trade Organization)

INDEX OF APPENDICES

CHAPTER 1

INTRODUCTION

1.0 AN OVERVIEW OF THE RESEARCH CONTEXT

Financial statements record a company's financial activities for a defined business period and are included in the company's annual report (Jones, 2006). They represent a company's financial position, performance and cash flows as a result of its business activities. These reports also represent the performance of the company director who manages the business to maximise entrusted resources, and are reported in three primary forms: balance sheet, income statement and statement of cash flows (Stice and Stice, 2006). These statements provide a variety of information for stakeholders such as investors, government and employees, and are generally used for economic decision making (IASB 2005; FASB 2010).

Comparability between the financial statements of businesses is necessary for several reasons, including inter-firm performance analysis and benchmarking. Because multinational enterprises (MNEs) operate globally, external pressures have been placed upon them, especially after World War II, from major stakeholders (such as investors, governments, trade unions, bankers, lenders, accountants and auditors) to improve financial comparability (Radebaugh *et al.* 2006). Further international harmonisation in MNE financial reporting would therefore enhance and complement the compatibility of accounting practices (Alexander *et al.* 2009).

Regarding public company financial statements, the International Accounting Standards Board (IASB) has been responsible since 2001 for developing, promoting and facilitating a set of globally accepted International Financial Reporting Standards (IFRS) (IFRS, 2013). Their

mandate in this task has been continued by joint commitment with the European Union (EU) to develop high quality and compatible accounting standards which require IFRS in the reporting of the consolidated financial statements of all companies listed on the European Stock Exchange beginning in 2005 (IASB 2002). In 2005, southern hemisphere countries such as Australia and Hong Kong started to implement IFRS. Meanwhile, Indonesia and Malaysia began to apply them in 2012. The IASB also works closely with the US Financial Accounting Standard Board (FASB) and the US Stock Exchange Committee (SEC) on IFRS convergence. This cooperation will allow publicly listed companies' (PLCs) financial statements to adopt IFRS in 2015 (MASB, 2008; IIA, 2011).

A gradual strategy of the Indonesian FASB (IFASB) in IFRS implementation was adopted and IFRS was modified to become national accounting standards. This aims to minimise the existing differences between local standards and IFRS, to overcome the lack of full members of the Indonesian FASB and to manage any translation problems from English to the Indonesian language in order to fit with local business terminologies (Adoption IFRS, 2013; IFRS, 2013). Another reason for Indonesia to converge local accounting standards with international standards (IAS/ IFRS) is because this would achieve congruence with IAS (Sinaga, 2009). This commitment was agreed in the first G20 summit which was held in Washington DC, USA on November 15, 2008 (MOFA, 2008). From an accounting perspective, one of the five principles in the G20 declaration is the strengthening of transparency and accountability. This principle can be achieved through planned immediate and medium-term actions that create high quality global accounting standards (MOFA, 2008). Recently, the G20 leaders have agreed with calls for accounting standards convergence that aims to help end the global financial crisis, through stronger and sustainable growth. The meeting was held in St. Petersburg on 5-6 September 2013 (IAS Plus, 2013).

The IFASB/ DSAK (*Dewan Standar Akuntansi Keuangan*) introduced three pillars of financial accounting standards, for public entities, non-public entities and *Syari'ah,* which follow Islamic values (Sinaga, 2009). For the public entity pillar, the IFASB has continued the convergence process of Indonesian Financial Accounting Statements (IFASS) and several steps have been taken. These include adapting IAS and IFRS to local standards and withdrawing the specific industrial accounting standards of IFASS (namely IFASS 32 *for forestry,* IFASS 35 *for telecommunications,* and IFASS 37 *for toll roads* (Sinaga, 2009)).

In comparison, the Malaysian FASB took a different strategy and adopted all IFRS. Their accounting standards were in line with IAS because since 1978 they have incorporated IAS into local ones (MASB, 2008). In line with the IASB, the Malaysia FASB initiated the strategy to follow IFRS in 2004. In 2008 they formally decided to fully adopt IFRS (MASB, 2013). Both Indonesia and Malaysia targeted January 1st, 2012 as the start date for implementation of all IFRS based standards, although earlier application of this was encouraged.

IFRS has been adopted by approximately 120 nations, which illustrates their acceptance of this as a definitive reference (IFRS, 2011; IFRS, 2012). An International Federation of Accountants (IFAC) survey revealed that the majority of respondents find IFRS compliance for economic development essential, because it provides various benefits for companies (IFAC, 2007). These include improving comparability of financial statements; enhancing the quality and transparency of financial reporting (which goes some way to facilitating cross-border investment); and helping to lower capital costs (Covrig, 2007; Daske, 2007; Epstein, 2009; IFRS, 2011).

National accounting standards in one country may require different recognition, measurement and disclosure in financial reporting when compared to another country. There is no system that is exactly the same because every country has its own essential differences (Radebaugh *et al.*, 2006). These differences can reflect culture, societal and accounting values, legal systems, providers of financial sources, taxation systems, nuances of the accountancy profession and the development stage of its capital market (Radebaugh *et al.*, 2006; Alexander *et al.*, 2009; Nobes and Parker, 2010).

IAS/ IFRS have been developed under the strong influence of Anglo-Saxon values, with similarity to accounting practices in Commonwealth countries such as the United Kingdom, Australia and Canada because they were the founders of the IASC (Evans *et al.*, 1994; Iqbal, 2002). However, Indonesia has significant cultural differences with these countries and other Germanic group countries such as Germany, Switzerland and Austria (Radebaugh *et al.*, 2006). The accounting environment in Indonesia is categorised by large power distance and the fact that it is a collectivist country (Perera and Baydoun, 2007). Perera and Baydoun explain that the large power distance shows a more hierarchical relationship, which will affect the transparency of information. As a collectivist country, Indonesia holds the societal characteristic by which people tend to live and work closely and collectively in achieving goals, compared to other developed countries which are more individualist. The Germanic group is also renowned for secrecy of information, mainly to safeguard creditors' interests (Waton *et al.*, 2003). In contrast to Indonesia, the Anglo-Saxon environment is characterised by a small power distance and individualism (Hoftsede, 1983; Perera and Baydoun, 2007).

The accounting environment in Indonesia is also characterised by cultural norms (with Dutch and US influences), and a lack of transparency and accountability in organisations (Sudarwan

and Fogarty, 1996; Perera and Baydoun, 2007). During the pre-Dutch colonial era, various legal orders were applied independently within the Indonesian archipelago, such as traditional and customary laws and Islamic law (Perera and Baydoun, 2007). Later, Roman-Dutch law was introduced into the national legal system during the Dutch colonial period. This blending of various laws in one country (pluralism) can potentially lead to a lack of understanding and implementation of those laws. Consequently, scholars have concluded that problems and challenges have arisen in the convergence of international financial accounting systems in Indonesia (*ibid*).

In line with the international accounting convergence program, the IFASB has also sought convergence of standards in three stages (IIA, 2008). The process began with the revision of standards and adoption of new accounting standards in line with IFRS during the adoption period 2007-2010. Subsequently, the process continued towards a preparation stage with completion of the infrastructures in 2011, before implementation of IFRS in 2012.

This study focuses on one IFASB standard only, that which deals with the fixed assets of those companies who trade their stocks publicly. Other public securities which are listed on the Indonesian Stock Exchange (IDX), namely asset-backed securities, corporate bonds and government bonds, are not part of the sample for this study due to the limited number of listed companies within the various industrial classifications.

The IFASS/ PSAK (*Pernyataan Standar Akuntansi Keuangan*) No. 16: *Fixed Assets* was released in 2007 (IIA, 2007) and began to be implemented on January 1, 2008. Prior to 2008, IFASB prohibited the use of anything other than a cost model for valuing fixed assets, but this latest standard allowed companies to apply either a cost or a revaluation model for such

purposes. The revaluation model measures fixed assets using a fair market value. Previously, IFASS No. 16, which was released in 1994, only allowed a company to apply a cost model. A cost model offered easy verification of fixed asset original and purchase costs. However, the amount presented in balance sheets did not reflect the current value because it relied upon a calculation using a depreciation method (IIA, 1994). Consequently, companies' total assets reported were typically lower than the market value and could potentially mislead investors; for instance, in their decision making processes. Other fixed assets that include the category of investment property are reported following IFASS 13 or IAS 40: *Investment Property*, which was not considered to be part of this research. Investment property is defined as property in the form of land or buildings which are held by the business owner or by the lessee under a finance lease. It is used to generate earnings from rentals, or capital appreciation, or both (IASB, 2009; IIA, 2011).

Hermann *et al.,* (2006) argue that a fair value approach for valuing tangible assets is superior to a historical cost valuation based on qualitative aspects of accounting information. However, previous studies have investigated domination of the cost model over the fair market value model in fixed asset valuation. Christensen and Nikolaev (2009) found that the majority of their samples in the UK and Germany applied a cost model. Diehl (2009) found that in 2008 only 11 per cent of companies listed on the *Financial Times and the London Stock Exchange* (FTSE) applied the fair value method and only three per cent of these were in the UK and Germany. Reasons for this are myriad, including greater expenses incurred (compared to expected benefits) in applying the fair value method, and questions of its relevancy to certain sectors such as real estate and finance.

Various methods of accounting treatments are provided in accounting standards. These alternatives may impact companies' financial condition, such as cash flows and investment decisions, and users' perception of financial statements about those changes (IIA, 2010). In relation to asset revaluation decisions, an accounting method chosen by a company manager may be influenced by various underpinning motives (Cullinan, 1999). Unfortunately, this flexibility can also be misleading in terms of economic reality. Thus, a higher degree of flexibility in accounting standards may lead to the distortion of information on earnings quality, which should be reliable and relevant for decision making purposes (Griffith, 1995). To be considered useful, all information should be valid and reliable. These two criteria are included in the qualitative characteristics of financial information. Reliable information represents assurance for the users of financial statements and depends on two components; namely, that it is i) verifiable and ii) neutral (unbiased) (FASB, 1980). Although information is verifiable to the original document, it should also be valid, otherwise it cannot be categorised as reliable.

As an agent, a financial director will tend to select the optimal accounting method which can enhance financial performance (Belkaoui, 2004). Agency theory is based on the assumption that a conflict of interest can exist between shareholders (owner/ principal) and a financial manager. The tension between these two parties is based upon the fact that managers will attempt to maximise their utilities, while shareholders are trying to maximise their wealth (Nasser, 1993; Saam 2007). This condition in turn leads to information asymmetry, which subsequently creates a moral hazard problem in which a manager sacrifices stakeholders' interests because of their intention to pursue key financial ratios as a measure of a company's performance.

Examples of incentives/ compensations which are given by the business owner to financial managers include bonus plans, higher salaries and stock options (Nasser, 1993). Financial managers' opportunistic behaviour may therefore occur in pursuing predetermined targets at the expense of other parties' best interests (Belkoui, 2004). In relation to asset revaluation decisions, the scope of opportunities available to the agent consist of various accounting methods offered in accounting standards; for example, estimation of certain attributes such as the amount of fixed assets revalued; the useful lives and residual value of fixed assets, and the timing of revaluation (Nasser, 1993).

The rationale for decisions to revalue an asset or not have been studied by previous researches, which have focused on the motives for, and the effects of, revaluation decisions (Brown *et al.*, 1992; Whittred and Chan, 1992; Lin and Peasnell, 2000a; Barlev *et al.*, 2007). Economic benefits and efficiency are the most common reasons behind revaluation and include improving borrowing capacity; attempting to obtain additional liquid funds; dissuading hostile takeover bids; enhancing growth prospects; issuing bonus shares; and seeking acquisition (Brown *et al.*, 1992; Whittred and Chan, 1992; Easton *et al.*, 1993, Lin and Peasnell, 2000a; Jaggi and Tsui, 2001). Another motive is to reduce the costs which relate to external financing (debt contracting costs), such as the restrictions imposed on the agreement to ensure the regular payment of interest and its principals; to avoid the seizure of a company's collateral; to increase future loan capacity; to combat higher interest rates; and to minimise the debt covenants imposed (Brown *et al.*, 1992; Whittred and Chan, 1992; Easton *et al.*, 1993; Cotter and Zimmer, 1995; Cotter, 1999; Choi *et al.*, 2009).

Previous studies have confirmed the effects of asset revaluation, namely to predict future company financial performances such as operating income and cash flows from operation

(Aboody *et al.*, 1999; Jaggi and Tsui, 2001; Barlev *et al.*, 2007), and stock/ share prices, returns and movements (Emanuel 1989; Easton *et al.*, 1993; Barth and Clinch, 1998; Cahan *et al.* 2000; and Jaggi and Tsui 2001). Before deciding to revalue their assets, companies need to critically assess the related cost advantages and disadvantages and assess whether potential benefits exceed anticipated costs (Henderson and Goodwin, 1992).

1.1 RESEARCH AIM AND OBJECTIVES

Within the realm of international financial accounting and reporting, the research aim is *to develop a conceptual model and prediction model which can critically assess the motives for, and effects of, asset revaluation decisions for publicly listed companies (PLCs) in Indonesia*. The research objectives are:

i) To investigate the motives underpinning a PLCs' decision to choose a cost or revaluation model for fixed asset revaluation in accordance with the revised Indonesian Financial Accounting Standards Statement (IFASS) No. 16 for Indonesia PLCs;
ii) To predict the potential effects on Indonesian PLCs' financial performance resulting from asset revaluation decisions;
iii) To validate the accuracy and usefulness of revaluation decisions using the prediction model emanating from this study; and
iv) To provide guidance on the practical application of this model and shape the future direction of the model's capability.

1.2 RESEARCH QUESTIONS

While previous research in asset revaluation has been carried out in developed countries such as the UK and Australia, this research will be focused on Indonesia. Legal and cultural aspects,

economic conditions and business practices are very different in Indonesia compared to the UK and Australia.

In view of the aforementioned, the research questions posed are:

i) Has the revaluation model of fixed asset value measurement (as offered in the revised IFASS 16) been widely applied by Indonesian PLCs?
ii) Can financial variables such as liquidity, ownership, asset intensity, leverage, size, debt restructuring, successful status, growth and disclosure be used to predict companies' motives for asset revaluation decisions?
iii) Can variables such as asset revaluation decisions, market to book ratio, assets, operating income, cash flow from operations (CFFO) and working capital be used to predict companies' future financial performance?
iv) Would a conceptual model of the asset revaluation decision help chief financial officers (CFOs) to evaluate the implementation of the new IFASS 16 in deciding whether to revalue assets or not?

1.3 EXPECTED OUTCOMES

This study will focus on one accounting standard only - that which deals the valuation of fixed assets (IFASS 16). It is expected that the advantages of IFASS 16 include:

i) The ability for CFOs to choose an appropriate model for fixed asset valuation that is relevant to their specific business sectors. For example, service sector companies which hold reduced stocks of fixed assets might view a cost model to be more relevant to their circumstances.

This is because that method will generate relatively the same fixed asset values compared with the application of a revaluation model (market value) and has lower maintenance costs.

ii) Recommending companies to carefully consider the applicable costs and benefits before applying one or the other model.

iii) Enabling revaluers (companies who conduct revaluations) to reflect a fair market value for their assets, and therefore yield relevant financial information to stakeholders such as investors, banks and governments.

This research provides the following contributions to new knowledge:

- *Existing knowledge*

  Fixed asset revaluation decision making using the fair market value approach is a new concept within Indonesia and therefore this research represents a unique and evolving research theme. Since IFASS 16 was adopted from IAS Statement No. 16, integrative solutions emerging from this research will add to knowledge on the efficiency, effectiveness and the effects of fixed asset revaluation decisions globally. The research provides conceptual and prediction models which can help companies to decide an appropriate measurement model for their fixed assets.

- *Publicly listed companies (PLC) on the Indonesia Stock Exchange (IDX)*

  The results of this study will help PLCs to understand which proxies are significant or not as underlying motives of the revaluation decision. By knowing this, PLCs can be more confident regarding which model of fixed asset measurement to apply (either the cost or revaluation model). Appropriately, the implementation of a revaluation model for asset valuation enables companies to reflect a fair market value for their assets.

- *Investors*

  Investors can learn from the research results to predict investment decisions more accurately. Predictive models (and other research presented) will help investors to take appropriate positions in buying, holding or selling certain companies' shares/ stocks. Therefore, by understanding the prediction of PLCs' future financial performances and the motives that underpin their asset revaluation, investment decision making will run more effectively and efficiently. That is, investment decisions should be more relevant to a company's future financial performance.

- *The IFASB*

  The originality of this study will serve as a reference for the IFASB to monitor the implementation of IFASS 16. It will also feed them relevant information with regard to the motives underpinning asset revaluation decisions, and cost-benefit considerations in choosing one of the two models offered for fixed asset value measurement.

- *The Indonesian Capital Market and Financial Institutions Supervisory Agency (ICMFISA)*

  The institution plays an important role in generating rules for financial statement preparation and monitoring transparency in financial reporting and consistency in accounting policies for PLCs on the IDX (ICMFISA, 2005). The choice of asset valuation model should be considered carefully by the board because it needs to demonstrate transparency and consistency. Inconsistencies introduced when implementing accounting policies in financial statements can provide misleading information (which can damage public interest in their asset value). Useful information on companies' asset revaluation will lead to fairer share/ stock prices and market trading that is represented by its prices.

1.4 SUMMARY OF THE CHAPTERS

The thesis comprises seven chapters, each of which iteratively builds upon the findings of the previous chapter(s).

i) Chapter one explains the research context, namely the IFRS convergence roadmap in an international context; discusses the challenges and benefits of applying IFRS in Indonesia (specifically, IFASS 16); and provides an overview of the motives for, and effects of, asset revaluation decisions. The chapter also elucidates the research aim, objectives, questions and anticipated research outcomes.

ii) Chapter two presents a review of the literature which covers behavioural aspects of accounting practices which relate to agency theory and accounting policy; details of global accounting standards convergence; the Indonesian accounting environment; information on fair value and historical cost concepts; and implementation of the IFASS 16.

iii) Chapter three concludes with a synthesis of the literature and culminates in the production of a conceptual model as a framework for research design and which helps PLCs in fixed asset revaluation decision making.

iv) Chapter four describes the research methodology, research design and the five key stages of the research processes undertaken: theory build, data collection, quantitative data analysis, validation and product development. Six motives of asset revaluation are reported upon, namely to: i) increase economic benefits and efficiency; ii) reduce debt contracting costs; iii) reduce political costs; iv) reduce opportunistic behaviour; v) provide signals; and vi) reduce information asymmetry. These motives are broken down into nine independent variables and 17 proxies that are used to predict revaluation decision making. The research collected data from the Indonesian Stock Exchange for the period 2008 – 2012, which were the first five years of the implementation of IFASS 16. Binomial logistic regression and multiple regressions are applied at the analysis stage.

v) Chapter five presents the analysis and results; namely, data analysis in descriptive forms; statistical tests and results; and validation tests of the developed model. Descriptive statistics describe revaluer and non-revaluer data per year and per industry, in charts and tables. Following this, the chapter details the statistical tests used, such as overall fit of the model; prediction power; and individual tests. The subsequent component of the research modified the model in order to strengthen its prediction power by using balanced cases of revaluers and non-revaluers, and a natural logarithm of monetary data. New 'hold-out' data was used to validate the prediction model using the same tests. Subsequently, the original model and validation model used for prediction results were then compared in order to observe the variance and measure model accuracy. The low variance between the two models illustrates the robustness of the algorithms produced.

vi) Chapter six interprets the statistical results. It is complemented by arguments that are based on business practice and also comparison with previous research within the literature. The chapter provides some sections of general analysis with regards to the fixed asset measurement model chosen by Indonesian PLCs, interpretation of prediction models (in the form of descriptive and detailed statistical analysis on each proxy), and the factors which caused a limited number of Indonesian PLCs to apply the revaluation model.

vii) Chapter seven presents the research conclusions, implications, limitations and provides recommendations for future research. The conclusions include the data used, descriptive findings and hypothesis testing findings. The study provides implications to business stakeholders, namely PLCs, investors, investors, creditors, and the Indonesian Capital Market Supervisory Agency. Additionally, it has an impact upon other relevant parties such as the Indonesian Tax Agency, IFASB and academia.

CHAPTER 2

LITERATURE REVIEW

2.0 INTRODUCTION

Chapter two is a review of the relevant literature on asset revaluation and the accounting environment in Indonesia, which will support the theoretical framework for this research. The chapter comprises four sub-sections that iteratively contextualise the research problem domain. These are:

i) A section on behavioural aspects in accounting practices which provides a description of agency theory and the wider options available to a company when choosing accounting policies. The section also discusses opportunistic behaviour within companies by individuals who act in their own self-interest.
ii) World accounting standards and the convergence of these are discussed. The section is then narrowed down to focus on the specific Indonesian accounting environment and its national accounting standards.
iii) The characteristics of fair value and historical cost concepts for fixed asset valuation are subsequently discussed, compared and contrasted against each other.
iv) Technical aspects of the accounting standard for asset revaluation.

Oliver (2008) notes that one purpose of a literature review is to establish the academic and research areas which are relevant to a research subject. This indicates that a researcher critically summarises prior research articles or studies in order to link these to current research. Finn (2005) states that a literature review aims to demonstrate a professional grasp of contemporary

knowledge but also to critically evaluate other related areas of research. Fink (2010) also defines a literature review as a systematic, explicit, and reproducible method for identifying, evaluating, and synthesising the existing body of completed and recorded work produced by researchers, scholars and practitioners. By undertaking such an approach in this study, the research will better frame the problem domain to provide direction for the research question hypotheses and to compare and contrast the literature with the results of this study (Creswell, 2009).

Bryman (2012) suggests that the reasons for writing a literature review include to identify gaps in current knowledge; develop an analytical framework; learn about theoretical and methodological approaches that fit the research area; and provide a basis for interpretation of the findings. Thus, the literature review helped this research to map the problem of asset revaluation issues, develop an analytical framework and identify variables in order to build a more accurate and robust model. Additionally, Underdown and Taylor (1991) suggest that the new theory (stemming from a literature review) developed should explain or predict phenomena based on empirical studies; generate testable future implications/ consequences; be consistent in every situation (internally) and with other disciplines (externally); and help to provide a guidance and direction in case of empirical problems.

Previous research in the field of asset revaluation has included a review to assess the costs-benefits aspect of asset revaluation (Henderson and Goodwin, 1992); a search for the ideal mechanism in revaluation of fixed assets in order to tackle high inflation in France (Collins, 1994); an investigation into the relevance of financial information for investors in determining share prices and its compliance to accounting standards for non-current asset valuation in

Australia (Easton and Eddey, 1997); and a review of the role of asset valuations in a company that is designing a restructuring programme through revaluation (Mintz, 2009).

To systematically log the literature for subsequent analysis, this study adopted Bryman's (2008) one-way model. This model comprises several steps, including: read and note recommended books and articles; follow up the relevant keywords through searches of electronic databases; examine abstracts; and check regularly for new research publications throughout the research period. The internet plays an important role in the search for knowledge by facilitating access to many sources of literature and data in a time-efficient manner. These include library catalogues, newspaper archives, electronic texts and indexes of periodical literature, as suggested by researchers such as Coombes (2001), Hewson *et al*. (2003), Blaxter *et al.* (2006) and Bryman (2008). In searching electronic full text articles, this study employed ProQuest-ABI/INFORM (2012), Emerald (2012), Swetswise (2012), JSTOR (2012) and Science Direct (2012) portals and databases. These yielded the most reputable (i.e. peer reviewed) and up-to-date knowledge relating to the subject. Searches utilised different criteria (e.g. word, phrase, journal title and author name) relevant to the topic (Coombes, 2001; Baker and Foy, 2008) to identify contemporary literature in reputable accounting journals, as defined by journal rating scores (for instance, ABDD, 2010; ABS, 2010).

Based on the results of the above, the following sections explain the theoretical bases underpinning accounting theory and policy, the accounting standards and the accounting environment in Indonesia, before linking back to the motives and effects of asset revaluation decisions.

2.1 BEHAVIOURAL ASPECTS IN ACCOUNTING PRACTICES

2.1.1 Agency Theory

Agency theory relates to the principals' (stockholders') financial welfare that may not be maximised because of differences in informational asymmetries, risk and goal preferences (Saam, 2007). Agency theory provides a framework for examining the relationship between information systems used, incentives and behaviour (Saam, 2007). Performance evaluation systems to measure financial statements (implemented by auditors as a third party) are often selected by stockholders to measure an agent's role on behalf of the principal running the organisation (Saam, 2007). In such circumstances, a conflict of interest may arise between those parties involved in the employment contract agreed. Auditors are hired and appointed by shareholders to work independently under auditing standards and to bridge managers' and stockholders' interests. Examples of opportunistic actions conducted by managers include misuse of company perks, and dysfunctional actions of using costs; the latter could include under spend budgets such as for marketing expenses and technical experts, which could subsequently negatively affect a company's long-term goals (Watts and Zimmerman, 1986; Nasser, 1993; Belkoui 2004).

Agents and stockholders share different roles of responsibility, but all parties should pursue similar goals which are mutually beneficial to the company. While an agent works in managing and preparing the information on business activities, principals observe their behaviour in running their tasks (Jensen and Meckling, 1976). This condition leads to inequality of information (information asymmetry) and can cause moral hazard problems such as the pursuit (by management) of activities which are not in the best interest of the principal (Nasser, 1993); driving company cars irresponsibly in the knowledge that company insurance covers all accidents and injury; and increased (and costly) duration of stays in private hospitals (Savage

and Wright, 2003). Sam (2007) offers various solutions to overcome these problems, such as providing incentives/ compensations/ reward and monitoring systems.

Furthermore, the conflicts of interests above have caused the occurrence of various world accounting scandals, which have influenced both national and international economies. These scandals have concerned ethics, integrity and accountability problems. Examples include Enron, which worked with Arthur Andersen Certified Public Accountants (CPA) to devise fraudulent schemes and destroyed the evidence (McPhail and Walters, 2009); and WorldCom, where groupthink (which represented the group interest within WorldCom), pressured and persuaded their internal accountants to perpetrate fraudulent activities (McPhail and Walters, 2009).

The above accounting scandals were caused by accounting malpractice and unethical professional practice. The scope of choice of accounting methods offers flexibilities which can mislead the essence of economic reality (Flemming and Zyglidopoulos, 2009; Omurgonulsen and Omurgonulsen, 2009). However, a higher degree of flexibility in accounting standards will potentially lead to a higher risk of the reported quality of earnings, and financial information provided to the users of financial statements will be distorted (Griffith 1995). Conversely, if the rules are too rigid, and there is no option available in the accounting method, it may encourage preparers of financial statements to circumvent the true meaning of numbers. The latest accounting scandal centred on Tesco PLC's early recognition of income and delayed recognition of costs. A £250 million shortfall in profit occurred for the expected half-year 2014. This scandal is currently under investigation by three parties, namely the Financial Conduct Authority, Deloitte Accountants, and Deloitte and Freshfield Law Firm (The Daily Telegraph, 2013).

Bad behaviour in accounting practice can result from managers who attempt to maximise their personal interest, for instance by performing creative accounting. This can yield misleading financial information and prevent users of financial statements from knowing the true and fair facts in companies' financial information. Creative accounting is defined as the process of manipulating accounting figures by taking advantage of loopholes in accounting rules, the choices of measurement used, and disclosure practices of financial statements (Naser, 1993). An example of creative accounting is performing off-balance sheet financing for leasing and window dressing (Naser, 1993). By doing so, the potential advantages of creative accounting are to boost profits, minimise losses, conceal financial risks, manipulate key financial ratios and circumvent borrowing restrictions. Smith (1996) suggests that readers of financial statements must be cautious of the following creative accounting categories: reporting inflated profits or earnings per share through fictitious sales and returns; reporting profits at the expense of the balance sheet through capital reserves; and reporting lower borrowings or loans. Unfortunately, these practices might contribute to a company's bankruptcy (McBarnet and Whelan, 1999), because stakeholders and investors, creditors, employees and government will sooner or later identify a company's shortcomings in performance with regard to their true financial circumstances.

Previous researchers have investigated the motives of asset revaluation used as a window dressing tool of creative accounting. To avoid misinterpretation by creative accounting, users of financial statements should carefully interpret companies' decision to demonstrate upward asset revaluation. This increases fixed asset value but at the same time also changes other accounts. This combination change impacts the two reports of financial statements namely: balance sheet for its fixed asset account; and income statement for its depreciation expenses account (Nasser, 1993). Moreover, although fixed asset revaluation is subject to registered

appraisal, subjectivity might still play a part. A financial manager has the right to determine a fixed asset's economic useful life, the timing of asset revaluation, residual value and amount depreciated (Naser, 1993; Barlev *et al.*, 2007). This is called management discretion. Prior studies have supported findings that window dressing practices through asset revaluation can positively influence companies' future financial performance (Aboody *et al.* 1999, Jaggi and Tsui, 2001).

2.1.2 Opportunistic Behaviour

To better understand behavioural aspects regarding the choice of accounting policy from the given methods, this research begins with an inquiry into the related theory and hypotheses. Positive accounting theory explains the essence of accounting and the economic consequences that might occur in the practise of that theory (Watts and Zimmerman, 1986; Nasser 1993). The theory is based on the proposition that managers, shareholders and regulators/ politicians are rational, and that they attempt to maximise the utility which is directly related to their compensation and wealth (Belkoui, 2004). Positive accounting theory provides some explanations and predictive models that can help predict the behaviour of investors, financial analysts, lenders, auditors, managers and standard setters regarding the accounting procedures underlying financial statements (Nasser, 1993; Watts and Zimmerman, 1986). For example, investors and analysts should not interpret balance sheets and earnings numbers as unbiased estimates because managers' personal incentives might influence them, often as a function of their compensation schemes (Watts and Zimmerman, 1986).

Furthermore, management can carefully compare the costs and benefits of each available accounting policy, and consider the effects of reported accounting numbers on various business aspects such as future financial performance, tax regulation, management compensation and

political costs (Belkoui, 2004). Managers therefore tend to behave opportunistically when selecting an accounting method, the risk being that management will aim to maximise their personal wealth through incentives such as bonus plans and debt contracts (Belkoui, 2004). These incentives lead to three hypotheses in positive accounting theory (Watts and Zimmerman, 1978):

- *Management compensation hypothesis* - managers with bonus plans are more likely to apply accounting methods that can increase current bonus income.

- *Debt hypothesis* - managers with a higher DER are more likely to increase income to avoid a covenant violation via maintenance of working capital, dividend pay-out ratio and restrictions on additional debt.

- *Political cost hypothesis* - large firms tend to apply accounting choices that can reduce their profits for liability purposes; this is described in the literature as a political cost. Motivated by media exposure and improving re-election chances, politicians and bureaucrats often attempt to tax higher profit companies to resolve these problems (Watts and Zimmerman, 1986). Wilson and Shailer (2007) also found that in the case of Tooth & Co Ltd, the decision to avoid political cost through systematic understatements of profit was aimed to justify a lower dividend pay-out policy.

Managers' opportunistic behaviour can be overcome by guidance encapsulated within two theoretical assumptions: i) agency theory; and ii) contracting cost theory. Jensen and Meckling (1976) define an agency relationship as a contract under which one or more persons (principals) engage another person (the agent) to perform some service on their behalf; this relationship

often involves delegating some decision-making authority to the agent. Agency costs might occur as a result of measuring and monitoring an agent's behaviour and the cost of establishing compensation policies such as monitoring and bonding costs (Jensen and Meckling, 1976). Contracting cost theory views the role of accounting information as the monitoring and enforcing of the contract to reduce agency cost (Belkoui, 2004). Examples of contracting costs are transaction costs, information costs and renegotiation costs (Belkoui, 2004).

Conservatism can also help to constrain managerial opportunistic behaviour; overcome the moral hazard problem; and enhance the reliability of financial reporting and disclosure (Kung *et al.,* 2008; Chi and Wang, 2010). FASB (1980, 2010) define conservatism as a prudent reaction to uncertainty that ensures that uncertainties and risks inherent in business situations are adequately considered. Thus, if two estimates of amounts to be received, or paid, in the future are about equally likely, conservatism dictates using the less optimistic estimate (FASB, 1980; FASB, 2010). However, if two amounts are not equally likely, conservatism does not necessarily dictate using the more pessimistic amount rather than the more likely one (FASB, 1980; FASB, 2010).

2.1.3 Accounting Policy

The practice of choosing accounting policy for Indonesian companies is embodied within IFASS 25: *Accounting Policy, Changes in Accounting Estimates and Error*, which was adapted from IAS 8 (IASB 2005; IIA, 2010). The new standard replaced previous versions of IFASS 25 that were first applied in 1994; the new IFASS 25 was implemented on January 1, 2011 (IIA, 2010). Accounting policy is a principle based upon convention, rules and certain practice that is applied by an entity in preparing financial statements (IIA, 2010). In the selection and application of accounting policies, companies should consider that the information provided in

financial statements contains relevant decision making guidance that is reliable, prudent and complete in all material respects (IIA, 2010).

However, in formulating accounting objectives, accounting standard-setters may face certain problems in the implementation and enforcement of accounting standards. These include lack of knowledge regarding the financial statement users' needs; variations between different users resulting from different needs; and conflicts of interest between accounting professionals, companies and users (Underdown and Taylor, 1991). Previously, Sundem and May (1981) proposed a model for accounting policy making that included four entities: policy makers, firms and auditors, individuals and markets. Each entity worked sequentially and generated economic consequences that influenced decision makers in choosing an appropriate 'future' accounting policy.

Prior research that examined management's selection of accounting policies found that company size and leverage were proxies of the contractual relationship between stockholders, creditors and managers in an agency theory framework (Watts and Zimmerman, 1990; Skinner, 1993). Because of the high agency costs generated, managers sometimes try to maximise the value of the firm using the most efficient accounting policy that serves their best interest (Jensen and Meckling, 1976).

Other researchers have studied the practice of choosing accounting policy. One study found that Canadian importers chose income-increasing accounting policies to create incentives in international trading activities (Cullinan, 1999). The research applied the straight line accounting depreciation method rather than an accelerated or combination method (*ibid*). The

reason for this was that if the Canadian dollar fell against the US dollar, it would be detrimental to Canadian importers (*ibid*).

Astami and Tower (2006) investigated companies' tendency to apply accounting policy choice that can increasing or decreasing the profit among five Asian Pacific countries. Four key disclosures in 442 financial statements were used, namely: i) inventory methods; ii) depreciation methods; iii) goodwill treatment; and iv) valuation base for property, plant and equipment (for the period 2000/2001). At the time of their research, Indonesia was the only country which allowed a historical cost valuation of property, plant and equipment using IFASS 16, 1994. The research found that Indonesian companies utilised the most income-decreasing accounting policy among the selected countries, characterised by higher leverage, higher level of ownership concentration and lower investment opportunity sets. The research findings helped managers to select the most appropriate factors when choosing accounting policies.

Accounting standards provide various choices for companies in preparing financial statements with regard to matters such as fixed asset valuation methods, fixed asset methods of depreciation, and inventory valuation. Alternative accounting methods can also yield different meanings, interpretations or consequences (IASB, 2005). When two business enterprises in the same industry and economic conditions apply different accounting policies, public sceptics question the reliability of the financial reporting (IASB, 2005). Comparability of financial statements may also be questioned because it may encourage unsound economic decisions by the users of financial statements (IASB, 2005). The two qualitative characteristics of useful accounting information (that is, relevance and faithful representation) should guide preparers of financial information when choosing an alternative to represent a company’s economic events (FASB, 2010). Relevance is the capacity of information to make a difference in decision

making by having predictive value and/or confirmatory value (FASB, 2010). Faithful representation relates to the reliability of quality information and embodies the three characteristics of being complete, neutral and free from error (FASB, 2010).

The decision upon which accounting policy is chosen resides purely with management discretion, but finance managers have to consider the cost-benefit aspects of this policy decision. Hjelstrom and Schuter (2011) studied the role of incentives that were available and received by management during the selection of accounting policy in 2005, among Swedish PLCs in the transition period to IFRS. Following IAS 16, six out of the seventeen samples applied the revaluation method for fixed asset measurement, which required more effort because each asset has its own characteristics. The depreciation expenses of each significant part of an asset were separated on the basis of their useful life. However, this caused additional costs for Swedish PLCs in collecting new data and setting up new systems.

The above discussion of accounting policy is now linked to this study. This research is set during the IFRS transition in Indonesia and specifically considers the accounting policy methods that were offered in IFASS 16. Therefore, either a cost or a revaluation model must be chosen by managers in asset value measurement, but this decision may be influenced by the underpinning motives of CFOs.

IFASS 16 requires a company to choose one method for fixed asset valuation, either: i) a revaluation method, and as a consequence, the requirement that the company should regularly revalue their fixed asset; or ii) a cost method which is based on a company's carrying amount/ book value and does not require revaluation (IIA, 2007). This standard also explains that a revaluation method favours the provision of meaningful information to stakeholders because

the valuation follows market value. During times of inflation, the market value of fixed assets such as land and buildings tend to increase and application of the revaluation method will strengthen a company's asset values. Conversely, the cost method helps a company avoid additional expenditure such as revaluation appraiser and auditor fees (IIA, 2007). Thus, choosing the most appropriate method may be linked to company accounting policy. The present study suggests that accounting policies applied by one company might represent a mixture of several parties' interests involved in decision making at individual, group and organisational levels. However, individuals' motives should be congruent with an organisation's to maintain overall organisational effectiveness. With regards to IFASS 16, each of the valuation methods above has its own costs-benefits that will influence preference. Thus, choosing the revaluation method reveals a company's desire to pursue economic benefits, avoid opportunistic behaviour and provide value-relevant information to stakeholders.

The decision on whether to revalue or not is one that might affect external parties such as investors, creditors and auditors. The release of financial statements can reduce information asymmetry by providing true and fair value; additionally, a high disclosure of financial information will support investors' interests. The conceptual framework for revaluation decision making that was developed for this study will be explained in a later section. This framework provides a guide for a company in analysing motive and effect factors that should be considered; in what ways the steps should be taken; and possible future consequences/ impacts on internal and external parties.

Unfortunately, accounting standards provide choices in the practices related to, for instance, fixed asset depreciation methods, cash flow statements, reporting methods and fixed asset valuation methods. Each alternative may yield consequences and/or management incentives, so

it is important to consider behavioural aspects regarding these decisions. These revaluation options may have allowed CFOs to behave opportunistically in the past (Nasser, 1993; Griffith, 1995), but they are obligated to align with strategic financial guidance to ensure that all necessary policies are met for the benefit of stakeholders. Therefore, ironically, while they supervise the compliance of accounting policy, they may sometimes be involved in accounting manipulation.

2.2 ACCOUNTING STANDARDS

2.2.1 Standard-Setting

The development of accounting standards seeks to improve the quality of financial reporting through the standardisation of interpretation and implementation in accounting practice (Tokar, 2005; Wagenhofer, 2009). As official statements, accounting standards are promulgated by standard-setting bodies on certain accounting issues, and they are expected to be complied with to ensure the availability of financial information and its disclosure (Ma, 1997). Historically, world accounting standard setting for the private sector has been dominated by two standard-setting bodies and has influenced other countries' national accounting standards boards - including Indonesia. These are the US Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB).

Other organisations which have been involved and worked in partnership with IASB in setting and promoting international accounting harmonisation include the Commission of the European Union (EU); the International Organization of Securities Commissions (IOSCO); the International Federation of Accountants (IFAC); the United Nations Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR); and the Organization for Economic Cooperation and Development (OECD) Working Group on

Accounting Standards (Doupnik and Perera, 2007; Choi and Meek, 2008). This section only explains two of the main standard setters, namely FASB and IASB, because of their roles in ruling on accounting standards globally.

- *Financial Accounting Standard Board (FASB)*

  The FASB is a non-government body which was established in 1973 to promulgate accounting rules/ standards and seeks to provide useful financial reporting information to stakeholders (FASB, 2013). The FASB's mission is accomplished through stakeholders' broad participation and is overseen by the Financial Accounting Foundation's Board of Trustees (FASB, 2013). Soon after being established, the FASB generated statements that became Generally Accepted Accounting Principles (GAAP) for US private companies. Both the US and the non-US companies which are listed on the New York Stock Exchange (NYSE) also have to meet these statements (FASB, 2013).

  As a standard-setting authority which runs its operations independently, it was necessary to set up the Financial Accounting Foundation (FAF), which oversees the FASB's operation, including raising and managing the funds (Evans *et al.,* 1994; Kinserdal, 1998; Iqbal, 2002). Seven full-time members serve for a renewable five-year assignment period on FASB. They represent a broad range of accounting expertise and professions, namely auditors, academia, government service and business (Evans *et al.,* 1994; Kinserdal, 1998; Iqbal, 2002). As of May 2009, the FASB had issued 165 statements of financial accounting standards (SFAS) and 48 interpretations for companies' external reporting (World GAAP, 2013).

  Prior to the FASB, the responsibility for maintaining accounting standards had been managed by the Committee on Accounting Procedure (CAP - from 1938 to 1959) and the

Accounting Principles Board (APB - from 1959 to 1973) (Meek, 2003; Nobes and Parker, 2010). During these periods, the CAP produced 51 publications, which were known as Accounting Research Bulletins (ARB), while the APB released 31 opinions and four statements (Meek, 2003; Nobes and Parker, 2010).

- *International Accounting Standards Board (IASB)*

  IASB's legitimacy continuously increased as the world's main standard setter and thus far more than 120 countries have committed to apply IAS/ IFRS, including Indonesia (IFRS, 2011; IFRS, 2012). The IASB was preceded by the formation of the International Accounting Standards Committee (IASC) in 1973. The establishment of IASC was led by professional accounting bodies from nine countries, Australia, Canada, France, West Germany, Japan, Mexico, the Netherlands, the UK and Ireland and the US. The American Institute of Certified Public Accountants (AICPA) represented the US as an IASC member, but not FASB as an organisation. This situation indicated that it was only the US that did not surrender its accounting sovereignty to IASC. The overall objectives of the IASC are to i) globally formulate international accounting standards which can be presented and audited; and ii) to harmonise the regulations, accounting standards and procedures that relate to the presentation of financial statements (Evans *et al.*, 1994; Iqbal, 2002). IASC has proactively taken responsibility to serve all types of business and today over two million accountants worldwide use this standard. Similar to FASB, the IASC is also a non-government body which administers its activities through contributions from various parties such as professional accounting organisations, publications and multinational companies (Evans *et al.*, 1994; Iqbal, 2002).

  The restructuring process of IASC into IASB took five years and the IASB officially accepted responsibility for the standard setting and the harmonisation program for

comparability of financial statements on April 1, 2001 (Doupnik and Perera, 2007). As a consequence, prospective IAS statements changed to IFRS statements. The IASB is composed of 14 members, who comprise 12 full-time members and 2 part-time ones. They represent expert groups with various backgrounds such as standard setters, academics and practitioners (Doupnik and Perera, 2007). The due process procedures of IFRS comprise six stages to ensure compliance: i) setting the agenda; ii) planning the project; iii) developing and publishing the discussion paper; iv) releasing the exposure draft; v) setting the standard; and vi) monitoring IFRS application after the standards are issued. As of 31 December 2012, IASC and IASB had revised/promulgated 41 IASs and 13 IFRSs (IFRS, 2013).

To raise the long-term viability and legitimacy as a global standard-setting organisation, Larson and Kenny (2011) suggest that IASC/ IASB should operate and be funded independently. Their study covered contributions recorded by the IASC from 1990-1999 and IASB from 2001-2008. The results revealed that over the years, the number of donors and value of donations had increased significantly, together with the growing legitimacy of both IASC/ IASB. Corporations ranked as the highest donors in the stakeholder interest group, followed by central banks and CPA firms. In terms of the stakeholders' demographic category, Larson and Kenny (2011) also found that more countries from various regions had contributed to the organisation (from a dozen countries at the beginning of the 1990s to over 30 in 2008). Furthermore, it also found that countries with higher gross domestic product (GDP) and domestic equity market capitalisation dominated the contributions (such as EU and Anglo-American countries).

Conversely, a critical study was conducted by Burlaud and Colasse (2011) with regard to the IASC/ IASB role of building up the legitimacy of international accounting standards. The

research highlights the weakness of IASC/IASB in terms of agency theory and efficient market theory, and also political legitimacy as it is compared to European Union (EU) legal regulations. Moreover, the accounting standards offer choices of accounting method to those who prepare financial reports; this flexibility can weaken public perception of compliance (Ma, 1997). Ma identifies problems which can be addressed with regard to standardising accounting practice, namely i) the lack of consensus on best practice; ii) the lack of an underlying theoretical framework; and iii) the inability of the standard-setting bodies and professions to monitor and enforce the compliance of accounting standards. Other problems relating to accounting standards convergence included low lobbying, acceptance and legitimacy. To address these observed problems, interest groups such as preparers, auditors and creditors often employ lobbying to influence standard-setting bodies (Georgio, 2002; Stenka and Taylor, 2010; Orens *et al.*, 2011).

To investigate the gap between the nature of participation during the accounting standards-setting process and its volume in practice, Georgiou (2010) took samples from UK investment management firms. Using comment letters as a proxy of participation, the research found that a low level of lobbying activity was undertaken by users. Georgiou concluded that the reasons for this were based upon the fact that the organisations were unaware of the cost of lobbying; believed that their interests had been represented by other users; did not perceive that any user group reports would influence the IASB process; and believed that accounting professions and standard-setting bodies were not independent and dominated the process.

Larson (2007) suggests that greater acceptance and legitimacy has been received by IASB on the transformation from IASC as a leader in promulgating international accounting

standards. The research collected 714 comment letters from four stakeholders, namely accounting profession organisations; regulators; financial accounting preparers; and users with regard to the first 18 International Financial Reporting Interpretation Committee (IFRIC). The results revealed that a wide variety of responses to IFRIC existed, and that those responses had a significant correlation to financial reporting systems. The majority of EU respondents indicated their lack of involvement in the accounting standard-setting process. Only a few respondents replied from developing countries and North America, whilst professional bodies and accounting firms (as accounting profession groups) responded the most among other stakeholders.

Jorrisen *et al*. (2002) collected 3,234 comment letters of constituents' participation within the IASB's due process procedures during the period 2002 to 2006. During this process, constituents wrote letters directly and formally to response exposure drafts and discussion papers. The research found that compared to other stakeholders (namely government and academia), parties such as preparers (companies), accountants (certified public firms), and standard setters reacted significantly to it. This was due to its impact on a company's financial reporting. The work also revealed that users, stock exchanges and supervisory authorities react more by writing comment letters on the aspect of disclosure issues.

2.2.2 Accounting Standards Convergence

Differences in accounting rules and practices between countries are influenced by various factors, such as the economic, political and cultural environments (Walton *et al.,* 2003; Doupnik and Perera, 2007; Nobes and Parker 2010). The need for business growth has encouraged corporations to seek alternative financial sources and others to diversify their investments internationally (Radebaugh *et al.,* 2006). With regard to these opportunities, problems may

become apparent for multinational corporations (MNCs) when measuring the comparability of accounting numbers and disclosing financial statements. To overcome these problems, many parties, including accounting standard setters, securities market regulators, MNCs and stock exchanges, must act cooperatively (Radebaugh *et al.*, 2006). IASB uses the term "convergence" as it has the same meaning as harmonisation both in regulations, standards and practices (Choi and Meek, 2008). Harmonisation is the process used to reduce the difference in international reporting by narrowing and gradually eliminating the obstacles to ease comparability of financial statements (Walton *et al.*, 2003; Doupnik and Perera, 2007).

Beside the comparability aspect, a set of internationally accepted accounting standards can reduce the preparation costs of financial statements, simplify the audit process, increase the credibility of financial information and give more financial control to MNCs by governments of developing countries (Lawrence, 1996; Doupnik and Perera, 2007). Conversely, obstacles to accounting harmonisation have also risen. These include local values, which have historically formed the basis for financial reporting. They often incur high political costs when international accounting standards are subordinate to national accounting standards; create legal conflicts between different law systems, and economic gaps between developing and developed countries; and favour large companies over small and medium-size enterprises (SMEs) (Evans and Taylor, 1994; Lawrence, 1996; Saudagaran, 2001; Walton *et al.*, 2003; Doupnik and Perera, 2007; Nobes and Parker 2010).

Rezaee (2010) conducted research into accounting standards convergence in achieving global financial comparability between the US GAAP and IFRS in the USA, with 244 responses received from CFOs as practitioners and university academic staff. The research reached three main conclusions: i) accounting standards convergence provided benefits to financial statement

preparers, users, auditors, analysts and standard setters; ii) respondents agreed on the transition of US GAAP to IFRS; and iii) because of this conversion management, auditors and investors should be retrained and educated in a relevant curriculum.

Similarly, Barth *et al.* (2012) compared the financial statements of IFRS firms and US GAAP ones. The research collected data from 3,400 firms in 27 countries between 1996 and 2009, and analysed the before and after IFRS implementation periods. The results revealed that both the US and non-US IFRS firms had greater comparability of accounting amounts than US GAAP firms. The comparability aspect was greater for firms who adopt IFRS mandatorily, and also for firms who apply common laws or reside within countries with high enforcement. Firms that applied common law had higher value relevance of comparability than US firms in the pre-adoption period only. After IFRS adoption, that comparability was significantly increased for the three major industry groups (i.e. finance, insurance and real estate). Based on the research, it was suggested that coordination and communication between stock exchange regulators from various countries be encouraged so that it can prompt the use of IFRS.

In Europe, IASB gained greater legitimacy when the EU required all companies listed to prepare consolidated financial statements based on IFRS (IFRS, 2013). A survey conducted in 17 EU countries by Larson and Street (2004) identified obstacles to the convergence progress including the complicated nature of IFRS financial instruments; the tax orientation of national accounting systems; underdeveloped capital markets; insufficient guidance on the IFRS application process; and the limited experience of certain transactions such as pensions. To address these shortfalls in IFRS implementation, from 2005 the IASB worked on improving the three core aspects of technical programmes, the political dimension and the implementation problem (Whittington, 2005).

Jermakowicz and Tomaszewki (2006) conducted research on 112 EU listed companies which responded to a survey of IFRS adoption in 2004. The results concluded that the majority of respondents applied IFRS for more than consolidation purposes, even though this incurred higher costs due to the lack of guidance and uniform interpretation. Respondents also did not expect IFRS implementation to lower the cost of capital; therefore, they would not have implemented it if the EU had not required them to do so.

The current European financial crisis led to criticism of the IASB. Even though the IASB was established on procedural and substantial legitimacies, a lack of political legitimacy occurred (Burlaud and Colase, 2011). Only a few European countries such as the UK, Ireland, Germany and France, with major financial and intellectual resources, can be represented amongst the 14 IASB members (Burlaud and Colase, 2011). The crisis also forced the EU to reinstate IASB's power to alter standard-setting processes and its governance structure. Bengtsson (2011) states that IASB is able to settle independently with little political influence, but that they should adapt the EU interests in order to gain political support.

As a member of international accounting profession organisations, the Indonesian Institute of Accountants (IIA) works with the IASB to ensure that national accounting standards are in line with the harmonisation agenda (IIA, 2008). This helps to ensure that members of the Association of South East Asian Nations (ASEAN) receive benefits such as cost savings for multinational corporations and to enhance the comprehensiveness and comparability of financial statements. Saudagaran and Diga (1998) proposed policy recommendations to pursue regional harmonisation, which included the development of a minimum list of items disclosed following IAS. Indonesia is a member of the following international accounting organisations:

- *The ASEAN Federation of Accountants (AFA)* - AFA was established in 1977 and seeks to provide further advancement of the ASEAN accounting profession. Currently, 10 ASEAN countries have joined AFA (AFA, 2013).

- *The Confederation of Asia-Pacific Accountants (CAPA)* - CAPA was established in 1957, with Indonesia being one of the founding members. CAPA has memberships from 31 organisations from 24 jurisdictions and aims to provide leadership in the development, enhancement and coordination of the accounting profession in the Asia-Pacific region. It also aspires to promote harmonisation through the adoption of international accounting standards (CAPA, 2013).

- *The International Federation of Accountants (IFAC)* - IFAC was established in 1977 in Munich to strengthen the worldwide accountancy profession. The rationale for IFAC is to develop and facilitate high quality international standards in auditing and assurance, public sector accounting, ethics and education, and to collaborate with the members and other international organisations. Currently, the IFAC has 173 members and associates from 129 countries and jurisdictions. Indonesia became a member in 1997 (IFAC, 2013).

Various scholars have studied accounting convergence in ASEAN (Craig and Diga, 1996; Saudagaran and Diga, 1998; and Craig and Diga, 1998) and have identified similarities and differences in financial reporting and its disclosure under colonial influences. AFA has played an important role in overcoming the problems during the international accounting harmonisation program (Craig and Diga, 1996). The differences in financial reporting regulations among ASEAN countries are explained by various factors such as social-historic, economic, political and past colonial linkages in each country. Moreover, different company

laws, securities regulation and tax regulation can also influence accounting standards and practice (Craig and Diga, 1996; Saudagaran and Diga, 2000). For example, national company laws in Brunei, Malaysia and Singapore were based on the British approach, while Indonesia and Philippines followed the Dutch and US approaches (Craig and Diga, 1996). Moreover, in terms of stock exchange regulation, PLCs in Indonesia, Thailand, Philippines and Malaysia adopted US-style regulation, while Brunei and Singapore applied UK-style regulation (Craig and Diga, 1996). Despite these differences, AFA has successfully encouraged ASEAN to harmonise IASC standards.

To investigate corporate accounting disclosure in five ASEAN countries (namely, Indonesia, Malaysia, Philippines, Singapore and Thailand as of December 31st 1993), Craig and Diga (1998) collected data from the financial statements of 154 publicly listed companies. Their research compared 530 disclosure items as required by each stock market's regulation and IAS. The study helped to understand the pattern and nature of corporate disclosure and to contemplate accounting harmonisation in ASEAN. They found that Singaporean companies had the highest percentage in items disclosed according to the stock exchange authority (74 per cent), followed by companies from Malaysia, Philippines and Thailand. Indonesian companies were the least compliant, at 52 per cent. The disclosure related to management information, segmental information, interim reporting, research and development and corporate social responsibility. Moreover, using 200 IAS disclosure items, the rank of Singaporean companies compared to other ASEAN countries yielded similar results. They scored a compliance level of 93 per cent, while Indonesia ranked last, with 55 per cent of items disclosed. These differences occurred because of the volume and extent of disclosure required by the ICMFISA and the IIA. This study provided examples of items which disclose differently to other ASEAN countries,

such as research and development information, corporate social responsibility and the names of significant related parties.

Recent progress has shown that Thailand, Malaysia, Singapore and Indonesia, as members of ASEAN, have progressively implemented IFRS over the last few years (PWC, 2013). Furthermore, from 2009 the AFA also encouraged SMEs and non-public entities in 10 ASEAN countries to adopt IFRS. These standards allow SMEs to disclose a reduced number of items required in the financial statements (e.g. 250 compared to 3,000 for a full IFRS disclosure) (Accountancy Asia, 2013). In addition to SME accounting standards, IFASB has adopted the Financial Reporting Standards for Smaller Entities (FRSSE), which were effectively applied from April 1st, 2008 (IASB, 2007).

In Indonesia, *Standar Akuntansi Keuangan Entitas Tanpa Akuntanbilitas Publik* (SAK ETAP) was designed for SMEs (not significant for public accountability purposes) so that they can prepare financial statements and be audited for proposed loans applications from banks (IAI, 2009). SAK ETAP was first applied on January 1st, 2011, but early implementation of this accounting standard was encouraged. A more simple accounting policy (such as a cost method) is offered in this accounting standard for fixed assets valuation because it will help companies to efficiently manage an appraisal fee in the case of revaluing their assets. FRSSE (effective applications in April 2008 and January 2015) offered companies the choice to measure fixed assets using either a cost or a revaluation model, and the impact of using each method should be disclosed in the notes to financial statements. Thus, there is no difference in accounting treatment between IAS 16 and FRSSE with regard to fixed asset valuation.

2.2.3 Indonesian Accounting Environment

Accounting and the social environment have an interdependent relationship that influences each other (Saudagaran, 2001). This interaction generates unique accounting regulations and practices in one country that can also impact internationally, and vice - versa. Saudagaran (2001) defines ten environmental factors that can affect the development of accounting in a country: the type of capital market; reporting regimes; business entity; legal system; level of law enforcement; inflation rate; political and economic influences; status of the accounting profession; the existence of a conceptual framework; and the quality of accounting education. The more sophisticated and supportive these aspects, the better developed the accounting regulations and practices which tend to evolve. Choi and Meek (2008) state that the diversity of accounting development in a country is also influenced significantly by eight factors, namely the sources of finance; legal system; taxation; political and economic ties; inflation; economic development level; educational level; and culture.

The cultural aspect is present in the process of choosing an accounting policy and providing accounting information in a country (Belkoui, 1995). Moreover, accounting information provided by accounting systems is influenced by five environmental aspects: the economic, political, legal, educational, and religious. Accounting systems will collectively formulate cultural or societal values (Iqbal, 2002). Differences in accounting systems are also linked by several factors by Nobes and Parker (2010), including culture; legal systems; providers of finance; taxation; the accounting profession; and other external influences (such as international accounting standards bodies and regional organisations). In a related work, Radebaugh *et al*., (2006) model the environmental influences that can affect the development of accounting systems; for instance, the legal system; taxation; the political system; culture; economic growth and development; accounting regulation; the accounting profession; accounting education; and

research and international factors such as colonial influence and the international accounting standard body. It is apparent that these aforementioned cultural aspects may also be valid within the Indonesian context.

The Indonesian accounting environment is explained below.

- *Cultural Classification*

  The Indonesian archipelago comprises 17,508 islands located in Southeast Asia and this makes the country the largest archipelago in the world (Indonesia, 2014). The area borders Papua New Guinea to the East, the Indian Ocean to the West and South, and Malaysia to the North. It comprises a landmass of 1,919,440 square kilometres (Geography, 2014). With around 250 million people, Indonesia is the fourth most populated country in the world (Republika, 2013). Nearly two-thirds of all Indonesians live on Java Island and the Javanese form the country's major ethnic group (Perera and Baydoun, 2007). The major religion is Islam, which is practised by more than 85 per cent of the population, making Indonesia the world's largest Muslim country. The Indonesian economy is the world's sixteenth largest as measured by nominal GDP, and the fifteenth largest purchasing power parity (PPP) country (Perera and Baydoun, 2007).

  Hofstede (2010) defines culture as the patterns of feeling, thinking and acting that are learned by human nature. Perceived culture affects people's minds and reflects their personality. Culture grows up in a social environment/ society such as family, school, social groups and the workplace. In any nation, there can be more than one society with various cultural differences (*ibid*). The presence of the cultural process can guide development and accounting decisions within a given country (Belkoui, 1995). Sudarwan and Fogarty (1996)

found that individualism has an impact on the welfare of a country if it is driven by the private sector. They explain that firms with a higher degree of individualism will reflect it for the purpose of increasing their performance skills to overcome competition from other firms. The relationships between individualism, welfare and professional levels within accounting have also been discussed by Hofstede (1980) and Gray (1988). Within Indonesia, an increase in the level of competition was not caused by individualism, but rather was triggered by government initiatives, notably prior to 1997.

Earlier research developed a model to explain the relationship between culture and accounting systems in practice (Gray, 1988). This helped to understand the linkage between societal values, accounting values, and accounting systems and practices that had been applied in one country (Radebaugh *et al.*, 2006). This model was extended from previous studies (Hofstede, 1980; Hofstede, 1984; Gray, 1988) and was also based on cultural aspects of less developed Asian countries such as Indonesia, Malaysia, Philippines, Thailand, Taiwan, Pakistan and India (Radebaugh *et al.*, 2006). The position of less-developed countries such as Indonesia was in contrast to Anglo-American countries such as the UK and USA, particularly in the dimensions of transparency and professionalism. This research helped to understand factors that differentiate Indonesia during the implementation of new/revised accounting standards (IFRS), especially in relation to the disclosure of the accounting policies of Indonesian companies with regard to the decision of whether to revalue fixed assets or not.

Complementing Hofstede's (1980) findings, the relationship between cultural/ societal values, accounting values and accounting systems was developed by Radebaugh (1998). The difference in accounting systems on the international level is influenced by cultural/ societal

and accounting values. As each country has its own bespoke national roots, Gray's (1988) research helped to predict the development of international accounting. Hofstede (1980, 1984, 2010) identified four dimensions of societal values, as follows:

i) *Large versus small power distance.* Power distance relates to human inequality as measured by wealth and power and it is hierarchically formalised by the boss-subordinate relationship, such as in parent and child, or teacher and student. A large or small distance of power depends on the level of acceptance by each member of society. A smaller power distance can encourage greater information to be disclosed, thus reducing secrecy and increasing transparency. Using a power distance index (PDI) (Hofstede *et al.*, 2010), Indonesia's index was 78, which ranks 15th-16th globally. This means that a large power distance occurs in practice, as illustrated in the workplace, where inequality of roles, decentralisation and narrow salary ranges are apparent. European countries ranked top for small power distance, with Austria coming first.

ii) *Individualism versus collectivism*. Individualism explains the interaction between an individual and society collectively. It sacrifices a social framework, while conversely collectivism aspires to develop stronger collaborative linkages throughout society in order to achieve goals. Using an individualism index (IDV) (Hofstede *et al*., 2010), Indonesia scored 14 and was ranked 70th-71th globally, thus revealing its collectivist dimension. Anglo-American and European countries' indexes showed that they are amongst the leading individualist countries, with the United States ranked first. Examples of collectivism in the workplace include lower occupational mobility and hiring and promotion decisions which prioritise in-house employees. The better individualism works, the more positive impact it has upon professionalism, and this gives incidental benefit to the settlement and enforcement of accounting systems and practices.

iii) *Masculinity versus femininity.* Masculinity refers to societal values such as achievement, assertiveness and material success, while femininity relates to modesty, caring for the weak and quality of life. Masculinity affects the accounting values of professionalism, optimism and transparency positively. Using a masculinity index (MAS) (Hofstede *et al*., 2010), Indonesia scored 46 and was ranked 41st, placing it within the context of a 'feminine' country. The research notes that countries with the highest masculinity indexes are Slovakia, Japan and Austria. Examples of femininity are intuition and a consensual management style, along with resolution of conflicts by compromise and negotiation.

iv) *Strong versus weak uncertainty avoidance.* Uncertainty avoidance refers to that uncomfortable feeling created by uncertainty and ambiguity. People in the organisation with weaker uncertainty avoidance tend to pursue accounting values positively and optimistically. Using an uncertainty avoidance index (UAI) (Hofstede *et al*., 2010), Indonesia scored 48 with a rank of 62nd, making it a weak uncertainty avoidance country, whilst Greece was recorded as having the strongest uncertainty avoidance. Examples of weak uncertainty avoidance in the workplace are attitudes of working hard only when needed, and a belief in generalism and common sense.

Based on these societal values, Gray (1988) proposes four accounting values which then affect the establishment of accounting systems and practice. These are:

i) *Professionalism versus statutory control*. Professionalism refers to self-regulation (e.g. as applied within the UK), while statutory control represents a mandatory legal requirement (e.g. as applied in France). Therefore, the establishment and development of accounting associations in the Anglo-American group is far more advanced than in the Continental Europe group (e.g. France and Germany). Professionalism is positively

associated with culture/ social values such as individualism, small power distance, weak uncertainty avoidance and masculinity.

ii) *Uniformity versus flexibility*. Uniformity values refer to the enforcement of similar accounting practices for all companies over time (e.g. as applied in France, Germany and Spain), whilst conversely flexibility treats individual companies differently in accounting practices (e.g. as applied in the US and the UK). Flexibility is positively associated with individualism, small power distance and strong uncertainty avoidance.

iii) *Conservatism versus optimism*. Conservatism represents cautious approaches in accounts measurement for one event and/or transaction in the uncertainty of future events (e.g. as applied in Japan, France and Germany), while optimism tends towards risk-taking approaches in measuring a company's accounts (e.g. as applied in the UK and the US). Optimism is positively associated with individualism, strong uncertainty avoidance and femininity.

iv) *Secrecy versus transparency*. This measures the degree of disclosure of confidential information to stakeholders. A secrecy approach maintains confidential information only for internal management (e.g. as applied in Japan, France and Germany); this is the opposite of a more transparent, open and publicly accountable approach (e.g. as applied in the UK and the US). Transparency is positively associated with individualism, small power distance, weak uncertainty avoidance and masculinity.

Indonesia is grouped among the less-developed Asian countries (Gray, 1988). According to Gray, the relationship between Indonesian accounting values and accounting systems tends towards statutory control, uniformity, secrecy and conservatism, a position that is contrary to Anglo-American and Nordic countries. There is no further research that explains Indonesia's position in these classifications. Gray (1988) further predicts that if the factors

of the accounting environment are changed, this change will alter the country's accounting classifications accordingly. Accounting environment factors include the role of the internet in spreading information; more accounting professionals who are trained and competent; and increased national welfare and IFRS implementation. This progress could affect Indonesian accounting values, which in turn leads to a more professional organisation, more optimist accounting measurements, less secrecy and more transparent financial information.

The different societal values explained above may potentially represent a barrier to applying IFRS in Indonesia (Perera and Baydoun, 2007). They suggest that in Anglo-Saxon countries, private interest is recognised within legal systems and this encourages higher levels of disclosure in financial statements. Paternalistic protection, which is embedded within Indonesian culture and adopted within the legal system, can, for example, be potentially problematic for Indonesian society in IFRS implementation (Perera and Baydoun, 2007). Akin to other Asian countries, scholars have predicted that culture creates conflict in the enforcement of accountability and transparency principles. However, as the target for IFRS implementation in Indonesia was set for 2012, this disproved Perera's and Baydoun's prediction that cultural environmental aspects would prevent this from occurring. The IFASB has overcome the predicted barriers (*cf.ibid*) to IFRS standards convergence by the implementation of fairer value and disclosure principles.

Sudarwan and Fogarty (1996) examined the relationship between culture and accounting values in Indonesia, studying both financial and non-financial aspects. These included state-owned and private enterprises financial reports for the period 1981-1982, along with various archives on cultural value sources. Their study applied the concept of Hofstede's cultural values and Gray's (1988) accounting values to Indonesia's research background. In most

cases, an increase in one country's national wealth has driven societies to reduce the power distance in their perceived social norms. However, individualism and business may have different constructs, because individualism within Indonesian society has decreased since the 1980s as a result of a significant increase in national wealth (Sudarwan and Fogarty, 1996). Sudarwan and Fogarty also state that individualism and conservatism within accounting practice have also been found to be relatively low due to the high secrecy of information in Indonesia, which results in a low level of disclosure. Another impact was the process of national wealth creation, which relied extensively on government policies for both state and private enterprises. This strong government influence affected professionalism in business, accounting and auditing standard-setting processes (Sudarwan and Fogarty, 1996). On the other hand, in the private sector the IIA could not emerge as a self-regulated profession due to several factors, including the less conducive environment; relatively immature professional communities; the low expertise of full-time staff; and funding availability. Consequently, the creation of national wealth could not reduce power distance as one of the societal values.

This study highlights the comparison between Indonesian, Anglo-American and Germanic accounting. Anglo-American accounting is distinguished by the UK's colonial influence and is manifest in anglicised countries such as the United States, Canada, Australia, Hong Kong, India, Ireland, Kenya, Malaysia, New Zealand, Nigeria, Singapore and South Africa (Radebaugh, *et al.,* 2006). This group adopted a relatively similar legal system, common law, and relied on equity stocks for external funding (Christopher and Nobes, 2010). This approach to accounting encouraged stock exchange growth in terms of PLCs and market capitalisation, especially on the New York and London stock exchanges. The UK professional accounting association was formed in the 1850s as a self-regulating

organisation and became the Accounting Standards Steering Committee (ASSC) in 1970. It has continued to grow and was renamed the Accounting Standards Committee (ASC) in 1976, the Accounting Standards Board (ASB) in 1990 and the Financial Reporting Council (FRC) in 2012. Gray (1988) characterised the Anglo-American accounting system as demonstrating professionalism, flexibility, transparency and optimism. It was compared to other accounting groups' characteristics in countries/ economic regimes such as Germanic, Asian, and African ones.

Germanic (as part of Continental European countries) accounting is found in Germany, Austria and Switzerland and is significantly different from Indonesian and Anglo-American practices due to the strong influence of company law and taxation. The secrecy of information and conservative measurement of accounts in financial statements are favoured to safeguard creditors' interest (Waton *et al.,* 2003; Radebaugh *et al.,* 2006). Because the primary source of companies' finance is bank loans rather than stocks, guidance for financial reporting refers to commercial law, tax law and pronouncements issued by the accounting profession (Doupnik and Perera, 2007). Unlike Anglo-American countries, the German professional organisation is relatively small (Radebaugh *et al.,* 2006).

In order to run national standardisation in accounting practice, the German Accounting Standards Committee (GASC) was established in 1998 to develop accounting principles in financial reporting and to enhance quality (GASC, 1998). The committee is recognised by the Ministry of Justice as the German standard-setting authority. Financial statement types includes balance sheets, income statements, notes, management reports, and auditors' reports (following German law) (Choi and Meek, 2008). However, IFRS implementation

began in 2005 for PLCs, requiring them to adjust their accounting values (especially regarding more transparent disclosure of information in financial statements).

- *Accounting Professional Body*

  The IIA was established on December 23, 1957 (IIA, 2013). Its objectives were to supervise and guide accounting professions; achieve a higher standard of accounting education; and provide a higher accounting service quality (IIA, 2013). IIA's vision is to be the leading professional organisation for developing knowledge of accounting, business management and public practice. It holds ethical values, high social responsibility and environmental orientation in national and international perspectives.

  The early development of the accounting profession in Indonesia was dominated by Dutch colonialism. They influenced most sectors, including business, taxation and laws, even after Indonesian Independence Day on August 17, 1945 (Digga and Yunus, 1997). As a principal commercial organisation during colonialism, the Dutch East India Company played an important role in business by introducing double-entry book keeping in the 17th Century (ADB, 2003). The opportunity for local accountants had grown by the time of the Japanese occupation in 1942-1945 and continued after Indonesian independence (ADB, 2003). Subsequently, the Ministry of Finance of the Republic of Indonesia initiated the Accountant Law No. 34/1954 to regulate accounting practice. Under US influence during the 1970s, a huge capital inflow was recorded via MNEs' investment and debts, and this triggered a change in accounting education, with a shift towards using the Anglo-Saxon system, regulations, stock market and accounting standards (Siddik and Jensen, 1980; Digga and Yunus, 1997).

Despite dissimilarities between the Dutch and the US accounting systems, collectively they are still grouped within the same generic anglified accounting system applied in the UK, NZ, Australia, Ireland and Canada. Siddik and Jensen (1980) and Digga and Yunus (1997) support the classification of a macro-economic and micro-economic split which was postulated by Mueller (1967). Both the Dutch and the US accounting systems were categorised as micro-fair-judgemental commercial driven systems which allow the private sector to set the accounting system. Mueller (1967) suggests that the micro-economic climate has influenced accounting to reflect economic reality in measurements and valuations. Conversely, a macro-uniform government-driven system relies on the government to moderate the accounting system and develop accounting as an adjunct of national economic policies, as has been applied in Germany, Italy and Sweden (Mueller, 1967). In another study, Willet *et al.* (1997) classify the Dutch accounting system in a different class to the US variant, which is less prone to colonial influences. Along with France and Portugal, the Dutch were grouped under the European class. Other countries, such as the UK, the US and the old Soviet Union were categorised within other classes.

Although Dutch colonialism and the US influence have led to political transitions over time, local Indonesian cultures and languages are still used predominantly within the community (Perera and Baydoun, 2007). Their research suggests that the sustainability of accounting profession development in Indonesia was supported by several factors, namely the consistency of Indonesian economic growth over recent decades (except for the global financial crisis of 1997); accounting education at the tertiary level; and IFRS implementation for reasons of worldwide financial reporting comparability. This progress has proved successful in the process of overcoming language and legal barriers for the convergence of

accounting standards, as noted by Perera and Baydoun (2007), who conclude that language and accounting systems were usually imported from the same sources.

The history of accounting within Indonesia can be broadly divided into two phases (Tuanakotta, 2007). First, pre-independence until the end of the era of the first Indonesian president, Soekarno (1945-1966). During this first transitional era, Japan occupied Indonesia from 1942-1945. This gave opportunities for Indonesian accountants to hold important positions in the Ministry of Finance that were previously held by the Dutch. Consequently, there was a shortage of accounting expertise until the second era, when the US educational system was introduced in the 1960s (Diga and Yunus, 1997). Upon the second transition of power in 1966, the new government struggled to overcome hyperinflation and the nation suffered an economic crisis until the end of the Soekarno era. This first accounting environment was characterised by the following key events.

i) Accounting and auditing subjects taught at university level were introduced in the 1950s based on the US model, namely generally accepted accounting principles (GAAP) and generally accepted auditing standards (GAAS) (Tuanakotta, 2007). The US influence changed all Dutch teaching references in accounting and auditing subjects.
ii) The law with regard to using the title "accountant" was released. *Undang-undang Nomor 34 Tahun 1954: Pemakaian Gelar Akuntan* only allowed for those who had graduated from state universities to run public accounting firms. They officially had to register and be issued a number by the Ministry of Finance of the Republic of Indonesia.
iii) The IIA was established on December 23rd, 1957 and approved by the Minister of Justice of the Republic of Indonesia. Alumnae from Dutch and Indonesian universities became the founders.

The second phase was the new Indonesian economy during the second presidential era, that of Soeharto from 1966 to 1998, which was followed by other presidential governments up to the present (Tuannakotta, 2007). Soeharto argued that numerous capital inflows and foreign debts financed the nation and besides national companies, multinational corporations were instrumental in developing a new economy. US aid and debts given to Indonesia required Indonesian accountants to record transactions based on accounting principles and rules prescribed by the US, and as a consequence laws and accounting and auditing systems also had to be amended to the US model (Liang, 1997; Tuannakotta, 2007). During this era, US accounting practices were dominant and replaced the Dutch accounting system (Diga and Yunus, 1997). Almost simultaneously, an increasing number of government-based colleges and universities opened in 1975 and were mandated to provide accounting education that followed the US system. This was perhaps a reaction to the Indonesian government's concern over the shortage of qualified accountants in the country at that time (Diga and Yunus, 1997).

In order to manage the registration of accountants, *the Decree of the Minister of Finance of the Republic of Indonesia Number: 331/KMK.017/1999 regarding Managing Registration of the State Register Accountants* was introduced. The decree required a registered accountant approved by the Directorate of the Centre for the Founding of Accountant and Appraisal Services of the Ministry of Finance of the Republic of Indonesia to submit a written request to publicly practise as a partner in an Indonesian Certified Public Accountant Firm. The latest rule was released on February 3rd, 2013, and stated that the directorate can cooperate with a professional accountant association, which in this case is the IIA. Roles within the IIA include the management of continuing professional programmes, formulation of policies for professional development, and monitoring of law and rule compliance with

regard to their services. These responsibilities are set in the *Decree of the Minister of Finance of the Republic of Indonesia Number: 25 / PMK.01/2014 Regarding State Register Accountants.*

- *Economic System and Capital Market*

  Data provided by the Central Bank of the Republic of Indonesia (2010) shows that the Indonesia economy grew steadily from 5.5 to 6.1 per cent over the period 2006 to 2010. It also recorded that interest rates stood at 6.5 per cent and inflation at 5.1 per cent in 2010. This robust economic climate has stabilised Indonesia's wealth. The country's economic growth reached the highest rate in the previous ten years, at 6.5 per cent, while inflation was only 3.79 per cent in 2011 (The Central Bank of the Republic of Indonesia, 2011). The following year, Indonesia was noted as one of the emerging countries in Southeast Asia, with 6.23 per cent growth in GDP in 2012, totalling USD 895 billion (Wikipedia, 2013). Wikipedia also notes that the main industries include natural resource products, agricultural products and tourism services. The country is involved in several prestigious trade organisations, such as the Group of 20 countries (G-20), the Asian Pacific Economic Community (APEC), and the World Trade Organization (WTO). Although GDP is relatively low, at only USD 4,943 per capita, compared to other G20 countries, Indonesia has shown great potential as a developing country (Wikipedia, 2013). A slight decrease in economic growth occurred from 2012 to 2013 (6.2 per cent to 5.7 per cent) but this was expected to recover in 2014 (Kompas, 2014).

The purpose of Indonesian company and securities laws is to ensure the availability of sufficient financial information to fulfil stockholders' needs (such as creditors and investors) (Craig and Diga, 1997). Craig and Diga also found that the company and securities laws

were strongly influenced by past colonial and political linkages. The agencies/ bodies that relate to the Indonesian business environment are the Foreign Investment Coordinating Board (FICD)/ *Badan Koordinasi Pasar Modal* (BKPM*)*, the ICMFISA (*Badan Pengawas Pasar Modal* dan *Lembaga Keuangan* (Bapepam-LK), and the Ministry of Finance. The ICMFISA supervises and maintains transactions in Indonesian capital markets in an orderly, fair and efficient manner to bridge investors' and companies' interests in gaining funds and profits, and supports the national economy (Bapepam, 2014). The institution is responsible for preparing rules, and for the monitoring and enforcement of these rules in the capital market, including accounting policy and disclosure aspects (Bapepam, 2014).

The IIA and the IDX act as private sector bodies which issue and oversee the following laws as guidance: *Commercial Code 1848* which was revised to *Laws No. 40 (2007); Presidential Decree No. 52 (1976) for Company Law;* and *Law No. 8 (1995) for Capital Market Law* (Diga and Yunus, 1997). Shortly after Indonesian independence, Law No. 5 (1952) was promulgated to regulate the Batavia/ Jakarta stock market (*ibid*). Because of economic turbulence during the 1950s, the Indonesian stock exchange was shut down (*ibid*). The implementation of Law No. 8 (1995) encouraged improvements to the Jakarta Stock Exchange, which itself was supported by the Jakarta Automated Trading System (JATS) which was launched in 1995. Under the new JATS (2009) system, all financial transactions such as stocks, bonds and derivatives can be handled on one platform (IDX, 2012).

The first Indonesian capital market was established in 1973 and was followed by the codification of the first Indonesian Accounting Principles (Tuanakotta, 2007). Subsequently, Tuanakotta adds that in line with the new business environment, the second Accounting Principles were introduced in 1984 and a new accounting standard was launched in 1994

that sought to harmonise IAS. Subsequently, the IFASB adopted the IFRS iteratively, 2007-2010 being the adoption period, and in 2011 completed the standards, which were fully adopted and implemented in 2012. As of April 2011, the IFASB had adopted 35 IAS/ IFRS or achieved 95 per cent progress on the convergence processes. The impact of IFRS implementation will be gradually evaluated (Sinaga, 2011).

As a way of gathering public funds for plantation development in Indonesia, the first stock exchange (Vereniging voor de Effectenhander) was established in Jakarta (Batavia) in 1912 (Bapepam, 2014; IDX, 2014). It is the fourth oldest capital market in Asia, after Bombay, Hong Kong and Tokyo, and attracts investors from Europe and Indonesia. A capital market vacuum was created between 1945-1952 and 1958-1977 as a result of World War I (1914-1918) and II (1939-1945); the transfer of power from the Dutch to the Indonesian government; the nationalisation of Dutch companies in Indonesia; and hyperinflation in 1966 (Bapepam, 2014; IDX, 2014). However, the market operated normally from 1952 to 1958 as *Law No. 13 for the Capital Market* was released on September 1st, 1951. Subsequently, the capital market was reactivated in 1977. The IDX is operationally supported by several registered professions and institutions including public accountant firms, law firms, appraisers, Company's Bureau of Securities Administration, custodians, trustees and the credit rating agency (Bapepam, 2014).

The IDX showed significant improvement in its composite index and market capitalisation in 2010, which more than doubled the figures of 2006 (IDX, 2011). Surprisingly, during the last day of stock transactions in 2010, the composite index reached 3,703.51 points, while the closing index on the same transaction day of 2006 reached only 1,805.52 points. The IDX was noted as one of the best index growths among major exchanges in the Asia Pacific

region (The Jakarta Post, 2011). Subsequently, a modest growth of 3.2 per cent on December 31, 2011 marked a continuing trend of the IDX composite index (The Jakarta Post, 2011). Stock market capitalisation nearly tripled to USD 382.01 million in 2010 compared to 2006, when it was only USD 146.94 million (IDX, 2011). At the end of 2011, market capitalisation rose 8.9 per cent from the previous year, to USD 397.06 million.

- *Tax System*

  As well as for the business sector, revaluing assets in Indonesia is also an important issue for the government. It helps users of financial statements to update the market value of the fixed assets either in PLCs or Indonesian ministries because its market price is always increasing (Maslani, 2011). The implementation of government asset revaluation has been guided by several Indonesian laws. These include:

  i) *The Law of the Republic of Indonesia Number 1 Year 2004 regarding State Treasury, Government Regulation Number 6 Year 2006 regarding State and Local Assets.*
  ii) *Government Regulation Number 24 Year 2005 regarding Government Accounting Standards No. 7: Fixed Assets.*
  iii) *Decree of the Minister of Finance of the Republic of Indonesia Number: 59 / PMK.59/2005 Regarding Accounting System and Central Government Financial Reporting.*

  With regard to taxation purposes for the business sector, the Indonesian government revised *the Decree of the Minister of Finance of the Republic of Indonesia Number 486/KMK.03/2002 Fixed Asset Revaluation for Taxation Purpose* and changed *the Regulation of the Minister of Finance of the Republic of Indonesia, Number*

79/PMK.03/2008. Based upon both these regulations, companies must provide extra money for an appraisal service, plus 10 per cent tax liable for upward asset revaluation. Companies who want to revaluate their assets must have permission from the General Director of Tax according to the *Regulation of the Minister of Finance of the Republic of Indonesia Number 79/PMK.03/2008 regarding Fixed Asset Revaluation for Taxation Purpose*, which was released shortly after IFASB 16 2008. The process itself sometimes takes longer than expected. The *Regulation of the Minister of Finance of the Republic of Indonesia Number 79/PMK.03/2008* states that all types of assets, including land, must be revaluated, whilst IFASB 16 allows companies to revaluate only a group of assets. Moreover, the *Regulation of the Minister of Finance of the Republic of Indonesia Number 79/PMK.03/2008* enables companies to revaluate every five years, but IFASS 16 companies can revaluate their assets every year as long as there is a significant difference between carrying costs and market value (IIA, 2007). These two differences, namely the group of assets to be revalued and the frequency allowed for revaluation, can restrain companies who intend to revaluate their assets. However, the differences can be bridged by fiscal reconciliation. A 10 per cent tax must be paid from the increase in market value in the past 12 months, whereas previously *the Decree of the Minister of Finance of the Republic of Indonesia Number 486/KMK.03/2002 Fixed Asset Revaluation for Taxation Purpose* allowed payment via instalments over 2-5 years. Therefore, such tax could burden companies with cash flow problems and negatively impact their liquidity.

- *Appraisal*

The Indonesian Association of Appraisers (ISA) was established on October 20th, 1981. It represents the appraiser profession in contributing to national development; specifically, strengthening the role and quality of Indonesian appraisers (MAPPI, 2014). This is achieved

through a training program and enforcement of ethical conduct and professional standards for appraisers (MAPPI, 2014). As a member of the International Valuation Standards Council (IVSC), they help IVSC to implement valuation standards and to serve the local valuation profession (IVSC, 2014). To conduct asset valuation, the appraisal agency must have permission (registration) to provide two kinds of professional services: property valuation (fixed assets) and business valuation (intangible assets) based on the *Decree of the Minister of Finance the Republic of Indonesia No 125/PMK.01/2008 regarding Public Appraisal Service* (PPAJP, 2014). The property valuation service is required by the General Directorate of Tax of the Republic of Indonesia. The petition to revalue an asset must be submitted to the Regional Office of Tax of the General Directorate and be reviewed within 30 working days (Ministry of Finance of the Republic of Indonesia, 2009; General Directorate of Tax, 2009). During that period, the institution will evaluate the submission and reply to confirm whether the petition of asset revaluation has been approved or rejected.

Cotter and Richardson (2002) examine the reliability of asset revaluation made by independent appraisers and board directors using the financial statements of Australian firms between 1981 and 1999. Their research found that due to directors' asset knowledge specialities, the company accounts such as investments, plant and equipment and identifiable intangibles were revalued by them. The service of independent appraisers tended to be used for other accounts, especially land and buildings. This is favoured within firms with a less independent board of directors and with a lower level of good governance. The results also showed that there was no statistical correlation between the revaluations of independent appraisers and directors, except for plant and equipment.

Cheng and Lin (2009) conducted research on the timing of asset revaluation using samples taken from UK firms for the period 1994-1998. Revaluer and non-revaluer characteristics and share performances were compared. The characteristics of the revaluers were significantly higher than the industrial median in debt-to-total asset ratio, greater total sales, higher fixed asset intensity and higher share returns in the two years before and one year after asset revaluation. However, they were lower in technological content and R&D budget in intensive industries than the non-revaluers. The firms chose not to recognise good news unless it had been supported by superior market performance and high leverage industry. This finding was consistent with the accounting conservatism principle that firms recognise good news with a delay.

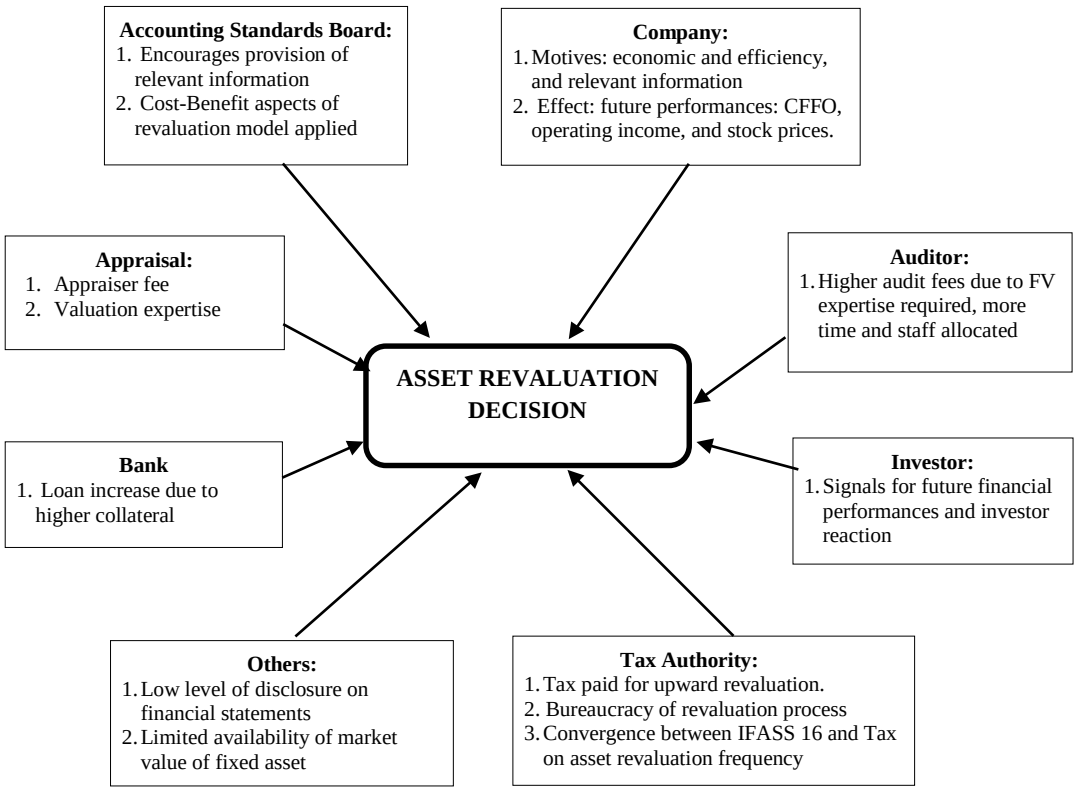
2.2.4 Fixed Assets Revaluation Environment in Indonesia

Figure 2.1 illustrates the various parties that are involved in fixed asset revaluation in Indonesia. Those contributing to this decision making process are the company, an appraiser, the accounting standards board, the tax authority, the bank, an auditor, an investor or investors, other parties such as the ICMFISA, and an auction agent. This figure is based on the researcher's own observations of the revaluation environment following a critical appraisal and synthesis of the literature. To varying degrees (dependent upon the asset and contractual conditions of the parties), these parties will invariably interact with each other.

To understand the roles of CFOs and Chief Executive Officers (CEOs) in an organisation, it is important to investigate their job responsibilities and compensation structures. A study by Feng *et al.* (2011) put CFOs as CEOs' subordinates and determined that CFOs are sometimes involved in accounting manipulation of a company's financial reporting, contrary to their traditional role in monitoring financial transactions. The motivation behind material accounting

manipulation is more likely because of pressure from CEOs with power and high equity incentives to falsify accounting records (Feng *et al.*, 2011). Other research, for example Jiang *et al.* (2010), discusses the practice of earnings management, which is motivated by equity incentives such as stock bonuses to CFOs and CEOs. Jiang *et al*'s research found that the incentives allocated to CFOs are greater than those of CEOs because of their role in managing financial reporting and earnings.

Figure 2.1 - Fixed Asset Revaluation Environment



2.3 FAIR VALUE AND THE HISTORICAL COST CONCEPT

The new option for Indonesian companies for fixed asset valuation is the revaluation model which applies the fair value principle, as adapted by the IASB (IIA, 2007). It is a strategy

intended to fulfil the objective of financial reporting by providing relevant, reliable and understandable information to stakeholders (Wilson, 2007). The terminology 'fair value' was first used in IAS 20: *Accounting for Government Grants and Disclosure of Government Assistance*, where it was defined as the amount for which an asset could be exchanged between a knowledgeable, willing buyer and a knowledgeable seller in an arm's length transaction (Alexander, 2002). The Statement of Financial Accounting Standards (SFAS) 157 defines fair value as the price that would be received to sell an asset, or paid to transfer liability, in a usual and customary manner, not in a forced transaction such as liquidation or a distress sale, between market participants at the measurement date (FASB, 2006).

The concept of fair value is used as a measurement basis for i) the formation of an exchange transaction when there is no monetary amount; ii) purchase price allocations in the business combination; iii) a benchmark to provide an upper limit/ ceiling for asset values; iv) a determination of the recoverable amount of assets; and v) a tool for subsequent measurement after the first-time/ initial recognition of assets (Cairns, 2007; Walton, 2007). Hence, fair value information has a strong relevance in financial reporting and it is congruent with users' interests (Hague, 2007). It is suggested that fair value enhances the visibility, comparability and accountability of management for managing resources and is reflected in a companies' current economic conditions (*ibid*).

The usefulness of deciding to apply fair value accounting can be approached from two perspectives - i) the measurement or valuation perspective; and ii) the information perspective (Hitz, 2007). Hitz found that the decision relevance of fair value measurement can be justified from both the measurement perspective and the information perspective. Under the measurement perspective, firms focus on accounting numbers and use accounting to measure

and report the basic information needed by investors. Therefore, all financial accounts are well defined in reflecting an economic reality. Meanwhile, from the information perspective, the focus is more on improving decision making by increasing the information system (which has information content and information value). Fair value can also be viewed from the two primary objectives of financial statements in the proposed conceptual framework of FASB and IASB (Ronen, 2008). The first of this is informativeness that can assist firms in predicting, evaluating, and comparing the amounts, timing, and uncertainty of future cash flows. The second is stewardship, which can help a firm in evaluating its managers' performance in order to increase shareholder value.

FASB (2010) elucidated two qualitative characteristics of financial information: relevance and faithful representation. Relevant information possesses predictive value and confirmatory value. Because of its capability to serve different options, fair market value can favour stakeholders in providing relevant financial information. Using Statement of Financial Accounting Concepts (SFAC) *No. 2 for Conceptual Framework* in a section of qualitative characteristics of accounting information (FASB, 1980), academic research (Sharpe and Walker, 1975; Barth and Clinch, 1998; Jaggi and Tsui, 2001) has shown that a fair value for property, plant and equipment is more relevant to decision makers; for example, in predicting stock price, future earnings or dividend policy. Thus, previous explanations are congruent with the IASB, which seems to favour fair values over the cost model in many reporting situations. As a result, the increase in usefulness of financial reports is the basic goal of the standard setter’s perspective. This is because it provides benefit for users with regard to their decision making for investment, analysis and regulatory purposes (Zimmermann and Werner 2006).

When valuing assets, Hermann *et al.* (2006) argue that a fair market value is superior to historical cost valuation based on qualitative accounting information. Conversely, the historical cost approach is more aligned to the aspect of faithful representation because it has three particular characteristics: completeness, neutrality and freedom from error (FASB, 2010). By contrast, US bankers granted significantly higher loans to companies that reported use of historical cost (Nichols and Buerger, 2002), while German bankers preferred companies dealing with property, plant and equipment to use fair value. Research has also shown that historical cost figures dominate current and replacement cost disclosures (Beaver and Landsman, 1982; Beaver and Landsman 1983). Historical cost by far dominates fair value in practice for the non-financial assets of 1,539 companies applying IFRS between 2005 and 2006 and domiciled in the UK and Germany (Christensen and Nikolaev, 2009).

IFRS does not require the measurement of all assets and liabilities using the fair value method (Cairns, 2006). Goodwill, financial lease obligation and trade payables are examples of financial statement accounts which are measured by the cost method (*ibid*). Assets such as property, plant and equipment can be measured using either the cost method or the fair value/ revaluation method (Cairns, 2006). Thus, IFRS does not require all accounts to be measured by fair value.

Historical cost is defined as the aggregate price paid to a firm to acquire ownership and use of an asset, including all related costs to make the assets ready for use (Hendriksen, 1982). Though it has advantages (namely it represents the value of the asset at the time of acquisition so that it can be verified easily for recording and auditing purposes), historical cost disadvantages include the fact that is does not reflect current market value, future services value either in constant price or in the case of price changes that occur after asset acquisition. Any change in technology,

taste or service of the asset may affect its current value (Hendriksen, 1982). Macdonald (1974) also shows the inability of the method to provide useful financial statements for users as lack of equivalency in scale for monetary accounts was also a significant disadvantage (cash and marketable securities, and fixed assets using a non-monetary scale).

Both fair value and historical cost depreciate fixed assets. Weetman (2013) defines depreciation as the systematic allocation of the depreciable amount of an asset over its useful life. This accounting step is conducted because fixed assets provide a contribution to business operations in terms of generating incomes. However, as a limited resource, land is also included in that category, but it is not depreciated for reasons of its infinite useful life, lack of residual value, scarcity in supply and increased market value (*ibid*).

2.4 ACCOUNTING STANDARD FOR ASSET REVALUATION

Tangible assets are expected to be used for more than a year in the production or supply of business goods and services, for lease to third parties or for administrative purposes (IASB, 2005). Because of their contribution to generating income, tangible assets are depreciated over their useful life. The revised IFASS No. 16 for *Fixed Assets* became mandatory as of January 1, 2008 (IIA, 2007) and was adopted from IAS No. 16 for *Property, Plant and Equipment* for owner-occupied purposes (IASB, 2005). IFASS No. 16 requires companies to apply a cost model to record any new asset purchased, but for subsequent transactions this accounting standard allows companies to adopt either a cost or a revaluation model for fixed assets. When the revaluation model is used, companies must provide relevant information on its property, plant and equipment value to the users of financial statements using fair market values. As a consequence, companies have to appraise the value of their fixed assets regularly.

Alternatively, fixed assets held by companies for purposes other than business operations are treated separately. These include land and buildings which are intended for sale or investment. Property, plant and equipment held for sale must apply IFRS 5 for *Non-Current Assets Held for Sale and Discontinued Operations*; IAS 2 *for Inventories*; and IAS 40 *for Investment Property*. The latest revision for IFASS 16 2011 was implemented on January 1, 2012 and it was adapted from IAS 16 2009. IFASS 16 2011 no longer covers the recognition, measurement and disclosure of a fixed asset which is held for sale; exploration and evaluation of assets for mineral resources mining; and investment property in progress (IIA, 2011). Biological assets related to agricultural activity are still included in IFASS 16 2011, while they are excluded from IAS 16 2009 (IASB, 2009).

IFASS 16 (IIA, 2007) explains that there are two categories in which fixed assets are: i) held for use in the production, supply of goods or services, rental and administrative purposes; and ii) expected to be used over one period of useful economic life. Fixed assets shall be recognised to be likely to supply future economic benefit and the cost is reliably measured (IIA, 2007). As also explained in the standard, the elements of its cost that can be capitalised comprise purchase price and any other costs to prepare the fixed asset for use (including site preparation, delivery and handling, installation and assembly, and testing costs).

When using the revaluation model, companies must provide relevant information on its property, plant and equipment value to the users of financial statements using fair market value (IIA, 2007). Consequently, they need to perform regular appraisal of their fixed assets every three or five years for any items which experience significant and volatile changes in fair market value. If one item of a fixed asset is revalued, the entire class should also be revalued (IIA, 2007). The asset should also be grouped in one of several separate classes, namely land

machinery, furniture and fixtures. The fair value of land and buildings is determined by qualified appraisal using market-based evidence. If there is no market-based evidence (due to a scarcity of data), a replacement cost approach can be used (Owen and Law, 2005). Replacement cost consists of the cost of replacing an asset, either in its present physical form or as a cost of obtaining equivalent services (Owen and Law, 2005). In a typical revaluation model, the increase or decrease in value of certain assets revalued will directly carry forward to a revaluation reserve account within the shareholders' equity section. This maintains the market price fluctuation of the same asset as long as the decrease of that value does not exceed the reserve value (IIA, 2007). The effect of price movement will also be recognised as profit or loss in the income statements in the same fiscal year (IIA, 2007).

Market value is defined as the estimated amount for which property should be exchanged on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing, wherein the parties had each acted knowledgeably, prudently and without compulsion (IVSC, 2007). As a consequence, companies need to appraise their asset values in order to follow market value. Thus, a revaluation model of fixed asset measurement provides relevant information to the users of financial statements for decision making, even during high market volatility and periods of high inflation (IIA, 2007). The chosen policy should be applied to the entire class of fixed assets as long as they are similar in nature and used in a company's daily activities (IIA, 2007).

The fair value/ revaluation model applied by New Zealand publicly listed companies had increased sharply from just over 15.8 per cent to 28.1 per cent in 2005 by the time IFRS was first adopted (Tay, 2009). Surprisingly, Diehl (2009) found that greater expenses were incurred in applying the fair value method (and that there was less comparability), meaning that fewer

companies applied this method for measuring property, plant and equipment. Diehl's research illustrated that only 11 per cent of companies listed on the FTSE had applied the revaluation method, and 33 per cent of those companies were listed in financial and real estate industries. For this reason, Diehl suggests that the IASB consider eliminating financial reporting using fair value for property, plant and equipment.

Jaggi and Tsui (2001) found a stronger positive association between asset revaluation and stock prices for property and services firms compared to industrial firms. Additionally, Christensen and Nikolaev (2009) found that historical cost by far dominates fair value in practice. Only three per cent of companies surveyed applied fair value for owner-occupied property, while 47 per cent applied the revaluation method for investment property in the UK and Germany. Overall, previous facts prove that the revaluation method is more applicable to real estate companies in investment property. Although this method theoretically offers benefits (such as providing relevant information to investors and supplying lenders with up-to-date liquidation value), research reveals that it is inconsistent in overall use of the fair value method (Christensen and Nikolaev, 2009; Diehl, 2009). The latest research on this was conducted by Perez *et al.* (2011) using a sample of 85 Spanish insurance companies who applied fair value instead of historical cost for three classes of asset valuation: land and buildings; financial investment in associated and group companies; and other financial investments. The research found that the variations in fair value and historical cost among companies and classes of assets were substantial. These facts show that the change from the historical cost to fair value method could certainly alter financial analyst perceptions.

The survey conducted by Brown and Turner (2008) suggests that companies should make financial soundness their priority, along with quality of management, because these two

categories were regarded as more important than others. For example, Tesco, HSBC and Shell were always in the upper ranks of Britain's most admired companies in the 1990s and 2000s because they were successful in terms of financial soundness and quality of management criteria (*ibid*). Furthermore, the decision to revalue assets or not is not merely to determine the successful status of a company. This is just one aspect of accounting rules like others in financial soundness, such as financial ratio analysis. Financial soundness aims to support macro-prudential analysis and to assess the strengths and vulnerabilities of financial systems (IMF, 2013).

2.5 Summary of the Chapter

The different roles of agents and stockholders can lead each party to develop agendas which may oppose the company target; consequently, conflict of interests may occur. An agent may choose an accounting policy that can provide greater personal benefits/ incentives even though it is may not represent the essence of business practice.

The harmonisation program among international accounting standard setters has influenced the Indonesian FASB to revise IFASS 16 (adopted from IAS 16). The standard offers a company an option to apply a cost or revaluation model for asset measurement and has been implemented since 2008. The cost model measures fixed assets based on historical cost while the revaluation model relies on the fair/ market value of those assets. The previous IFASS No. 16, which was released in 1994, only allowed a company to apply a cost model (US GAAP model).

The uniqueness of the Indonesian accounting environment is due to its socio-cultural and historical aspects. Indonesia was colonialised by the Dutch and Japanese, and received huge US capital investments that influenced the country's development. Therefore these differences

in dimensions of societal values with other countries affect the local accounting values and the establishment of accounting systems/ practice in public and private sectors.

CHAPTER 3

CONCEPTUAL MODEL FOR ASSET REVALUATION DECISION MAKING

3.0 INTRODUCTION

Chapter three is the culmination of the previous work, and leads to the development of a conceptual model. The chapter comprises five sub-sections that help this study to detail the implementation of a conceptual model into prediction models and into business practice.

These are:

i) The proposed conceptual model of the asset revaluation decision cycle. This cycle consists of six elements which flows in order.

ii) Seven management motives for asset revaluation are discussed and contextualised from Indonesian perspectives.

iii) Two approaches resulting from the effects of asset revaluation decisions are also discussed.

iv) Before deciding to apply a revaluation model, a company needs to consider the cost-benefit aspects as an underlying criterion.

v) The future business outcomes and impacts are predicted from the above decisions.

3.1 Conceptual Model of the Asset Revaluation Decision Cycle

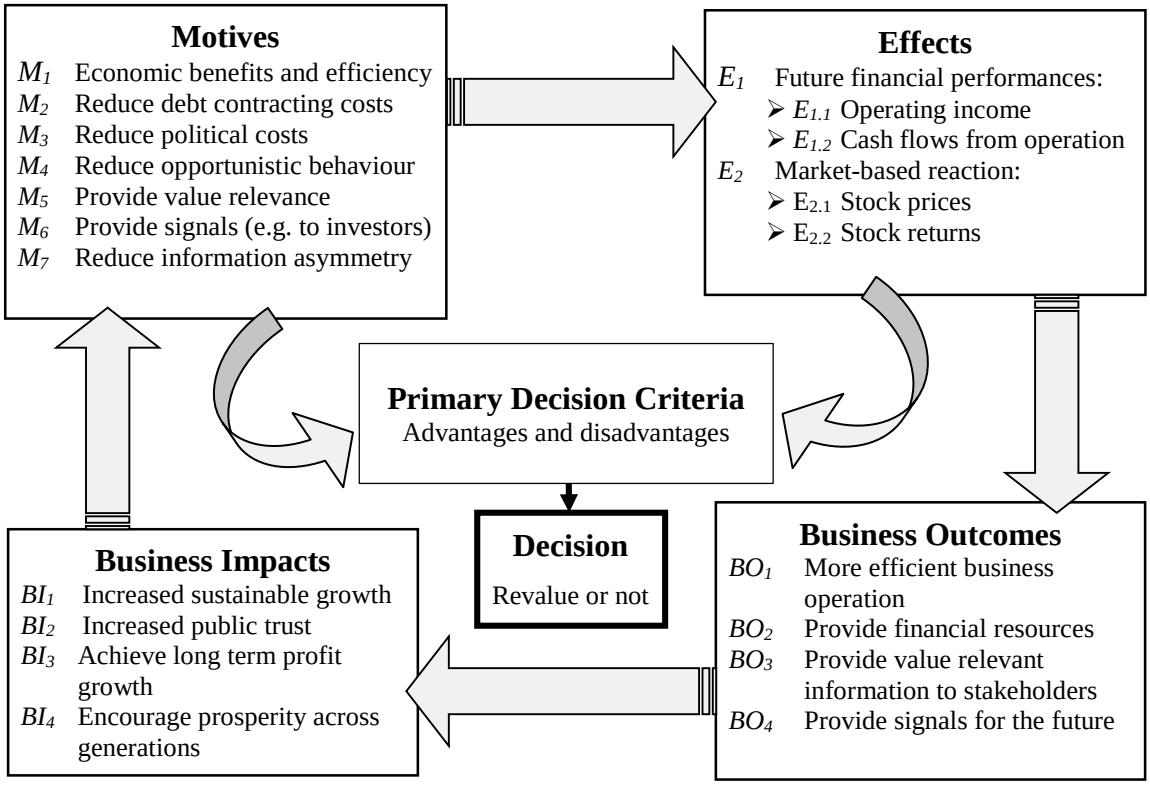
Recently, asset revaluation has been an important issue discussed in the Indonesian business community (Tempo, 2013). Information suggests that the cost-benefit aspect is fully considered by state-owned enterprises that are planning to offer shares to the public. The Indonesian Post Company represents one example of an Indonesian state owned company that revalued 20 per cent of its assets and decided to delay the process, of becoming a public company listed on the

IDX (Tempo, 2013). They plan to sell stocks to the public as an external source of funding, but the result will not provide enough cash for the company to expand business operations. This is because at the same time the Indonesian Post Company has to pay 10 per cent tax on the asset value increase to the Indonesian Tax Authority according to *Regulation of the Minister of Finance of the Republic of Indonesia Number 79/PMK.03/2008 regarding Fixed Asset Revaluation for Taxation Purposes.*

A different aspect was highlighted by the Mutiara Bank case. As a public listed company in Indonesia, they regularly revalued their assets every five years (Antara news, 2013). This was done for the purpose of increasing the capital adequacy ratio. Although higher costs in revaluing assets regularly occurred, the Mutiara Bank voluntarily informed stockholders of the fair value of its assets to clarify their decision making. Another advantage is a better debt-to-equity ratio (DER), which can be referred to in order to raise additional external funding (such as stock divestment and to reduce tax paid due to higher depreciation costs).

Figure 3.1 illustrates a diagrammatic representation of a conceptual model produced as a result of the literature review to decide whether to revalue an asset or not (Zakaria *et al*., 2014). Beside economic benefits, issues such as opportunism and information asymmetry are also relevant to asset revaluation. Ultimately, these two motives will affect companies' future financial performances. Financial statements which do not meet the qualitative characteristics of information might mislead users in interpreting their contents. Subsequently, it is necessary for each company to carefully consider the advantages and disadvantages of the impacts of revaluation before deciding to revalue assets (Henderson and Goodwin, 1992; Lin and Peasnell, 2000a). Deciding to revalue or not is at the company's discretion and ultimately decided by the CFO, who may be susceptible to opportunistic behaviour.

Figure 3.1 - Conceptual Model of the Asset Revaluation Decision Cycle



3.2 Management's Motives for Asset Revaluation *(M_n)*

Unlike in the US and Japan, asset revaluation practices are very common among Commonwealth countries and are based on their national accounting standards (Hermann *et al.*, 2006). This section will explain seven motives (M_n) as the first element of the conceptual model (illustrated in Figure 2.2). The underpinning asset revaluation decisions are namely to: i) obtain economic benefits and efficiency; ii) reduce debt contracting costs; iii) reduce political costs; iv) minimise opportunistic behaviour; v) provide value relevance information; vi) provide positive signals; and vii) reduce information asymmetry. Each motive is detailed as follows:

3.2.1 Economic Benefits and Efficiency

Having synthesised the relevant literature regarding asset revaluation, the research summarises that economic motives are the most common reason for asset revaluation. Prior studies have identified various factors underlying asset revaluation. Lin and Peasnell (2000a) identified that at least twelve factors influence management's decision to revaluate an asset; this finding is similar to the results of earlier scholars (Whittred and Chan, 1992; Brown *et al.*, 1992; Cotter and Zimmer, 1995; Gaeremynk and Veugeler, 1999). These factors are equity depletion, issuing of bonus shares, frequent strikes, takeover threats, company size, tightness of lending agreements, indebtedness, raising new debt, declining operating cash flows, liquidity, growth prospects, existence of assets which can be revalued and prior revaluation.

Lin and Peasnell (2000a) assume that asset revaluations are based upon managers' attempts to balance the costs and benefits of such decisions. The results show that, upward revaluation is first closely associated with equity depletion as a proportion of reduction due to reserves such as goodwill; and second, revaluation is positively associated with company size, gearing and FAI, and negatively associated with liquidity. These results complement previous research on asset revaluation decision making (*ibid*).

Similarly, asset revaluation has been used to dissuade hostile takeover bids (Brown *et al.* 1992; Easton *et al.* 1993); gain additional loans/improve borrowing capacity (Whittred and Chan, 1992; Jaggi and Tsui 2001); increase secured borrowings using higher collateral assets; and obtain additional cash in declining CFFO (Cotter and Zimmer, 1995). Tucker (2002) also found that asset revaluations for business combination entities were positively associated with changes in future operating income and CFFO. Tucker's research used data collected from 871 business combinations during the period 1987-1997 in the US.

Subsequently, despite the asset revaluation model being costly, it has a direct effect upon companies' cash flow. Brown *et al.* (1992) identify the reasons for this. The results illustrate that firms which were highly levered, had higher property holdings, had lower tax-free reserves and produced bonus issues were more likely to revalue their assets. Cotter and Zimmer (1995) also found that economic benefits (such as decreasing CFFO, which leads to the need for additional cash) were the reason for asset revaluation. Their research suggests that firms with high leverage and declining CFFO were more likely to revalue their assets. Another study in Hong Kong by Jaggi and Tsui (2001) tested managers' motivation to improve firms' borrowing capacity through the DER of revaluer and non-revaluer companies using data from operating firms. They found that the DER of revaluers was significantly higher when compared to non-revaluers in the post-revaluation period. This revealed that the motivation for conducting a revaluation might stem from a desire to improve borrowing capacity.

Piera (2007) also investigated the economic motives for the fixed asset revaluations of industrial and commercial companies listed on the Swiss Stock Exchange. These motives included leverage, ownership diffusion and sales exports, and a desire to increase a firm's borrowing capacity through improving creditor and foreign stakeholder perceptions of a firm's financial health. Unlike UK and Australian companies, Swiss firms are heavily reliant upon external funding such as bank loans (Piera, 2007). Using pooled data, Piera's study found that firms with more leverage and fewer investment opportunities chose the revaluation model rather than the cost model. Revaluation seemed to be used as a signal for additional borrowing capacity to the banks, increasing credit ratings and reducing violations of restrictive covenants (Piera, 2007). In addition to the above findings, Piera (2007) also summarises that revaluation decisions were positively associated with foreign sales and leverage but negatively associated with another proxy, investment opportunity. His research also reveals that when applying cross-sectional

data, revaluer firms have lower interest rates compared to non-revaluer firms, even though leverage declined over the research period.

Barlev *et al.* (2007) found that economic motives such as liquidity, financing, financing requirements and number of previous revaluations significantly impacted upon asset revaluation decisions. The following two studies that used New Zealand Stock Exchange data investigated the economic reasons for asset revaluation. Tay (2009) reveals that liquidity and fixed asset intensity were positively significant to revaluation policy. Seng (2010) shows that CFFO, fixed asset intensity, takeover and bonus issues had a positive association, but found that only fixed asset intensity was significant to revaluation decisions. Research conducted by Whittred and Chan (1992) on Australia Stock Exchange data found that a reason for revaluation was from the perspective of efficiency rather than opportunism. Their findings suggest that managers revalue assets when the benefits exceed costs. Revaluations were also seen as a low-cost mechanism to reduce the losses associated with underinvestment problems.

The decision whether to revalue fixed assets or not also relates to the composition/ number of shares owned. Ownership percentage is used as a proxy of companies' management control. Shares may be owned by domestic or foreign investors, and their involvement will affect the trading values (either for capital inflow or outflow) in IDX. The data shows that domestic investors dominate transactions compared to foreign ones. During the five year research period, their trading values were relatively stable, at 769,868 billion rupiahs in 2008 and 792,200 billion rupiahs in 2011, but saw a slight decrease to 633,328 billion rupiahs in 2012. However, for the same period, trading value significantly increased, especially for foreign buyers, from 294,660 billion rupiahs in 2008 to 482,785 billion rupiahs in 2012 (IDX, 2012).

3.2.2 Reduce Debt Contracting Costs

In business practice, external financing (debt financing) requires companies to pay back the lenders the principal and interest as agreed in the debt contract. They also have to prioritise that payment over other external financing such as stock financing. Contract covenants are agreed by both parties (lender and borrower) and aim to restrict the action of management in business operation. Examples of debt covenants are dividend and share purchase restrictions; maintenance of working capital; and restrictions on merger activity, investments in other firms, the disposition of assets and on additional debt (Watts and Zimmerman, 1986). In the case of a breach of a debt contract, the lender will limit borrowing capacity or seize a company's collateral (Beneish and Press, 1995). Moreover, Beneish and Press also suggest that technical violation of debt covenants may cause higher interest rates, more debt covenants to be imposed and decreasing future loan capacity. The latest case was the Royal Bank of Scotland (RBS), which had been restructured and recapitalised by the UK government in 2009. That program used British taxpayer funds and enabled them to focus their services on supporting the British economy (HM Treasury, 2013). RBS was fined £28.6m for breaching competition law between October 2007 and March 2008. They practised anti-competitive behaviour by colluding with Barclays Bank to share banking-related information (Daily Telegraph, 2010).

Lin and Peasnell (2000b) conducted research into corporate disclosure decisions related to asset revaluation and current cost accounting. Their findings reveal that asset revaluation was positively associated with size, gearing and the decision whether to revaluate or not for the previous two year periods. These motives were based on political costs and debt contracting hypotheses on asset revaluation.

Other research conducted by Cotter (1999) considers asset revaluation and debt contracting activities such as borrowing and repayment. The settings of asset revaluation in Australia during the 1970s and 1980s incurred institutional changes that encouraged asset revaluation and information disclosure on financial statements; changes in the macroeconomic environment; and change in the debt market from public (stock exchange) to private debt (direct relationship between borrower and lender). Data was collected and interviews with chief financial officers were undertaken. Cotter found that the costs of revaluing assets were greater than expected reduction of debt contracting costs; and that Australian firms tend to disclose asset revaluation in the footnote of financial statements rather than recognise it on a balance sheet. Other earlier studies focused on asset revaluation as a way of reducing contracting costs (Whittred and Chan, 1992; Brown *et al.*, 1992; Cotter and Zimmer, 1995).

In relation to asset revaluation, several facts have arisen. These include the increase in property market value that encourages companies to revalue their assets and companies' efforts to maintain the DER covenant as regulated by the lending contract. Conducting asset revaluation has also been suggested to reduce DER, to avoid costs related to violation of debt covenants and to reduce debt contracting costs (Brown *et al.,* 1992; Whittred and Chan, 1992; Easton *et al.,* 1993; Cotter and Zimmer, 1995; Choi *et al.* 2009).

Brown *et al.* (1992) investigated revaluation decisions using Australian Stock Exchange data during a high inflation period (1974-1977) and a lower inflation period (1984-1986). During the high inflation period, revaluations were conducted in industries which had a high incidence of strikes to adjust the fixed asset price to current/ market price. During the low inflation period, firms enjoyed revaluation of assets for growth purposes because the costs of revaluation had been allocated in the previous high inflation period. It was found that asset revaluation can be

the solution to lower political and debt contracting costs, and to provide positive signals to users of higher performing financial statements. Additionally, compared to non-revaluers, revaluers tended to have higher leverage, almost to the point of violating debt covenants, issued stock bonuses to frustrate bidders on takeover, and were the larger firms with relatively lower tax-free reserves and higher property holdings.

Whittred and Chan (1992) investigated asset write-up in 200 Australian firms for the period 1980-1984. In relation to debt contracting costs, they revealed that highly levered firms with borrowing limitations were more likely to revalue their assets. Their research was extended by Cotter and Zimmer (1995), who used the selected Whittred and Chan (1992) data for the same period. They found that highly leveraged firms used asset revaluation to secure borrowing for collateral assets as guaranteed to the lenders in the contract. Moreover, through telephone surveys of Australian CFOs, Easton *et al.* (1993) concluded that the motive for reducing DER ranked as the second most frequent reason chosen by CFOs, after true and fair financial statements. As the market value of freehold property has sharply increased, asset revaluation has helped firms to maintain borrowing limitations and balance sheet ratios. Choi *et al.* (2009) collected financial information from 1,689 companies listed on the Korean Stock Exchange. Korean companies used asset revaluation for the purpose of reducing debt contracting costs rather than to lessen political costs or to signal their future financial performance.

In comparison to developed countries such as the USA, UK, Singapore and Malaysia, the debt-to-GDP ratio of Indonesian government debt is relatively low. Indonesia also shows a positive trend, with a slight decrease in this ratio from 33.2 per cent in 2008 to 22.2 per cent in 2013 (GFMAG, 2014; CIA, 2014). This ratio also reflects the government's burden on paying its principal amounts and interests to lenders. Except for Malaysia, with an average of 50 per cent

of debt-to-GDP ratio, the four aforementioned countries' ratio recorded a debt-to-GDP ratio of around 100 per cent. This condition is certainly worse than Indonesia.

A company with a higher DER could be suffering from a liquidity problem. To avoid breach of the debt contract, such companies should lower DER. Asset revaluation can be a way to reduce this ratio, as it will increase the asset value and revaluation reserve value as an account within the equity section of the balance sheet. Modifying this ratio by asset revaluation is categorised as opportunistic behaviour. Additionally, this study summarised PLC DER over a five year period in order to understand private sector debts, and its trend for each industry using IDX financial data. Table 3.1 shows the DER yearly average, and per industrial sector. Except for 2012, the highest ratio was recorded in 2008 at 4.04 times, which declined gradually to 1.71 times in 2011. The average of the nine industries is 2.48 times. A higher DER represents companies reliant upon debt. Two industries, 'basic' and 'property', maintained a stable DER between 2008 and 2012; this exhibits their independency from the burden of debts and interests. Inversely, other sectors, such as 'finance' and 'miscellaneous', were far more reliant upon debt financing.

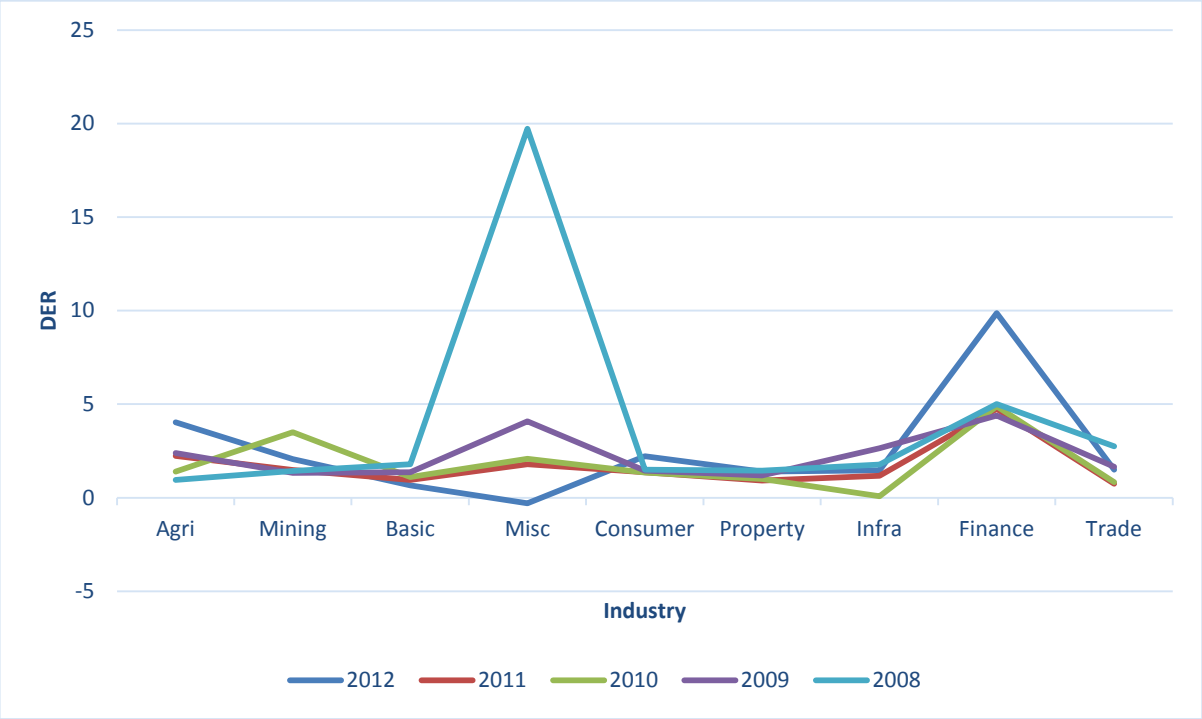
Table 3.1 – DER Trend among IDX Industries

IDX Industry	DER					
	2012	**2011**	**2010**	**2009**	**2008**	**Avg**
Agriculture	4.25	2.23	1.40	2.39	0.96	
Mining	2.35	1.48	3.50	1.33	1.43	
Basic	1.53	0.95	1.10	1.36	1.79	
Miscellaneous	0.03	1.79	2.08	4.08	19.73	
Consumer	5.61	1.37	1.35	1.45	1.50	
Property	1.19	0.92	1.01	1.20	1.45	
Infrastructure	2.38	1.17	0.08	2.64	1.77	
Finance	1.43	4.75	4.89	4.39	5.01	
Trade	2.53	0.74	0.84	1.66	2.75	
	2.55	1.71	1.81	2.28	4.04	2.48

Source: IDX Fact Book (2012).

The fluctuation of PLCs' DER occurred in six industries over the research period, namely agriculture, mining, miscellaneous, infrastructure, finance and trade. The causes of this fluctuation were new debt and repayment, and market stock prices. The line chart (Figure 3.2) shows the fluctuation in the different industries.

Figure 3.2 – DER fluctuation among IDX Industries



Source: IDX Fact Book (2012).

3.2.3 Reduce Political Costs

A political process exists when there is competition for wealth transfer from company taxes to public utilities through government services and subsidies such as education, health services, public transportation and parks (Watts and Zimmerman, 1986). Politicians and bureaucrats take advantage of media exposure to improve their re-election chances by proposing large earnings methods as solutions in order to transfer earnings to the public (*ibid*). Large earnings can be derived from inflation, changes in accounting procedures and fluctuation in foreign exchange rates (Watts and Zimmerman, 1986).

These circumstances may cause some companies to reallocate their profits and resources by adopting income reducing accounting procedures/ policies in order to avoid paying higher tax. Earnings management and more frequent labour strikes can be used as strategies for bargaining

power with government and trade unions, as reasons not to pay higher taxes or to meet pay rise demands (Watts and Zimmerman, 1978; Brown *et al.*, 1992). For example, larger firms in New Zealand behave opportunistically in upward asset revaluation in order to mitigate political costs (Seng and Su, 2010) and have regularly conducted asset revaluation using independent appraisers.

Operating revenue and total size were the proxies of firm size and produced a significantly positive association with asset revaluation. Political reasons were measured by total assets and frequency of strikes. Brown *et al.* (1992) also found that larger Australian firms which were more strike-prone were likely to have more asset valuation by directors. Nevertheless, Choi *et al.* (2009) concluded differently, since large Korean companies did not show a significant association with asset revaluation when size was used as a proxy for measuring a company's political costs.

Higher political costs arise from larger size companies which are taxed highly by government. Proxies of company size can be represented by total sales, net income, market capitalisation and trading values. This study compared the annual IDX composite index over a period of 5 years in order to observe and comprehend the trend of the market capitalisation indexes. If the index increased due to overall higher stock prices, market capitalisation also increased. The 2012 index was three times higher than in 2008 and investors enjoyed the stock price leap. A positive trend can be summarised from the 2008-2012 index. The composite indexes were 1,355.41; 2,534.36; 3,703.51; 3,821.99; and 4,316.69 points respectively (IDX, 2012). Thus, the higher the composite index, the higher the political costs that should be paid.

3.2.4 Reduce Opportunistic Behaviour

The choice is given to company CFOs to apply an accounting method which meets their business characteristics, types of accounts and the usefulness of accounting information presented to business users (IIA, 2007). Each alternative will result in different consequences. For example, in asset valuation, companies will need to choose between the cost or revaluation method. This may encourage CFOs to behave opportunistically for their own and/or company's interests rather than to present optimally informative financial statements (Choi *et al*., 2009).

Seng and Su (2010) investigated the underlying management incentives for the upward fixed asset revaluation behaviour of listed companies in New Zealand. The study found that there was evidence of opportunistic behaviour in New Zealand companies' revaluation practices. Larger firms were found to be more likely to revalue their assets in order to mitigate political costs. High debt firms were also behaving opportunistically in conducting asset revaluation in order to comply with debt covenant restrictions and to increase asset values as collateral for additional debts, even though revaluation can reduce profits and returns on assets or equity (Henderson and Goodwin, 1992; Cotter and Zimmer, 1995; Courtney and Cahan, 2004).

Gathering data from Tunisian managers, Azouzi and Zarboui (2012) studied three CEOs' behavioural biases in relation to asset revaluation. These biases included loss aversion, optimism and overconfidence. The results found that asset revaluation was positively correlated with the CEOs' emotions and could drive their behavioural biases to revaluation decision making. The motives underpinning these biases are:

i) Companies seeking social recognition and portraying a good reputation to shareholders. This indicates that CEOs' loss aversion tendencies can influence the choice of accounting policy, which in turn can provide a better financial performance through revaluation.

ii) CEOs' optimism promotes the practice of asset revaluation to reduce the level of firms' indebtness and increase equity value.

iii) CEOs' overconfidence on the principle of reliability and adequacy of financial information makes them regularly revalue their assets.

3.2.5 Provide Value Relevant Information

The purpose of financial reporting is to provide accurate information about the economic resources of an enterprise, the claims to those resources and the effects of transactions, events and circumstances that change resources (FASB, 2010). This information helps investors, creditors and others to assess the amounts, timing and uncertainty of prospective net cash inflows to the related enterprise. To achieve this purpose, financial information should have predictive and/or confirmatory value, as required by FASB (2010).

Early research showed that true and fair financial statements were chosen by 45 per cent of CFOs on the Australian Stock Exchange, as required by Australian Company Law (Easton *et al.,* 1993). The work revealed that CFOs assumed that asset valuation using a market value provided relevant information to the users of financial statements. Thus, this relevant information represented the essence of true and fair contents of financial statements to stakeholders. Other research by Paik (2009) focused on the value relevance of annual asset revaluation reserves on stock prices in 15 countries which had adopted IFRS. Assets have future economic benefit to firms in terms of both business operations and investment purposes. Accordingly, upward asset revaluation can increase a firm’s future benefit. These results

illustrated that revaluation reserves were value relevant to firm market value in five sample countries, namely Great Britain, Bermuda, Australia, Hong Kong and the Philippines; ten others countries were not significant at the five per cent level.

Value relevance of information has been investigated by several researchers. Barth and Clinch (1998), for example, predicted revalued financial, tangible and intangible assets associated with share prices and non-market-based estimates of firms' value on the Australia Stock Exchange. Their research found that information on all types of asset revaluations were value relevant. Revaluation of plant and equipment provided stronger value relevance than property because as operating assets, plant and equipment represented a greater portion of total assets. Additionally, Cahan *et al.* (2000) examined the value relevance of fixed asset revaluation. They found that comprehensive income was more value relevant than net income. These results were consistent with Barth and Clinch's (1998) findings, which showed that revalued financial, tangible and intangible assets provided value relevant information to users of financial statements.

Deaconu *et al.* (2010) studied value relevant characteristics using Romanian public listed company data during the period 2003-2007. During this era of economic growth, many companies revalued their assets. These revised characteristics of relevant financial information are similar to previous characteristics (FASB, 1980), namely predictive and feedback value, and timeliness.

3.2.6 Provide Positive Signals

Asset revaluation provides signals to users of financial statements regarding companies' future performance, successful status, growth opportunities and liquidity improvement (Gaermnynck

and Veugelers, 1999; Jaggi and Tsui, 2001; Chainirun and Narktabtee, 2009). Signalling theory relates to information asymmetry in the labour market, but it is equally applicable in any market, including a financial market (Morris, 1987). Signalling theory requires firms to provide more information to signal users about future events/ occurrences and having provided it, information asymmetry is reduced. Signalling theory contributes to prediction both for higher and lower quality firms because higher quality ones tend to choose an accounting policy which allows their superior quality to be revealed (Morris, 1987). Conversely, lower quality firms tend to choose an accounting policy which hides their poor quality.

Gaermnynck and Veugelers (1999) conducted research related to asset revaluation signals using Belgium industrial companies and non-listed companies on the Belgium Stock Exchange from 1989 to 1994. Their research found that most of the revaluations were conducted by unsuccessful firms. Characteristics of unsuccessful firms included low variance in performance; a high DER; low net worth values; and being close to debt covenants. Thus, the revaluations that were conducted by unsuccessful firms did not represent a credible signal to investors, because the revaluation decision was not meant to inform or to provide a positive signal. Conversely, successful firms were less likely to revaluate their tangible assets.

A recent study on signalling theory was by Chainirun and Narktabtee (2009). They investigated the underlying incentives for management with regard to the upward revaluation of property plant and equipment using sample firms listed on the Stock Exchange of Thailand (SET). The results indicated that upward revaluation signals a firms' debt ratio, growth opportunity and liquidity improvement. All proxies used (DER, market-to-book ratio (MBR), and net working capital) were positively associated and significant to asset revaluation at the five per cent level.

3.2.7 Reduce Information Asymmetry

Agency problems stem from inequality/ asymmetry of information between principal and agent (Nasser, 1993). Because a moral hazard arises as a result of information asymmetry, it is important to reduce its occurrence. Information asymmetry can be reduced in various ways, which include new auditing regulation and accounting disclosures (Zhou, 2007); industry specialisation and audit firm tenure (Almutairi *et al.*, 2009); public reporting and the availability of a credit rating; more reputable arrangers; timely loss recognition (Wittenberg, 2008); supplementary accounting disclosure information (Lim *et al.*, 2003); voluntary disclosure (Petersen and Plenborg, 2006); voluntary governance disclosure of board and audit committee (Cormier *et al.*, 2010); and corporate disclosures (Jiang *et al.*, 2011).

Research conducted by Courtney and Cahan (2004) regarding non-current asset revaluation using a sample of companies listed on the New Zealand Stock Exchange illustrated that bona fide efforts to share information with the public help to reduce information asymmetry for low debt firms, while incentives to behave opportunistically tend to be undertaken by high debt firms. Brown *et al.* (1992) also found that upward revaluation decisions in Australia were used to reduce information asymmetry using companies' growth and information disclosure as measures. Research completed by Iatridis and Kilirgiotis (2012) found that foreign operations were a motive for improving information asymmetry, along with low fixed assets as a political aspect, acquisition as an economic factor, and high debt capital needs.

Information asymmetry can be reduced in several ways; for example, by measuring relevant financial ratios (price earnings ratio (PER) and price to book value (PBV)), and encouraging more disclosed information in financial statements.

International trading conducted by Indonesian PLCs increased significantly over the research period (2008-2012). Its trading values reflected more transactions with parties involved in this activity such as buyers, sellers and agents. In the respective years between 2008 and 2012, export values were USD 137 trillion, USD 116 trillion, USD 157 trillion, USD 203 trillion and USD 190 trillion (BPS, 2014). Companies should pay more attention to this circumstance with regard to the parties involved in a business because of the opportunities to grow exports. Therefore, it is necessary to reduce companies' information asymmetry, because from a wider perspective, more stakeholders would rely on relevant and reliable financial statements. This study summarises the trend of PER as a proxy to measure company growth. Table 3.2 shows yearly averages and industrial PER. PER for the mining industry is seen to gradually increase, which reflects the industry's growth of stock shares and earning per share. Other industries, such as agriculture, miscellaneous and finance, fluctuate highly, which indicates the instability of their share prices and earnings gained. The fluctuation of PER can be seen in Figure 3.3.

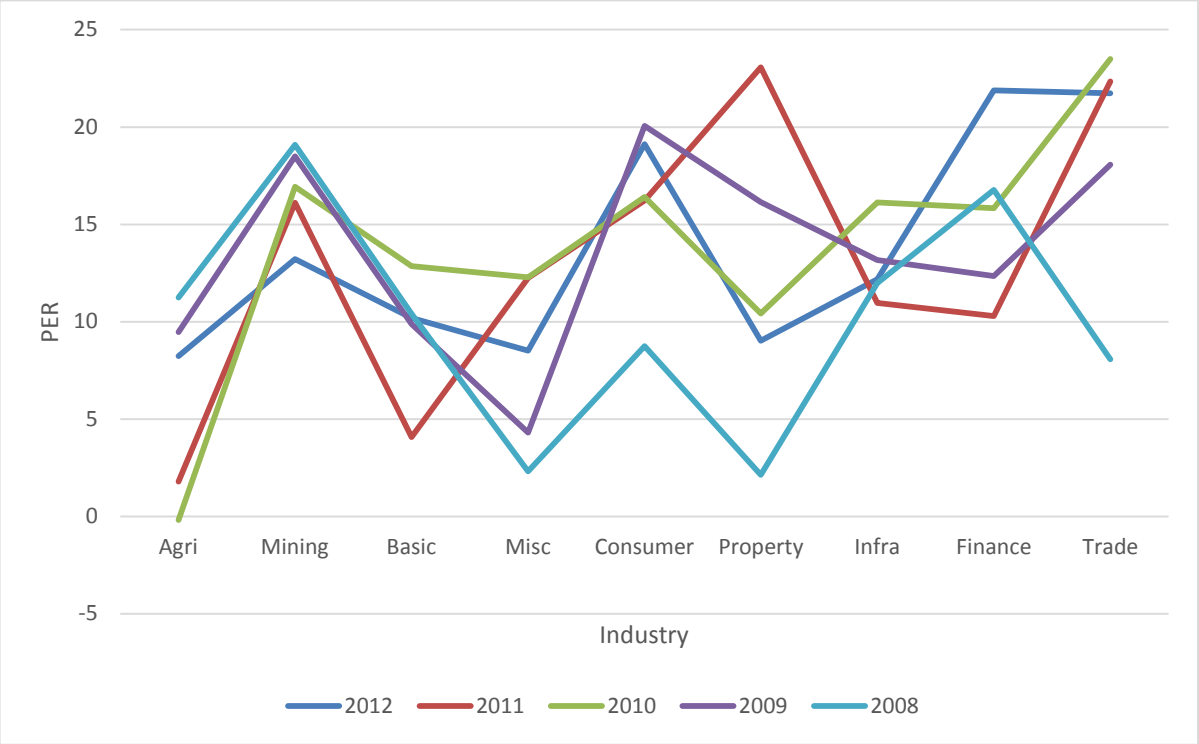
Table 3.2 – PER Trend among IDX Industries

IDX Industry	PER					
	2012	**2011**	**2010**	**2009**	**2008**	**Avg**
Agriculture	8.24	1.79	- 0.19	9.47	11.25	
Mining	13.22	16.11	16.94	18.50	19.09	
Basic	10.19	4.08	12.86	9.88	10.41	
Miscellaneous	8.52	12.24	12.28	4.30	2.32	
Consumer	19.12	16.22	16.40	20.06	8.75	
Property	9.02	23.07	10.42	16.15	2.14	
Infrastructure	12.18	10.96	16.13	13.16	11.98	
Finance	21.89	10.29	15.83	12.35	16.77	
Trade	21.73	22.34	23.49	18.07	8.07	
	13.79	13.01	13.80	13.55	10.09	12.85

Source: IDX Fact Book (2012).

On average, except for 2008, yearly PER shows stability, at around 13. This financial circumstance attracts investors because of its benefits, such as dividend yields, share price increase and lower business risk.

Figure 3.3 – PER Fluctuation among IDX Industries



Source: IDX Fact Book (2012).

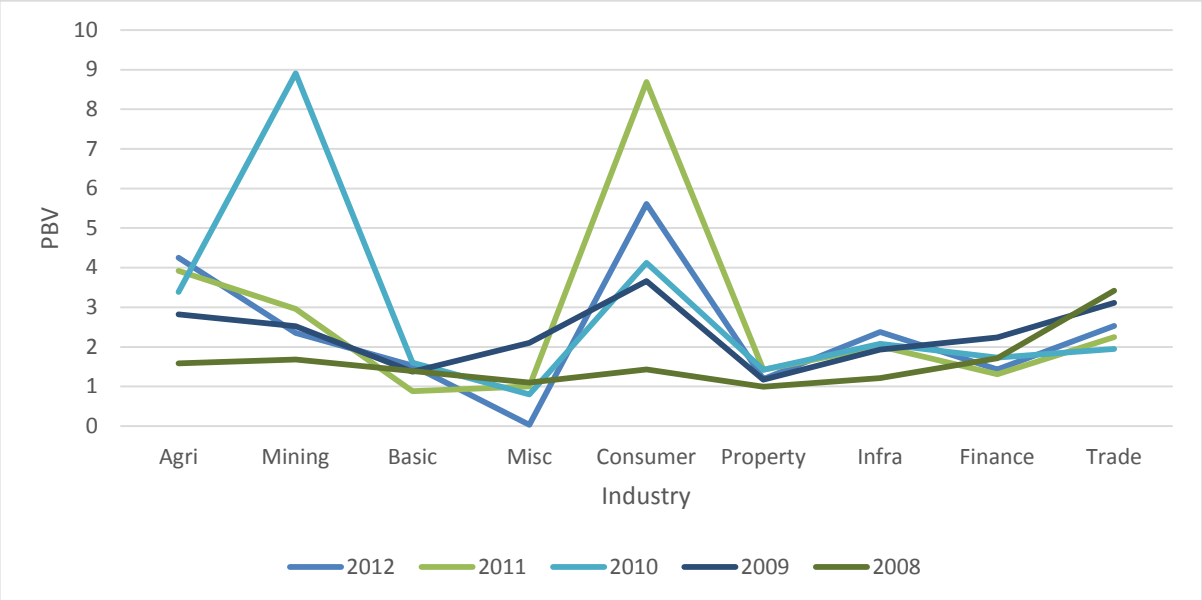
Another signal of reduced asymmetry of information is if the PBV score is around 1. In this condition, information published in financial statements which contains book value will subsequently cause investors to react and in so doing adjust its market price. Table 3.3 shows the PBV trend for every industry and yearly averages, while Figure 3.4 portrays its fluctuations. Basic and property industries are recorded at around 1 PBV value. Consumer and mining industries' PBV fluctuates much more than that of other industries. However, apart from 2008, the annual value for all industries has relatively similar values.

Table 3.3 – PBV Trend among IDX Industries

IDX Industry	PBV					
	2012	**2011**	**2010**	**2009**	**2008**	**Avg**
Agriculture	4.25	3.92	3.39	2.82	1.58	
Mining	2.35	2.96	8.91	2.52	1.68	
Basic	1.53	0.88	1.60	1.37	1.39	
Miscellaneous	0.03	1.00	0.80	2.10	1.10	
Consumer	5.61	8.69	4.12	3.66	1.43	
Property	1.19	1.42	1.42	1.17	0.99	
Infrastructure	2.38	2.01	2.08	1.93	1.21	
Finance	1.43	1.31	1.73	2.24	1.71	
Trade	2.53	2.25	1.95	3.11	3.42	
	2.37	2.72	2.89	2.32	1.61	2.38

Source: IDX Fact Book (2012).

Figure 3.4 – PBV Fluctuation among IDX Industries



Sources: IDX Fact Book (2012).

In summary, previous research identifies seven motives for asset revaluation. By revaluing an asset, companies can impress creditors and shareholders that they are able to manage financial difficulties and improve future financial performances. These motives are:

i) *To obtain economic benefits and efficiency*: including to improve borrowing capacity; obtain additional cash; dissuade hostile takeover bids; provide positive signals for growth prospects; and issue bonus shares.
ii) *To reduce debt contracting costs*: including to avoid breach of debt contract, which may cause loss of future loan capacity and the seizure of a company's collateral; and to prevent higher interest rates charged by a lender and more debt covenants being imposed.
iii) *To reduce political costs*: by adopting income reducing accounting methods; and bargaining with government and labour unions for the lowering of tax payments.
iv) *To provide value relevant information*: in order to meet value relevant criteria such as feedback value, predictive value and timeliness, and to present true and fair financial statements.
v) *To provide a signal*: such as clear information on companies' future performances, successful status, growth opportunity and liquidity improvement.
vi) *To reduce opportunistic behaviour*: in order to mitigate political costs; comply with debt covenant restrictions; and increase assets as collateral for additional debts.
vii) *To reduce information asymmetry*: achieved via bona fide efforts to share information with the public for low level debt company.

3.3 Effects of Asset Revaluation *(E_n)*

The second element in Figure 3.1 illustrates the effects of asset revaluation which have been researched by various scholars. Future operating performances and market-based reaction are two main purposes of asset revaluation, which can be explained as follows.

3.3.1 Future Operating Performances: Operating Income and CFFO

Previous researchers have investigated asset revaluation practices to understand their effects on future financial performance. For example, having observed UK firms from 1983-1995, Aboody *et al.*, (1999) found that upward asset revaluation had a significantly positive relationship with future financial performance over a 1 to 3 year period subsequent to the revaluation. This change indicated that asset revaluation practices can predict future asset values. Moreover, current year revaluations also affected annual returns and stock prices positively. As predicted, (dependent) variables, future performances, stock prices and stock returns were weaker for higher DER. The research concluded that these results occurred because the motive in conducting asset revaluation was to present true and fair financial statements. This finding was contrary to previous research in Australia, which found that the motive for higher DER firms was to reduce debt contracting costs (Brown *et al.*, 1992; Whittred and Chan, 1992; Cotter and Zimmer, 1995).

Having observed samples from the Hong Kong Stock Exchange, Jaggi and Tsui (2001) illustrate that revaluation was positively associated with a firm's future operating performance. The motivation for Hong Kong managers to revalue fixed assets was related to signalling fair value. Subsequently, investors' prediction of revaluations aligns with financial performances because higher values of fixed assets increase company size.

Barlev *et al.* (2007) investigated the effects of asset revaluation and reported that revaluation is allowed in 48 countries. They concluded that only operating income as a proxy of future performance was consistent with asset revaluation. Similarly, using Brazilian samples from 1998 to 2000, Lopes and Walker (2012) found that fixed asset revaluation was negatively related to future firm performance. Zhai (2007) found that there was no significant evidence of upward asset revaluation associated with operating income and CFFO for three consecutive years of revaluations (2000-2003).

3.3.2 Market-Based Reaction: Stock Prices, Stock Returns and Stock Price Movement.

Early research into asset revaluation and stock prices was conducted by Sharpe and Walker (1975), who studied 34 revaluers of Australian firms during the 1960s. The research revealed that the market reacted positively to revaluation announcements during the 60 months of observation. This indicated that the announcement of asset revaluation provided significant information to investors, who absorbed it quickly into security prices through buy and sell investment decisions.

Research by Barth and Clinch (1998) predicted future stock prices and stock returns for three classes of assets: financial, tangible and intangible. This study used 100 of the largest and smallest market values of equity on the Australian Stock Exchange from 1991 to 1995, and categorised three industrial groups, namely non-financial, mining and financial firms. Regression modelling was applied for stock prices and returns and the results show that asset revaluation was positively significant for all industrial groups. Thus, the research suggests that the information on revaluation is value relevant to predict stock prices. Other findings (related to revaluation reserves of property plant and equipment) were positively significant only to stock returns for mining firms. Furthermore, Jaggi and Tsui (2001) illustrate that revaluation

was positively associated with share prices for larger Hong Kong firms using data for the period 1991-1995. Their research suggests that larger firms' revaluations are considered to be more reliable. To be more specific, this association was positively stronger for property and service firms, while for industrial firms it was negatively insignificant.

In other studies, stock prices and returns were affected significantly by asset revaluation reserves for high DER companies and in certain countries (Easton *et al.*, 1993; Paik, 2009). This illustrates the value relevance of revaluation reserves to the market. Standish and Ung (1982) examined the impact of fixed asset revaluation on stock price residuals in the UK using a capital asset pricing model. Their research examined 192 firms, which between them conducted 232 revaluations for the period of 1964-1973. The results show that asset revaluation was associated with unexpected positive returns in the cumulative average residuals around announcement date, which signalled a favourable message from a company for the benefit of future stockholders.

In contrast, using New Zealand samples from 2002-2005, Zhai's (2007) findings were different. Zhai argued that share price and annual returns were not significant with asset revaluation, which was consistent with Emanuel (1989), who gathered samples from the period 1970-1979 from the New Zealand Stock Exchange but in a different period (2002-2005). Asset revaluations were common practice, supported by 90 per cent of the samples. Although share prices reacted quickly at the announcement of asset revaluation in annual reports, Emanuel fails to conclude that revaluation was the main factor for share prices revisions.

Research conducted by Lopes and Walker (2012) using Brazilian PLC data for the period 1998-2004 found that asset revaluation was negatively related to stock prices and return and the

corporate governance index, but positively related to indebtedness and illiquidity. Based on these findings, the research suggests that revaluation information was used to improve equity position and to reduce opportunistic motivation rather than to convey financial information to the external users of financial statements.

In summary, prior studies explain the effects of asset revaluation on companies' future financial performance (namely, operating income and cash flows from operation), while the market-based reaction approach might view stock/ share prices, returns and movements as results of asset revaluation. Most studies reviewed in the literature have shown a strong relationship between the effects, as a result of asset revaluation decisions, and the motives underpinning decisions.

3.4 Criteria and Decision Making

The third and fourth elements in the asset revaluation decision cycle are criteria and decision making. Before deciding on which asset valuation model to apply, companies must consider the primary decision criteria. These criteria often have advantages and disadvantages which can affect whether potential benefits exceed costs. Choosing a revaluation model in a fixed asset valuation is suggested if potential advantages gained outweigh disadvantages. Otherwise, a company may apply the cost model.

IFASS 16 requires a company to choose one method for fixed asset valuation, either: i) a revaluation method (and as a consequence, a company should regularly revalue their assets); or ii) a cost method, which does not require a company to revalue their assets. A revaluation method favours more meaningful information and strengthens a company's asset values. A cost

method helps a company to avoid the costs of maintaining fixed assets following a market assessment.

The advantages of revaluing assets can be summarised as follows. Lin and Peasnell (2000a) found that three potential advantages of revaluing assets were to: i) reduce the risk of violating a covenant by strengthening asset values on a company's balance sheet; ii) provide credible signals for future prospectors; and iii) reduce the accounting rate of return as a bargaining position to unions and government or other statutory regulators. Henderson and Goodwin (1992) suggest that asset revaluation could be used to: i) show a lower, more realistic profit; ii) provide more meaningful data on the balance sheet; iii) create a reserve for issuing bonus shares; iv) reduce the risk of violating covenants by strengthening asset values on companies' balance sheets; v) provide credible signals for future prospects; vi) reduce the accounting rate of return as a bargaining position to unions and government/ regulators; and vii) improve/lower the debt-to-asset ratio.

Costs should also be considered before deciding on revaluation; these include costs relating to appraisal fees; an increase in audit fees; record keeping costs; and opportunity costs. Opportunity costs consist of time spent revaluing assets, reviewing fair value and negotiation of an estimated fair value (Brown *et al.*, 1992; Lin and Peasnell, 2000b; Choi *et al.*, 2009). Moreover, asset revaluation may also negatively impact on future profitability due to higher depreciation expenses, lower return on assets (ROA) and lower return on equity (ROE) (Henderson and Goodwin, 1992).

Other research in the field of revaluation practices and audit fees was conducted by Goodwin (1994) and Hu *et al.* (2012). Goodwin found that revaluation practice can also lead to higher

audit fees for several reasons, including higher risk due to litigation over a client's breach of a debt covenant and loss of the client; and greater time spent auditing a revalued asset when a client's proposed share issuance and competence of appraisal was lower. Similarly, Hu *et al.* investigated revaluation practice in relation to cost consequences. Their research collected samples from Australian public listed firms for the period 2003-2007, and the results concluded that applying an asset revaluation model resulted in higher audit costs; higher costs of reviewing value estimation of an asset; higher agency costs; and higher litigation costs. In addition, an audit of property plant and equipment incurred higher audit fees than investment property because longer was spent on reviewing its fair value and complex auditing matters.

3.5 Business Outcomes (BO_n) and Impacts (Bi_n)

The last two elements in Figure 3.1 describe the business outcomes and impacts. Outcomes refer to the short-to-medium term behavioural or systemic effects that the project makes a contribution towards, and that are designed to help achieve the project's impacts. Impacts are a fundamental and durable change in the condition of people and their environment brought about by the project. For example, a financial incentives program can increase attendance, which is measured by the attendance rate, while this program can also impact on actual learning and workforce participation (GEF, 2009; Slavin, 2010). As management tools for performance evaluation, the use of outcome and impact as measurements are applied both in the private and public sectors. In the public sector, outcomes are typically measured through interview or questionnaires regarding the satisfaction of services provided by public servants (Jones and Pendlebury, 2010).

This study predicts that for companies which decide to apply a revaluation model for fixed asset value measurement, several outcomes may arise. These outcomes include:

1. Engendering more efficient business operation

   This outcome can be achieved in various ways in the relationship to the economic benefits and efficiency, and can reduce political costs. Examples are cash available from higher net income, which is caused by lower tax paid due to a higher value of fixed assets and more depreciation expenses; and potential benefit from avoiding charges/ interest due to breaches of the debt contract.

2. Providing financial sources for companies' business operation

   This outcome results from a continuance of more efficient business operation. Lenders believe that PLCs will follow the agreed debt and interest payment schedule. They may also give additional loans due to the increased market value of companies' fixed assets. Furthermore, the availability of these loans can positively support companies' business expansion.

3. Providing value relevant information to stakeholders

   By choosing a revaluation method, companies can provide useful information to stakeholders. Following the market price, the value of land and buildings fluctuate either upwards or downwards. This outcome can be achieved by a reduction in information asymmetry by measuring the market to book ratio and price earnings ratio. The lower value of both ratios shows that book value information with regard to land and buildings reflects its market values. The existence of other information, such as companies which operate internationally and export sales, can help stakeholders to assess the companies' market share globally.

4. Providing future signals to investors

   This outcome will help investors to assess the likely financial performances of the company using the revaluation model. Examples are the availability of idle company funds in the future for successful firms using the FCF formula; company DER in comparison to industrial DER, which can show the risks being faced; and the existence of debt restructuring circumstances, for which companies may opportunistically use revaluation as a way of avoiding breach of the debt covenant.

Subsequently, attainment of these outcomes will generate a longer term positive impact on business processes. These impacts can increase the motives for asset revaluation. Examples of impacts are:

i) Increased sustainable growth, which can be gained through the achievement of long-term company aims in gaining profits.
ii) Increased public trust, gained via increased disclosure of items in notes to financial statements and more symmetry of information.

3.6 SUMMARY OF THE CHAPTER

A diagram which represent a conceptual model of revaluation decision making is developed and it consists of eight elements. The literature review research has confirmed cost advantages and disadvantages of conducting asset revaluation. A revaluation model is suggested if potential advantages outweigh disadvantages. The literature review has also confirmed the factors regarding seven motives and two approaches that can be applied to investigate the asset revaluation decision.

The seven management motives for asset revaluation are to gain economic benefits and efficiency; to reduce debt contracting costs; to reduce political costs; to reduce opportunistic behaviour; to provide value relevant information; to provide positive signals; and to reduce information asymmetry.

By revaluing an asset, companies can impress upon creditors and shareholders that they are able to manage financial difficulties and improve future financial performances (Aboody *et al.*, 1999; Jaggi and Tsui, 2001). Subsequently, this study will formulate statistical models to help managers in implementing revaluation decisions effectively and efficiently.

CHAPTER 4

RESEARCH METHODOLOGY

4.0 INTRODUCTION

Research methodology refers to the science of method underpinning any academic study and comprises systematic method(s) to produce, interpret and report on data. One approach is to use research instruments to accrue primary data (Dunne, 2005). Example instruments include questionnaires, interviews and participant observations. Secondary data may also be used in the study, which include financial statements, library resources, and archives (Walliman, 2006; Robson, 2011). The research methodology in this study is designed to support the research process. It is compiled following the eight operational steps involved in formulating a research problem to writing a research report, as explained by Kumar (2011). Within this study, the methodology employed seeks to:

i) review the relevant literature on asset revaluation, including historical practices and the transition to the new IFASS 16;
ii) conduct a holistic overview of global IFRS convergence because of its important impact upon financial reporting in Indonesia;
iii) develop a conceptual model for asset revaluation decision making, along with prediction models for determining the motives for, and effects of, asset revaluation decisions.

Research *per se* can be broadly classified into two contrasting approaches, namely:

i) *Inductive research*, which develops theory through empirical observation. Inductive research is generated and built through the analysis of, and interaction with, empirical data (Saunders, 2007); and
ii) *Deductive research*, which tests theoretical propositions (Saunders, 2007). Deductive research strategically utilises existing theory to inform research at the outset of hypothesis development (or framing of research questions); in so doing, it provides direction for the research (Grix, 2004). In deductive reasoning, a theory is tested through trial and error and expressed in a statement (hypothesis). A recurring process of observation and (often statistical) experiment generates results that produce the most appropriate theory (Walliman, 2006). Deductive reasoning is assumed by some to have greater validity due to its objective nature; the conclusion is based upon hypothesis testing (Schechter, 2013).

This research applied a deductive approach to achieve the predetermined research aim. The use of financial data and statistical tools helped to ensure the validity, reliability and robustness of the research results.

Quantitative research provides a means of testing theories by examining and analysing the relationship between measured variables, as well as developing prediction or classification models (Creswell, 2008). Quantitative research tends to maintain distance between the researcher and participants to help preserve the objectivity, neutrality and validity of the statistical or mathematical results generated (Robson, 2011). This study used a quantitative approach, which had been previously applied in other similar research undertaken (Brown *et al.*, 1992; Barlev *et al.*, 2007; Choi *et al.* 2009).

Previous research uncovered within the literature review was subsequently used to develop a conceptual model for asset revaluation decision making. Financial data collected was then incorporated into two predictive models to provide important tools to the users of financial statements (e.g. investors and companies), through which patterns of future financial performance and identification of those factors to consider when deciding whether to revaluate an asset could be established.

Qualitative research is concerned with collecting and analysing non-numeric information and focuses on exploring social phenomena to achieve depth rather than specificity of new knowledge (Blaxter, 2010). Qualitative research explores the meaning of individuals or groups within the context of a social or human problem and builds analysis from qualitative data to create general themes (Creswell and Clark, 2007). Bryman (1992) identifies major characteristics that distinguish qualitative and quantitative research, namely:

i) Qualitative researchers highlight their paradigm's capacity to expose actors' meaning and interpretation of post field work, while quantitative researchers tend to view the quantitative research role as being useful at a research project's preparatory stage.
ii) Qualitative research entails more sustained contact with the subject than quantitative research and typically involves smaller sample sizes.
iii) Qualitative research tends to be more open and unstructured, whilst quantitative research is clearly defined at the outset (e.g. via hypotheses).
iv) Qualitative researchers describe the nature of data as rich, deep and meaningful, while quantitative researchers depict their data as hard, rigorous and more reliable.
v) Qualitative research may not facilitate generalisation of its results and may be influenced by personal biases. Conversely, quantitative research provides a more precise and valid testing

of hypotheses and therefore any findings generated can be generalised and used for prediction or classification purposes (within the parameters of the data frame applied).

Other common contrasts between quantitative and qualitative research focus upon the researcher's interaction when using the approaches (Bryman, 2008):

- Quantitative researchers are less involved with respondents. However, they can present a social reality phenomenon with the relationships among applied variables using secondary and reliable data;
- Quantitative researchers tend to generalise their findings, which are supported by precision measurements such as accounting formulae;
- Qualitative researchers seek a close involvement with the respondents and can understand the research problems in depth; and
- Although qualitative researchers gather less numerical data, they may acquire a better social understanding of respondents' behaviours, values and beliefs to provide richer and more insightful results.

Johnson *et al*. (2007) define mixed methods research as that which combines qualitative and quantitative research approaches to achieve both breadth and depth of understanding and corroboration. Similarly, Creswell and Clark (2011) explain that this hybrid approach represents an amalgam of methods, philosophy and research design orientation. A mixed methods approach does, however, require considerable skill, competence and resources to successfully execute extensive data collection and analysis (Creswell and Clark, 2011). This is because it employs techniques and methods associated with quantitative and qualitative data paradigms.

Greene *et al.* (1989) list five reasons for researchers to combine quantitative and qualitative methods via mixed methods (triangulation is a different concept): i) it enables data collected to be converged, interpreted and results concluded to enhance the credibility of the research findings; ii) it provides a fuller understanding of the research problem and clarifies the results from one method to another; iii) the results of one method employed hone and refine the future methods employed; iv) it facilitates the discovery of new perspectives, to raise new questions which can initiate a further (perhaps new) study; v) it extends the breadth and range of research conducted by employing different methods of inquiry; methods that complement, yet augment each other. Sometimes, the use of alternate methods as data sources in this way can also achieve triangulations (Greene *et al.*, 1989).

This chapter presents the research process employed in this study, including aspects relating to research design, theory and model building, data collection, measurements, analysis and validation. The overarching research design is diagrammatically represented in Figure 4.1 to summarise a holistic view of the approach adopted and sequential steps within it.

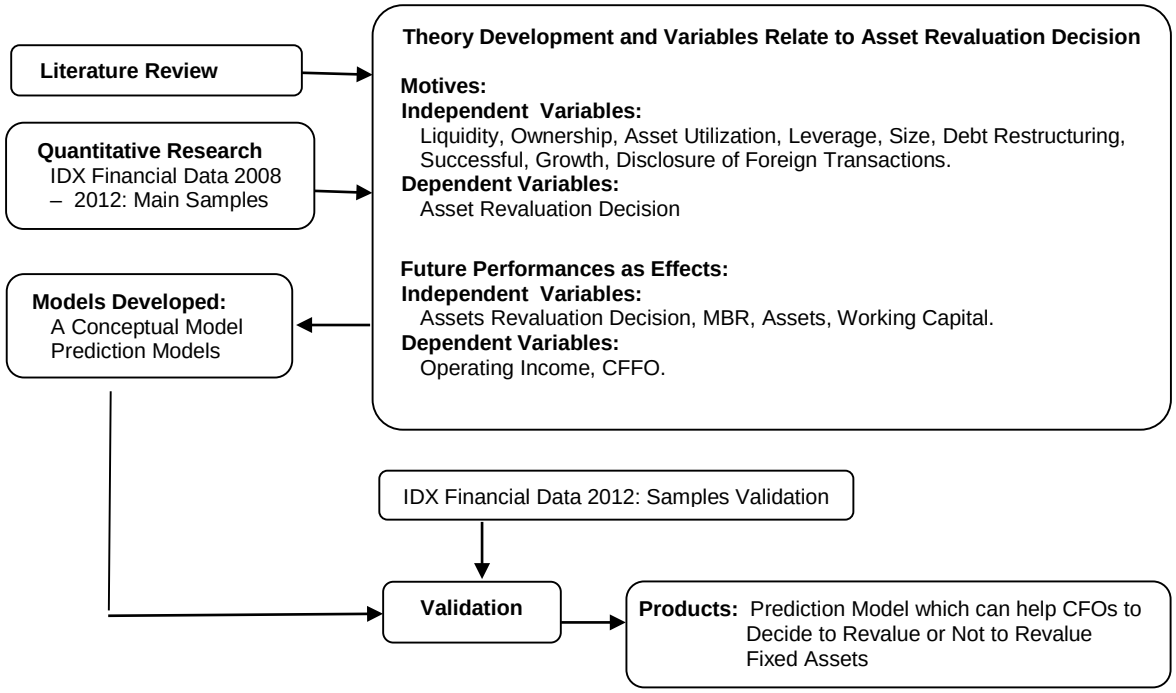
4.1 RESEARCH DESIGN OF THE STUDY

Creswell (2009) defines research design as a comprehensive plan, or proposal, to conduct research which involves interaction between three components: i) philosophy; ii) strategy of inquiry; and iii) specific methods. Within these aforementioned components, various interrelated design elements (methods) must be considered, including a conceptual framework, methods, sampling strategy and analysis. These elements allow the research question to be answered through the implementation of the research (Robson, 2011). The development of a robust research design in this study provided a clear supporting framework through which the work would unfold; specifically, this included a review of relevant studies (found within the

literature) to build a conceptual model and subsequent prediction models for asset revaluation decision making. It also helped the researcher to evaluate the progress of the study as it unfolded and ensure that the research design would fulfil the predetermined aim and objectives of the study.

The research design illustrated in Figure 4.1 depicts the iterative stages of research enquiry as a process that commences with a literature review and culminates in a high impact product of the work. Each step within this process is now further elucidated upon.

Figure 4.1 - Research Design



- Emanating from the literature review, hypotheses were generated and a conceptual model of the asset revaluation decision cycle developed (stage one).
- The study then collected and analysed the financial data of PLCs listed on the IDX. The data was aggregated randomly into two dichotomous groupings of main sample data and hold-out

'validation' data (refer to incremental stage four). Electronic copies of this data were accessed from the Indonesian Capital Market Library (ICML) (stage two).

- The research subsequently conducted quantitative data analysis and employed inferential statistical methods to test the hypotheses generated (stage three).
- To validate the models, the research obtained other financial data which had been held back as a hold-out validation sample (stage four).
- Finally, the research developed a product aimed at assisting managers to: i) assess the necessity of asset revaluation; ii) highlight the possible outcomes of the asset revaluation decision; and iii) indicate possible business effects given a revaluation (expected to relate to operating income and CFFO) (stage five).

4.2 STAGE ONE - THEORY BUILD

4.2.1 Previous Studies

Following the world's accounting standards convergence (IASB 2002; Sinaga, 2009; IFRS, 2013), the IFASB revised IFASS 16 - 2007 to offer companies the option to measure fixed assets using either a cost or revaluation model (IIA, 2007). The previous IFASS 16 - 1994 only allowed a cost model to be used (IIA, 1994). The revaluation model's application clearly affects companies' fixed assets, which are based on the fair market value within financial statements. As a consequence, the revaluation generates more relevant and meaningful financial information to users. Lin and Peasnell (2000a) found three potential advantages of revaluing assets, namely to: i) reduce the risk of violating a covenant by strengthening asset value on the company's balance sheet; ii) provide a credible basis for future decision making; and iii) reduce the accounting rate of return and thus provide a bargaining position with unions, government and regulators.

However, companies should consider several consequences, such as the higher costs related with the revaluation model, and its potential negative impact on the calculation of future financial performance. The costs referred to include an appraisal fee; increased audit fee; record keeping costs; and opportunity costs (Brown *et al.*, 1992; Lin and Peasnell, 2000b; Choi *et al.*, 2009). Examples of negative impact on future financial performance are lower profitability due to higher depreciation expenses; lower return on assets (ROA); and lower return on equity (ROE) (Henderson and Goodwin, 1992). Previous explanations discussed this in the literature (Henderson and Goodwin, 1992; Brown *et al.*, 1992; Lin and Peasnell, 2000a; Lin and Peasnell, 2000b; Choi *et al.*, 2009) and demonstrated that a trade-off between applying a cost or revaluation model for fixed asset valuation is needed, or at least that the decision must be considered carefully. A revaluation model therefore provides financial and informational benefits, but with higher implementation costs. Hence, before deciding to revalue its assets, a company needs to critically assess the related cost advantages and disadvantages, and whether the potential benefits exceed anticipated costs (Henderson and Goodwin, 1992).

The development of a conceptual model could identify the motives for, and effects of, asset revaluation decision making. These motives might drive companies to decide to revaluate assets. Appendix 1 summarises the description of the motives applied by way of several variables and proxies for hypotheses testing and analysis. First, in the motive model, nine independent variables that best represent motives for asset revaluation decision making are included: liquidity, ownership, assets, leverage, size, covenant, successful status, growth, and disclosure. The dependent variable is the decision to revalue fixed assets or not. Second, in the effect model, the decision is applied as one of the independent variables, and it is analysed in terms of how it will affect companies' future financial performances as dependent variables; namely, operating income and CFFO.

4.2.2 Hypotheses and Prediction Models

This study developed hypotheses based upon the literature review and subsequent conceptual model developed (refer to Appendices 1 and 2). The expected sign of each proxy either has a positive or negative association with the revaluation decision, as explained in Appendix 1. The hypotheses are:

H_1: Liquidity is negatively associated, and ownership, asset intensity, leverage, size, covenant, successful status, growth, and disclosure are positively associated with companies' fixed asset revaluation decisions.

H_2: Asset revaluation decisions, market to book ratio, assets, operating income, cash flow from operations, and working capital are positively associated with future financial performance.

Hypothesis one investigated ten variables (dependent and independent) as motives for asset revaluation using logistic regression as a deterministic modelling approach. Hypothesis two predicted companies' future financial performance using multiple regression. Hence, the hypothesised models were in the form described below.

- *The motive model (to test hypothesis one)*

  This is formalised by:

$$Logit_{ti} = \beta_0 - \beta_1 LIQ_{ti} + \beta_2 OWN_{ti} + \beta_3 ASSET_{ti} + \beta_4 LEV_{ti} + \beta_5 SIZE_{ti} + \beta_6 DEB_{ti} + \beta_7 SUC_{ti} + \beta_8 GRO_{ti} + \beta_9 DIS_{ti} + e_{ti}$$

Where:

1. Y denotes the dependent variable (revaluation decision) = 1 if assets are to be revalued and 0 otherwise
2. X denotes nine independent variables as follows: LIQ= Liquidity: cash and marketable securities (CMS) and CFFO; OWN= Ownership: share ownership and acquisition; ASSET= Asset: fixed asset intensity (FAI); LEV= Leverage: DER and DTA; SIZE= Size: total assets, sales and operating income; DEB= Debt Restructuring: existence of debt restructuring; SUC= Successful firm: FCF and low DER; GRO= Growth: MBR and PER; and DIS= Disclosure: foreign operation and export sales.

- *Future performance models (to test hypothesis two)*

  Future operating income model is formalised by:

  $$\Delta OPINC_{t+\,t,i} = \beta_0 + \beta_1 REV_{ti} + \beta_2 \Delta\, OPINC_{t\,i} + \beta_3 MBR_{ti} + \beta_4 ASSETS_{ti} + e_{ti}$$

  Where:

  1. Y denotes the dependent variable, OPINC= Operating Income
  2. X denotes the four independent variables as follows: REV= Assets revaluation decision; OPINC = Operating income; MBR= Market to book ratio; and ASSETS= Assets.

  Future cash flow from operations model is formalised by:

  $$\Delta CFFO_{t+\,t,i} = \beta_0 + \beta_1 REV_{ti} + \beta_2 \Delta CFFO_{ti} + \beta_3 \Delta WC_{ti} + \beta_4 MBR_{ti} + \beta_5 ASSETS_{ti} + e_{ti}$$

Where:

1. Y denotes the dependent variable, CFFO= Cash flows from operations
2. X denotes the five independent variables as follows: REV= Assets revaluation decision; CFFO= Cash flow from operations; WC= Working capital; MBR= Market to book ratio; and ASSETS= Assets.

4.2.3 Motives Proxies

The research also identified criteria for each proxy in the motive model. These are as follows:

- *Revaluation decision*

  Related information with regard to the revaluation decision (to revalue fixed assets or not) is available on the financial statements in the balance sheet section; namely, chosen fixed asset measurement model and its reason(s); revalued value; appraisal firm (which must be registered with ICMFISA); and the approval letter for conducting asset revaluation which is released by the Head of the Tax Directorate of the Ministry of Finance of the Republic of Indonesia. If a company applies a revaluation model, they have to revalue their assets regularly (if there is significant difference between the market value and book value of a fixed asset). Following previous studies (Chainirun and Narktabtee 2009; Seng and Su, 2010), this research applied dummy 'binary or boolean' variables, which noted 1 for measurement of this case and 0 otherwise.

- *Liquidity*

  Liquidity is a company's ability to fulfil short-term obligations to external parties such as the government for withholding tax bills and for income tax bills, and lenders for loans and interests. These are due within one year and must be paid using a company's current assets

(Subramanyam and Wild, 2009). Inability to meet the liquidity demand can create serious financial issues for a company, such as loss of profitable opportunities and/or bankruptcy (Subramanyam and Wild, 2009). This study predicted a negative association between liquidity and revaluation decisions. That is, the more frequently illiquidity (cash shortage) occurs, the more companies need cash, so asset revaluation can help to resolve this problem by securing loans from financial institutions (Lin and Peasnell, 2000a). Two proxies are applied to measure liquidity which are recorded on the ratio scale as follows:

i) CMS

CMS includes cash available in any currency, short-term deposits and marketable securities (trading and available for sale securities). Maturities securities are excluded due to their long-term status. For financial institutions (e.g. banks), only short-term deposits are included, so for example current accounts with the Indonesian Central Bank are excluded because they are required to be maintained as statutory reserves, and similarly, placements with other banks and the Indonesian Central Bank are also excluded from deposits because these are treated as receivables. Receivables are claims to another party in the form of future inflows of cash, such as trade receivables and other prepayments (O'Regan, 2006). Because receivables may be defaulted upon and go unpaid, a company should set provision for doubtful debts. Following Brown *et al.* (1992), this study used CMS as a proxy of liquid assets.

ii) CFFO

The research applied another proxy, CFFO, to measure companies' liquidity. Information about cash outflows helps stakeholders to make economic decisions in a timely fashion and with greater certainty (IAS, 2012). Companies' ability to generate cash is reported in

the operating activity section of cash flow statements. CFFO is derived from the principal revenue-producing activities, namely sales, interest received and payments to suppliers.

Some IDX companies use other countries' currencies (such as USD) in their financial statements as their main operating currency; for example, the mining industry. Therefore, for these companies this study had to convert certain accounts displayed in the financial statements from USD into the Indonesian currency (the rupiah) using the year-end exchange rate. The exchange rate over the research period followed the Indonesian Central Bank. The year-end USD exchange rates over the period Dec 31st; 2007 – Dec 31st; 2012 for the Indonesian Central Bank are reproduced in Table 4.1 below.

Table 4.1 – Exchange Rate (USD 1) for the Indonesian Central Bank

No	Year-End	Rate (in Rupiah)
1	Dec 31, 2012	9,670
2	Dec 31, 2011	9,067
3	Dec 31, 2010	9,010
4	Dec 31, 2009	9,395
5	Dec 31, 2008	10,900
6	Dec 31, 2007	9,419

- *Control*

Control as a predictor of revaluation decision making has been used in previous studies (Brown *et al.*, 1992; Iatridis and Kilirgiotis, 2012) with shared ownership (in percentages) and acquisition (in the form of associates, jointly controlled entities and subsidiaries) as proxies. A company with a high majority share of ownership tends to have more power to

choose revaluation policy freely, and revaluation is used as a way to mark up the asset at the level of market value through acquisition (Piera, 2007; Iatridis, and Kilirgiotis, 2012). This study predicted a positive association between control and revaluation decisions. Acquisition is measured using a dummy score; i.e., it is coded with a 1 if acquisition is conducted and 0 otherwise.

- FAI

  FAI (as efficiency in the deployment of assets) measures investment opportunities in fixed assets compared to the proportion of total assets (Lin and Peasnell, 2000a; Barlev *et al.*, 2007; Iatridis and Kilirgiotis, 2012). This study predicted a positive association between asset intensity and revaluation decision. The formula to measure this is:

$$\text{FAI} = \frac{\text{Fixed assets}}{\text{Total assets}}$$

- *Leverage*

  The use of two financial sources, debts and equity, may provide different implications for a company's financial risk (Subramanyam and Wild, 2009). Capital structures can be assessed by using ratios which measure a company's leverage level when expanding their asset value (Pendlebury and Groves, 2004; Subramanyam and Wild, 2009). A company with higher DER and DTA ratios might close to the lender's covenant. The formulae are as follows:

$$\text{DER} = \frac{\text{Total Debts or Liabilities}}{\text{Total Equities}}$$

$$\text{DTA} = \frac{\text{Total Debts or Liabilities}}{\text{Total Assets}}$$

DER measures the proportion of a company's leverage (gearing) which is funded by creditors against owners' equity (Jaggi and Tsui, 2001; Iatridis and Kilirgiotis, 2012), while DTA measures the reliance on debt for investment in assets (Brown *et al.*, 1992; Cotter, 1999; Lin and Peasnell, 2000a; Choi *et al.*, 2009). Ratios of DER and DTA, for example, exceeding 1.0 indicate that a company relies more on its creditors, and this will burden them with payment of interest and principals in the future. Asset revaluation is used as a way of reducing debt contracting costs. This study predicted a positive association between leverage level and revaluation decision.

- *Company Size*

  To reduce political costs, a company may reduce its business size to avoid reporting excessive profits and being charged higher tax. This strategy was found to be used as a tool in asset revaluation policy (Brown *et al.*, 1992; Lin and Peasnell, 2000a; Barlev *et al.*, 2007; Choi *et al.*, 2009; Seng and Su, 2010). This study predicted a positive association between company size and revaluation decision. The research applied the following proxies in measuring company size: total assets, net sales, and operating income.

- *Debt Restructuring*

  A company may behave opportunistically by choosing an asset revaluation policy for several reasons; for example, to avoid paying higher contracting costs; to avoid breaching debt covenants; or for debt restructuring (Brown *et al.*, 1992; Cotter, 1999). This research applied a binary code of 1 if a company is in the process of debt restructuring and 0 otherwise. A positive association between debt restructuring and revaluation decision is predicted.

- *Successful Status*

  The research applied two proxies to measure companies' success status, specifically low DER and FCF. Low DER represents lower company risk in repaying the debt and interest. A company with positive FCF means that funds are available for operational growth and financial flexibility. FCF is the remaining funds obtained after being allocated for a company's main activities, such as for financing and investment purposes. The fulfilment of these purposes will maintain a company's productive capacity, at least at its current level (Subramanyam and Wild, 2009). To assess success status, this study applied two proxies, low DER and FCF (Gaermnynck and Veugelers, 1999; Barlev *et al.*, 2007). A company with a low DER compared to levels among other companies within the same industry is considered to have a lower risk of debt default, while positive FCF allows a company to increase its potential growth; for instance, through acquisitions, and research and development. This study predicted a positive association between successful status and revaluation decision. The proxies within this variable are:

  i) Low debt to equity ratio – where a company's DER and industry DER are compared using binary in statistical modelling. If a company's DER is less than industrial DER, it is denoted by 1 and 0 otherwise.
  ii) FCF is where FCF = CFFO - capital expenditure. Capital expenditure = change in total assets (current total assets – last year total assets) – change in total liabilities (current liabilities (short-term + long-term) – previous year's liabilities).

- *Growth*

Previous studies reveal that two proxies have been used to measure companies' potential growth with regard to the availability of information to the public. These are MBR and PER.

MBR (otherwise known as PBV) is a comparison between the market value of the stock which is taken from the last transaction day of a year, while book value per common share is computed below (Friedson and Alvarez, 2011). PER measures the market price of the stock in comparison to the earnings per share gained from the investment. These two proxies help to reduce information asymmetry through asset revaluation (Whittred and Chan, 1992; Cotter, 1999; Seng and Su, 2010). This study predicted a positive association between growth and revaluation decision book value per common share, which can be expressed as:

i) Book value per common share = $\frac{\text{Total Shareholder Equity – Preferred Equity}}{\text{Total Outstanding Shares}}$

PER can be expressed as (Friedson and Alvarez, 2011):

ii) PER = $\frac{\text{Stock Price}}{\text{Earnings per Share (EPS)}}$

- *Disclosure*

This research also sought to test earlier studies in order to measure the level of company disclosure and its relationship to asset revaluation (Brown *et al.,* 1992; Piera, 2007; Iatridis and Kilirgiotis, 2012). For PLCs, providing relevant and reliable information to stakeholders is a necessity to fulfil accounting standards requirements. This is because they use financial statements as communication tools to reduce information asymmetry; for example, through more disclosed information with regard to foreign transactions about foreign (branch) operation and export sales. These two proxies represent the need for the latest information on fixed asset values using market value and for these to be reported to stakeholders (buyers and sellers), especially overseas parties, which leads companies to revalue their fixed assets.

Therefore, this study predicted a positive association between disclosure and revaluation decision. The proxies are as follows:

i) Foreign operations or business segment simply provide information on whether a company is operating in one country or multiple ones and is included in the model as a binary coded variable.

ii) Export sales simply denote whether a company exports and again are represented as a binary variable.

4.3 STAGE TWO - DATA AND SAMPLING

4.3.1 Data

Walliman (2006), Adams *et al.* (2007), and Kumar (2011) all describe two data information sources:

i) Primary sources, which are gathered from research inquiry such as through observation, interview and questionnaire. The advantages of primary sources include in-depth information provided and/or expertise, but these should be balanced against the increased time and budget for collation, as well as a tendency to introduce bias.

ii) Secondary sources include information and data provided by government publications, censuses, libraries and databases. Generally, these sources are more valid and reliable and less expensive to collect, but can lack depth.

For this research, the secondary data comprised financial panel (pooled) data of companies listed on the IDX. These data was publicly available on the IDX website and via the ICML. Panel data was a combination of time series and cross-section data; for example, daily stock prices of Indonesian PLCs from various industries over temporal series (Gujarati, 2003). Panel data provide advantages such as heterogeneity; being more insightful and informative; less

collinearity between variables; a greater degree of freedom and more efficiency; being better suited to study the dynamics of change; better in the detection and measurement of effects which could not be observed in cross-section or time series data alone; inherently capable of studying more complicated behavioural models; and they can minimise bias (Gujarati, 2003).

Time series data consists of a set of observations (values) of a given variable recorded chronologically at different times over a set time period, such as daily stock prices of financial sector companies (Gujarati, 2003). On the other hand, cross-sectional data is collected at a single point in time (Gujarati, 2003; Anderson *et al.,* 2009) and include aspects such as daily stock prices of Indonesian PLCs from agriculture, mining and basic industries.

4.3.2 Sampling Technique

Proportional stratified sampling uses the same proportion of the sample within different categories/ strata in the population (Walliman, 2006). Because the population is sub-divided into more specific and relevant strata, this method offers greater accuracy in representing the population through groups of samples. The better a sample represents the whole group (population), the more relevant will be the inferences drawn from it (Walliman, 2006; Bryman and Crammer, 2009). This method ensures proportional representation for each stratum and decreases sampling variability (Henry, 1990).

This research applied stratified sampling to determine samples in certain categories, characteristics of the companies listed on the IDX such as their total market value (market capitalisation), year of establishment and IDX business sector (industry). Two measurement scales of data collected were used, namely a nominal scale and ratio scale. Nominal scale data

was used to measure revaluation decisions as a dependent variable and in the motives model as a categorical variable. Other independent variables were measured on a ratio scale.

The research initially observed 2,136 IDX PLCs' financial data (Fact book, 2008-2012) to screen what asset valuation method was applied by them; the total of 2,136 companies represents the sum of 400+414+415+447+460 PLCs for each year during the period 2008-2012 consecutively. Krajcie and Morgan (1970) provide a sample table which helped the researcher to draw a robust sample size based on the number of cases in a population. Because this study has a population of 2,136 companies, 325 samples were taken for the main sample (or 15 per cent of the population), which resulted in 9,750 data items. Another 30 samples were randomly gathered as a hold-out sample for model validation purposes later in the study. Therefore, for every year of the above period, there were 65 cases logged, which were then spread into each selected category.

The procedures for data collection were as follows:

i) The 5 year (2008-2012) financial statements were downloaded from the IDX website. This is the period when the option of either using a cost or revaluation model was first offered to Indonesian companies. The list of PLC names is available in Appendix 13.
ii) Companies were observed and summarised to identify the proportion that had implemented the new IFASS 16. This early information helped to determine which samples represent the non-revaluer (cost model company) or the revaluer (revaluation model company).
iii) These two aforementioned dichotomous groupings of companies were then assigned a binary code.
iv) The samples were aggregated in the main group and validation group samples respectively.

v) The samples were then spread into a five year research period and fitted into three predetermined categories. Sixty-five cases were logged annually, which were derived from 325 samples (divided by five years).

vi) Three categories of companies were identified for stratification purposes; these were company age (young, middle or old, using year of establishment as a reference point); size (small, medium, or large, based upon market capitalisation value); and nine IDX industry classifications. Appendices 13 (year of establishment) and 14 (size/ market capitalisation) support the case groupings, while Appendix 15 (per category) details the cases annually.

vii) This study first ranked the year of establishment of the 325 cases in three groups. The results show the three layers in that category, with the same number of cases in each. These included young (1989-2009), middle (1977-1989) and old (1859-1977).

viii) The research also ranked the market capitalisation of the cases annually before using it.

ix) If similarity occurred in the cases, then the following rank of the case would replace the previous one.

4.4 STAGE THREE - QUANTITATIVE DATA ANALYSIS

Bryman and Cramer (2009) illustrate the steps to be taken when conducting quantitative research, namely build theoretical framework; formulate hypothesis; select samples; collect data; analyse data; and confirm the findings by the validation of the hypotheses. This section explains the hypothesis testing undertaken, which employed logistic and multiple regression. This employed SPSS (Statistical Package for the Social Sciences version 21) to automate data collection, organisation and statistical analysis. SPSS provided all the relevant tests required with regard to data requisite testing, descriptive statistics, logistic and multiple regression and, importantly, helped to accurately apply complicated statistical techniques (Bryman and Cramer, 2009; Field 2009).

The research commenced by calculating the descriptive statistics to summarise and describe particular aspects or characteristics of the data set (Kleinbaum *et al.,* 2008). The measures included central tendency (e.g. mean, median, and mode) and variability (e.g. standard deviation, range and interquartile range, kurtosis and skewness). Adams *et al.*, (2007) state that descriptive statistics help the researcher to understand and summarise the data, either in tabular or graphical form; in this instance, such statistics enabled the researcher to gain greater insight into the data characteristics prior to conducting deterministic modelling.

4.4.1 Logistic regression

Logistic regression is defined as a mathematical modelling approach which describes the relationship of predictor variables with a dichotomous dependent variable that has two possible qualitative categories (measures) coded as Boolean (binary) 'quantitative' variables (Mendehall and Sincich, 2003; Kleinbaum *et al.,* 2008). Logistic regression is a special form of regression in which the dependent variable is represented by non-metric data (Hair, 2006).

The research employed logistic regression (logit) analysis because it used non-metric data; that is, a revaluation decision (the qualitative dependent variable) which fundamentally has two possible answers. The decision to revalue is dummy coded 1, while the not to revalue decision is coded by 0. Note that this decision is an arbitrary one, as converse coding would yield the same result during analysis (e.g. $a > b$ or $b < a$). In hypothesis one, the independent variables (liquidity, ownership, asset intensity, leverage, asset size, debt covenant, successful status, growth, and disclosure) apply metric data. Metric data is used when subjects differ in the amount or degree of a particular attribute, as measured on interval and ratio scales, while non-metric data indicates the presence or absence of a characteristic via nominal and ordinal scales (Hair, 2006; Walliman, 2006; Adams, 2007). Within logistic regression, classic assumptions

tests will not be conducted because errors in the regression model spread abnormally, heteroscedasticity occurs, and the fitted value is not between 0 and 1 (Kurtner *et al.,* 2004).

Bryman (2012) states that the test of statistical significance allows a researcher to estimate how confidently statistical results obtained from a sample can be generalised to a population. The research applied the overall and partial model that fits at a 0.05 level of significance. The use of a 0.05 significance level is generally accepted in research work and as a convention in social science research. Changing the significance level will affect the number of cases taken. The lower the significance level expected, the greater the number of cases that should be collected.

The following tests were conducted and related to hypothesis one using logistic regression:

i) Pseudo R^2 value, which is similar to the coefficient of determination in multiple regression and is used to assess the goodness-of-fit of the estimated model (Hair *et al.*, 2006; Kleinbaum *et al.,* 2008). A higher value of Pseudo R^2 represents a better prediction level of independent variables in the model (Field, 2009).
ii) The Chi-Square-test of -2 log likelihood (-2LL) difference, which is similar to the F test in multiple regression, was applied to test the overall model fit; lower values show a better fit (Mendehall and Sincich, 2003; Hair *et. al.*, 2006).
iii) Hypothesis test of individual coefficients using the Wald statistic, which is similar to a t-test in multiple regression (Field, 2009). The significant value shows the impact of probability and prediction whether an event (asset revaluation) occurred or not (Field, 2009).

4.4.2 Multiple Regression

Multiple regression produces probabilistic models that include two or more independent variables to predict a dependent variable (Mendehall and Sincich, 2003; Hair, 2006). The use of multiple regression can predict companies' future financial performances, such as operating income and cash flows from operations. To generate the optimum coefficient of multiple regression for each variable, Hair (2006) suggests that the regression model should meet classic assumptions (otherwise known as the Best Linear Unbiased Estimation (BLUE)). These are linearity of the phenomenon measured; constant variance of the error terms; independence of the error terms; and normality of the error term distribution. Other statisticians discuss the classic assumptions that also have to be met before hypothesis testing, such as existence, independence, linearity, homoscedasticity and normality (Kleinbaum *et al.*, 2008). Three tests to measure goodness of fit of the model were used; specifically, R^2 (coefficient of determination), F test (overall model) and t-test (partial model).

To test hypothesis two, the research investigated the effects of asset revaluation decision making using multiple regression. All independent and dependent variables are in metric scales except asset revaluation decision, which is a non-metric binary scale. Independent variables include market to book ratio, assets, and working capital, and these are in ratio scales, while assets revaluation decision is in nominal ratio. Binary dependent variable codes used are 1 for revalue or 0 for not revalue.

The procedures detailed below are related to the testing of hypothesis two, which applied multiple regression:

i) The classic assumptions test measures linearity, constant variance of the error terms, independence of the error terms and normality of the error term distribution (Hair *et al.*, 2006);

ii) A goodness-of-fit test and the coefficient of determination (R^2). A goodness-of-fit test provides an indication of how well a specified model reproduces the covariance matrix among the indicator variables (Mendehall and Sincich, 2003; Kleinbaum *et al.*, 2008);

iii) Hypothesis testing using the t-test predicts the significance of each independent variable (as cause factors) upon the change of companies' future performance (as a dependent variable); and

iv) The F-test is used to determine the overall model contribution in predicting operating income and CFFO as dependent variables.

4.5 STAGE FOUR - VALIDATION

To evaluate the prediction models and to achieve a more robust model, the research conducted the following steps.

i) An additional 30 cases were collected to comprise a hold-out sample, which included revaluers and non-revaluers. These cases were added to the 325 cases in the main sample to total 355 cases in all.

ii) Comparison of the statistical results (specifically, the significance of the F test, t-test, and R2) of the original 325 cases to the 355 combined cases.

iii) If there is no significant difference between the groups of cases in terms of their mean percentages, this means that the prediction model is reliable and accurate and *vice versa*.

iv) The comparative analysis of the two groups shows the significant or non-significant differences in PLCs' decisions with regard to revaluation of fixed assets or not.

v) To increase the significant values of the statistical results, the research took several trial and error steps; namely, it changed cases due to outliers; removed some non-significant proxies; removed proxies with zero beta values; compared revaluers and non-revaluers using balanced cases; and used natural logarithm on proxies with monetary values (CMS, total assets, and sales).

4.6 STAGE FIVE – RESEARCH PRODUCT

Initially, the research developed a conceptual model, which was then used to formulate the motives and effects prediction models. These models led to the decision of whether a company should revalue or not based on the factors which are the main decision support criteria. In each variable used, there are several proxies which measure the variables in the models. The statistically significant proxies within the prediction models will help CFOs to consider which factors are more influential than others. This algorithmic solution to the selection problem enables intended beneficiaries to input raw data at one end (the attributes measured by companies in the selection process) and be offered a decision making output at the other (a comparative indication of companies' motives and effects during the fixed asset valuation method selection process). Ferreira (2010) defines an algorithm as a well-defined procedure which can solve a given problem and consists of a number of instructions.

4.7 SUMMARY OF THE CHAPTER

The deductive research methodology designed and then used in this study ensured that the predetermined research aim and objectives (which sought to give an overview of global IFRS convergence and to predict its impact on the implementation of revised IFASS 16 to stakeholders) were satisfied. This was achieved by the development of a conceptual model and prediction models to support CFOs in deciding whether to revalue fixed assets or not.

The five stages adopted in the research design were theory build; data and sampling; quantitative data analysis; validation; and research products. The development of the hypotheses was based on the literature review and was subsequently used to build the prediction models. Samples were taken from the population of financial data from a five year research period (2008-2012). The study used stratified random sampling in three categories (year of establishment, market capitalisation and IDX industrial sector) as a sampling technique. Logistic and multiple regressions were applied to analyse the data. To achieve the most robust prediction model, the data were modified and hold-out samples were taken for validation.

CHAPTER 5

ANALYSIS and RESULTS

5.0 INTRODUCTION

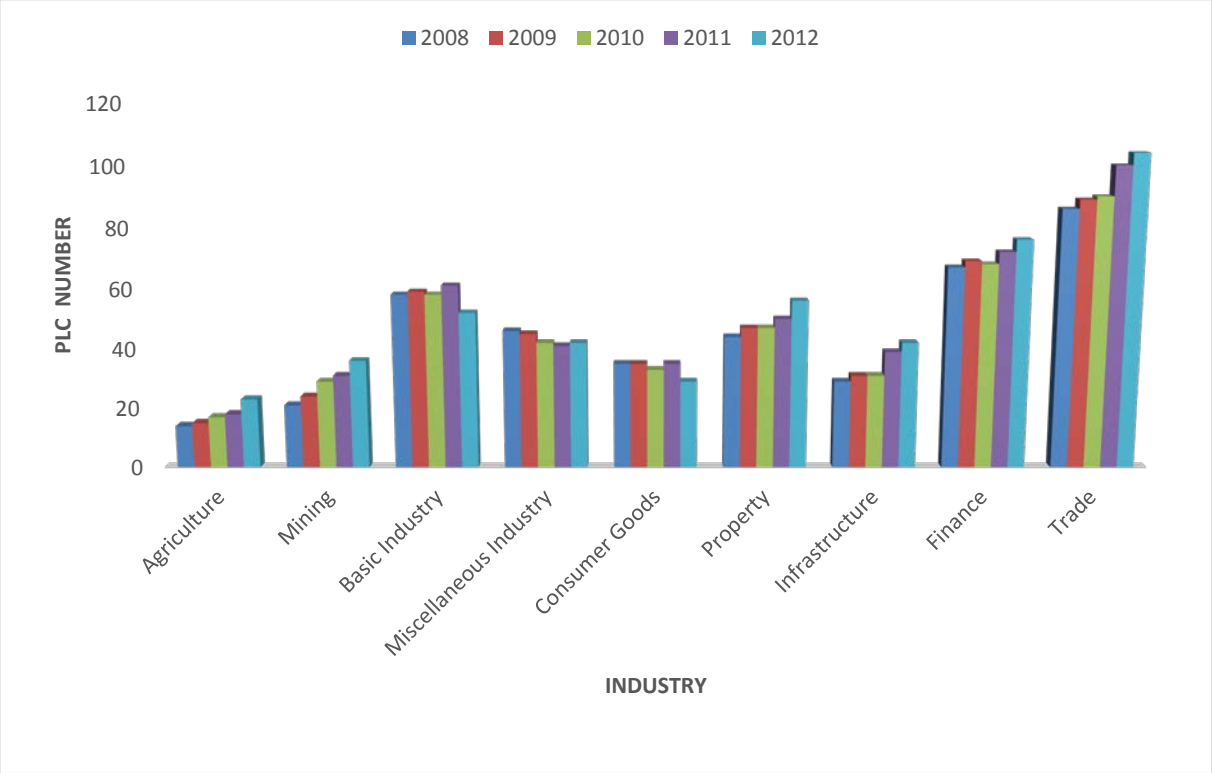
This chapter presents the findings arising from the data analysis, testing and validation. The analysis commences with descriptive statistics such as data characteristics, which are illustrated and explained via bar charts, scatter charts and summary tables. The descriptive statistics are presented in two forms, namely before and after the refined data. Second, the study tests the prediction models to assess companies' decisions to revalue their fixed assets or not. The analysed data are in the form of three scenarios, namely, a main sample of 325 cases (both for revaluers and non-revaluers); revaluers only; and changed cases due to outliers. Third, this chapter details the validation process used to confirm model robustness through a comparative analysis between the main samples and hold-out samples. This study also achieves its validation in several ways, such as the use of balanced cases between revaluers and non-revaluers, and natural logarithm on monetary proxies.

5.1 DESCRIPTIVE ANALYSIS

5.1.1 General Information

Figure 5.1 illustrates the trend for every IDX industry. The number of PLCs gradually increased from 400 in 2008 to 460 in 2012. The PLC names are listed in Appendix 6. Among all listed companies, the trade industry scored the highest frequency, with 104 PLCs, while agriculture ranked the lowest with only 23 PLCs in 2012. In total, 2,136 PLCs are included within the study population over the period from 2008 to 2012. From this population, the research collected main and validation samples using a stratified sampling technique.

Figure 5.1 - Number of PLCs per Industry



Sources: IDX Fact Book (2012).

The research collected 325 cases (refer to Appendix 3) over the first five years (2008-2012) that the cost or revaluation model for asset valuation was first offered. Among these cases, there was a slight yearly increase in the number of PLCs that applied the revaluation model. During the first year of introduction (2008), only 0.50 per cent of all companies applied this model (revaluers). This percentage doubled during the first three years but then rose only slowly until 2012, reaching 2.83 per cent. In this chapter, the study uses code to shorten the PLC names for brevity (full names are given in Appendices 3, 6, 7, and 10). Numerically, only two companies applied the revaluation model (namely TOWR and NIPS) in 2008, whilst in 2012, 13 PLCs had adopted it. Overall, most companies preferred to apply the cost model as illustrated in Table 5.1.

Table 5.1 – Models Applied by PLCs in IDX

Item	2008	2009	2010	2011	2012	Total
Revaluation Model	2	4	8	10	13	37
Cost Model	398	410	407	437	447	2,099
Total PLCs	400	414	415	447	460	2,136
Revaluation Percentage	0.50	0.97	1.93	2.24	2.83	1.73

Table 5.2 presents the number and percentage of revaluers (companies who applied the revaluation model) by industry type. Revaluers classified under infrastructure were the largest group, at 51.35 per cent, and this industry sector was followed by trade and service industries (27.03 per cent), and the basic and finance industries (8.11 per cent each). Four industries have not yet applied the revaluation model: mining, miscellaneous, consumer goods and property.

Table 5.2 – Revaluation Conducted by IDX Industries

No	Classification	2008	2009	2010	2011	2012	Total	%
1	Agriculture				1	1	2	5.40
2	Mining						0	0.00
3	Basic Industry			1	1	1	3	8.11
4	Miscellaneous						0	0.00
5	Consumer Goods						0	0.00
6	Property						0	0.00
7	Infrastructure	1	3	5	5	5	19	51.35
8	Finance				1	2	3	8.11
9	Trade and Service	1	1	2	2	4	10	27.03
10	Total	2	4	8	10	13	37	100

Among the 325 cases in the main sample, Table 5.3 illustrates PLC preference to apply the cost model to measure assets at 92.9 per cent; the frequency of companies who use the revaluation model is therefore only 7.1 per cent, representing 23 PLCs.

Table 5.3 – Revaluation Frequency for Main Samples in IDX

		Frequency	Percentage	Cumulative Percentage
Valid	0	302	92.9	92.9
	1	23	7.1	100.0
	Total	325	100.0	
Missing	System	0	0	
Total		325	100.0	

5.1.2 Detailed Revaluation's Descriptive Results

This section explains the data analysis related to revaluation conducted by Indonesian PLCs in the period 2008-2013. A summary of frequency is as follows: total PLCs 2,136 (no.); total revaluers 37 (no.); revaluation before PLC listing date 7 (no.); unavailable financial statements due to debt restructuring (until December 2013) 2 (no.); total financial statements for revaluers available (Appendix 10) 28 (no.); revaluers' financial statements used in the main samples 23 (no.); and revaluers' financial statements used in the validation samples 5 (no.). The characteristics of the data analysed are elucidated upon in Appendix 4, using descriptive statistics. Both the minimum (coded 0) and maximum (coded 1) values were utilised for the five 'categorical' proxies; namely, acquisition, debt restructuring, DER level, foreign branch (operation) and export sales. Other proxies that have high data variability are summarised using standard deviation, and minimum and maximum values. These are CMS, CFFO, DER, DTA, sales, operating income, FCF, MBR, and PER.

Having observed the PLCs' fixed asset measurement and whether they applied the cost or revaluation model, the research found 28 financial statements over a five year research period (Appendix 10). Because of their strong financial condition, none of the revaluers restructured their debts and only two PLCs (7.1 per cent) conducted acquisitions, namely BLTA 2009 and SDMU 2012.

In the relation to the DER level, 67.9 per cent of revaluers had a low level; a company that had a DER score that was lower than the industry average DER score was coded by 1. 19 PLCs were categorised in the low level group, which meant that most companies relied on debt for financing. Only two PLCs had both foreign and domestic branches. Almost all of them (92.9 per cent) operated domestically. However, 71.4 per cent of the total 28 revaluers exported their goods or services; their export sales were mostly generated by domestic offices. Operating a foreign branch may be considered costly by most Indonesian PLCs and this may explain why most of the sample surveyed operated domestically only.

Figure 5.2 illustrates the data points representing CMS owned by the 28 revaluers. More than fifty per cent of them had CMS below 100 billion rupiahs. Other companies were spread between 100 billion rupiahs to 1.7 trillion rupiahs and among these, five PLCs owned over 1 trillion rupiahs in terms of CMS, namely BACA 2011, BACA 2012, BLTA 2009, BLTA 2010 and TOWR 2012. Appendix 11 gives a summary of the descriptive statistics, including measures of central tendency and standard deviation. The statistical mean of the CMS value was 358,185 million rupiahs and over half of the revaluers' values were below 100 billion rupiahs. It can therefore be interpreted that around half of the PLCs were financially healthy because they had a CMS value of between 100,000 and 200,000 million Rupiahs; the mean of CMS was higher because of data skewness.

Figure 5.2 – CMS in IDX (in Million Rupiahs)

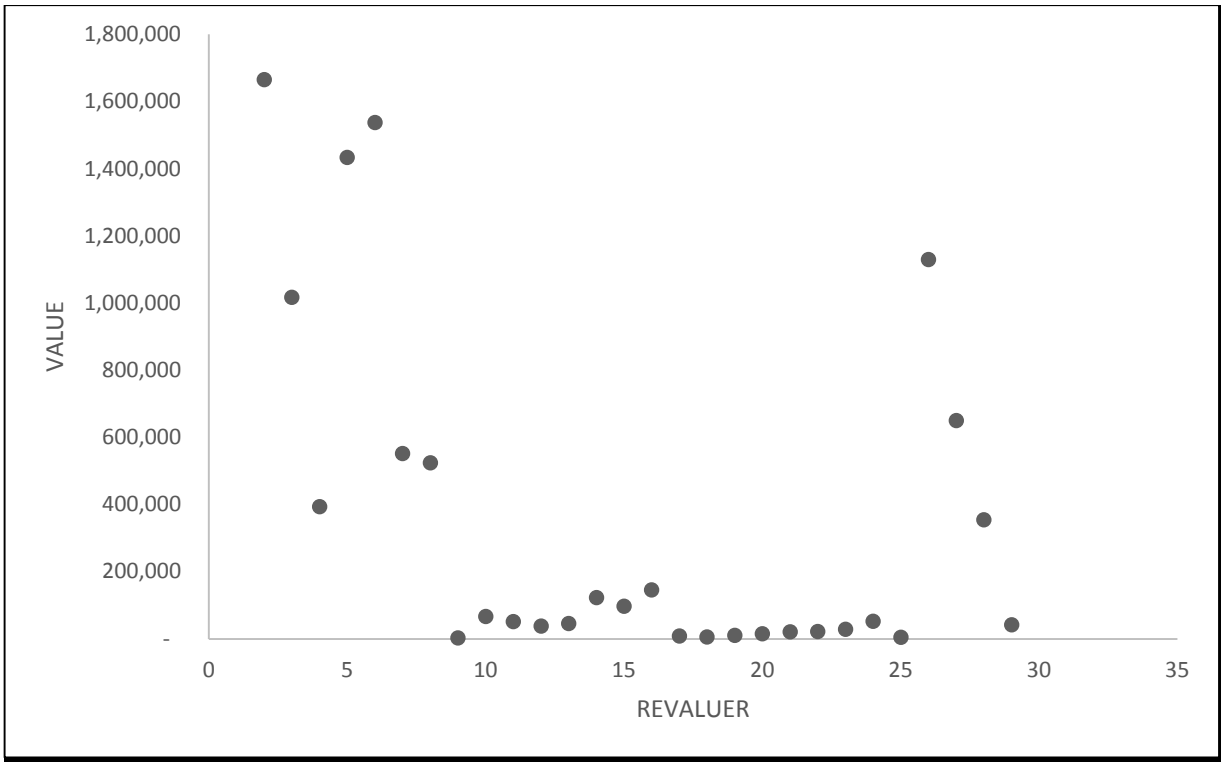
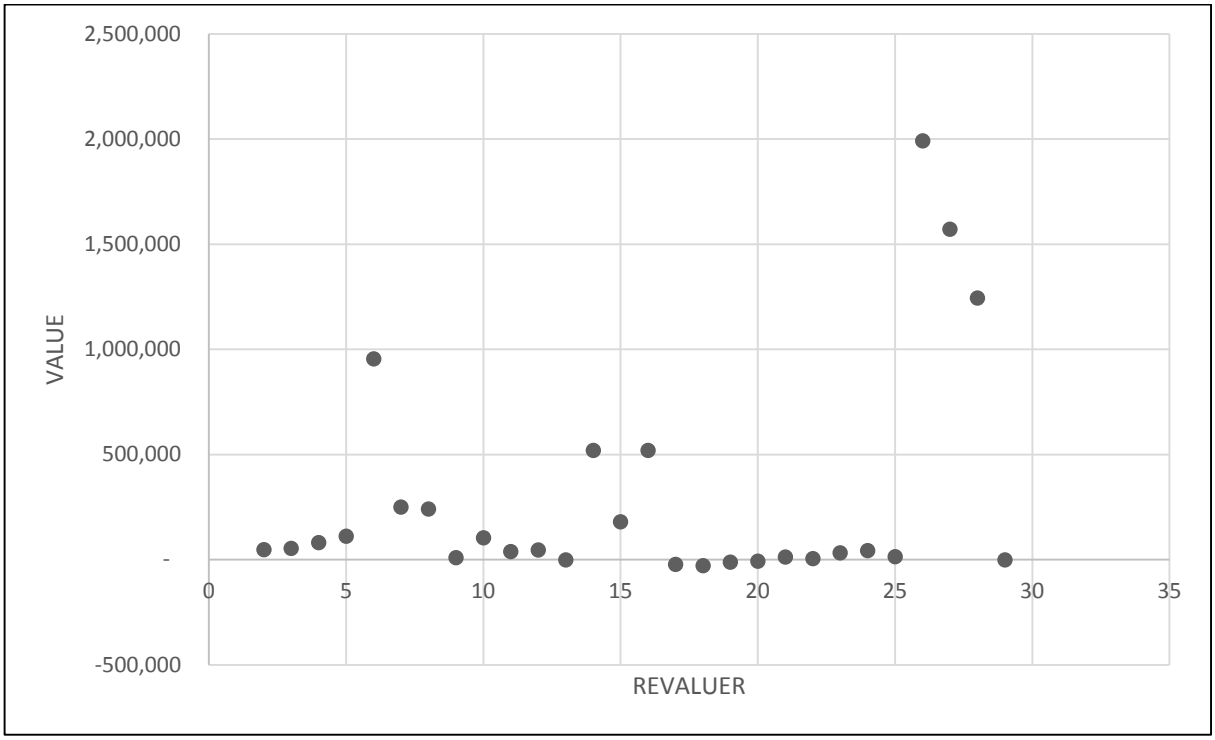


Figure 5.3 shows that the majority of PLCs had a CFFO below 300 million rupiahs. TOWR 2010, 2011 and 2012 had over 1 trillion rupiahs, and their overall mean upward to 285,792. The 23 revaluers (PLCs who adopted the revaluation model in the main sample) maintained positive cash flows for operating activities, showing them to be financially liquid, performing strongly and healthy. Unfortunately, six PLCs suffered a negative CFFO: MICE 2010, NIPS 2009, 2010, 2011, 2012 and SDMU 2011 (Appendix 11).

Figure 5.3 – Revaluers' CFFO in IDX (in Million Rupiahs)



The ownership proxy illustrates that the majority of PLCs were owned by more than one party (refer to Figure 5.4). Approximately half of the PLCs had shared ownership, in the region of 40 per cent; one company was wholly owned by one institution; and the majority lay within the region of 20–80 per cent. The average (mean) ownership share was 46 per cent (refer to Appendix 11). Two revaluers below 20 per cent ownership were BACA 2011 and TOWR 2012, and BCIC 2012 had 99.99 per cent ownership.

FAI is shown in Figure 5.5. It ranges from small (defined as less than 10 per cent), medium (30-60 per cent) and large (above 60 per cent) ratios. Figure 5.5 also illustrates that around half of the PLCs had an FAI below 50 per cent and that half were above it. This means that a high proportion of the sample PLCs relied upon fixed assets as a contribution to company operations. The PLCs which had a ratio of more than 80 per cent include BLTA 2010, TOWR 2010 and TOWR 2011. Conversely, three revaluers recorded lowest ratios: BACA 2011, 2012 and BCIC

2012. The FAI statistical mean is 53 per cent (Appendix 11), and it can be interpreted that the composition of fixed assets and other types of assets within the total assets is fifty-fifty. For certain industries assets were not mainly allocated as fixed assets (such as finance, trade and infrastructure – refer to Appendix 10).

Figure 5.4 – Revaluers' Ownership Percentage in IDX

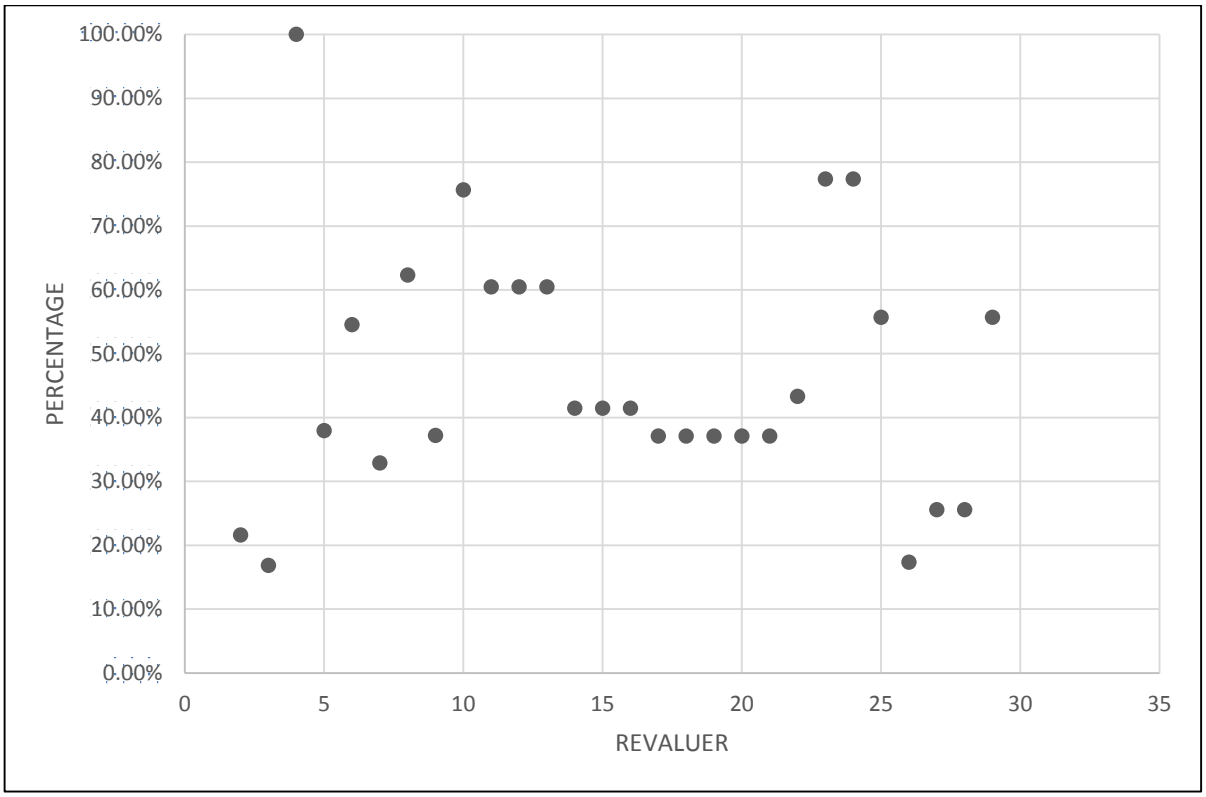
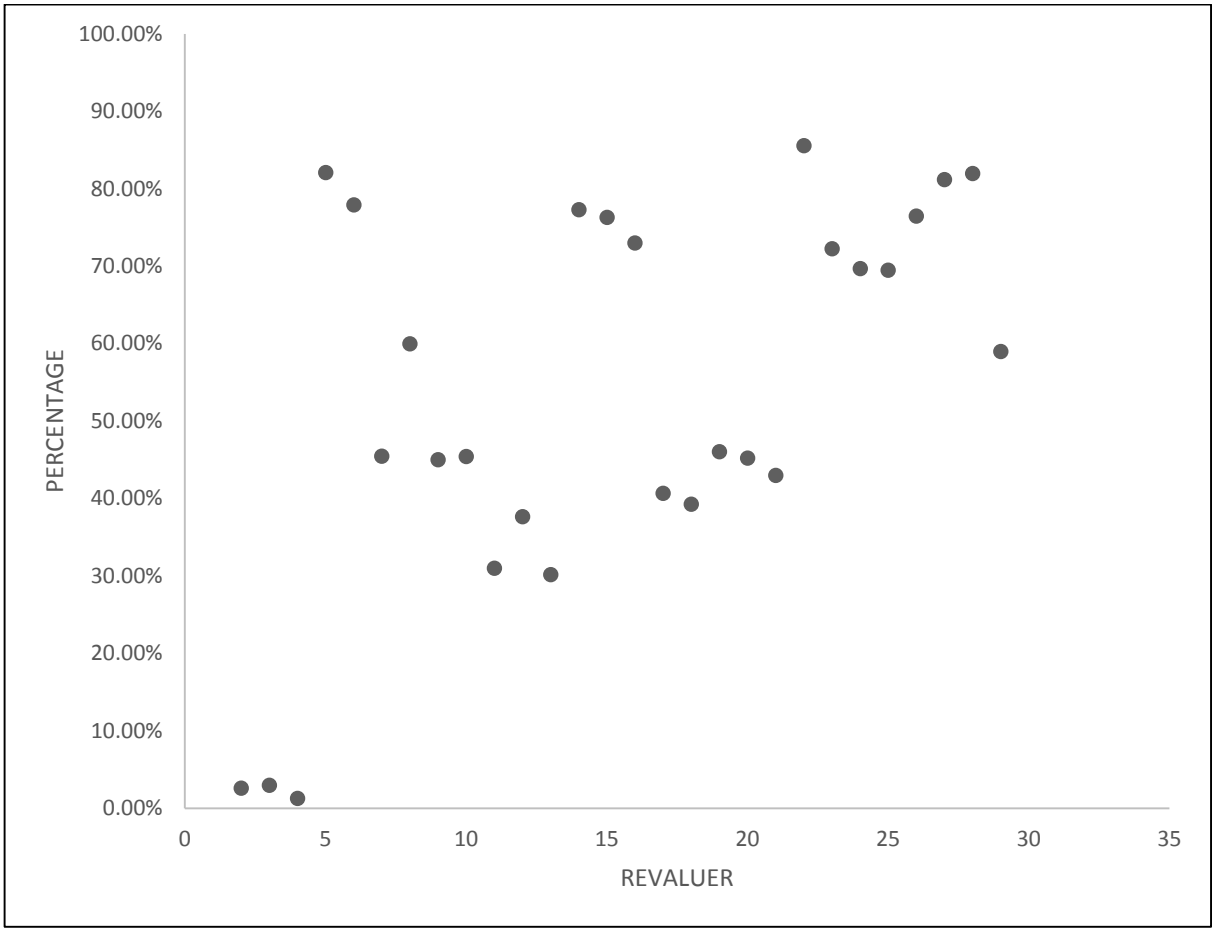
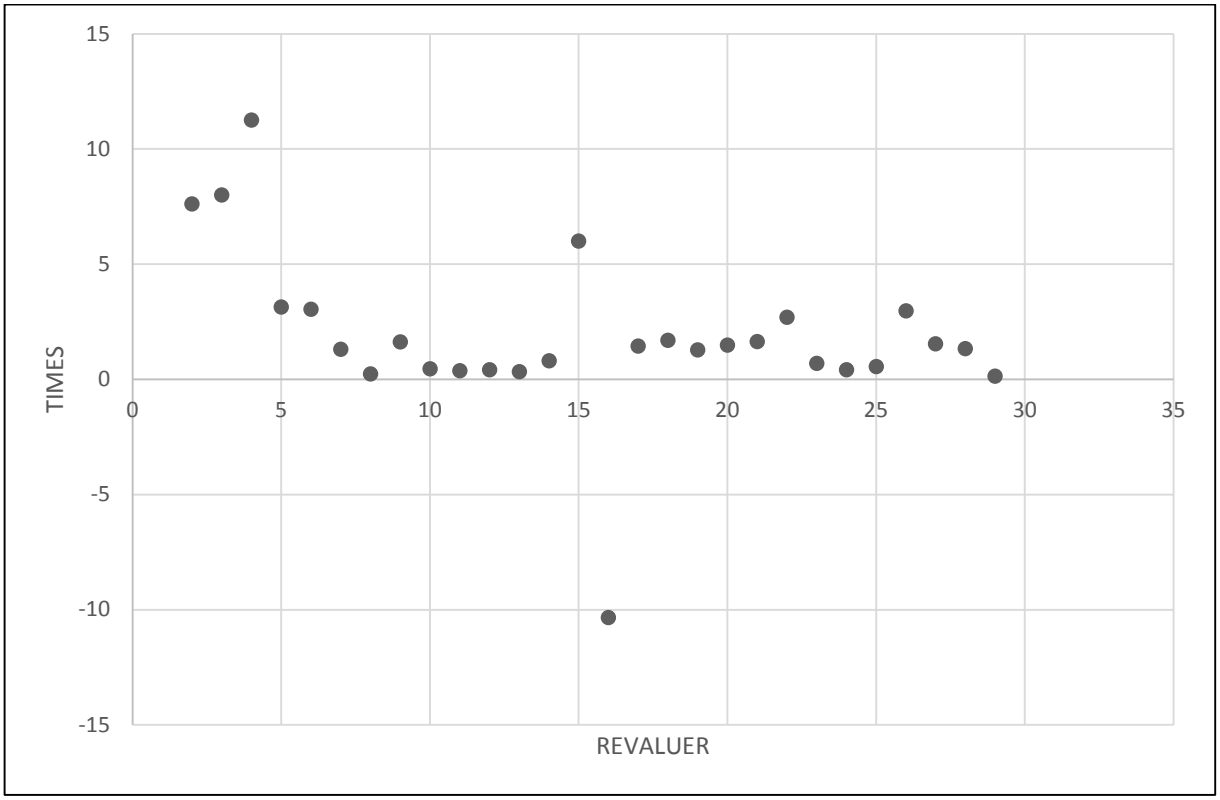


Figure 5.5 – Revaluers' FAI in IDX



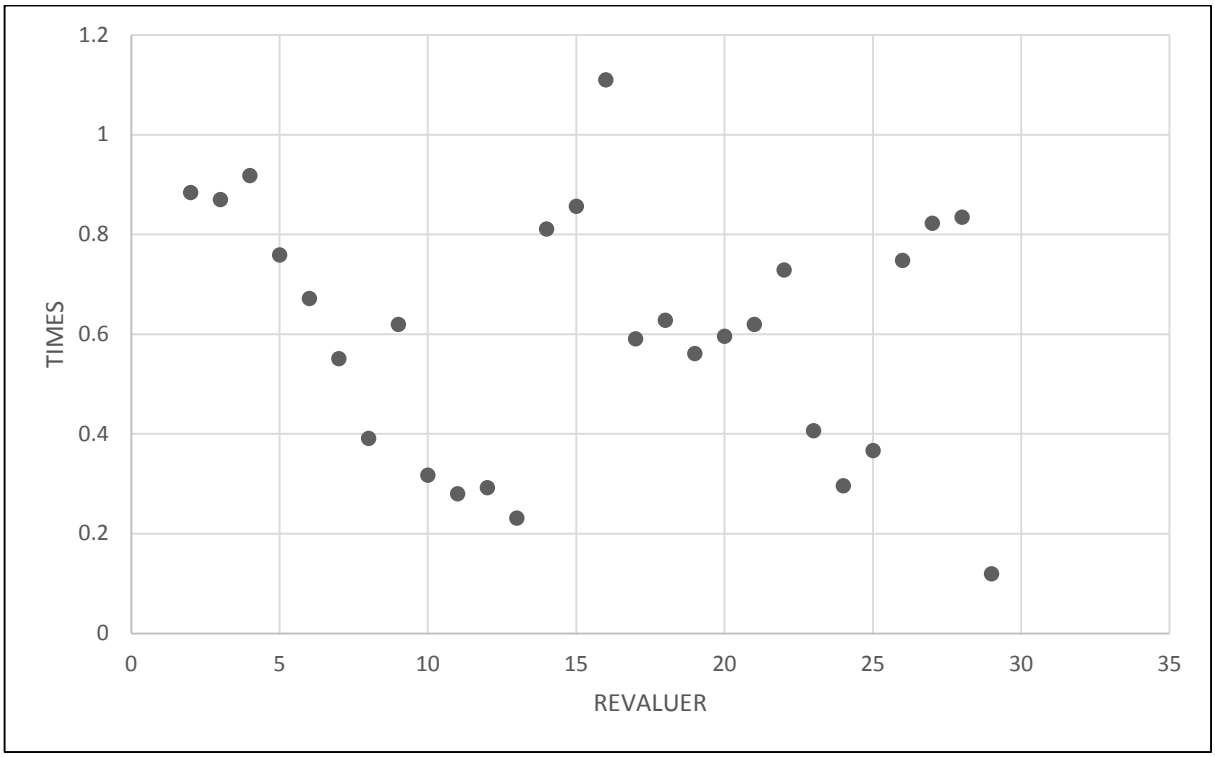
DER represents the PLCs' reliance on debt as compared to equity, where a positive value illustrates that the proportion of debt to equity has increased. The variability of DER is shown in Figure 5.6. Even though most of the revaluers range from 0 to 3.14 (see Appendix 11), some PLCs had very extreme scores, namely BCIC 2012 with 11.25 and MLIA 2010, with -10.34. The DER statistical mean score was 1.86, which means that on average revaluers had nearly doubled their debts values compared to equity.

Figure 5.6 – Revaluers' DER in IDX



Using a DTA formula, the research analysed PLC debts as financial sources to invest in assets. With a statistical mean of 0.60 (see Appendix 11), revaluers relied on debts rather than equities. This result was also relevant to the DER conclusion (1.8) as above. Figure 5.7 shows the ratios spreading from a minimum of 0.12 (SDMU 2011) to maximum of 1.11 (MLIA 2010).

Figure 5.7 – Revaluers' DTA Ratio in IDX



Total fixed assets owned by revaluers varied significantly but most were below 5 trillion rupiahs (Figure 5.8). Although most of the revaluers were far below that value, the statistical mean averaged 5,035,564 million rupiahs. Two revaluers had exceptional assets; namely, BLTA 2009 and 2010 with over 25 trillion rupiahs (Appendix 11). The lowest value observed was SDMU 2011 with 197,859 million rupiahs.

Sales values varied between three bands (Figure 5.9); namely: i) below 1 trillion rupiahs, which represents the majority of revaluers; ii) between 1 to 5 trillion rupiahs; and iii) over 5 trillion rupiahs. The statistical mean was 1,391,235 (Appendix 11). Although the number of revaluers with sales values of over 1 trillion rupiahs was less than those with values below 1 trillion rupiahs, the mean value was increased by data skewnessa. BLTA 2009 and 2010 had sales

values of over 5 trillion rupiahs, while SDMU 2011 and 2012 ranked in the last position, with only 100,310 million rupiahs and 128,068 million rupiahs respectively.

Figure 5.8 – Revaluers' Total Assets in IDX (in Million Rupiahs)

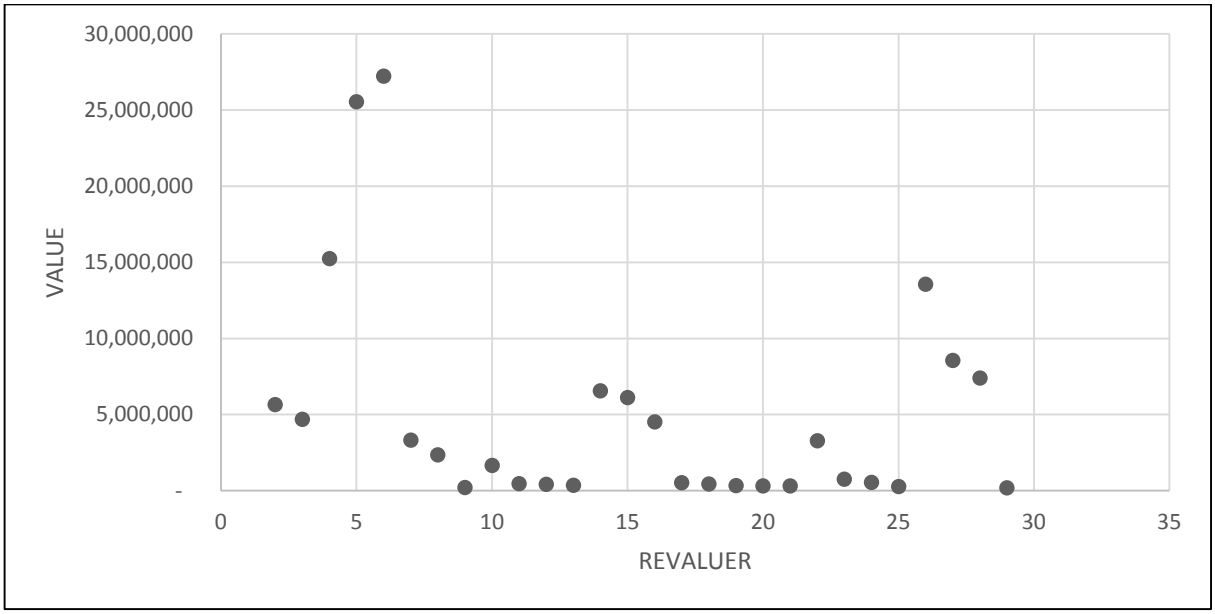
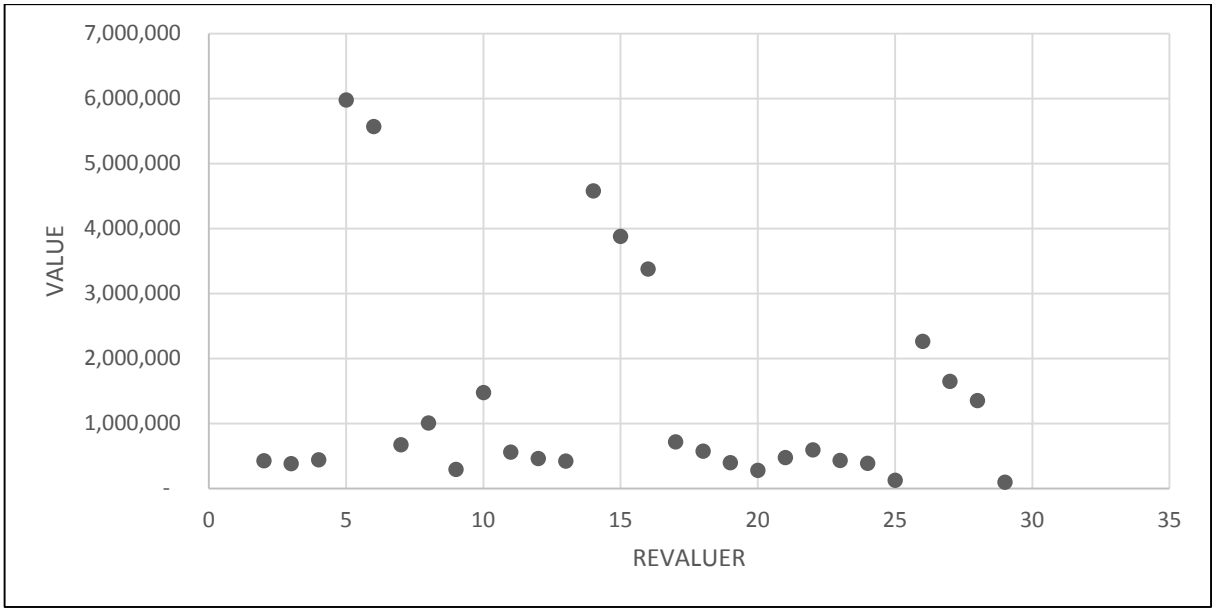


Figure 5.9 – Revaluers' Sales in IDX (in Million Rupiahs)



The majority of revaluers had an operating income of under 100 billion rupiahs (Figure 5.10) but the statistical mean was 117,173 million rupiahs (Appendix 11). All revaluers recorded positive income except BULL 2011, which had an operating loss. This was due to the extreme figure of the highest operating income with 900,162 trillion rupiahs (BLTA 2009) and the lowest operating loss with -936,434 trillion rupiahs (BULL 2011).

Figure 5.10 – Revaluers' Operating Income in IDX (in Million Rupiahs)

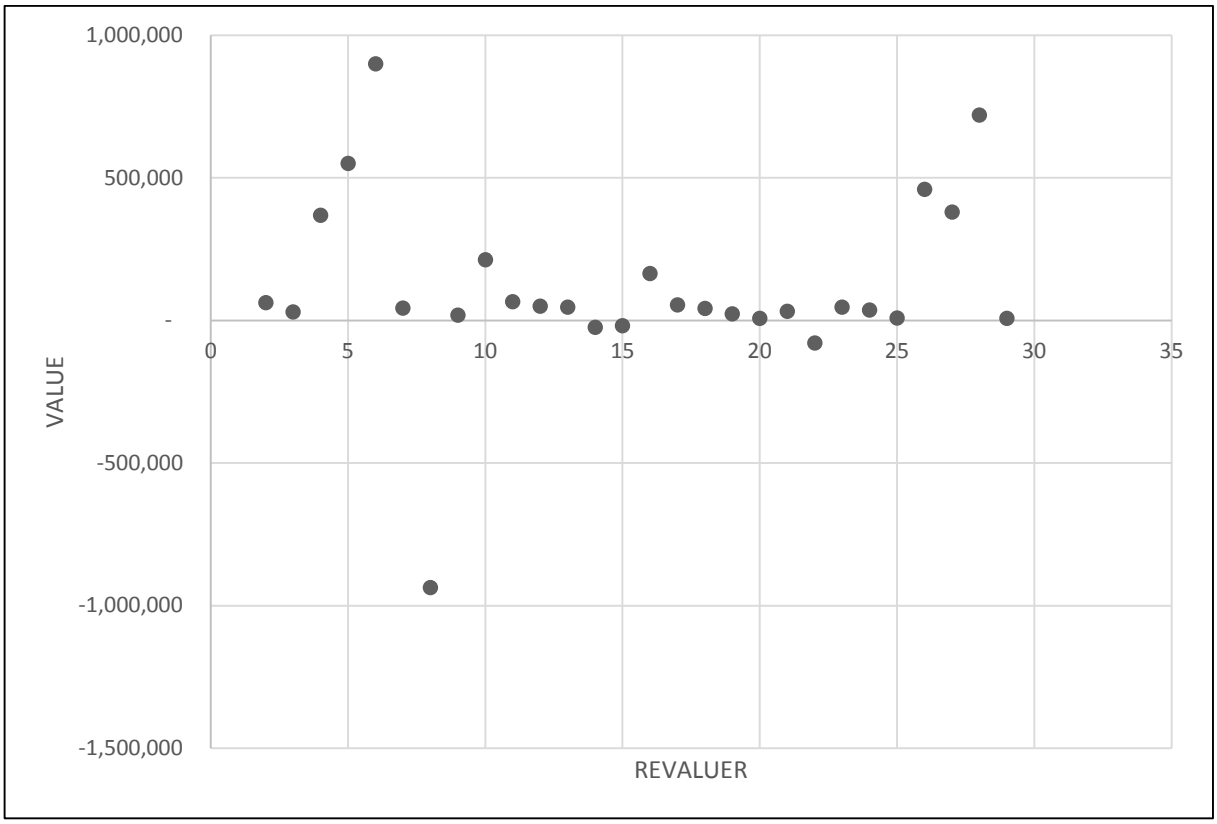
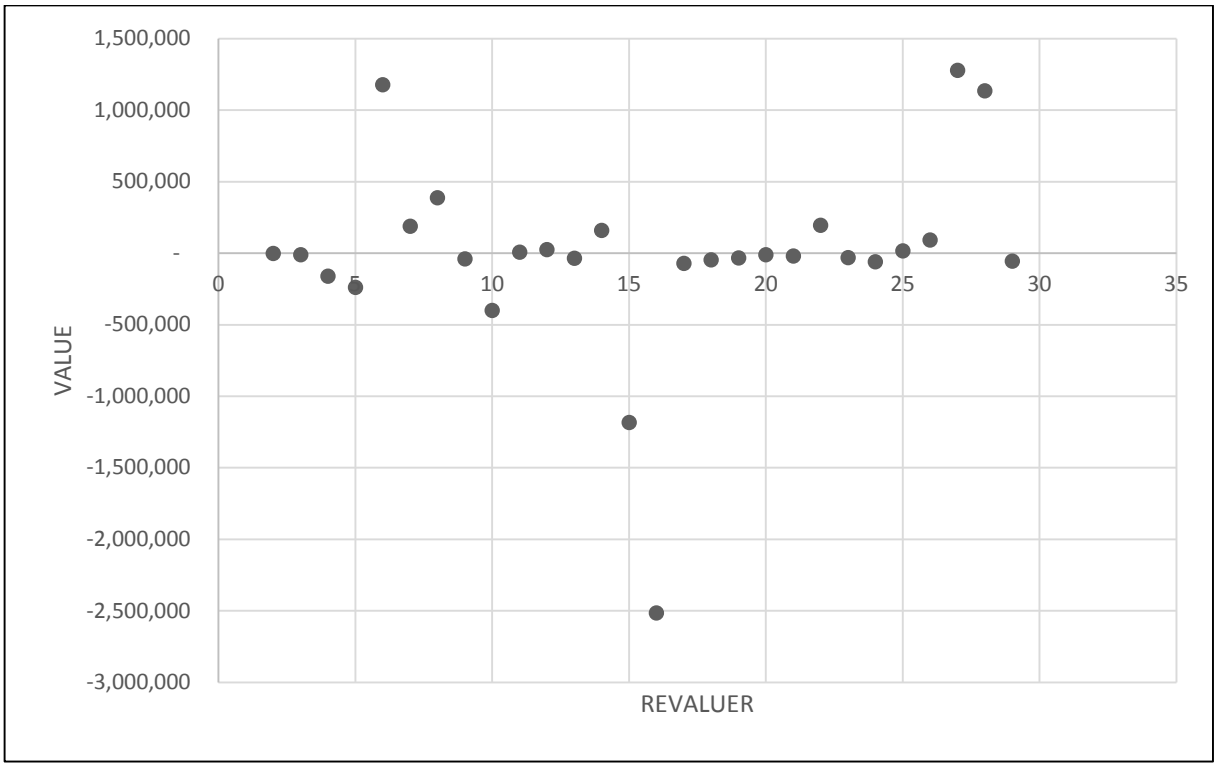


Figure 5.11 shows the uniqueness of the data spread within FCF, illustrating that revaluers were approximately equally distributed between positive and negative values for FCF. Two revaluers, MLIA 2010 and 2011, had negative outliers with -1,183,732 million rupiahs and -2,515,017 million rupiahs (Appendix 11). Three revaluers also scored positive outliers such as BLTA 2009 (1,178,343 million rupiahs), TOWR 2010 (1,134,062 million rupiahs) and TOWR

2011 (1,277,974 million rupiahs). Thus the mean became negative (i.e. -8,978 million rupiahs) and revaluers did not have funds available for further investment using FCF.

Figure 5.11 – Revaluers' FCF in IDX (in Million Rupiahs)



The scores of MBR were spread around 1 (refer to Figure 5.12) and had a statistical mean of 1.26 (Appendix 11). From this, it can be interpreted that the market value of the stock is relatively similar to its book value. Revaluers provided enough disclosure of information to the public to enable investors to make informed investment decisions. One revaluer, MLIA 2010, scored negatively with -1.15, whilst two other revaluers (TOWR 2011 and 2012) had positive MBR at 6.44 and 6.72.

Figure 5.12 – Revaluers' MBR in IDX

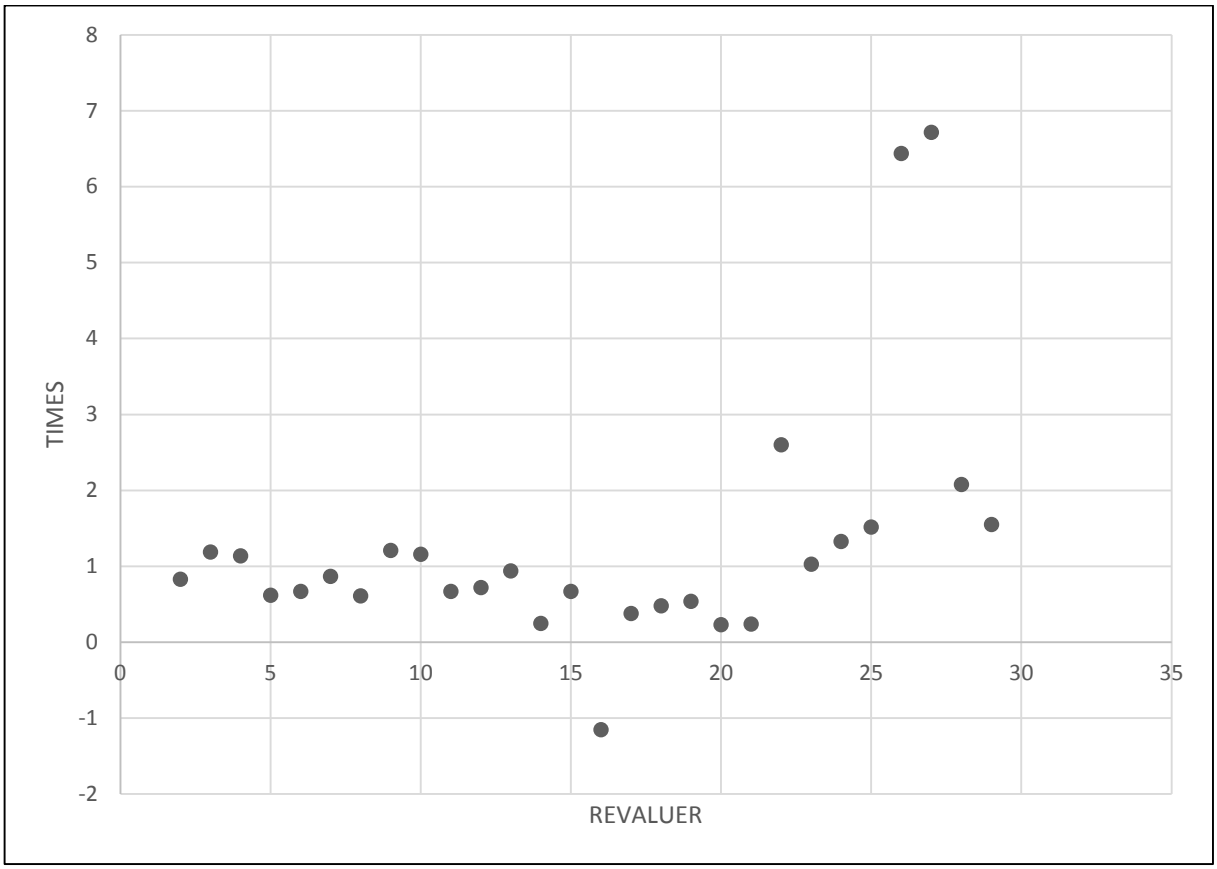
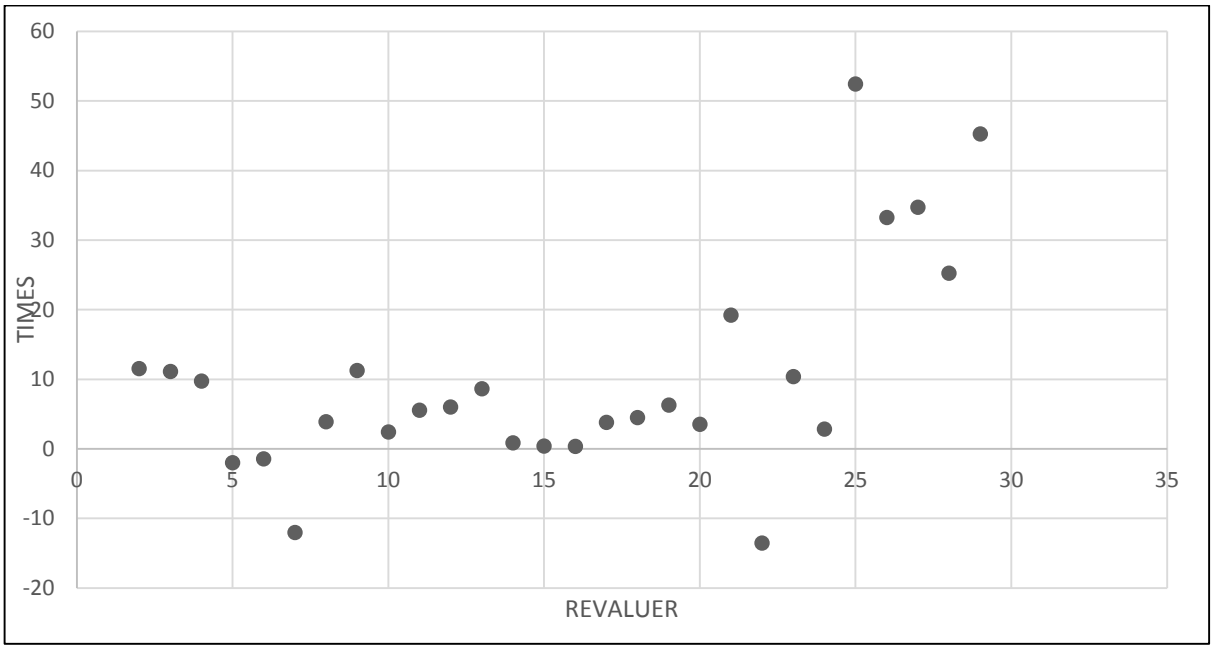


Figure 5.13 shows the PER for the 28 revaluers and illustrates that most of them were spread between 0-10, although only a few outliers were present. They ranged between the highest, SDMU 2012 with 52.45, and the lowest, PALM 2012 with -13.55 (Appendix 11). The mean was 10.16, from which it can be interpreted that the market price of stock that investors should pay is 10 times its stock earnings. The higher the PER, the more expensive and less profitable it is for investors to buy one stock. A negative PER is caused by the negative equity value of stock and this circumstance revealed poor financial performance.

Figure 5.13 – Revaluers' PER in IDX



5.1.3 Detailed Statistical Results for 325 Cases of Main Samples

The analysis presented in this section is supported by scatter charts to illustrate the data spread of the 17 proxies. These independent proxies were free from multicollinearity, as illustrated in the correlation matrix (Appendix 20). None of the applied proxies in this study had a high correlation score among the independent variables of more than 0.90 or -0.90 (Hair, *et al*., 2006). High variability in the descriptive statistics (Appendix 4) occurred because the research collected samples using PLC size as a measurement category.

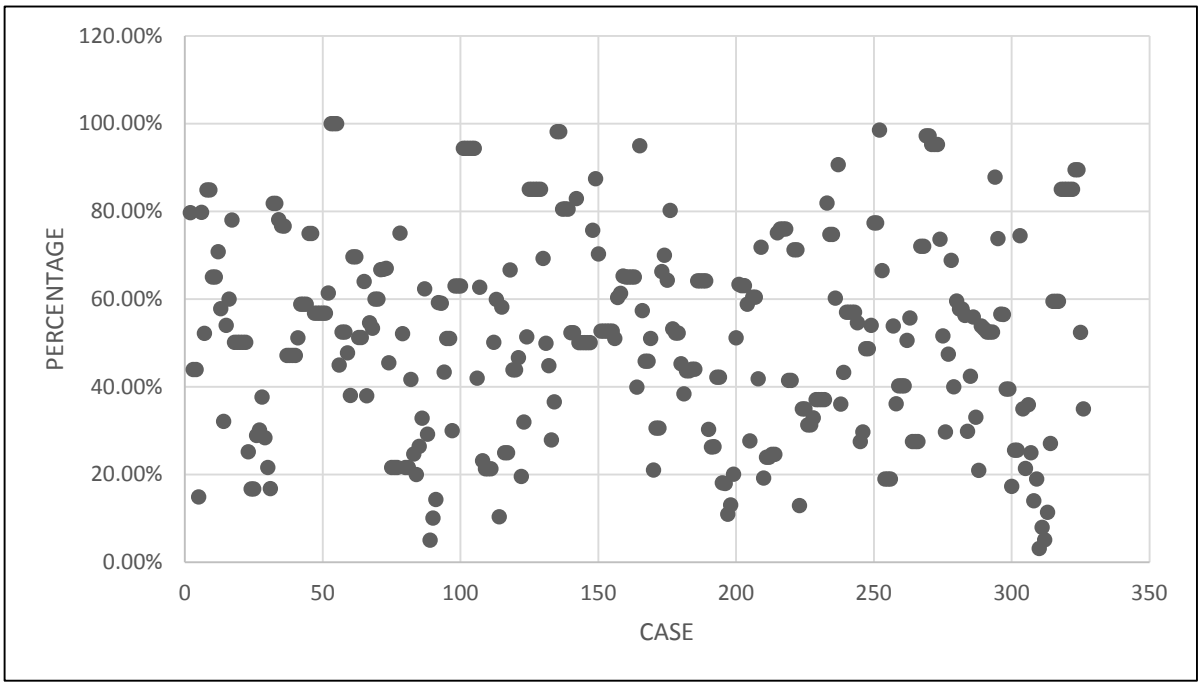
As market capitalisation was a proxy for size, three classes of PLC were used: small, medium and large. The industrial category also affected the variability due to its different financial performances. PLCs in the finance industrial classification (especially the banking sector) were observed to own a higher proportion of asset and sales values when compared to other sectors such as agriculture and trading. Other categories, for example PLC age, did not significantly

affect the variability of the value because both old and young PLCs may have relatively similar financial conditions.

The data is spread perfectly for the ownership percentage and FAI, while other data tended to concentrate around the same area or had a similar pattern. Consequently, the research deleted 23 outlier samples, which were subsequently replaced with 23 new PLCs based upon the stratified classifications of size, age and sub industry (as previously explained in chapter 3). Therefore, the original descriptive statistics changed and were consequently replaced in Appendix 5. The list of PLC cases is provided in Appendix 6. As a result of removing these outliers, data variability in terms of standard deviation, and minimum and maximum value, was reduced.

For ownership percentage data, no apparent pattern was detected – refer to Figure 5.14, which has a mean (average) value of 51.90 per cent. This data varies greatly in representing the class (category) of PLC, such as small to big companies, and young to old ones. The ownership percentage variable shows the proportion of majority shares owned by one institution.

Figure 5.14 - Ownership Percentage in IDX



Figures 5.15 and 5.16 compare the data variability of CMS before and after the 23 samples are changed. It is apparent that outliers occurred in Figure 5.16 before the data was changed. In comparison to other sectors, the banking sub-sector possesses higher values of CMS. This is because of its operating characteristics in financial transactions; namely, cash withdrawal and fund transfer, which means that CMS has to be maintained at a liquid level to avoid cash shortages during operations. Few banks have significant CMS values and almost all are state-owned banks, such as BBCA, BMRI and BBNI, with CMS values of more than 30 to nearly 80 trillion rupiahs.

However, a wide range of CMS values occurred among the cases and most of the PLCs maintain CMS values of around 1 trillion rupiahs. Several PLCs with CMS values of more than 40 trillion rupiahs were removed to smooth the data fluctuation. Figure 5.16 represents the data after the change. Outliers were found in Figures 5.15 and 5.17. This study used researcher judgements

to determine outliers and non-outliers. Because in the logistic regression errors of the regression model spread abnormally, no test is required to meet the normality of the error term distribution assumption (one of four classic assumptions), as in multiple regression (Kurtner *et al.*, 2004; Kleinbaum *et al.*, 2008). Pallant (2010) suggests that it is not necessary to inspect the residuals of outlying cases if there is no problem with the goodness of fit of the models.

Figure 5.15 - CMS in IDX (Before Change in Million Rupiahs)

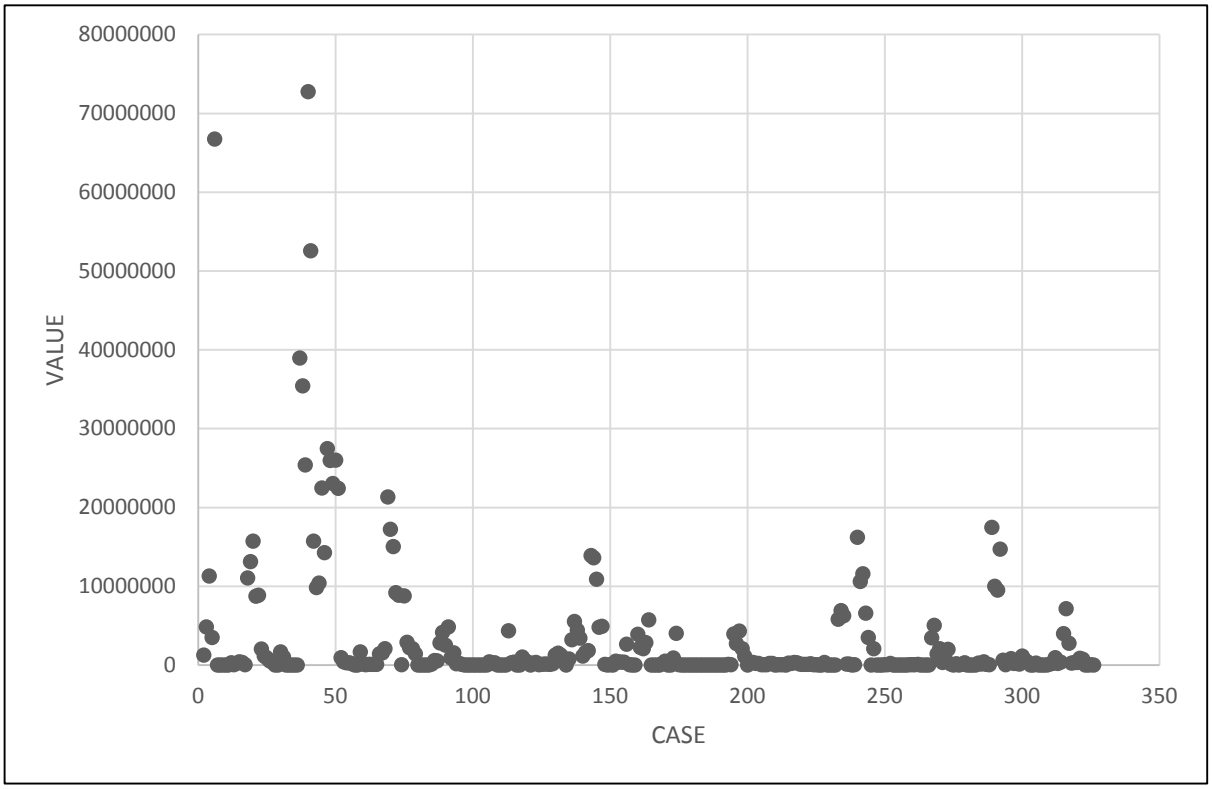
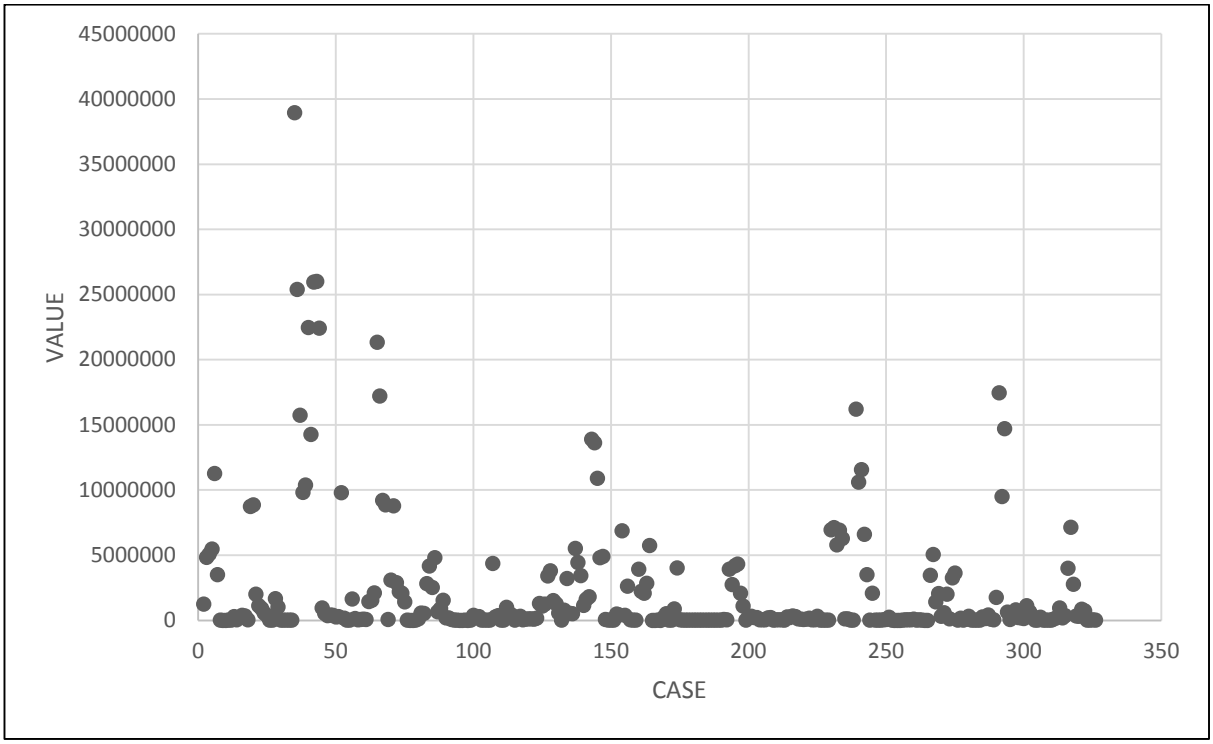


Figure 5.16 - CMS in IDX (After Change in Million Rupiahs)



A slight change in the mean and data spread occurred within the CFFO data once all outliers were removed. Figures 5.17 and 5.18 illustrate this difference and reveal a smoother data spread, whilst the mean decreases from 1,814 to 1,590 trillion rupiahs (Appendices 4 and 5). Most PLCs had a CFFO ranging from 0 to 5 trillion rupiahs and an average of 1 trillion rupiahs. Due to the high scale of operation, companies listed in the banking sector (namely BBRI, BMRI and BBCA) ranked as the highest and the lowest cash providers for the operating activities. Examples of CFFO are cash received from sales, bank interest, cash paid for staff salaries and purchase of inventory. The net CFFO provided by BBRI and BMRI were 54 and 42 trillion rupiahs, both in 2010, whereas conversely, BBCA suffered from a negative CFFO in 2011 of 38 trillion rupiahs.

Figure 5.17 – CFFO in IDX (Before Change in Million Rupiahs)

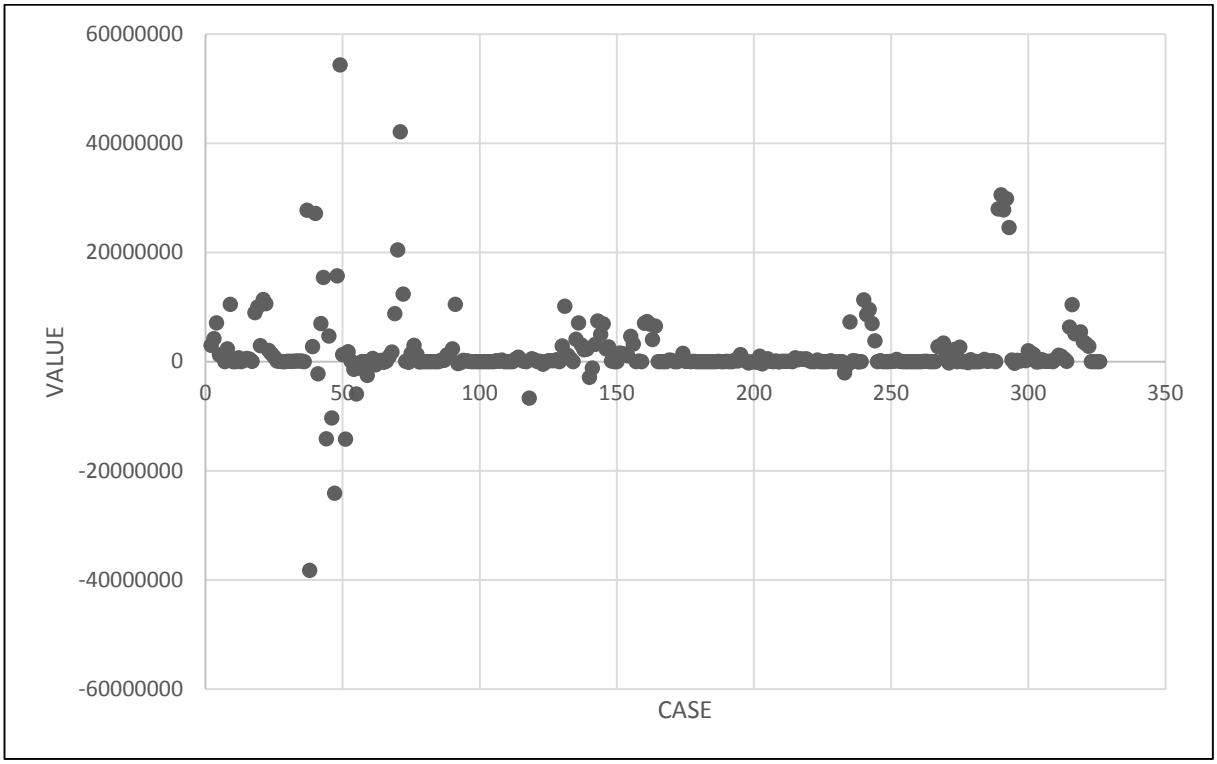


Figure 5.18 - CFFO in IDX (After Change in Million Rupiahs)

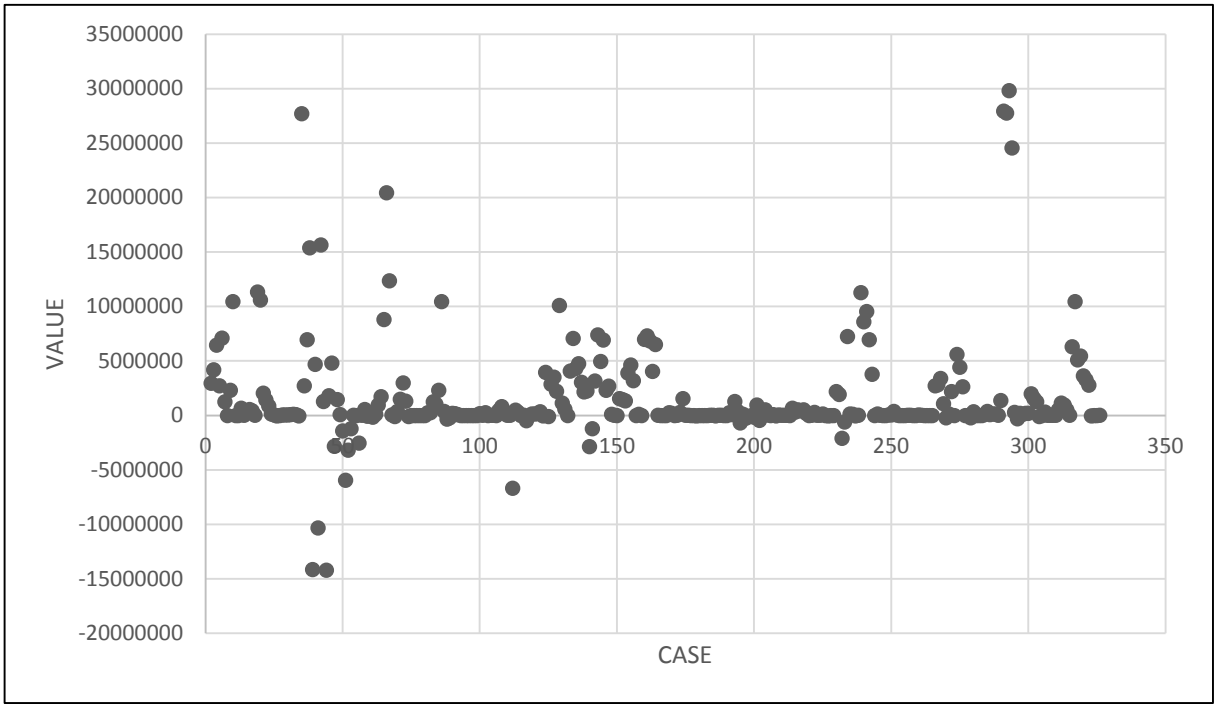


Table 5.4 shows five categorical proxies that were applied to measure companies' revaluation decisions, namely: acquisition, debt restructuring, DER level, foreign branches (operation) and export sales. Acquisition was undertaken by only 32 PLCs (or 9.8 per cent of the total of 325) between 2008 and 2012 (Table 5.4). Acquisitions gave the opportunity for companies to measure their assets using market value in the form of business combination and to expand their size by acquiring other companies during the period (for example ADRO, ASII, BUMI and UNSP). Only three PLCs (i.e. BNBR, FREN, and INKP) were in the process of restructuring their debts, as shown in Table 5.4. These PLCs had liquidity and solvency problems, which were shown by their current position in debt restructuring.

PLCs with a low or high DER level were almost equally distributed (Table 5.4). This shows that the majority of PLCs relied upon debt or equity, or both, as a means of finance. A company's DER level is compared to the industrial average DER before being classified as a low or high DER level status. A score of 1 means that a company has a lower DER level, which means that their debt is lower than the industrial average; conversely, a score of 0 indicates that the debt is higher than the industrial average. Clearly, a higher DER indicates that the PLC is similarly a high risk for investors.

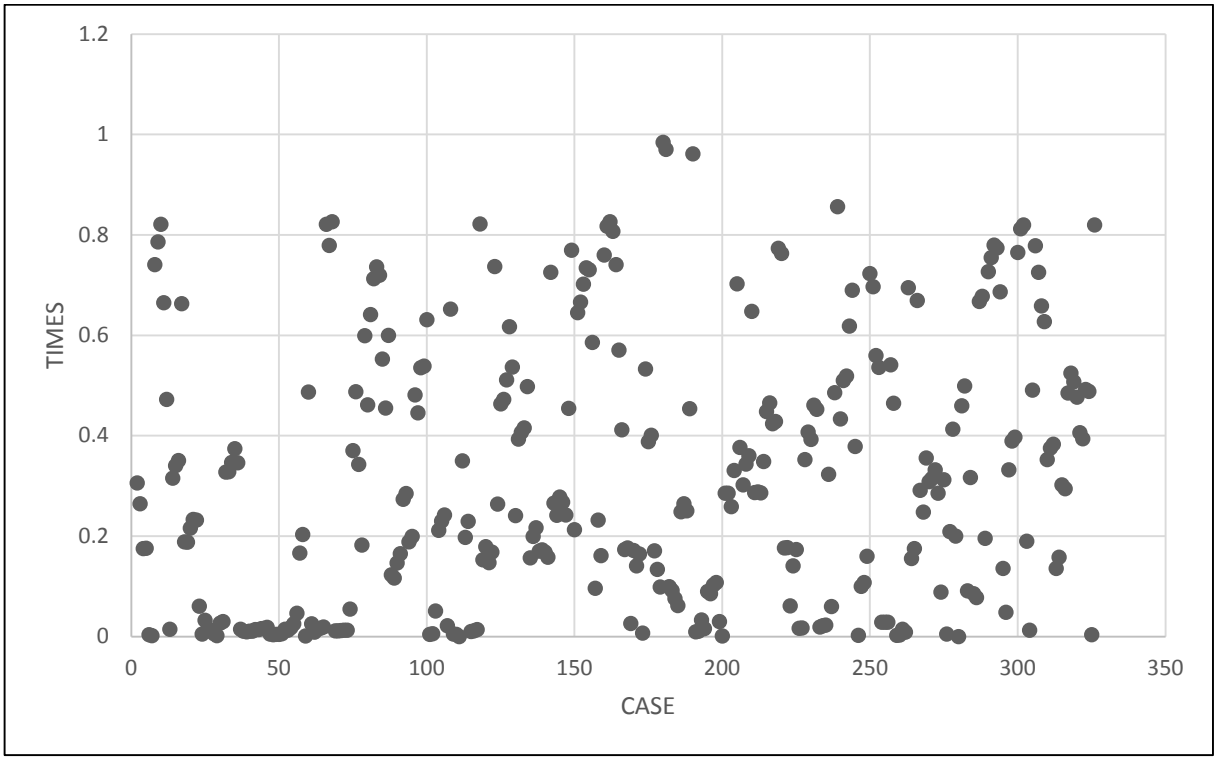
Furthermore, 284, or 87.1 per cent, PLCs operate domestically, while others incorporate foreign branch operations (refer to Table 5.4). Most of these are located in the zero score line. However, Table 5.4 shows that exports and domestic sales were nearly equal. It can be interpreted therefore that although the majority of PLCs (284 or 87.1 per cent) were located domestically, their sales were also generated from export activity.

Table 5.4 - Categorical Proxies Coding in IDX

Proxy	Frequency	Parameter Coding
Acquisition	293	0
	32	1
Debt Restructure	322	0
	3	1
DER Level	164	0
	161	1
Foreign	284	0
	41	1
Export	172	0
	153	1

Figure 5.19 illustrates the data spread of fixed asset intensity, with the majority of data points within this ratio being between 0.2 and 0.8 per cent. Companies with a portion of fixed assets over 80 per cent are non-financial companies from various sub-sectors. They hold a fixed asset portion that is higher than financial companies and include ZBRA and BLTA (Transportation sub-sector), TOWR (Non-building Construction sub-sector), KARW (Textile sub-sector), KBRI (Pulp and Paper sub-sector), ISAT (Telecommunication sub-sector) and AKKU (Plastics and Packaging sub-sector).

Figure 5.19 – FAI in IDX



One company (KARW PLC – a textile company) from Figure 5.20 was removed and changed because it had a negative equity DER (-44.71) in the financial statements. A negative net worth means that the asset value owned by the companies cannot cover the outstanding balance of debts. This removal of KARW slightly affected the sample mean, from 1.96 to 2.06 (Figure 5.21). Figure 5.21 reveals that most PLCs had a positive DER of 1 to 5 and it can therefore be concluded that those PLCs were reliant upon debt to accelerate business growth. Other companies with a high reliance on debt were BKSW, CPDW and TKGA, with ratios of 12 to 15. However, both negative DER due to negative equity, and a high ratio of DER, reflected poorly upon the financial performances of these companies in the eyes of investors.

Figure 5.20 – DER in IDX (Before Change)

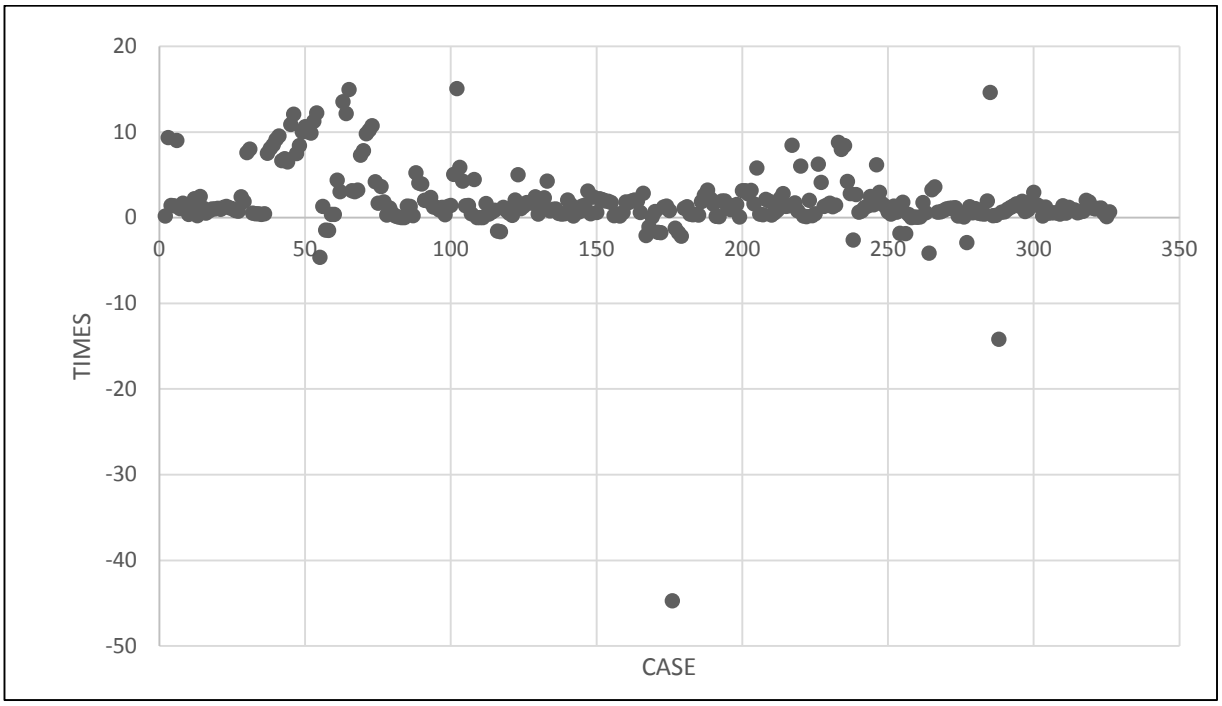
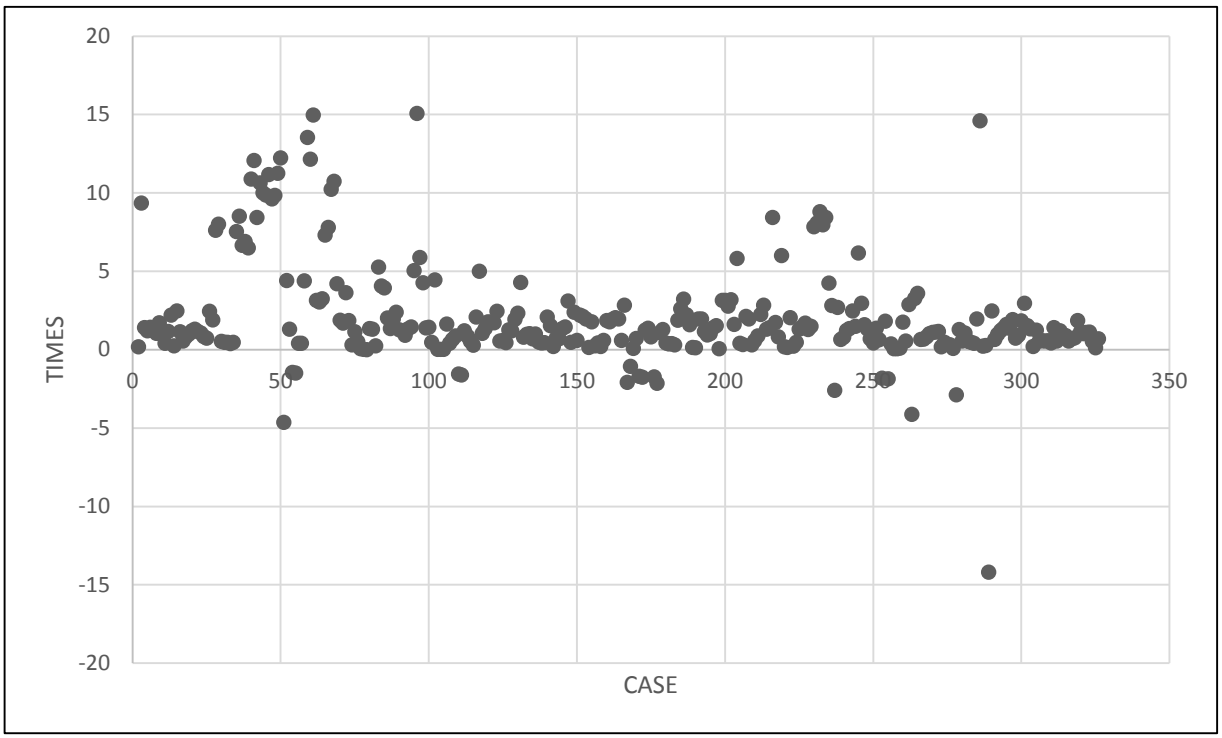


Figure 5.21 – DER in IDX (After Change)



Outlier removal also created a small change in the debt to asset ratio, as illustrated in Figure 5.23, with the mean ratio falling from 0.64 to 0.62 (refer to Figure 5.22). Companies with a higher debt to asset ratio (that is, 200 per cent or more - such as BIMA, CPDW, ERTX, INDS, JKSW, KARW and PWSI) increased their liquidity and solvency risks. The acquisition of company assets through debt (as in the above examples) burdened companies' ability to repay their debts. This debt structure created a short-term problem; cash outflows which used current liability resources (liquidity) and longer-term problems such as default could lead to the seizure of company assets by creditors.

Figure 5.22 – DTA Ratio in IDX (Before Change)

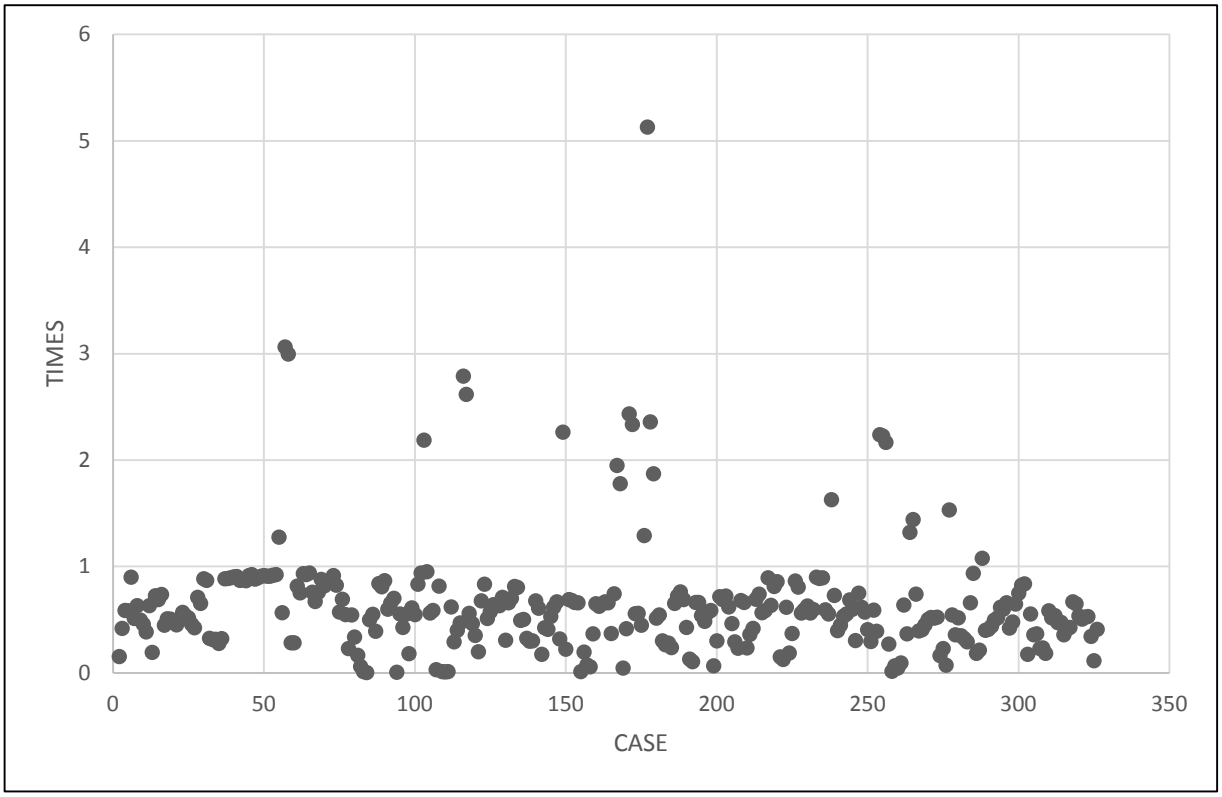


Figure 5.23 – DTA Ratio in IDX (After Change)

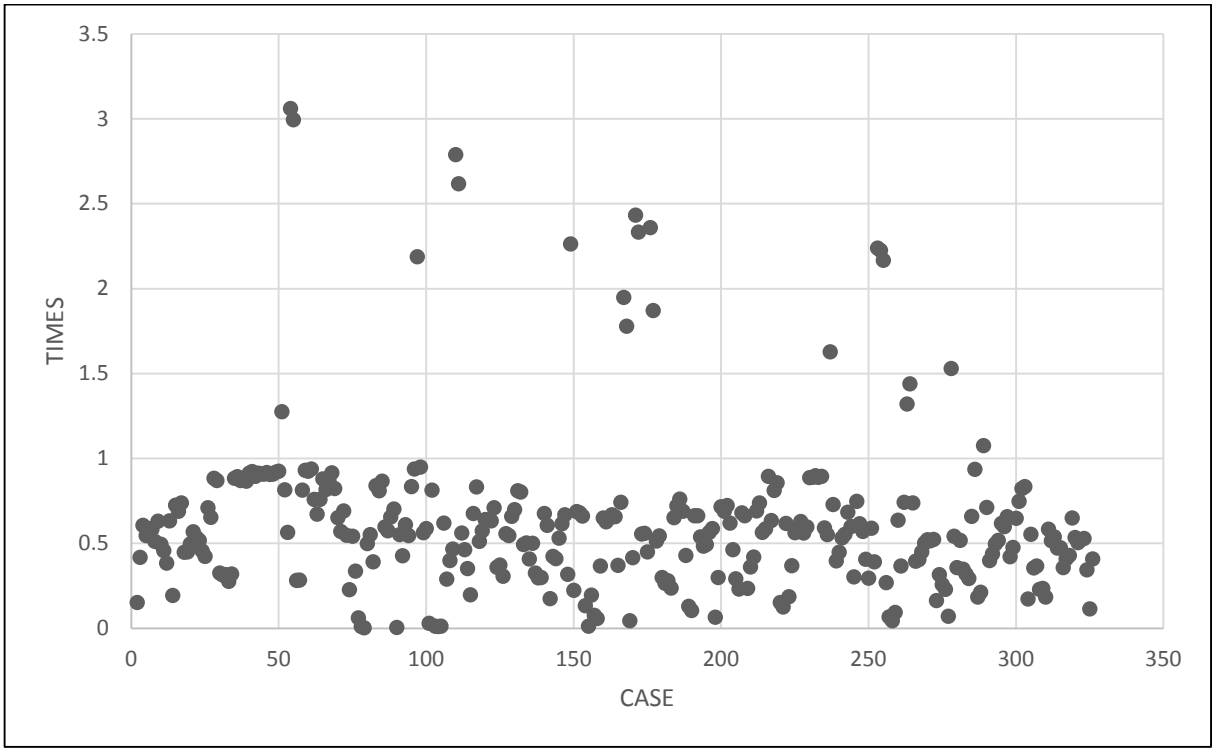
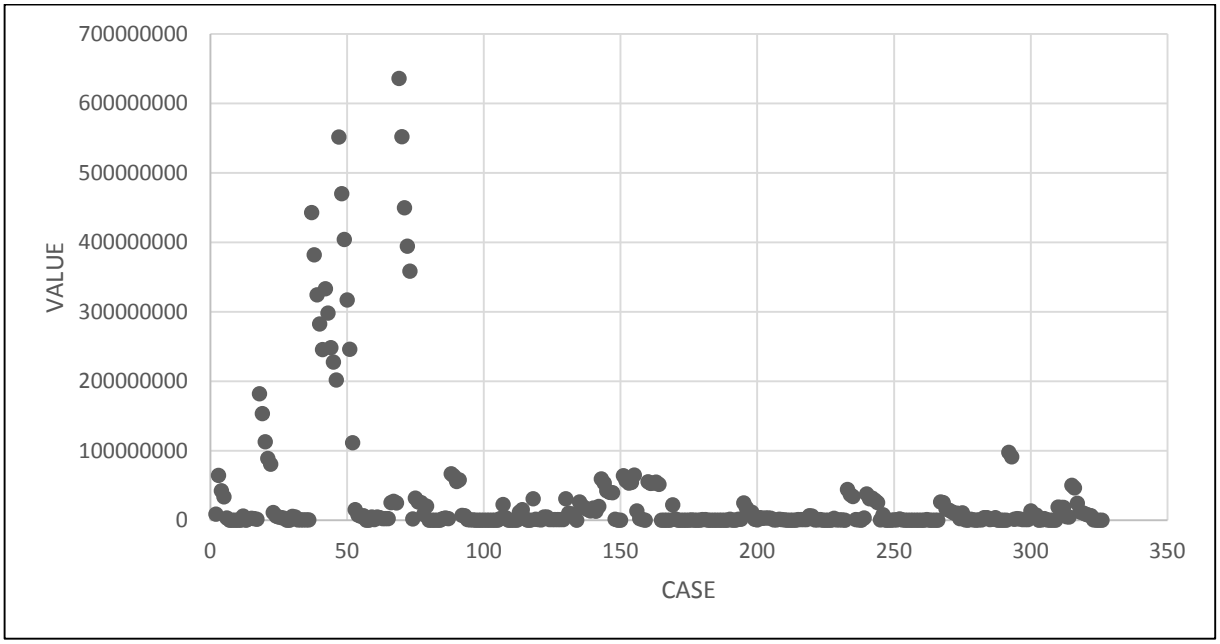


Figure 5.24 illustrates the data spread of the total assets of the 325 cases and shows the variation in companies' total assets. Some have more than 100 trillion rupiahs but the majority of the companies have less than 1 trillion rupiahs. Companies listed in the banking and finance sector (such as BBCA, BBRI, BBNI and BMRI) have a strong asset ownership portfolio, as does an automotive company – ASII. Total assets is one measure that can be used to illustrate the value of a company (refer to Figure 5.24). However, the proxy 'market capitalisation' illustrates the same trend as total assets for data collected as part of this research.

Figure 5.24 - Total Assets in IDX (in Million Rupiahs)



The ASII, BBCA and BBRI PLCs exhibited the highest sales during 2010-2012, with values of more than 80 trillion rupiahs (Figure 5.25). However, these PLCs do not represent the majority of cases, which are below 40 trillion rupiahs. Subsequently, the above examples (outliers) were removed from the data in order to smooth the spread around the majority of sales values (Figure 5.26).

Figure 5.25 – Sales in IDX (Before Change in Million Rupiahs)

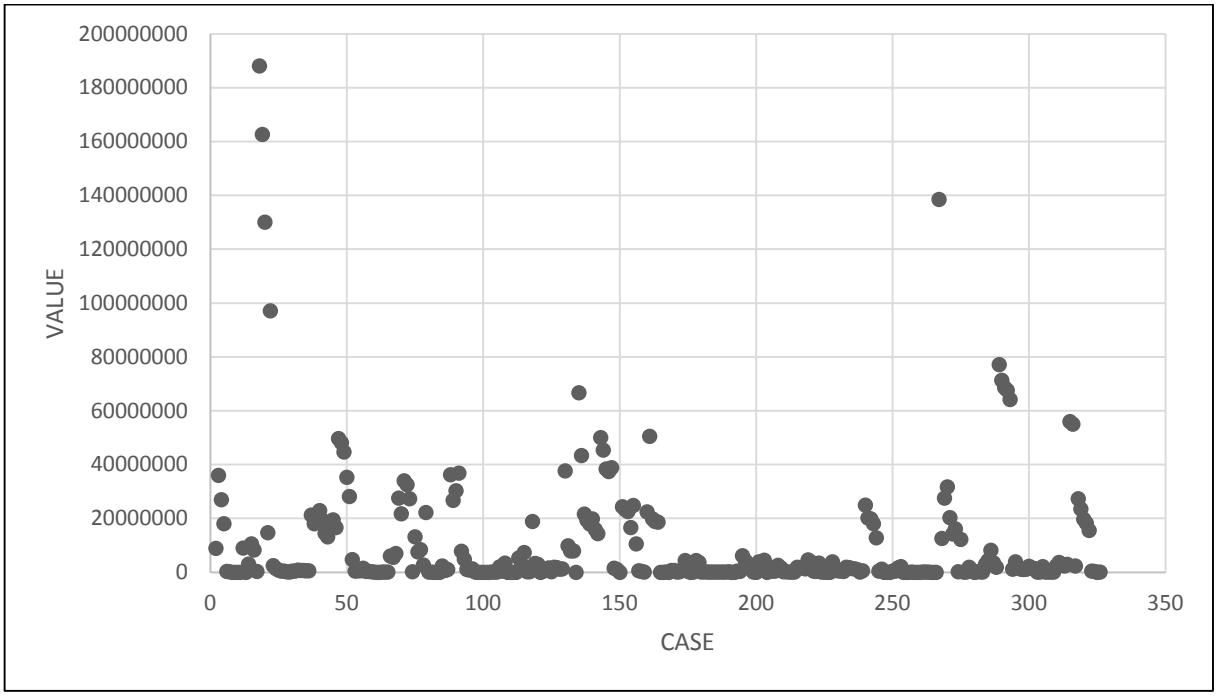
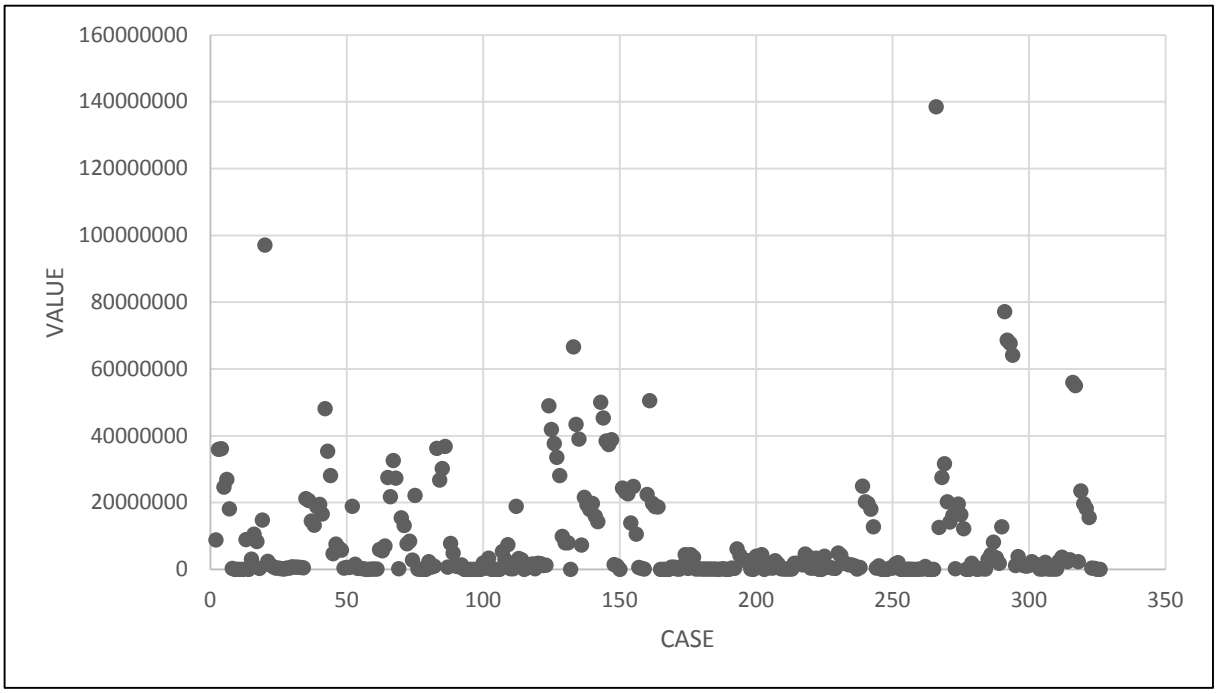


Figure 5.26 – Sales in IDX (After Change in Million Rupiahs)



ASII also generated the highest operating income at nearly 100 trillion rupiahs. Other companies with high operating income are TLKM (telecommunication sub-industry), HMSP (tobacco manufacturer), and BBCA, BMRI and BBRI from the banking sector (Figure 5.27). After outliers were removed, the operating income data became smoother (Figure 5.28). PLCs with 1-5 trillion rupiah operating income dominated the data spread. However, numerous PLCs with an operating income ranging from 5 to 20 trillion rupiahs have a greater capacity to generate higher income.

Figure 5.27 - Operating Income in IDX (Before Change in Million Rupiahs)

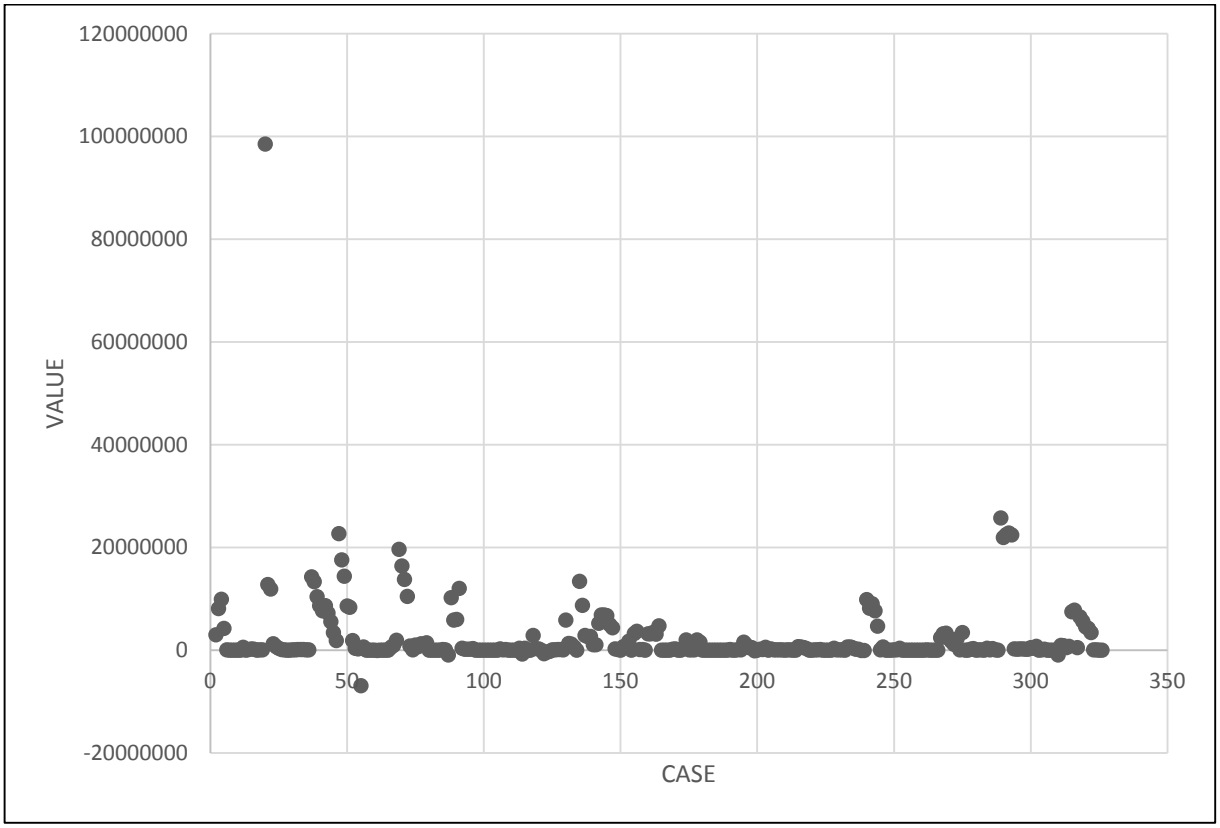
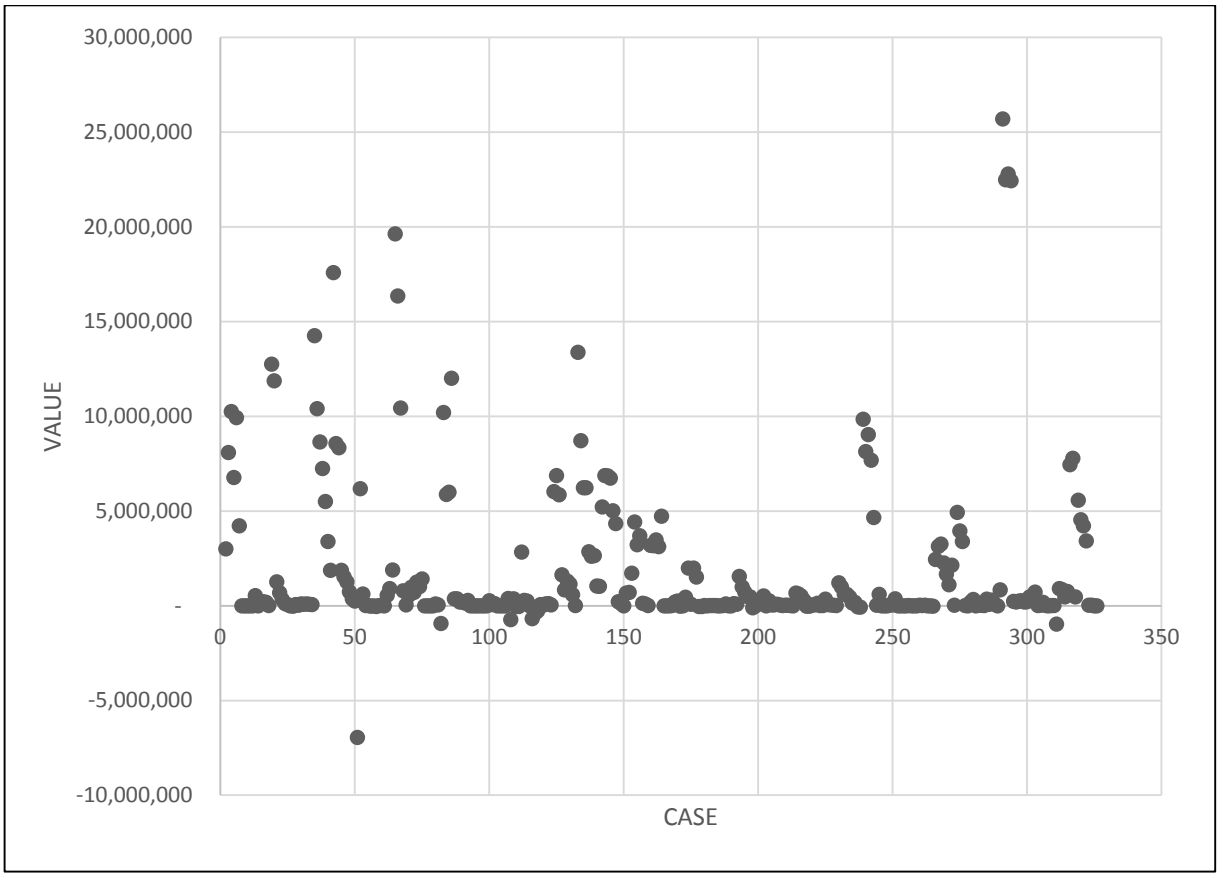


Figure 5.28 - Operating Income in IDX (After Change in Million Rupiahs)



Figures 5.29 and 5.30 illustrate that the three cases were removed because they were observed to be outliers (i.e. BBCA, BBRI and BBRI); consequently, the standard deviation of the free cash flow data was reduced. Because of the global financial crisis in 2008, among the 325 cases several banking sector companies (namely BBCA, BBRI and BBNI) incurred negative FCF.

Figure 5.29 - FCF in IDX (Before Change in Million Rupiahs)

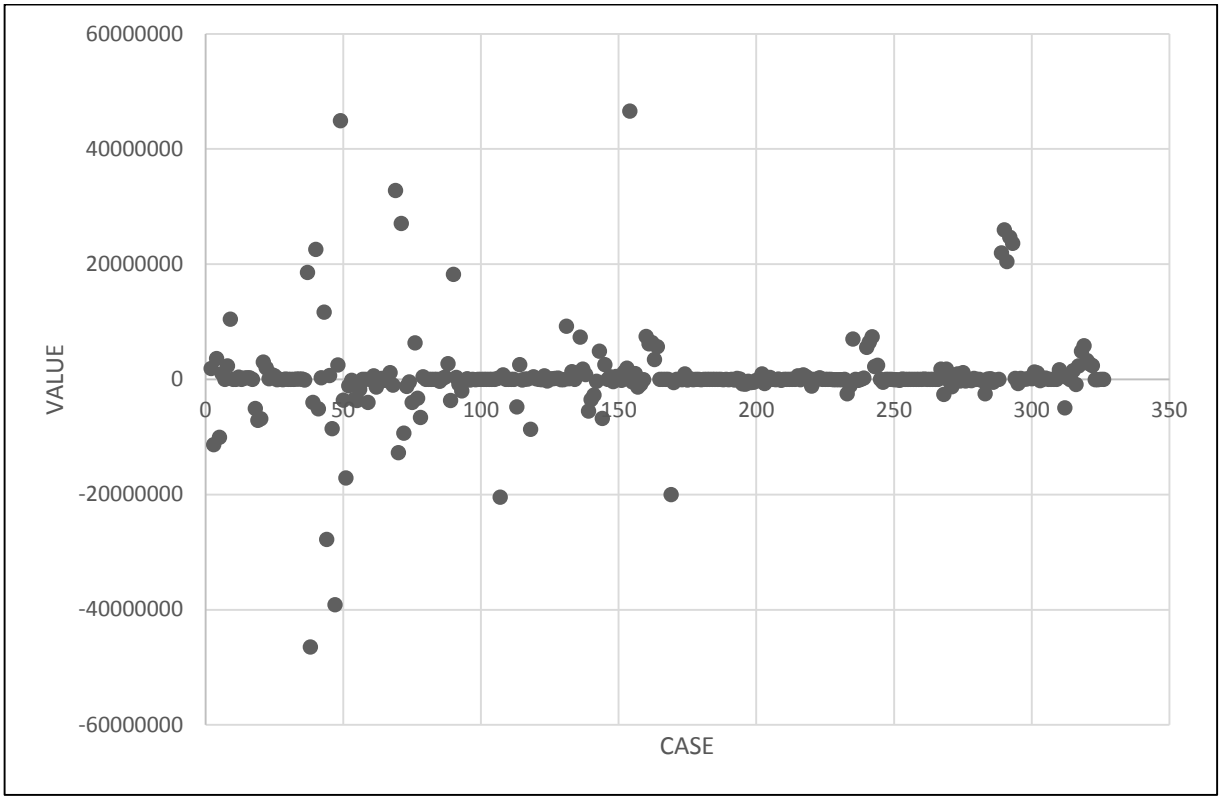
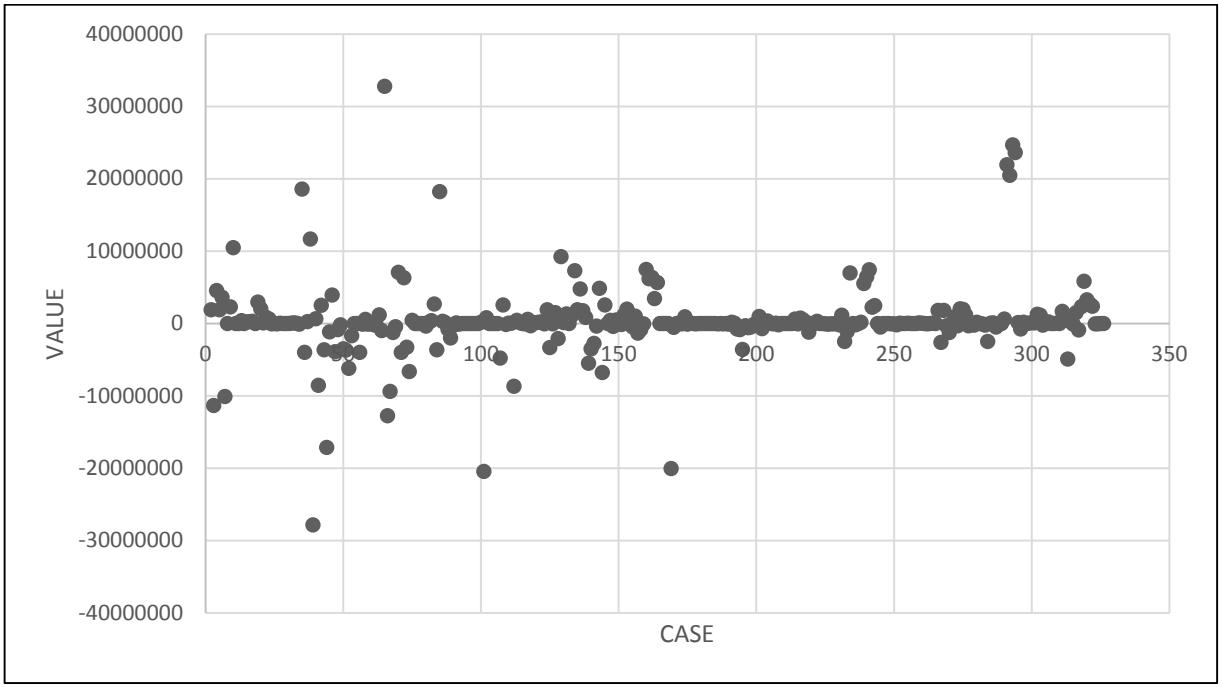


Figure 5.30 – FCF in IDX (After Change in Million Rupiahs)



Two PLCs had an MBR of over 50, namely MYOH 2009 and MYOH 2008, which illustrates that shares were overpriced and expensive to procure. Outliers occurred because there were big gaps between the market price and book value of the shares. Having removed these outliers (Figure 5.31) the MBR data was smoother (refer to Figure 5.32) and the mean was reduced from 3.08 to 2.59 (Appendices 4 and 5). Several companies had an MBR of over 20 (namely MLBI, MYOH, KARW and UNVR), whilst the majority of PLCs had an MBR of between 1 and 5. This lower MBR average means the information publicly disclosed by a PLC was better, because the market price of a share closely reflects its book value.

Figure 5.31 – MBR in IDX (Before Change)

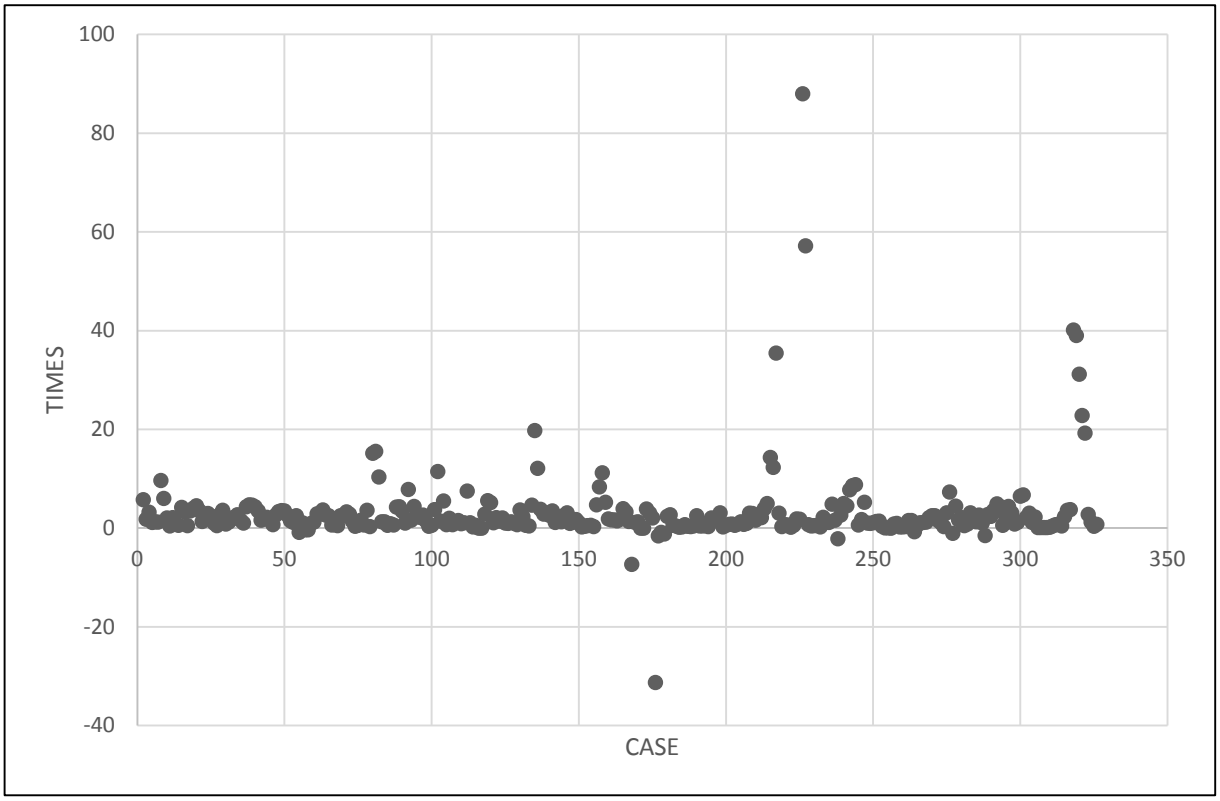


Figure 5.32 – MBR in IDX (After Change)

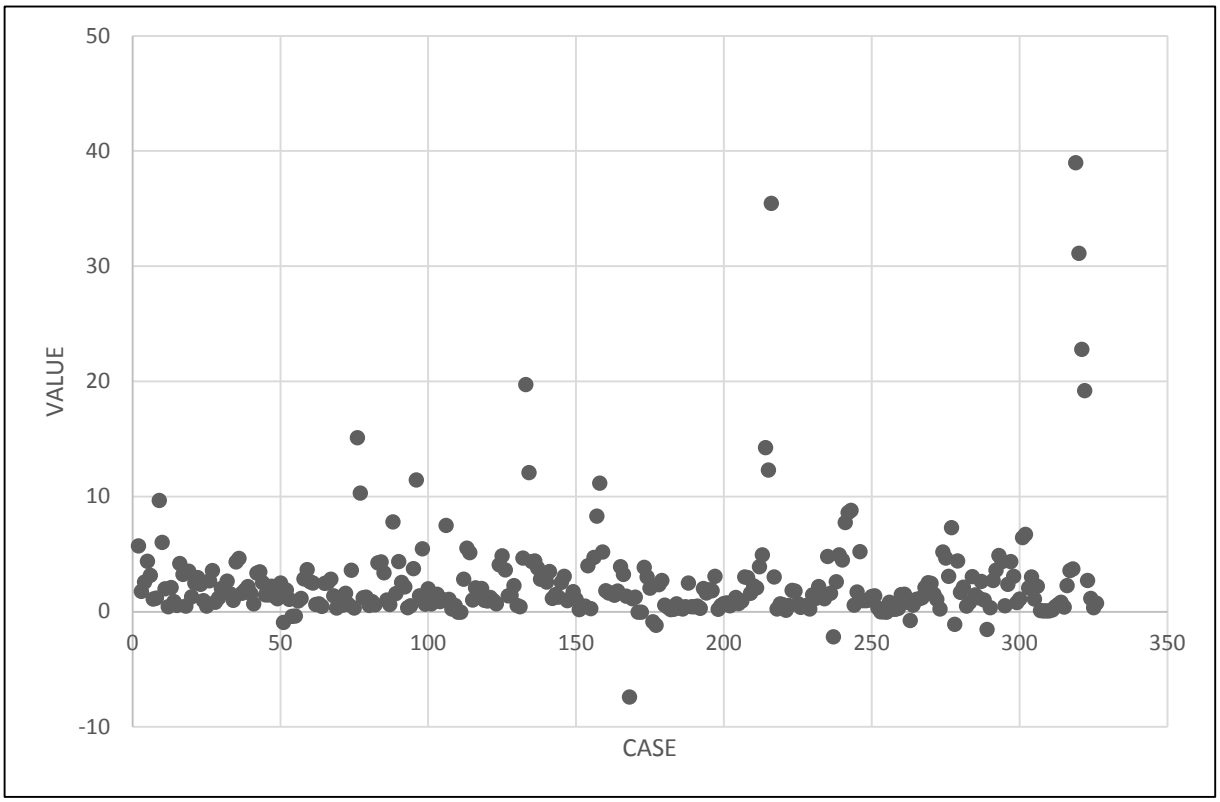


Figure 5.33 illustrates that four PLCs had extreme PER values: BKSW 2011, BTEK 2011, CMPP 2012 and RAJA 2008. Removing these outliers helped to smooth the data (refer to Figure 5.34). In addition to the above companies, INK, RBMS, STAR and SUGI also had high PER; it can be interpreted that these shares did not generate maximum earnings with a higher share price. Investors tended to expect yields from the share price increase, not from the paid dividend.

Figure 5.33 - PER in IDX (Before Change)

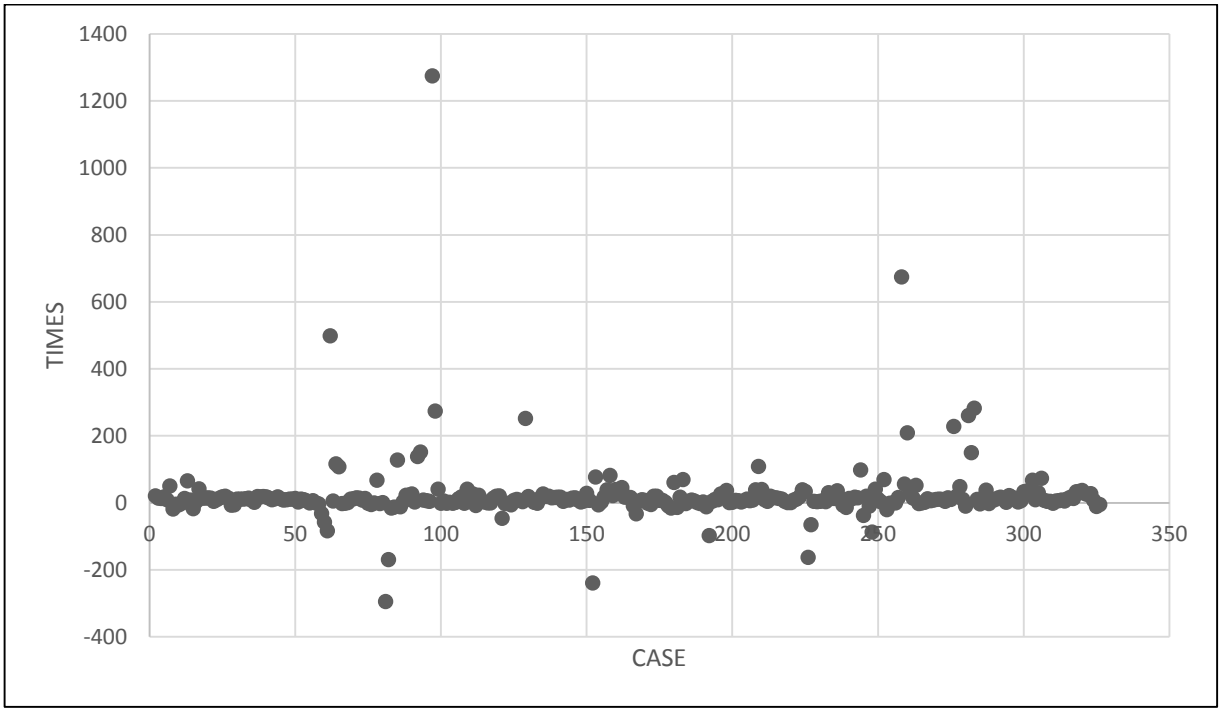
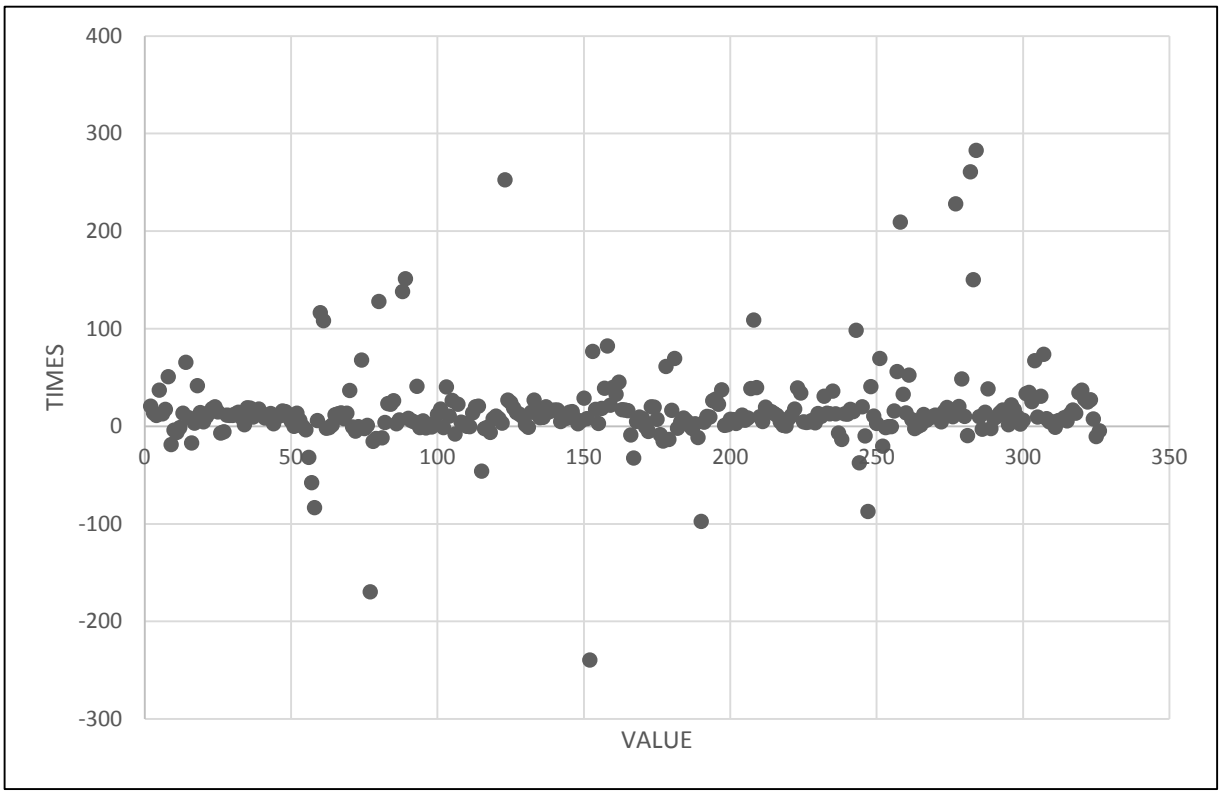


Figure 5.34 – PER in IDX (After Change)



5.2 RESULTS OF HYPOTHESIS TESTING

The research conducted tests to investigate the most influential factors impacting upon the decision to revalue assets or not. Using SPSS, the tests applied included overall fit of the model (F-test) and an individual test of the predictors (proxies) to the model (t-test). The research employed five stages to iteratively exhaust all possible variations of prediction and thus achieve high modelling accuracy, namely:

- Stage 1: A basic prediction model of companies' revaluation decisions using the original data set of 325 cases.
- Stage 2: A modified prediction model of revaluation decisions which removed 23 originally selected cases of outliers within the sample, which were replaced with 23 new cases.
- Stage 3: A modified prediction model of revaluation decisions which removed proxies with zero beta coefficients.
- Stage 4: A modified prediction model of revaluation decisions which removed proxies with a Wald significance value of more than 0.5.
- Stage 5: A basic prediction model of revaluation decisions using the step wise method.

5.2.1 Overall Fit of the Model (F-test)

The developed prediction model had to be verified for the overall fit of the data (Hair *et al.*, 2006; Field, 2009). This study explains the prediction power of the overall fit model in three forms: Nagelkerke R^2, Cox & Snell R^2, and -2 Log likelihood. The higher the percentage of prediction power, the better the predicted (dependent) variable that can be explained by predictors (independent variables), therefore the more robust the model. The outputs of SPSS

statistics are reproduced below. The model incorporated 17 proxies (represented by nine independent variables) as motives that predicted whether fixed assets should be revalued or not.

- *Stage 1: Basic prediction model*

  Table 5.5 summarises the significance of the chi-square value in the omnibus tests before outliers were removed. Since the significance value of the overall model test (F-test) is less than 0.05, the model is likely to predict the decision whether to revalue fixed assets or not.

Table 5.5 - Omnibus Tests of Model Coefficients (Before Change)

	Chi-square	Df	Sig
Step 1 Step	64.299	17	.000
Block	64.299	17	.000
Model	64.299	17	.000

The -2 Log-likelihood statistic indicated the unexplained information remaining within the model fitted; the larger the value of -2 Log-likelihood, the poorer the fit of the model (Field, 2009). Three types of R^2 values are shown, namely Nagelkerke R^2 with 44.8 per cent (Table 5.7), Cox and Snell R^2 with 18 per cent (Table 5.7), and -2 Log likelihood with 38.69 per cent (Tables 5.6 and 5.7). The computation of -2 Log likelihood below is based on the SPSS output, which is summarised in Table 5.6 (for the value of 166.156) and Table 5.7 (for the value of 101.857). This is as follows: R^2 = (166.156 - 101.857) / 166.156; and R^2 = 38.69 per cent.

The above three results of R^2 were not able to provide an accurate prediction of the dependent variable. Therefore, to increase the model's prediction power, this study employed modifications of the data.

Table 5.6 - Iteration History[a,b,c] (Before Change)

Iteration		-2 Log likelihood	Coefficients
Step 0	1	186.352	-1.717
	2	167.328	-2.348
	3	166.164	-2.555
	4	166.156	-2.575
	5	166.156	-2.575

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 166.156
c. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 5.7 - Model Summary (Before Change)

Step	-2 Log likelihood	Cox and Snell R^2	Nagelkerke R^2
1	101.857[a]	.180	.448

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

- *Stage 2: Modified prediction model with cases change due to outliers*

Having removed 23 outliers and changed to the new cases, the study repeated the overall model test (F-test). Table 5.8 summarises the significance of the overall model based on the omnibus test. The table illustrates the significance value of 0.000 and it can therefore be concluded that the model is likely to predict the decision whether to revalue an asset or not.

Table 5.8 - Omnibus Tests of Model Coefficients (After Change)

		Chi-square	df	Sig
Step 1	Step	64.279	17	.000
	Block	64.279	17	.000
	Model	64.279	17	.000

The results of three R^2 using new cases (Tables 5.9 and 5.10) produced results that were relatively similar to the previous tables (Tables 5.6 and 5.7). These low powers of prediction were the Nagelkerke R^2 scores of 44.8 per cent (Table 5.10), while Cox and Snell R^2 records 17.9 per cent (Table 5.10). The -2 Log likelihood R^2 is 38.68 per cent, with computation as follows: R^2 = (166.156 - 101.876) / 166.156; and R^2 = 38.68 per cent.

Table 5.9 - Iteration History[a,b,c] (After Change)

Iteration		-2 Log likelihood	Coefficients
Step 0	1	186.352	-1.717
	2	167.328	-2.348
	3	166.164	-2.555
	4	166.156	-2.575
	5	166.156	-2.575

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 166.156
c. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 5.10 - Model Summary (After Change)

Step	-2 Log likelihood	Cox and Snell R^2	Nagelkerke R^2
1	101.876[a]	.179	.448

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

- *Stage 3: Modified prediction model with removed proxies due to zero beta coefficient*

The research then removed five proxies from the independent variables which had a zero beta value; the overarching view was that these proxies did not have a strong enough predictive impact upon the dependent variable. The proxies were CMS, CFFO, total assets, operating income and FCF. Having rerun the overall model test, the results are summarised

in the following tables. The omnibus test of model coefficients produced a significant value of chi-square (Table 5.11) and proved that the overall model is significant and had reasonable predictive power.

Table 5.11 - Omnibus Tests of Model Coefficients

		Chi-square	df	Sig
Step 1	Step	47.555	12	.000
	Block	47.555	12	.000
	Model	47.555	12	.000

The research found that the results of the tests and the removal of the zero beta value of the proxies did not increase the R^2 value, which was lower than the two previous approaches. Nagelkerke R^2 scores 34 per cent, and Cox and Snell R^2 records 13.6 per cent (Table 5.13). The prediction power of the model using the -2 Log likelihood R^2 approach (Tables 5.12 and 5.13) is computed as follows: -2 Log likelihood R^2 = (166.156 - 118.601) / 166.156; and R^2 = 28.62 per cent

Table 5.12 - Iteration History[a,b,c]

Iteration		-2 Log likelihood	Coefficients
Step 0	1	186.352	-1.717
	2	167.328	-2.348
	3	166.164	-2.555
	4	166.156	-2.575
	5	166.156	-2.575

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 166.156
c. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 5.13 - Model Summary

Step	-2 Log likelihood	Cox and Snell R^2	Nagelkerke R^2
1	118.601[a]	.136	.340

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

- *Stage 4: Modified prediction model with removed proxies due to Wald significance value of more than 0.5 per cent*

  This approach removed seven proxies which were observed to have a significance level greater than 0.05 per cent and was based on the refined data without outliers. These proxies were CFFO, CMS, DTA, asset, debt restructuring, FCF and foreign operation (branch). Table 4.14 illustrates that with a significance value of 0.000, the research can confirm that the model is likely to predict the decision whether to revalue an asset or not.

Table 5.14 - Omnibus Tests of Model Coefficients

		Chi-square	df	Sig
Step 1	Step	59.016	11	.000
	Block	59.016	11	.000
	Model	59.016	11	.000

The prediction power of this model (Table 5.15) was then computed. The Nagelkerke R^2 was 41.5 per cent, and Cox and Snell R^2 scored 16.6 per cent (Table 5.16.). The -2 Log likelihood R^2 was computed as follows: R^2 = (166.156 – 107.140) / 166.156; and R^2 = 35.51. As this juncture, the model's predictive power was deemed to be poor.

Table 5.15 - Iteration History[a,b,c]

	Iteration	-2 Log likelihood	Coefficients
Step 0	1	186.352	-1.717
	2	167.328	-2.348
	3	166.164	-2.555
	4	166.156	-2.575
	5	166.156	-2.575

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 166.156
c. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 5.16 - Model Summary

Step	-2 Log likelihood	Cox and Snell R^2	Nagelkerke R^2
1	107.140[a]	.166	.415
1	107.140[a]	.166	.415
1	107.140[a]	.166	.415

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

- *Stage 5: Basic prediction model using step wise method in SPSS*

  Instead of using the enter method, as in the previous first four approaches, the research applied the step wise method of data entry. As shown in Table 5.17, the research revealed although the predictive capability of the model was poor, the overall predictive model significant, at p = 0.05.

Table 5.17 - Omnibus Tests of Model Coefficients

		Chi-square	df	Sig
Step 1	Step	18.571	1	.000
	Block	18.571	1	.000
	Model	18.571	1	.000
Step 1	Step	13.097	1	.000
	Block	31.668	2	.000
	Model	31.668	2	.000
Step 1	Step	7.033	1	.008
	Block	38.701	3	.000
	Model	38.701	3	.000

Unfortunately, the step wise method failed to increase the model's predictive power. Overall, this approach produced a lower predictive power for all R^2. Table 5.19 shows that Nagelkerke's and Cox and Snell's R^2 are 28 per cent and 11.2 per cent respectively. The -2 Log likelihood R^2 was 35.67 per cent and this score is relatively similar to scores obtained from previous approaches. Based on Table 5.18, the prediction power of the model using -2 Log likelihood is computed as follows: R^2 = (166.156 – 107.140) / 166.56; and R^2 = 35.67 per cent.

Table 5.18 - Iteration History[a,b,c]

Iteration		-2 Log likelihood	Coefficients
Step 0	1	186.352	-1.717
	2	167.328	-2.348
	3	166.164	-2.555
	4	166.156	-2.575
	5	166.156	-2.575

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 166.156
c. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 5.19 - Model Summary

Step	-2 Log likelihood	Cox and Snell R^2	Nagelkerke R^2
1	147.585[a]	.056	.139
1	134.488[b]	.093	.232
1	127.455[c]	.112	.280

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.
b. Estimation terminated at iteration number 8 because parameter estimates changed by less than .001.
c. Estimation terminated at iteration number 9 because parameter estimates changed by less than .001.

In conclusion, the above five approaches resulted in the same significance value of the overall model test (F-test) being generated, which was less than 0.05 (Tables 5.5, 5.8, 5.11, 5.14, 5.17). These values demonstrate that the model is likely to predict the decision to revalue fixed assets. Among the above five scenarios, the outputs demonstrate that the models developed were unable to make an accurate prediction.

5.2.2 Individual Test of the Model (t-test)

To investigate the motives for PLCs who decide whether to revalue their assets or not, the research conducted individual tests for each proxy applied in the model. The significant Wald statistic represents the contribution to those motives if the coefficient of its statistic (*b* coefficient) is significantly different from zero (Field, 2009).

- *Stage 1: Basic prediction model*

  Table 5.20 summarises the statistical output with regard to the Wald significance values and beta coefficients for each proxy. Four proxies were found to be significant predictors and had Wald values of less than 0.05. These variables were i) fixed asset intensity; ii) debt equity ratio (DER); iii) DER level; and iv) export sales. Four other proxies scored the highest

insignificance with a Wald value of over 0.9, namely i) debt restructuring; ii) FCF; iii) CMS; and iv) DTA.

Beta values were then used to identify proxies that triggered the greatest change in the dependent variable. The statistical output in Table 5.20 demonstrates (via beta scores) that four proxies positively support the companies' decisions to revalue assets. These were: i) acquisition; ii) FAI; iii) DER; and iv) DER level. PLCs should consider these proxies carefully because any change in their values will positively affect the change of revaluation decision. For example, a PLC with a higher proportion (ratio) of fixed assets out of the total assets will tend to revaluate its assets more often, as exhibited by their higher and positive beta coefficient values (refer to Table 5.25). In ascending order of importance, fixed asset intensity had the highest beta coefficient, followed by DER level, acquisition and DER. A company with higher debt ratio and acquisition of other PLCs will also induce a positive change in a revaluation decision.

Table 5.20 - Variables in the Equation

		B	Wald	Sig.
Step 1	CMS	.000	.005	.942
	CFFO	.000	.133	.716
	OWNPERCENT	-.669	.328	.567
	ACQUISITION(1)	1.668	2.063	.151
	FAINTENSITY	5.613	19.249	.000
	DER	.478	15.082	.000
	DTA	-.036	.004	.952
	ASSET	.000	1.371	.242
	SALES	.000	2.169	.141
	OPRINCOME	.000	.859	.354
	DEBTREST(1)	-16.190	.000	.999
	FREECF	.000	.003	.955
	DER LEVEL(1)	1.801	6.756	.009
	MBR	-.265	2.963	.085
	PER	-.009	1.966	.161
	FOREIGN(1)	-.719	.326	.568
	EXPORT(1)	-1.936	8.154	.004
	Constant	-4.665	12.314	.000

Seven other proxies achieved negative scores (inverse relationships), namely: i) ownership percentage; ii) DTA; iii) debt restructuring; iv) MBR; v) PER; vi) foreign operation/ branches; and vii) export sales. These inverse relationships illustrate that companies did not revalue assets using other proxies, i.e. ownership percentage, DTA, MBR and PER.

Interestingly, six other independent variables scored beta coefficients of 0.00, namely: i) CMS; ii) CFFO, iii) total assets; iv) sales; v) operating income; and vi) free cash flows. This demonstrates that these variables were not determinants in the asset revaluation decision making process.

- *Stage 2: Modified prediction model with cases change due to outliers*

  23 company cases were removed from the sample of 325 company cases on the basis that they were outliers. The four significant proxies remained the same (as with outliers included): i) FAI; ii) DER; iii) DER level; and iv) export sales. The Wald values of several proxies were highly insignificant, such as CMS and DTA, and were decreased compared to Table 5.20. Other proxies had similar Wald values.

  Table 5.21 provides a summary of beta coefficients. The three proxies that have the most positive influence upon a change in the dependent variable were i) FAI; ii) export sales; and iii) DER level. Conversely, debt restructuring scored the highest negative beta value among all proxies found amongst the independent variables. The use of 23 new cases also changed the beta coefficients of two variables, which became positive; namely DTA and export sales. Having modified the data set by removing outliers, both DER and DTA produce positive beta coefficients. This means that companies tend to revalue assets using debt financing. Thus, there is a positive correlation between higher debt financing in the capital structure and a greater probability that a company will revalue assets. For the export sales proxy, this research suspects that the positive association with the revaluation decision is because of the availability of disclosed information to foreign buyers. Furthermore, the removal of the 23 outlier company cases did not increase or decrease the other beta values significantly. The six variables with 0.00 beta coefficients remained the same (e.g. CMS, CFFO, asset, sales, operating income and FCF).

Table 5.21 - Variables in the Equation

		B	Wald	Sig.
Step 1	CMS	.000	.163	.686
	CFFO	.000	.077	.781
	OWNPERCENT	-.822	.498	.480
	ACQUISITION(1)	1.624	1.986	.159
	FAINTENSITY	5.687	19.502	.000
	DER	.463	13.845	.000
	DTA	.105	.020	.886
	ASSET	.000	.280	.596
	SALES	.000	2.093	.148
	OPRINCOME	.000	.714	.398
	DEBTREST(1)	-16.286	.000	1.000
	FREECF	.000	.002	.966
	DER LEVEL(1)	1.780	6.661	.010
	MBR	-.241	2.163	.141
	PER	-.010	1.840	.175
	FOREIGN(1)	-.610	.244	.621
	EXPORT(1)	1.977	8.298	.004
	Constant	-6.651	21.780	.000

- *Stage 3: Modified prediction model with removed variables due to zero beta coefficient*

  This output was produced using the 325 company cases where proxies with 0.00 beta coefficients were removed. These were CMS, CFFO, total assets, operating income and FCF. Table 5.22 illustrates that the results previously found in Table 5.20 and 5.21 are similar. The four significant proxies are i) FAI; ii) DER; iii) DER level; and iv) export sales. Furthermore, the beta coefficients of those proxies are similar to those values reported in Tables 5.20 and 5.21 and have more influence on the dependent variable.

Table 5.22 - Variables in the Equation

		B	Wald	Sig.
Step 1	OWNPERCENT	-1.190	1.057	.304
	ACQUISITION(1)	.627	.442	.506
	FAINTENSITY	5.278	21.138	.000
	DER	.393	12.359	.000
	DTA	.368	.282	.595
	DEBTREST(1)	-17.134	.000	.999
	DER LEVEL(1)	2.018	9.384	.002
	MBR	-.259	2.810	.094
	PER	-.005	.798	.372
	FOREIGN(1)	-1.133	1.395	.238
	EXPORT(1)	1.420	6.581	.010
	Constant	-6.750	24.162	.000

- *Stage 4: Modified prediction model with removed variables due to Wald significance value of more than 0.5 per cent*

  The research modified the model by removing proxies whose Wald significant value was over 0.5 per cent (refer to Table 5.23). The data analysed used company cases where outliers had been removed (Table 5.21); the proxies that were removed were CFFO, CMS, DTA, asset, debt restructuring, FCF and foreign operation (branch). This approach increased the number of significant values of the predictors from four to five. Operating income was found to be a fifth proxy, with the remaining four proxies being FAI, DER, DER level and export sales. Beta values for each proxy are relatively the same as previous results obtained (as illustrated in Tables 5.20 – 5.22).

Table 5.23 - Variables in the Equation

		B	Wald	Sig.
Step 1[a]	1OWNPERCENT	-.901	.639	.424
	ACQUISITION(1)	1.033	1.010	.315
	FAINTENSITY	5.160	19.194	.000
	DER	.436	14.938	.000
	DER LEVEL(1)	2.023	9.039	.003
	MBR	-.158	1.234	.267
	PER	-.005	1.024	.312
	EXPORT(1)	1.462	6.691	.010
	OPRINCOME	.000	4.479	.034
	Constant	-6.531	25.079	.000

- *Stage 5: Basic prediction model using step wise method in SPSS*

  Table 5.24 reproduces information on the results of the Wald test conducted. Step wise regression decreased the number of significant proxies within the model from 17 to only three 'significant' proxies – namely i) FAI, ii) sales; and iii) export sales. Previous results which were based on Tables 5.20 - 5.23 did not support this argument. Those tables found that four to five proxies were significant.

Table 5.24 - Variables in the Equation

		B	Wald	Sig.
Step 1[a]	FAINTENSITY	3.506	16.700	.000
	Constant	-4.031	65.745	.000
Step 2[b]	FAINTENSITY	3.726	17.661	.000
	SALES	.000	4.478	.034
	Constant	-3.619	50.569	.000
Step 3[c]	FAINTENSITY	3.922	15.730	.000
	SALES	.000	4.844	.028
	EXPORT(1)	1.312	6.345	.012
	Constant	-4.393	41.438	.000

a. Variable(s) entered on step 1: FAINTENSITY.

b. Variable(s) entered on step 2: SALES.
c. Variable(s) entered on step 3: EXPORT.

5.3 VALIDATION

The research conducted a robust test to measure the validity of the prediction model developed, using data from a hold-out sample of 30 companies (Appendix 7). A comparative table was utilised to observe the different results obtained from the main survey and the hold-out samples. If no significant differences in the predictive results were apparent, the validation analysis could reasonably conclude that the prediction model was robust.

As in previous omnibus tests of model coefficients, the significance value of the chi-square test is 0.000 (table 5.25). Thus, the model performs well and will make a reliable prediction.

Table 5.25 - Omnibus Tests of Model Coefficients

		Chi-square	df	Sig
Step 1	Step	69.565	17	.000
	Block	69.565	17	.000
	Model	69.565	17	.000

Three measures were used to assess the model's predictive power, the results of which are reproduced in Tables 5.26 and 5.27. Overall, the following R^2 values are similar to the R^2 values which were generated from the main samples. The -2 Log likelihood R^2 computations are as follows (Tables 5.26 and 5.27): -2 Log likelihood R^2 = (195.966 - 126.401) / 195.966; and R^2 = 35.38 per cent.

The Nagelkerke R^2 showed a higher score, with 41.9 per cent (Table 5.22), and the Cox and Snell R^2 resulted in a lower prediction power, with 17.8 per cent (Table 5.27). The use of an

additional 30 cases to validate the prediction model did not change the prediction power of the model at F-test (overall model test). Even though this study ran additional statistical tests using other data, both analyses resulted in (relatively) similar outputs. The results were subsequently categorised as having low prediction power, but were valid in terms of their consistency between the results arising from the original and validation data sets.

Table 5.26 - Iteration History[a,b,c]

Iteration		-2 Log likelihood	Coefficients
Step 0	1	215.171	-1.685
	2	196.898	-2.273
	3	195.971	-2.444
	4	195.966	-2.458
	5	195.966	-2.458

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 195.966
c. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 5.27 - Model Summary

Step	-2 Log likelihood	Cox and Snell R^2	Nagelkerke R^2
1	126.401[a]	.178	.419

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

The statistical output generated by SPSS is presented in Table 5.28. Overall, the results were similar to those reported in Tables 5.20 – 5.22. Four significant proxies were apparent: i) FAI; ii) DER; iii) DER level and iv) export sales. Beta coefficients values were also similar to previous prediction models; for example, the two highest proxies were fixed asset intensity and debt restructuring. These beta coefficient values will give more significant impact to the change in dependent variable than other proxies.

Table 5.28 – Validation

		B	Wald	Sig.
Step 1	CMS	.000	.001	.977
	CFFO	.000	.135	.713
	OWNPERCENT	-.453	.189	.664
	ACQUISITION(1)	1.166	1.250	.264
	FAINTENSITY	4.877	20.486	.000
	DER	.315	8.505	.004
	DTA	-.063	.018	.892
	ASSET	.000	1.511	.219
	SALES	.000	2.848	.091
	OPRINCOME	.000	1.054	.305
	DEBTREST(1)	-16.472	.000	.999
	FREECF	.000	.080	.777
	DER LEVEL(1)	1.385	5.702	.017
	MBR	-.281	3.447	.063
	PER	-.008	1.864	.172
	FOREIGN(1)	-.898	.648	.421
	EXPORT(1)	1.857	10.854	.001
	Constant	-5.505	22.085	.000

To confirm the model's robustness, a comparative analysis was undertaken between the main and hold-out samples. Appendix 8 provides the categories and conclusion; namely, with regard to the overall fitness of the model (F Test), prediction power (R^2), individual t-test and beta coefficient.

The F Test revealed that both samples produced a model that had a significant value of 0.000. The R^2 comparison revealed that there was a slight decrease in all three R^2 approaches. The prediction powers of Nagelkerke, -2 Log likelihood, and Cox and Snell were reduced from 44.80, 38.69 and 18.00 per cent to 41.90, 35.38 and 17.80 per cent respectively. The four significant proxies were also confirmed in both models (main survey and hold-out sample models) and relatively similar Wald values were obtained for FAI, DER, DER level and export sales (19.50, 13.84, 6.66, 8.29 (Table 5.21) and 20.48, 8.50, 5.7, 10.85 (Table 5.28).

Among the 17 proxies, the beta coefficients of five showed different scores, namely ownership, acquisition, DER, DER level, and export sales, while others had the same or relatively similar scores.

The final equation for the four scenarios is as follows:

1. Basic prediction model using enter method (default procedure) in SPSS:

$$Logit_{ti} = -4.665 - 0.669\text{OWN} + 1.668\text{ACQU} + 5.613\text{FA} + 0.478\text{DER} - 0.036\text{DTA} - 16.190\text{DEBREST} + 1.801\text{DERLEVEL} - 0.265\text{MBR} - 0.009\text{PER} - 0.719\text{FOREIGN} - 1.936\text{EXPORT}.$$

2. Modified prediction model with cases change due to outliers:

$$Logit_{ti} = -6.651 - 0.822\text{OWN} + 1.624\text{ACQU} + 5.687\text{FA} + 0.463\text{DER} + 0.105\text{DTA} - 16.268\text{DEBREST} + 1.780\text{DERLEVEL} - 0.241\text{MBR} - 0.010\text{PER} - 0.610\text{FOREIGN} + 1.977\text{EXPORT}.$$

3. Modified prediction model with removed variables due to 0 beta coefficient:

$$Logit_{ti} = -6.750 - 1.190\text{OWN} + 0.627\text{ACQU} + 5.278\text{FA} + 0.393\text{DER} + 0.368\text{DTA} - 17.134\text{DEBREST} + 2.018\ \text{DERLEVEL} - 0.259\text{MBR} - 0.005\text{PER} - 1.113\text{FOREIGN} + 1.420\text{EXPORT}.$$

4. Modified prediction model with removed variables due to a Wald significance value of more than 0.5:

$$Logit_{ti} = -6.531 - 0.901\text{OWN} + 1.033\text{ACQU} + 5.160\text{FA} + 0.436\text{DER} + 2.023\ \text{DERLEVEL} - 0.158\text{MBR} - 0.005\text{PER} + 1.465\text{EXPORT}.$$

In summary, a robust (and indeed, iterative) analysis of the data reveals that four motives are able to assist PLCs into determining whether to revalue an asset or not. Appendix 9 illustrates that these motives are economic benefit and efficiency; reduction in debt contracting costs;

provision of signals to predict future financial performance; and reduction of information asymmetry.

5.4 MORE ROBUST PREDICTION MODEL

5.4.1 Balanced Cases of Revaluers and Non-Revaluers

The research found several weaknesses in the above model, namely small R^2 values and only four significant proxies. This occurrence was suspected because of the following reasons: i) the imbalanced number of cases between revaluers (28) and non-revaluers (327); and ii) a high variation in values of CMS, CFFO, total assets, sales, and operating income among revaluers. As a consequence, any change among revaluers could not affect the total number of cases because the majority of the main sample was represented by non-revaluers. Therefore, it was necessary to create the same proportion of cases between revaluers and non-revaluers. The research chose 28 cases from the 327 non-revaluer cases which had a relatively similar size to revaluers using two criteria: i) the PLC is a non-revaluer which is not categorised as a high market capitalisation (large size category) PLC; and ii) all nine IDX industrial sectors are represented.

This section explains the analysis and improved results generated for the F-test and t-test. The overall model (F-test) was found to be significant in predicting decisions whether to revalue assets or not because the significance value is less than 0.05 (Table 5.29).

Table 5.29 - Omnibus Tests of Model Coefficients

		Chi-square	df	Sig
Step 1	Step	46.488	16	.000
	Block	46.488	16	.000
	Model	46.488	16	.000

Tables 5.30 and 5.31 present the R^2 values generated. As the number of cases is equal, it was found that the prediction power has improved from 18 per cent (Table 6) to 75.2 per cent (Table 5.31). Using the -2 Log likelihood R^2, the R^2 value of 59.88 per cent is computed as follows: $R^2 = (77.632 – 31.144) / 77.632$; and $R^2 = 59.882$.

The R^2 has also increased using Nagelkerke and Cox and Snell (Table 5.31) to 56.4 and 75.2 per cent respectively.

Table 5.30 - Iteration History[a,b,c]

	Iteration	-2 Log likelihood	Coefficients
Step 0	1	77.632	.000

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 77.632
c. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 5.31 - Model Summary

Step	-2 Log likelihood	Cox and Snell R^2	Nagelkerke R^2
1	31.144[a]	.564	.752

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Overall, the significance value of the t-test became closer to the significant level (Table 5.32). However, this approach generated variations in the results when compared to previous models developed. Four proxies were found significant at the 5 per cent level, namely i) FAI; ii) operating income; iii) foreign branch; and iv) export sales. Among these variables, only two proxies (FAI and export sales) were included in previous models. Moreover, another three proxies were significant at the 10 per cent level: CFFO, sales and debt restructuring.

Table 5.32 - Variables in the Equation

		B	Wald	Sig.
Step 1	CMS	.000	.092	.761
	CFFO	.000	3.004	.083
	OWNPERCENT	.632	.035	.851
	ACQUISITION(1)	.847	.069	.793
	FAINTENSITY	10.636	5.043	.025
	DER	.028	.020	.887
	DTA	-2.375	2.619	.106
	ASSET	.000	2.547	.111
	SALES	.000	3.584	.058
	OPRINCOME	.000	4.478	.034
	DEBTREST(1)	.000	2.785	.095
	FREECF	1.727	1.685	.194
	DER LEVEL(1)	.121	.159	.690
	MBR	.000	.004	.948
	PER	-13.031	2.246	.134
	FOREIGN(1)	7.287	5.798	.016
	EXPORT(1)	-7.670	4.353	.037
	Constant	.000	.092	.761

5.4.2 Use of a Natural Logarithm for Monetary Proxies

To reduce and smooth variability in the data values, the research used a natural logarithm for monetary proxies which had positive values, CMS, total assets, and sales. Furthermore, 325 cases of revaluers and non-revaluers were entered into the prediction model for statistical tests. This step followed a similar approach adopted by previous scholars such as Brown *et al.* (1992); Lin and Peasnell (2000a); Lin and Peasnell (2000b); Barlev *et al.* (2007); Choi *et al.* (2009) and Seng and Su (2010). The research found that all three R^2 values (-2 Log likelihood, Nagelkerke, and Cox and Snell) were lower than in a balanced case approach. However, the significant proxies of the model were increased from four to six (CMS, DER, FAI, operating income, DER level, and export sales).

Table 5.33 illustrates that the overall prediction model (F test) was significant at p = 0.05. The -2 Log likelihood R^2 was derived from the results which are produced in Tables 5.34 and 5.35. This value is relatively similar to the -2 Log likelihood R^2 of balanced cases of revaluers and non-revaluers (section 5.4.1). The computation is as follows: R^2 = (166.156– 70.288) / 166.156; and R^2 = 57.69.

Unfortunately, the R^2 decreased using Nagelkerke and Cox and Snell (Table 5.35), with only 19.4 and 48.6 per cent respectively.

Table 5.33 - Omnibus Tests of Model Coefficients

		Chi-square	df	Sig
Step 1	Step	70.288	17	.000
	Block	70.288	17	.000
	Model	70.288	17	.000

Table 5.34 - Iteration History[a,b,c]

Iteration		-2 Log likelihood	Coefficients
Step 0	1	186.352	-1.717
	2	167.328	-2.348
	3	166.164	-2.555
	4	166.156	-2.575
	5	166.156	-2.575

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 166.156
c. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 5.35 - Model Summary

Step	-2 Log likelihood	Cox and Snell R^2	Nagelkerke R^2
1	95.868[a]	.194	.486

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Using the natural logarithm, two new significant proxies were found: CMS and operating income. Hence, the original set of proxies was expanded from four to six; all six were found to be significant at p = 0.05 (refer to Table 5.41).

Table 5.36 - Variables in the Equation

		B	Wald	Sig.
Step 1	CMS	.640	5.568	.018
	CFFO	.000	.047	.829
	OWNPERCENT	-.396	.108	.742
	ACQUISITION(1)	1.314	1.343	.247
	FAINTENSITY	7.504	20.516	.000
	DER	.451	12.202	.000
	DTA	-.353	.088	.766
	ASSET	-.142	.192	.661
	SALES	-.296	1.445	.229
	OPRINCOME	.000	7.658	.006
	DEBTREST(1)	-18.163	.000	.999
	FREECF	.000	.049	.825
	DER LEVEL(1)	2.021	7.811	.005
	MBR	-.191	.982	.322
	PER	-.006	1.303	.254
	FOREIGN(1)	-1.597	1.679	.195
	EXPORT(1)	1.588	5.280	.022
	Constant	-8.774	10.123	.001

5.5 THE EFFECTS OF ASSET REVALUATION DECISIONS

The research collected and analysed 2,136 PLC financial statements for the first five years (2008-2012) of implementation of the new IFASS 16. Table 5.37 below reveals that only 28 revaluers' financial statements were available during those years from the total of 37 PLCs. The insufficient number of PLCs who applied the revaluation model can also be viewed from the data list in 2012, only 13 PLCs out of 460 PLCs, or 2.83 per cent (as per Table 5.1).

Table 5.37 – Revaluers' Financial Statements Available

No	Year	Number of Revaluers	Revaluers Before IPO	Debt Restructuring	Total Available
1	2008	2	1	0	1
2	2009	4	2	0	2
3	2010	8	3	0	5
4	2011	10	1	1	8
5	2012	13	0	1	12
	Total	37	7	2	28

Subsequently, two items are deducted from that total: first, seven revaluers who performed fixed asset revaluation but before initial public offering (IPO) of their shares to the public through IDX. Therefore, their shares were not traded publicly, and as a consequence MBR and PER computation could not be performed. Second, two revaluers who had not yet published financial statements due to debt restructuring were excluded from further analysis. Thus, this study considered that 28 revaluers were not enough to predict future PLC financial performance, namely, operating income, CFFO and share prices (Barth and Clinch, 1998; Aboody *et al.*, 1999; Jaggi and Tsui, 2001).

This study suggests a minimum of 30 cases (financial statements) every year as required by statistics which occur 1-3 years after the revaluation (Aboody *et al.,* 1999; Jaggi and Tsui, 2001; Lopes and Walker, 2012). However, as shown in Table 5.1, more PLCs are revaluing their assets (applying the revaluation model) every year. The research predicted that in the following years (post 2012), more PLCs would apply the revaluation model. Thus, the prediction model of future PLC financial performances can be conducted in future research.

CHAPTER 6

DISCUSSION of FINDINGS

6.0 INTRODUCTION

This chapter comprises sections that address the principal research questions (refer to chapter 1, section 1.3) and which are explained below. It also highlights how the findings meet the research objectives, including their interpretation based on the theoretical background and analysis conducted.

- Section 6.1. – This section responds to the question: *Has the revaluation model of fixed asset value measurement offered in the revised IFASS 16 been widely applied by Indonesian PLCs?*

  The section discusses why only a few Indonesian PLCs have applied the revaluation model for fixed assets measurement. The reasons include:

  - the business circumstances of each revaluation model option;
  - the advantages and disadvantages of applying the chosen model;
  - the costs-benefits aspect in conducting asset revaluation;
  - the importance of more disclosed public information; and
  - comments on the various types of revaluers' assets.

  Both statistically significant and non-significant factors in determining revaluation decisions were investigated and supported by arguments and rationales from various perspectives; namely, accounting standard development backgrounds, and other business environment

aspects such as politics and economics. The results will inform what factors should (or should not) be considered in companies' revaluation decisions.

- Section 6.2. – This section responds to the question: *Can financial variables such as liquidity, ownership, asset intensity, leverage, size, debt restructuring, successful status, growth and disclosure be used to predict companies' motives for asset revaluation decisions?*

  The section discusses the results of the statistical hypothesis testing. Each motive underlying the revaluation decision is interpreted. The motives are sub-divided into variables, which are then assigned proxies for subsequent hypothesis testing. This section also provides explanations of the beta coefficients and relates these to various environmental aspects.

- Section 6.3. – This section responds to the question: *Would a conceptual model of asset revaluation decision making help chief financial officers (CFOs) to evaluate the implementation of the new IFASS 16 in deciding whether to revalue assets or not?*

  The section evaluates CFOs' decision making with regard to choosing an asset valuation method using a conceptual model (refer to chapter 3, Figure 3.1). This model can help CFOs to decide which valuation method is appropriate for their business circumstances. Statistical results of revaluation decisions (via hypothesis testing) and their discussion also strengthen the validity of the findings. Hence, evaluation of the above decisions using the conceptual model can be made.

6.1 MEASUREMENT MODEL APPLIED BY INDONESIAN COMPANIES

6.1.1 Discussion of the few PLCs who have Applied the Revaluation Model

This section focuses on the PLCs among the sample who have applied the asset revaluation method. These PLCs are drawn from every sector studied in the research and the justifications for using the method to support that decision are suggested. Results of the analysis in Figure 5.1 (refer to chapter 5) illustrate the growth in the number of IDX PLCs per industry sector during the five year research period (2008-2012). That is, there was a slight annual increase from 400 to 460 PLCs over the period. Two sectors, specifically trade and agriculture, are recorded as having the highest and the lowest number of PLCs respectively on the IDX. A similar upward trend occurred in regard to the number of companies deciding to use the revaluation model (from 2 to 13 PLCs) during the same period (Table 5.1), representing a 0.5 per cent to 2.83 per cent growth in the total number of PLCs. Thus, as of December 31st 2012, 97.17 per cent of PLCs had applied the cost model to measure their fixed assets since IFASS 16 was offered in 2007. In comparison to other countries' practices, 18 per cent of Korean PLCs had used the revaluation model as of March 2009 (Choi *et al.*, 2009), 28.1 per cent of New Zealand PLCs as of 2005 (Tay, 2009), and 11 per cent of FTSE London PLCs had also done so (Diehl, 2009).

In this study, asset revaluers existed within five of the nine sectors (see chapter 5, Table 5.2). Initially, two PLCs from two sectors revalued their assets in 2008 and this rose to 13 PLCs in five sectors in 2012, five of which were listed in the infrastructure sector. This was the largest number of PLCs applying a revaluation model in one IDX sector. Other revaluers were listed in the trade and service, finance, basic industry and agriculture sectors. None of revaluers were listed in the mining, miscellaneous, consumer goods, and property sectors.

To determine how many companies revalued fixed assets within the service, manufacturing and trading sectors further analysis was conducted. Two revaluers were included in the manufacturing type (MLIA and PALM) (refer to Appendix 3). Other revaluers, such as BACA, BCIC, BLTA, SDMU, BULL, PTIS and TOWR, were service companies and also conducted revaluation. In the last business type (trading), the revaluers were DSFI, INDS, MICE, and NIPS. From this, it can be inferred that asset revaluation was carried out by all types of business entities. In other countries, fixed asset revaluation practices were implemented by different business sectors. In the UK (Diehl, 2009), the sectors which applied the revaluation model for most fixed asset measurement were finance and real estate, comprising 33 per cent of the total number of revaluers. In Hong Kong, the property and services sectors have undertaken revaluation, as exhibited by a positive association between revaluation decisions and the value of fixed assets (Jaggi and Tsui, 2001).

Table 6.1 shows the type and specific class of fixed assets owned by revaluers. It can be seen that most (five out of nine) of the sectors revalued their assets during the period studied. The characteristics of assets revalued depended on the industry type, because certain IDX industrial categories, such as infrastructure, utilities and transportation, hold very specific types of assets that are reflected in their key business activities. A company which transports chemical and hazardous substances (SDMU) consequently has large fleets of lorries as their most valuable asset. Another company that manages marine logistic support (PTIS) logically owns ships and cranes amongst their priority assets. As part of the finance sector, two national banks, BACA and BCIC, possessed the same major assets of land and buildings. Thus, they revalued their fixed assets regularly, considering the fact that the majority of these were fixed in nature.

It is useful to consider examples from other countries because the Indonesian case might be similar. As an infinite asset and scarcity, land was the most popular class to be revalued by almost all companies in Korea, followed by buildings and machinery (Choi, 2009). Conversely, land and buildings were most likely to be revalued than other classes of assets by insurance companies in Spain (Perez *et al.*, 2011).

Table 6.1 – IDX Revaluers' Type of Assets in 2012

No	PLC	Industry	Sub-Industry	Type of Asset Mostly Possessed
1	BLTA	Infrastructure, Utilities and Transportation	Marine Transportation	Vessels and Equipment: Ships
2	SDMU	Infrastructure, Utilities and Transportation	Land Transportation	Trucks/ Lorries
3	BULL	Infrastructure, Utilities and Transportation	Other	Vessels and Equipment: Ships
4	PTIS	Infrastructure, Utilities and Transportation	Other	Marine Logistics: Cranes, Ships
5	TOWR	Infrastructure, Utilities and Transportation	Non-Building Construction	Towers
6	DSFI	Trade, Service, and Investment	Other	Machinery: Fisheries
7	INDS	Trade, Service, and Investment	Other	Design and Manufacture: Machinery
8	MICE	Trade, Service, and Investment	Other	Distributor of Health Care Products
9	NIPS	Trade, Service, and Investment	Other	Automotive Related Supplies
10	BACA	Finance	Bank	Land and Buildings
11	BCIC	Finance	Bank	Land and Buildings
12	PALM	Agriculture	Plantation	Plant
13	MLIA	Basic Industry and Chemicals	Ceramics, Glass and Porcelain	Machinery: Ceramics

This research concluded that only a limited number of IDX PLCs have applied the revaluation model for the following reasons:

- Indonesian PLCs are still cautious about this new accounting standard (IFASS 16, 2007) and are considering the advantages and disadvantages of applying the revaluation model. If they

choose to implement it, it must be consistently applied, unlike IFASS 16 – 1994, which allowed companies to revalue assets only for certain purposes, such as company restructuring programs and acquisition.

- Indonesian PLCs have a long history of applying cost models based on Indonesian Accounting Principles 1973 and 1984, and IFASS 16 – 1994. It would appear that due to this traditional approach, many Indonesian PLCs are unwilling to adopt or adjust to a revaluation model, which could be because of the difficulties associated with the cost and time involved of that approach.
- The revaluers have different industrial backgrounds and asset types. There were no specific assets which needed to be revalued because the intensity of the asset depended on the business characteristics. In the finance sector, PLCs mostly owned land and buildings, while basic industry sector PLCs owned machines. Revaluers' FIA ratios also varied (Appendix 11), from a minimum of 0.12 to a maximum of 0.85, with a mean of 0.53. Statistically, this study found that the FAI ratio was significant in predicting revaluation decision making.
- Applying the revaluation model regularly requires PLCs to allocate larger budgets, such as for appraisal fees. Moreover, a possible increase in audit fees is due to more complexity, a higher level of risk faced and more time involved.
- Indonesian PLCs must pay 10 per cent in tax, which is taken from the upward revaluation. This will certainly have an impact on a company's cash flows.
- Although only a few companies have applied the revaluation model, the implementation should be consistent. Learning from the cases of Korean companies, which already adopted property plant and equipment accounting standards in 2008, 30 companies switched back to the cost model in 2009. This was because they drew the conclusion that revaluers tended to have opportunistic reasons rather than reflect economic realities (Choi *et al*., 2009).

6.1.2 Discussion of the Descriptive Analysis of the Revaluation Model Applied

The actual number of revaluers during 2008-2012 was 37 PLCs, but seven of these implemented a revaluation model before their listing date (PALM 2011, BULL 2010, PTIS 2010, SDMU 2010, BULL 2009, TOWR 2009, and TOWR 2008). Therefore, their stocks were not available on IDX stock trading. This study required the availability of market stock prices for the computation of the two research proxies in measuring growth variables (MBR and PER). Because this computation could not be done, those seven financial statements had to be removed from the list.

Another two removed cases were BLTA (during 2011 and 2012), which had not yet been released for the periods 2011 and 2012 as of 31st of December 2013. Therefore, 28 revaluers' financial statements were available for this study. In the case of BLTA, several events are still in progress, namely debt restructuring negotiation with creditors, due diligence and audit of financial statements. Although e-mail contact was made and the IDX website was regularly checked, their financial statements could not be found.

As an Indonesian chemical, oil and gas shipper, BLTA had debt restructuring problems. These were caused by debt payment because of the acquisition of Chembulk Tankers LLC in 2007; the global financial crisis also caused higher fuel charges and lowered freight rates (Reuters, 2012; The Jakarta Post, 2013). Therefore, they had to sell their six ships to accelerate debt repayments. The company applied the revaluation model for several years to measure their fixed assets and to provide updated market values of their ships. In the case of the debt payment problems, the use of the revaluation model, which regularly appraised their fixed assets prices, has helped them to support the debt restructuring proposal that was agreed by their creditors (*ibid*).

To gain an overall conclusion of the revaluers' financial performances and their operation activities, the research linked and analysed the relationship between the proxies, namely DER, DTA, debt restructuring, DER level, and revaluers' descriptive statistics (Appendix 11). Revaluers relied more on debts rather than on equity in their capital structures. In comparison to their DER mean of 1.86, the outstanding debts were nearly double those of equity sources. Consequently, PLCs have prioritised payment to creditors (debt holders) on the principal and interests, and left stockholders the residual profits. In the long-term, this circumstance may lead to debt default and bankruptcy. Those who had high DER should have learnt from the case of BLTA, which had to restructure its debt payments and repay loans under the supervision of the Jakarta Commercial Court to avoid bankruptcy (The Jakarta Post, 2013).

The high reliance on debt can also be analysed from the DTA ratio mean, which is 0.60. Revaluers have financed their purchases of assets, namely land, buildings, equipment and inventories, using internal or external funds. These assets were employed to generate income and sustain growth. The research concluded that revaluers relied on external funds such as debts using both leverage measures (DER and DTA ratios). However, they could still manage the regular payments.

Sixty-eight per cent of revaluers were categorised as low level DER PLCs in comparison to other companies within the same sector. This shows that their scores were below the industrial DER average. This finding helped to formulate the conclusion that although revaluers relied on debts, the low level of these is still acceptable.

Except for BLTA (the case discussed above), all revaluers could manage payments (both to debt holders and stock holders). Regular payments could be made because the debt ratios were

still within reasonable limits. Having explained the aspects which related to debt in the above paragraphs, this study discusses four proxies (DER, DTA, debt restructuring, and DER level) and revaluers' descriptive statistics. It is concluded that the motives for conducting asset revaluation are to improve financial performance by reducing leverage and to loosen the debt covenant.

The research also linked two related proxies, foreign branches and export sales. Among the revaluers, BLTA is the only company who has representative offices throughout the world (refer to www.blt.co.id) to support their global transportation services in liquid and gas cargo. Because they use the USD as a functional currency in financial statements, there is no risk in currency exchange hence, the opening of overseas branches has supported their business operations. In total, 20 out of the 28 revaluers carried out export activities during the 5 year research period. They are listed in various IDX sectors, namely infrastructure, utilities and transportation (BLTA, BULL, TOWR); trade, service, and investment (DSFI, INDS, MICE, and INDS); and basic industry and chemicals (MLIA). With regards to export sales, for efficiency purposes the majority (87.38 per cent in Table 5.4) preferred to operate domestically vis-à-vis opening overseas branches.

With reference to company liquidity, the research linked four proxies, namely CMS (Figure 5.2), CFFO (Figure 5.3), FCF (Figure 5.11) and acquisition. With the mean of the cash and marketable securities of 358 billion rupiahs, PLCs can optimise this amount by supplying cash flows for their business operations. The positive value statistical mean of 285 million rupiahs for CFFO indicates an efficient process of generating incomes because they contributed to FCF (after a reduction by capital expenditure). Unfortunately, the positive values of revaluers' CFFO could not cover the amounts allocated for capital expenditures. As a consequence, the mean of

FCF was negative (-8.97 billion rupiahs), which reflected the insufficient CFFO provided for future investment in fixed assets (capital expenditures).

Moreover, this study associated company size classification proxies (total assets, sales, and operating income) (refer to Figures 5.8, 5.9, and 5.10) and fixed asset intensity (Figure 5.5). Revaluation with a statistical mean of above 5 trillion rupiahs (for total value of assets), 1.39 trillion rupiahs (for sales) and 117 billion rupiahs (for operating income) implies that they are big companies (Fact Book, 2012).

Finally, separate arguments arose among several proxies, such as share ownership (Figure 5.4), MBR (Figure 5.12), and PER (Figure 5.13). The share ownership statistical mean was a moderate 46 per cent and the majority of the ownership on this ratio was held by medium market capitalisation institutions. With this number (46 per cent), the motive for PLCs' asset revaluation tended to provide relevant information with regard to fixed asset value to the public. Figures greater than 46 per cent might be associated with opportunistic behaviour by PLCs to improve their financial conditions, namely managing the liquidity problem, and the demand for more debts due to a higher fixed asset value as collateral. Inversely, fixed asset revaluations which were conducted by PLCs with a lower share ownership percentage (spread among various institutions) might be connected to growth reasons; namely, to accelerate fixed asset values through regular revaluations.

A MBR of 1 reflects the fair value of assets that are similar to the book value and this shows that more disclosed information was provided to the public. The revaluers' MBR statistical mean was 1.26 and this result supports the explanation that they tend to disclose more detailed information to the public rather than non-revaluers, with a 3.58 mean. This study also discusses

PLCs' PER. With a ratio of 10.16, it can be interpreted that investing in revaluers' stocks gave stockholders earnings of 10 per cent. If compared to Indonesian banks' deposits rate, such as that of Mandiri Bank (December 16, 2013), which only pays 5 per cent annual interest, this investment is more profitable. In conclusion, revaluers found a positive public reaction with regard to their financial performances. The higher yields of revaluers' earnings compared to banks' deposit rate supports the argument that this was caused by publishing more public information.

To achieve a comparative analysis between revaluers and non-revaluers, the research analysed the statistical means of those groups (Table 6.2). This can differentiate between their financial performance and motives with regards to the decision to revalue or not in each group. The statistical mean of 28 revaluers (Appendix 11) is compared to the 327 non-revaluers (Appendix 12). The number of 327 non-revaluers was derived from: i) the total of 355 cases (325 in the main sample, plus an additional 30 in the new validation sample); and ii) it was reduced by the 28 revaluer cases. The revaluers were divided into two groups: a main sample (23 cases) and a validation sample (five cases).

Table 6.2 presents a comparison between the revaluers' and non-revaluers' means against each proxy. In summary:

- All four significant proxies, namely fixed asset intensity, DER, DER level and export sales have bigger values in the 28 revaluers than the 327 non-revaluers.
- Non-revaluers' characteristics are financially more prosperous, stronger in financial performance and represent a larger company size than revaluers. This conclusion can be linked to the three reports in the financial statements, namely CMS values and total asset

values in balance sheets; sales and operating income values in income statements; and CFFO values in cash flow statements. The higher value of CMS shows a good liquidity level, while the greater value of total assets represents the non-revaluers' size and growth. Sales and operating income values reflect their ability to generate profits and sustain growth. Positive and higher values of CFFO show the efficiency of companies' business operation. Therefore, non-revaluers have more chance to conduct acquisitions using their available funds and increase their share ownership using FCF.

- Non-revaluers have invested their funds in operational assets and are mostly financed through external funding such as debts. Their higher ratios of DER, DTA and debt level in comparison to the industrial average support this argument. Consequently, problems may arise and place a burden on companies' financial condition, such as higher debt contracting costs and debt restructuring.

Table 6.2 – Comparative Mean (in Million Rupiahs and Per Cent)

No	Proxy	28 Revaluers' Mean	327 Non-Revaluers' Mean	Description
1	Revaluation	1.00	0.00	Revalue/ Not to revalue
2	CMS	358,185	3,119,136	Non-revaluers have more CMS and liquidity level
3	CFFO	285,792	1,992,113	Non-revaluers have more CFFO and efficiency in operating activities
4	Ownership	0.46	0.52	Non-revaluers have more power domination
5	Acquisition	0.07	0.10	Non-revaluers acquire other companies more frequently
6	FAI	0.53	0.29	Non-revaluers have lower FA percentage
7	DER	1.86	1.85	Non-revaluers rely relatively less on debts
8	DTA	0.60	0.64	Non-revaluers have a higher proportion of debts used for investment in assets
9	Asset	5,035,564	34,679,101	Non-revaluers are much bigger
10	Sales	1,391,235	11,185,155	Non-revaluers are much bigger
11	Operating Income	117,173	2,511,386	Non-revaluers generate more profits
12	Debt Restructuring	0.00	0.01	Only non-revaluers who were in debt restructuring
13	FCF	-8,978	658,181	Non-revaluers have more free funds
14	DER Level	0.68	0.48	Non-revaluers have more debts that above the industrial average
15	MBR	1.26	3.58	Non-revaluers publish less relevant information
16	PER	10.16	22.88	Non-revaluers have higher stock prices
17	Foreign Branches	0.07	0.13	Non-revaluers have more foreign representatives
18	Export Sales	0.71	0.45	Non-revaluers focus more on domestic sales

- Non-revaluers did not release more relevant information to the public with regard to their important activities. This argument is supported by their high scores in MBR and PER. The higher MBR reflects the high disparity between the market price of stocks and their book value. This study predicted that one of the causes preventing PLCs from using the

revaluation model was the use of the cost model for fixed asset measurement. In fact, the market value of assets increased sharply and non-revaluers did not revalue their assets regularly. The limited public information is an example of information asymmetry which can affect the volatility of stock prices. Therefore, investors only relied on issues, rumours and inside information which were not officially informed. As a consequence, this circumstance led to a higher PER. Investing in stocks with higher MBR and PER will not reward investors with significant profits.

- Even though non-revaluers have more foreign branches than revaluers, they are still more focussed on the domestic market. However, this study concluded that non-revaluers could not maximise overseas operations to boost export sales because of the concern of incurring additional costs. This assumption will need to be substantiated in future research.

6.1.3 Discussion of Other Factors Which Led to a Limited Number of PLCs Applying the Revaluation Model

The reason why only a few Indonesian PLCs applied the revaluation model is because the accounting and business environment tends to support the implementation of the cost model. The research analysed this from various perspectives, namely political influence, capital market, accounting system and tax system. Detailed explanations are given below.

- *Political Influence and Institutional Relationships*

  The change in the Indonesian political system affected the accounting system. The formation of accounting standards in Indonesia, especially in relationship to fixed asset measurement, has historically followed the political regime of the country, which is based on a colonial past.

It is not easy for Indonesian companies to change the measurement method of fixed assets from the cost model to the revaluation model. The increasing number of PLCs who apply this method have experienced significant cultural barriers. Sudarwan and Fogarty (1996) and Perera and Baydoun (2007) both contend that the high paternalism perceived by almost all Indonesian PLCs has led to a limited number of Indonesian PLCs applying the fair market value of assets. Moreover, a low disclosure of presentation information in financial statements was found in Indonesian business practices because PLCs might have given high importance to secrecy (Sudarwan and Fogarty, 1996; Perera and Baydoun, 2007). With regard to fixed asset presentation and disclosure in financial statements, PLCs should present each type of fixed asset separately, rather than in aggregate class of fixed assets. The examples of specific information on fixed asset that has to be shared with the public are book value, salvage value, estimated useful life and accumulated depreciation.

Therefore, the IFASB and the ICMFISA play an important role in the regular monitoring of disclosure (both voluntary and mandatory) of information to the public. Several benefits of their role include the fact that Indonesian PLCs will always meet the minimum requirement for sharing public information; investors cannot decide their business expansion in Indonesia; restrained capital inflows; and a slowdown in market capitalisation and economic growth.

The ICMFISA has revised its *Financial Reporting Presentation Guidance Kep-06/PM/2000* dated 13th March 2000 to *Kep-347/BL/2012*, dated 25th June 2012. One of the new items in the 2012 guidance relates to the use of the asset revaluation model, which is something that was not previously elucidated upon. Because the agency was late to respond to the new IFASS 2007, the 2012 guidance revision was not relevant to the research period (2008-

2012). This guidance also does not specify detailed requirements for presenting or disclosing information in the financial statements. The 2012 guidance simply refers to the new IFASS 16 - 2007 with regard to asset revaluation and each company is consequently free to choose the method which is appropriate to its characteristics, either a cost model with its reliability advantage or a revaluation model with the relevant advantage of disclosing financial information to the public. If a company applies a revaluation model, a fair value measurement must be followed and an appraisal service officially listed on the IDX must be used. A company with a significant change in fixed assets based on fair value must conduct regular revaluation every year or at least once every three years (IIA, 2007).

- *Accounting System*

  Information asymmetry potentially occurs in a business practice due to inequality of information between management and stockholders. One party may take advantage of this condition to maximise its own interest, which can cause a moral hazard problem. Choosing an accounting policy that can decrease or increase a company's earnings will give CFOs a way to behave opportunistically in pursuing the agreed compensation schemes through more profitable and liquid financial performance. There is therefore a clear linkage between choosing an accounting method and its relationship to asset revaluation decision making.

  Before deciding to apply a cost or revaluation model in measuring fixed assets, Indonesian companies need to consider stakeholders' interests, i.e. those of creditors and investors. By applying a cost method, Indonesian companies will spend less than other companies who apply a revaluation model, thus avoiding payment of appraisal fees, audit fees and upward revaluation tax. Conversely, creditors and investors may become concerned about the money that they have lent or invested because they cannot access more relevant information with

regard to the fixed asset value. Almost all Indonesian companies have decided to apply a cost model. It can be interpreted that reliable ('faithful representation' was the latest term in 2010) information and cost-efficiency were the two main aspects which underpinned the reasons for most Indonesian PLCs not revaluing assets regularly.

In the relationship between these two qualitative characteristics of information, almost all Indonesian companies placed faithful representation (complete, neutral and free from error) higher than relevance (predictive value and confirmatory value). They decided to apply a cost model in order to minimise costs (to avoid the above costs) rather than providing more meaningful information to stakeholders through the implementation of fair value measurement.

Certain companies who applied a revaluation model were more concerned with providing more relevant information to stakeholders such as creditors and investors, even though they had to allocate certain funds for the payment of appraisal fees and upward revaluation tax, and maintain fair value records. This circumstance gave stakeholders more confidence to invest their money in the long-run. Since the number of revaluers increased slightly from 2008 to 2013, this study is confident that more companies will do so. They realise that providing more relevant information to stakeholders by applying a revaluation model is more important than the cost-efficiency consideration by applying a cost model.

It could also be argued that in time, several external parties, namely creditors, investors, capital market agency and the government, will also expect companies to disclose more relevant information to educate people and to compete in fair business transactions. The more detailed items in the contract between companies and external parties with regard to a

revaluation model might be added, and the capital market agency could also guide and encourage them over the appropriate model to be applied in the new regulation.

6.2 DISCUSSION OF THE DETAILED STATISTICAL RESULTS

6.2.1 Motives for Asset Revaluation

This section provides a detailed interpretation of each hypothesis. The study developed nine variables, and broke these down into 17 proxies. The proxies were CMS, CFFO, share ownership, acquisition, FAI, DER, DER level, DTA, total assets, sales, operating income, existence of debt restructuring, FCF, MBR, PER, foreign operation, and export sales. A summary of the discussion is given in Appendix 17. Each hypothesis is explained below.

- *Liquidity is negatively associated with companies' asset revaluation decisions*

  To fulfil companies' current 'business operations' liabilities (that is, for payment of salaries, interest on loans, and trade accounts), they should maintain sufficient funds to settle their short-term financial obligations. Failure to do so will lead to cash shortages and possible bankruptcy and therefore it is necessary to measure two liquidity proxies, CMS and CFFO. The results found, however, that both liquidity proxies were not significant to be considered as factors in deciding whether to revalue assets or not. The rationales underpinning the above findings are as follows:

  - The research collected company data within the range of three company size classifications (year of establishment, total assets and industrial classification) using stratified sampling. The results showed that various CMS and CFFO values in the sample did not investigate any change in dependent variable (i.e. an increase or decrease). Put simply, the use of data based on the level of company size could not predict decisions to

revalue assets or not. The variety of the data of the two proxies also resulted in 0 beta coefficients. It is interpreted that these proxies had no impact at all on the dependent variables.

- Although the financial crisis impacted on the performance of global companies in 2008, it did not influence Indonesian PLCs. Economic growth decreased gradually from 6.3 per cent in 2007 to 6.0 per cent in 2008. Subsequently, it was relatively stable at 6.2 per cent until 2012. Other developed countries' growth dropped to minus figures, such as that of the UK, by -1.0 per cent, the USA by -0.4 per cent and Japan, by -1.0 per cent. These countries were still struggling to recover their growth rates up until 2013; for example, in 2008 and 2013, the UK's growth rate was 0.3 per cent and 1.7 per cent respectively, and in the USA it was 2.8 per cent and 1.9 per cent (World Bank, 2013).
- However, in the same period, these freefall issues caused stock prices to drop and the Jakarta Composite Index plunged from 2,745 to 1,355 points (IDX, 2008). In fact, the Indonesian economy and PLCs' financial performances were still better than in developed countries. In 2009, the index recovered and nearly reached the 2007 index by 2,534 points and rose rapidly to 4,700 points as of March 22nd, 2014 (IDX, 2014).
- As summarised in Figure 5.3 with regard to the CMS trend, all cases have a positive CMS, which shows better liquidity. The ability to generate sales in such economic conditions has helped PLCs to maintain positive cash and marketable securities for short-term business operations. Since there is no requirement for additional cash, they might not consider revaluation of fixed assets as a way of increasing loan collateral. Thus, this is a reason for the insignificance of CMS and CFFO as predictors.
- Most cases in Figure 5.3 have a positive CFFO used for the running of business activities. Growing and mature PLCs with a positive CFFO can manage their core activities, namely, the selling of goods and services. They do not rely on cash inflows from investing or

financing activities. Even for some Indonesian PLCs with a negative CFFO (not able to generate enough cash to cover operating cash outflows), they could rely on the cash inflows from financing activities, such as from the selling of new stocks or new debts. This temporarily helps them to provide funds for operating activities.

- As of 31 December 2012, most PLCs which were categorised as large market capitalisation companies had not revalued their assets. These included ASII, HMSP, BBCA, BMRI, and TLKM. Consequently, a notable disparity occurred between revaluers and non-revaluers. The statistical means supported the fact that revaluers' CMS and CFFO (Appendix 11) were only 358 billion rupiahs and 285 billion rupiahs, while the combined (revaluers and non-revaluers) main samples had a CMS of 2.18 trillion rupiahs and CFFO of 1.59 trillion rupiahs (Appendix 5).
- There is a huge difference (imbalance) between the number of cases used for revaluers (28) and non-revaluers (327). This could create a further reason for the insignificant CMS and CFFO proxies in drawing conclusions.

In relation to this research, earlier studies produced various results of illiquid financial conditions, which led to declining cash flows from operations. Therefore, companies had a reason to request additional loans from banks to solve this problem. By making upward revaluation, they could secure new financing and increase their collateral to improve their borrowing capacity. This research produced different findings to previous studies, which might have been caused by different factors, for example the data used, the proxies and business environment. Previous researchers collected data from various countries such as the UK, Australia, New Zealand and Thailand - they found that upward revaluations were closely associated with liquidity. Barlev *et al.* (2007) proved that liquidity was significant (using the current assets to total assets ratio) and Lin and Peasnell (2000a) found that

revaluation was significant at a level of five per cent and negatively associated with liquidity (using the quick assets to current liabilities ratio).

With regard to CMS as a relative proportion of liquid assets (total tangible assets), they found that its ratio was not a significant factor in deciding revaluation. Similarly, Chainirun and Narktabtee (2009) used two proxies, quick ratio ((current assets - inventory - other current assets) to current liabilities) and net working capital ratio ((current assets - current liabilities) / total assets). They found that the quick ratio was not a significant factor in revaluation decisions, but that the net working capital ratio was. Similarly, another study conducted by Tay (2009) did not find the quick asset ratio to be significant.

- *Ownership is positively associated with companies' asset revaluation decisions*

  To understand the relationship between company ownership and its influence on asset revaluation decisions, this study tested two proxies, namely share ownership and acquisition. The research found these tested proxies insignificant in predicting asset revaluation decisions. The results revealed that acquisition was moving in the same way as revaluation decisions (positive association) as expected, but that share ownership reacted inversely. This study had originally anticipated that ownership would associate positively with the decision. The rationale for the results are as follows:

  - Before acquisition of other companies, PLCs have to deal with the proposed value of the acquired company. Having the assets appraised using fair market value, the total assets of both companies will increase due to upward revaluation. The research expected a positive association between acquisitions and the revaluation decision. This means that

the more widespread the plans to acquire other companies, the more revaluation will be undertaken.

- The acquisition proxy was insignificant in predicting asset revaluation decisions. The justification for the insignificance of both predictors is based on Table 5.5. Only a few PLCs (9.8 per cent) have conducted acquisitions, and 7.1 per cent of PLCs have revalued their assets. Although theoretically PLCs believed that the use of a revaluation model in measuring assets (using fair value) contributed to their growth, few PLCs actually did so. Therefore, these facts support the statistical results that acquisition was not a significant predictor in asset revaluation decisions.
- Share ownership represents the control span in managing the company. The higher the percentage the company has, the greater the control given to omit people to represent the majority stockholders' interest. If they own a higher percentage, they can use asset revaluation as a strategy to increase the market value of the firm without encountering much reluctance from the minority interest holders.
- A negative relationship between share ownership and revaluation decision means that the lower the percentage owned by the company, the more revaluation will be conducted. The research suspected that this was caused by the fact that there was no pattern of ownership percentage, as seen in Figure 5.4. Companies who were owned by many parties (high share ownerships) tended to undertake fixed asset revaluation. Most revaluers have a lower percentage of share ownership than non-revaluers. This study assumes that these companies might have large market capitalisation so that the ownership belongs to many (external) parties, and that the control, in deciding accounting policy, is delegated to the CFO and no permission is required from the shareholders' meeting. Among PLCs, the highest percentage of share ownership by one company varied from 3 per cent to 99 per

cent. In UNSP, the ownership spread to many parties, while in BCIC one party held nearly all the shares. Overall, the ownership mean was 51.90 per cent.

- Although there is no significant difference between revaluers and the main sample (revaluers plus non-revaluers) means, neither of the proxies (share ownership and control) are significant predictors. Revaluers' share ownership and acquisition means are 46 per cent and 7 per cent (Appendix 11), while in the main sample the means are 52 per cent and 9 per cent.
- The statistical results show that share ownership was not a significant factor in predicting revaluation decisions. Although previous research has used this proxy, in the Indonesian case PLCs did not consider it. Other factors such as fixed asset intensity, DER, debt level, and export sales were found to be more relevant to the decision. The companies might think that the share ownership aspect was not a significant aspect to be considered in choosing an accounting policy. They could not influence or change it directly because it represented the companies' financial structure and there was nothing CFOs could do about it.

In line with this research, Brown *et al.* (1992) also measured other motives, such as avoidance of hostile takeover from other companies through upward revaluation. Asset values will be increased, which can shield companies from takeover threats and hostile takeover bids. Brown *et al.* (1992) found avoidance of takeover bids to be insignificant as a proxy in predicting asset revaluation. Their results show a positive association with asset revaluation in order to fend off takeover threats. Meanwhile, Iatridis and Kilirgiotis (2012) concluded that their samples (PLCs) revalued fixed assets to strengthen companies' acquisition processes. Those companies tended to be larger and required more capital.

Moreover, Seng (2010) suggested that with the threat of takeover, firms were more likely to revalue assets. This strategy was taken by issuing bonus stocks to frustrate bidders.

- *Fixed Asset Intensity is positively associated with companies' asset revaluation decisions*

  To run their business operation, PLCs from the nine IDX sectors may allocate funds differently in their assets; namely, CMS, inventory and fixed assets. With regard to FAI, they employ different types of fixed assets, depending on their business characteristics. Service companies such as banks and other financial institutions have land and buildings as their principal assets, while basic industrial sectors own machines and equipment as their main assets. The level of FAI can also be different, as it depends the company's reliance on fixed assets used in the business. To measure that proportion of the total assets, this study applied an FAI formula. The research found that this proxy was significant. The rationale is explained as follows:

  - If the FAI ratio is higher for the majority of Indonesian PLCs, revaluation is an important strategy to keep the asset significant in relation to proportion of total assets. The result found that FAI was positively associated with asset revaluation, as expected in the hypothesis. This means that the higher the ratio of fixed asset intensity, the more asset revaluation is conducted; Figure 5.5 supports these arguments. Interestingly, non-financial sector companies have an FAI of over 80 per cent, which illustrates PLCs' reliance on the role of fixed assets in the business operation.
  - The intensity ratio for the main sample is only 30 per cent (Appendix 5), and revaluers have higher ratio at 53 per cent. Akin to the other two significant proxies (DER level and export sales), revaluers have a higher mean (with 0.68 and 0.71) than the main sample (mix of revaluers and non-revaluers), with 0.5 and 0.49.

In comparison to this study, earlier researches investigated fixed asset intensity as a proxy to predict the motives for asset revaluation. With a significant and higher beta coefficient to predict asset revaluation in this study, this result supports Tay's (2009) findings, which produced almost identical results. Lin and Peasnell (2000a) also found that fixed asset intensity was significant at a level of five per cent and was positively associated with upward revaluation. Conversely, Seng (2010) had different findings, with an insignificant result of the proxy, whereas Iatridis and Kilirgiotis (2012) concluded that revaluations were conducted by companies with a low value of fixed assets. Thus, to achieve a higher target on return on assets, they required a greater debt capital.

- *Leverage is positively associated with companies' asset revaluation decisions*

  To accelerate company growth, it is common practice for them to borrow funds as external financing. These sources can also be used for expanding the business as long as they can generate more income than the interest payable. However, the reliance on debt rather than equity is considered risky. Those highly leveraged companies may face very strict covenants and costly contracting consequences. Asset revaluation is a way of reducing contracting costs. This study applied two leverage proxies, DER and the DTA ratio, to predict companies' revaluation decisions. DER was found to be significant in predicting revaluation decisions, with a positive association as expected. The DTA ratio was not significant, and its association with revaluation decisions varied (positively or negatively) due to modified models. The rationale for these findings is as follows:

  - PLCs had to maintain DER at a certain level, so they tried not to violate debt covenants. Breaching the covenant could affect their credit rating (putting them at higher risk of unpaid debts). Revaluing fixed assets helped them to increase fixed asset and equity

values (lower DER). This increased asset collateral is also needed in the case of PLCs requiring additional loans. A positive association result means that the higher the DER, the more likely PLCs are to carry out revaluation. Thus, significant and positive statistical results are logical in practice. Figure 5.6 shows the PLCs' reliance on debt rather than equity as their main financial source for business operation. This is supported by the statistical results, in that debt values were roughly double those of equities (the DER mean was about doubled), and most of the companies DER was in the range of a 1-5 ratio.

- Although the DTA ratio is also related to DER in measuring leverage, it was unfortunately found to be insignificant in predicting revaluation decisions. The higher DTA ratio means that the company relies more on debt to finance assets, and it encourages PLCs to maximise the usage of assets. Figure 5.7 illustrates that the mean of the DTA ratio was 62 per cent. It can be interpreted that in the companies' efforts to generate income using their assets, they were financed by 62 per cent debts. They employed fixed assets to produce inventory and converted this into accounts receivable and/or cash. Because of this high ratio, PLCs should decrease the DTA ratio through asset revaluation. By doing so, asset values will increase, while debt values remain the same. In fact, statistically, the DTA ratio was not a significant factor in predicting companies' revaluation decisions.
- The test on leverage proxy generated two signs (positive and negative) of beta coefficients. Companies who had a positive association between the DTA ratio and revaluation decision might be in a growth phase, which needs more debts to expand the business. The higher the DTA ratio, the higher the level of revaluation carried out. Conversely, companies who had a negative association might be financially stable and successful, with a smaller DTA ratio.

Previous research that supported these findings includes that of Iatridis and Kilirgiotis (2012). To reinforce firms' financial condition and growth prospects, those with high debt capital and low profitability were urged to revalue their assets. Similar to this research, DER was also used by Jaggi and Tsui (2001) to investigate the motive in predicting revaluation decisions. They examined two groups of revaluers and non-revaluers and found that the DER mean of revaluers was slightly higher than that of non-revaluers, although statistically it was insignificant. For the post-revaluation period, the revaluers' DER mean was found to be significantly higher than that of non-revaluers.

In comparison to this research, several scholars previously applied the DTA ratio as another proxy for financial leverage. Lin and Peasnell (2000a) concluded that the leverage/ gearing ratio was a significant factor (at a level of five per cent) and positively associated with asset revaluation. Brown *et al.* (1992) and Choi *et al.* (2009) supported their results. They found that revaluers had higher leverage and closer to debt covenant constraints than non-revaluers. A positive association between leverage and revaluation was also suggested by Whittred and Chan (1992), with a significant value at a level of 10 per cent. Conversely, Cotter (1999) found leverage as a significant factor in revaluation decisions with a negative association.

- *Company's size is positively associated with companies' asset revaluation decisions*

  Politicians and bureaucrats sometimes use company profits as wealth allocation issues for providing public facilities through taxation. On the other hand, companies avoid this practice by adopting income reducing accounting policies. To investigate the impact of lowering company size and asset revaluation decisions, the research applied three proxies to be tested, specifically: total assets, sales and operating income. The results demonstrate that none of the proxies were significant in predicting revaluation decisions. The association between

those proxies was positive, as expected in the hypothesis, but statistically all three beta coefficients scored 0. It is interpreted that there was no effect (either positive or negative) of predictors on the dependent variables. The rationale for these results is as follows:

- The insignificant result of the three proxies above proved that PLCs did not carry out asset revaluation in order to downsize their companies. The issues of reducing political costs to avoid paying higher taxes and wealth allocation were not relevant in this case.
- In measuring company size, all proxies produced the same patterns and results. A result generated from one of three proxies (total assets, sales or operating income) could portray a similar conclusion among them in the other two.
- In relation to total assets, the use of a FAI ratio in the previous hypotheses is more relevant. This ratio illustrates the significance of the model because the assets to be revalued were only fixed assets, and do not impact all accounts among the total assets.
- The research tested three size proxies (total assets, sales and operating income) in the two case groups: 325 cases (combined revaluers and non-revaluers) and the 28 cases of revaluers only. Non-revaluers had higher values in all three proxies than revaluers. Because the results found were insignificant, the different sizes between revaluers and non-revaluers was not the cause for revaluation decision making using these three proxies.

Previous studies have also applied similar proxies to measure company size in order to predict revaluation decisions and most found size to be a significant motive in the model. Natural logarithms of sales values were used as a proxy size and yielded a positive association, being a significant factor to the model (Lin and Peasnell, 2000a; Lin and Peasnell, 2000b; Barlev *et al.*, 2007). Other proxies which have proved to be significant include the natural logarithm of total assets and operating income (Seng and Su, 2010). The

use of the natural logarithm of total assets has also yielded different results. Brown *et al.* (1992) and Choi *et al.* (2009) suggested that revaluers were more likely to be larger companies with eligible assets to be revalued. Conversely, firms with low fixed assets sought a way to increase their assets through revaluation (Iatridis and Kilirgiotis, 2012).

- *Debt restructuring is positively associated with companies' asset revaluation decisions*

  To understand companies' motives with regard to their opportunistic behaviour, the research tested the relationship between debt restructuring and revaluation decision making. PLCs who are in the process of debt restructuring face problems with debt covenant restrictions. This circumstance can lead them into a technical default and raise their contracting costs. The research found that only a few companies had such a problem, and none of them revalued their assets. Neither was debt restructuring a significant proxy in predicting asset revaluation. Statistically, revaluation practices were not based on the motive for opportunistic behaviour. A negative association between debt restructuring and asset revaluation decision making also supported this finding. Therefore, the more companies suffer from a debt restructuring problem, the less frequently is revaluation conducted. Other motives found to be significant in this research were economy and efficiency, to reduce debt contracting costs and information asymmetry, and to provide a signal to stakeholders. The rationales for the statistical results are as follows:

  - None of the 28 revaluers were involved in debt restructuring and there were only three companies doing this out of the 327 non-revaluers: BNBR 2009, FREN 2009, and INKP 2009. The research suggests that these companies were suffering the impact of the 2008 global financial crisis. The small number of companies involved in debt restructuring out of the total of 355 cases proved that almost all Indonesian PLCs had survived the crisis.

This fact supported the statistical findings with regard to the insignificance of debt restructuring when the asset revaluation predictor had a negative association.

- Since almost none of the companies were suffering from the debt impact, they were not in the process of debt restructuring. However, two significant proxies in this research, DER and the DER level, have shown the companies' high reliance on debt.

Similar to this study, Cotter (1999) found that the existence of leverage covenants was insignificant for asset revaluation. On the contrary, other research produced different results (Brown *et al.* 1992). In the case of firms' net asset shrinkage, they were more likely to revalue assets (significant with a negative association) because this could lead them closer to covenant default. A significant result of the existence of debt covenant with a positive association with asset revaluation was also found by Brown *et al.* (1992). Companies tended to revalue their assets using the expertise of independent valuers rather than internal ones. The reason was that independent valuers provided a more reliable valuation service of fixed assets for the companies who were on the point of violating debt covenant restrictions.

- *Successful status is positively associated with companies' asset revaluation decision*s

Successful companies were labelled with two proxies - FCF and DER level. In this study, having allocated capital expenditures for business operations from CFFO, the sum of the remaining values is FCF. A company with positive FCF is categorised as a successful company financially. A low DER level also represents a successful status because the ratio is below the industry average DER, which means lower risk. The research found that only the DER level proxy was significant to predict asset revaluation decisions and had a positive association. The rationales are as follows:

- The insignificant value of FCF is because of the variety of PLC data, namely positive and negative, and high and small values (Figure 5.29). That figure represents the relationship between companies' CFFO and the change in total assets minus the change in total liabilities. The research suggested stakeholders should not consider FCF as a factor for predicting asset revaluation decisions.
- A significant result with a positive association between DER level and revaluation decision making shows that this proxy is valuable in the model. A lower DER score than the industrial average suggests that a company has a bona fide (successful) status. PLCs often conduct a revaluation because they need to signal to stakeholders their better financial performance and good investment prospects. Conversely, high DER level companies might revalue their assets to avoid debt covenant restrictions, which may lead to costly contracting costs. PLCs did not revalue their fixed assets for reasons such as to gain economic/ efficiency benefits, opportunistic behaviour, and to reduce political costs.
- As summarised in Table 6.2, another reason for the insignificance of the FCF proxy is because of the very different revaluers' and non-revaluers' statistical means. The non-revaluers' FCF mean was positive (658,181 million rupiahs), and that of the revaluers was negative (-8,978 million rupiahs). This shows the disparity in the cases in the availability of free funds to accelerate business.

This study is relevant to previous studies which used FCF and DER levels as proxies in predicting revaluation decisions. Barlev *et al.* (2007) found a significant and positive association (in the total sample and British samples) between future financing and revaluation. Companies with a negative FCF showed lower growth and required more future capital expenditures. They tended to revalue asset revaluation. Companies with a positive FCF were categorised as firms with a successful status. In other research, Gaermnynck and

Veugelers (1999) signalled that successful firms did not revalue their assets and had a low DER status. Often firms having this status could be found in industries with a high variance performance, such as R&D intensive ones and high tech companies.

- *Growth is positively associated with companies' asset revaluation decisions*

  In this study, most companies had positive CFFOs (Figure 5.29), which illustrates a profitable business and stimulates faster potential growth. These funds were reinvested in the form of capital expenditures, namely property, plant and equipment. Companies attracted more creditors and investors to help speed up their growth and share business risks. Therefore, they should provide relevant and reliable information which enables external parties to make business decisions quickly and efficiently; this can reduce information asymmetry. The research measured two growth proxies which relate to revaluation decisions, MBR and PER. The results show these proxies were unable to provide significant value to the model. The rationale for this finding is as follows:

  - MBR had a negative association with asset revaluation decision making. This means that the closer the value of MBR to one, the better the information reflected publicly and the more revaluation is carried out. The ratio shows a comparative percentage between the market value and book value of equity.
  - The insignificance of the MBR proxy was triggered by the total number of non-revaluers compared to revaluers. Table 6.2 shows the difference between the means of MBR revaluers and non-revaluers. The non-revaluers mean was three times higher than that of the revaluers and this research suspects that this was the cause of the insignificance of MBR as a revaluation decision predictor.

- PER also had a negative association with the revaluation decision. This means that the lower the ratio of stock price and earnings per share, the greater the amount of money that is invested in this yielded stock. A company with a high ratio of PER will encourage revaluation in order to lift the book value of the stock closer to its market value.
- The research had a similar presumption on PER as on MBR. The non-revaluers' mean was about double that of the revaluers, which indicated that non-revaluers' stocks prices were too high. This circumstance resulted in PER not being significant in predicting revaluation decisions. Investors were more likely to invest in revaluers' stocks with lower PER and MBR.

In comparison to this study, several researchers have found different results for the growth proxy in predicting asset revaluation decisions. Whittred and Chan (1992) proved that there was a significant increase in the revaluing year for the market to book equity of the firm. Similarly, a positive significance of growth opportunity using the MBR was concluded by Chainirun and Narktabtee (2009). Moreover, Idiatris and Kilirgiotis (2012) found that higher growth had been shown by larger companies with better financial performances, so they tended to revalue assets to maintain their position. On the other hand, as measured by the change percentage in total tangible assets, the growth option was found to be insignificant (Seng and Su, 2010).

- *Disclosure is positively associated with companies' asset revaluation decisions*

Unlike private companies, publicly-listed ones must provide reliable and relevant information to the public (stakeholders). The internal party (namely employees) or external parties (such as creditors, investors and government) have an interest in companies' financial

progress. Because the financial statement is a communication tool, through it an interrelationship between stakeholders takes place. Good communication helps to reduce information asymmetry and business risks. In the relationship between the disclosure aspect of foreign transactions and revaluation decisions, this research measured a disclosure using two proxies, foreign (branch) operation and export sales. Subsequently, these measurements were associated with the revaluation decision. The research found that only export sales was a significant predictor in the model. The rationale for this finding is as follows:

- The insignificance of the foreign operation proxy is due to several reasons. Only a few companies had a foreign branch or operation to support their export sales, and there was a big difference between revaluers' and non-revaluers' means (Table 6.2). However, the proportion of the cases is equally shared between domestic and export sales proxies among the 325 cases. A negative association between foreign operation and revaluation decisions means that the fewer the companies with foreign branches, the more revaluation that is carried out. This is because they might think that having a foreign branch could be viewed as a costly activity (especially by revaluers), and that branches need to be assessed regularly for efficiency and effectiveness.
- The logical reason for the significance of the export sales proxy is that foreign customers might be viewed as an important party who should be supplied with reliable and relevant information. Revaluation is a way of updating companies' fixed assets, and it reduces information asymmetry between companies as the sellers and customers. 71 per cent of revaluers sold their products or services to other countries, while only 45 per cent non-revaluers exported their outputs. Thus, revaluers are likely to have more interest in asset revaluation than non-revaluers.

The above two proxies used in the research were also applied in previous studies (Piera, 2007; Idiatris and Kilirgiotis, 2012). To strengthen financial prospects and expand foreign business projects, Idiatris and Kilirgiotis (2012) suggested revaluation of assets. Their results show that firms which had foreign operations were larger, with higher growth and leverage. Exports were found to be significant and had a positive association with upward revaluation (Piera, 2007). Although revaluation tended to decrease profits and leverage ratios, international pressure could alter a company's focus on creditworthiness rather than profitability.

6.2.2 Discussion of the More Robust Prediction Model

- *Balanced Cases of Revaluers and Non-Revaluers*

This study applied a balanced case between revaluers (28) and non-revaluers (28), and discussed the statistical results. The comparative Table 6.2 proves that imbalanced conditions lead to a lower prediction power (R^2) and less significant predictor variables. The first result concerns the overall model (F test) and was found significant. The imbalanced data led to different values between the current and previous R^2. The current R^2 scored double in three measures, -2 Log likelihood, Nagelkerke and Cox Snell, with 59.88, 56.4, and 75.2 respectively. Consequently, the dependent variable (revaluation decision) can be better predicted by 17 proxies in this study. Thus, the proxies applied in the research were valid to predict revaluation decisions.

Among the four significant proxies, at the five per cent level, two proxies remained the same, both in the current and previous models, namely FAI and export sales. The FAI ratio as a proxy related to the economy/ efficiency motive. This fact reveals that when using either a small or large number of cases, small or large company size cases in the research, these two proxies were the main factors when considering whether to revalue fixed assets or not. Other

considerations (before revaluation is made) are which assets should be revalued, which related costs should be allocated, its impact on debt covenant and consistency in applying a revaluation model.

The argument for the significant export sales variable is the use of the fair value of fixed assets in the revaluation model in global accounting standards, which encourages the disclosure of relevant information to the public. Overseas buyers can assess companies' financial performance easily. Therefore, the disclosure of foreign transactions is closely linked to the effort to reduce information asymmetry.

The other two new significant proxies are operating income and foreign branches. The significance of the operating income proxy suggests that companies intended to revalue their fixed assets to increase operating income. The decision to revalue PLCs' fixed assets has increased the values of three company accounts (fixed asset, equity, and fixed asset accumulated depreciation) in financial statements. Those decisions were motivated by the income reduction scheme to mitigate companies' political costs. The presence of companies' foreign branches supports the role of export sales in extending business networks. Although export activities could be operated directly from domestic branches, for companies such as BLTA, INDF, and LTLS, opening foreign branches was a necessity because it helped their customers throughout the world. Similar to export sales as another significant proxy in this model, this study found that the presence of a foreign branch was significant to predict decisions to revalue assets. Because these proxies measured the motive to reduce information asymmetry, revaluation decisions reflected companies' efforts in improving the availability of relevant information.

In this new prediction model, DER and DER levels were no longer significant at the five per cent level. With significant values of 0.851 and 0.690, these proxies became insignificant. These changes showed that the companies did not consider leverage (with the motive to reduce contracting costs) and successful status (with the motive to give a positive signal to stakeholders) as factors in asset revaluation decisions. Put simply, achieving economy and efficiency, and providing relevant information, were given more consideration by PLCs than reducing debt contracting costs and signalling to stakeholders in deciding asset revaluation.

- *The Use of a Natural Logarithm for Monetary Proxies*

The research intended to increase the number of significant proxies and other statistical measures such as R^2. The data consisting of 325 cases was modified with the purpose of reducing its variability. The two categories used in this approach were monetary/ currency measures and having a positive value. Only three proxies met these categories, namely CMS, total assets and sales values. The overall fit of the model (F test) was significant and the R^2 values were lower than the previous model (28 revaluer and 28 non-revaluer cases). R^2 scores in all three types, -2 Log likelihood, Nagelkerke and Cox Snell, were 57.69, 19.4 and 48.6 per cent respectively. Therefore, various prediction powers of the models depend on the R^2 method used. This approach provides the highest number of significant proxies (with six proxies) but with less prediction power compared to the balanced cases approach (with 75.2 per cent).

Additional significant proxies occurred in this modified model. The individual test of the model (t-test) found that six proxies (summarised in Appendix 17) were significant in predicting revaluation decisions. These are CMS, fixed asset intensity, DER, operating income, DER level and export sales. Each proxy is linked to the motives for fixed asset

revaluation. Four proxies remained the same as in the previous model, namely fixed asset intensity (to gain economic benefits and for efficiency motives), DER (to reduce the debt contracting costs motive), DER level (to provide a signal motive) and export sales (to reduce the information asymmetry motive). Two additional significant proxies in this approach are CMS (to gain economic benefits and for efficiency motives) and operating income (to reduce the political costs motive).

6.3 EVALUATION OF ASSET REVALUATION DECISION MAKING USING THE CONCEPTUAL MODEL

This section explains the decisions made by revaluers. It relates to all six significant proxies found: CMS, FAI, DER, operating income, DER level and export sales. Each element is connected to the other elements in the conceptual model of asset revaluation. Following the sequential flow in Figure 3.1, the motives for asset revaluation are linked to other elements: effects, business outcomes and business impacts. Therefore, this study provides a broader perspective in understanding and evaluating revaluation decisions. The linkage between revaluers' motives and effects is explained below.

- Though CMS was found to be significant in predicting the model, the CMS mean of revaluers was less than that of non-revaluers because of the imbalanced number between them. CMS measures the economic benefits and efficiency motive. Non-revaluers had higher CMS values, which led them to revalue their assets and reveal their liquidity advantage to creditors. Additional loans might be received in the case of cash shortage and creditors were more confident with the loans given to companies because of higher collaterals. On the other hand, revaluation consumed more cash outflows for payment of upward revaluation tax and

appraisal fees. Thus, the economic benefit and efficiency motive in asset revaluation will affect companies' future cash flows.

- Revaluers recorded a FAI mean of 53 per cent, which was higher than the non-revaluers' mean. As a proxy of the economic benefit and efficiency motive, the FAI ratio measures the utilisation of companies' fixed assets to maximise contributions towards generating income. Cost allocation aims to allocate costs based on their activities. Therefore, the more utilized fixed asset, the lower the depreciation expenses allocated. Two accounts, total assets and equity values, were increased simultaneously. Through upward revaluation, companies' assets increased, and they were required to allocate their depreciation costs appropriately. They were encouraged to be more productive, in terms of producing and selling goods or services and became more efficient companies. Thus, the economic benefit and efficiency motive in asset revaluation affected companies' future operating income.
- Another significant proxy is DER as a motive to reduce debt contracting costs. Asset revaluation could reduce companies' DER because revaluation increased their equity values. This reduction was required to meet debt covenants and maintain a certain ratio. Furthermore, a lower DER protected companies from technical violation. It also meant they were charged higher interest rates and were rejected for additional debts. Thus, the motive to reduce debt contracting costs in asset revaluation affected companies' future cash flows.
- Operating income was a significant proxy which measured companies' motives for reducing political costs. Upward asset revaluation increased companies' depreciation expenses and, as a consequence, it lowered their net income and withholding (corporate) tax. Thus, the motive to reduce political costs in revaluing assets affected net income and withholding tax.
- Another significant proxy that measured companies' motives for signalling their financial success was the DER level. A lower DER level represented companies' successful status; the lower the DER level value, the greater the number of companies who revalued their

assets. A company DER which is below the industrial average DER is denoted by 1 and categorised as a lower DER level company. For successful companies, revaluation was a way of disclosing information on the current market value of fixed assets. That information is reflected in financial statements and would increase stock prices. Thus, the motive to provide signals of asset revaluation undertaken affected companies' stock prices.

- The last significant proxy, export sales, measured companies' motives for reducing information asymmetry with regard to asset revaluation. The revaluers' mean (0.71 per cent) was far higher than that of non-revaluers (0.45 per cent). Through the higher disclosure, export sales were linked to overseas buyers who were concerned about the fair value information of fixed assets. Its value reflected reality, so the users of financial statements could quickly and accurately make investment decisions. As information was shared openly with the public, it reduced information asymmetry and was able to stimulate stock prices. Thus, the motive to reduce information asymmetry in asset revaluation affected companies' stock prices.

Subsequently, the above effects might influence business outcomes as another element in the conceptual framework as follows:

- By providing more efficient business operation. This can be achieved by generating greater operating income from savings due to higher depreciation expenses; by providing more cash saving from paying less tax; and by reducing contracting costs, such as lower interest costs. Economic benefit and efficiency, and reduction of political cost motives will support this outcome.
- By providing more financial sources. This can be achieved by requesting new loans from creditors, for example, to increase production capacity. This is backed by higher collateral

values as an impact of upward revaluation taken. This outcome will be supported by two motives: economic benefit and efficiency, and reduction of debt contracting costs.

- By providing more relevant information to stakeholders. Applying a revaluation model means adopting a fair value method for fixed asset measurement. Financial statements reflect economic reality, and therefore they can reduce the information gap between the preparer and users of financial statements. The motive of reducing information asymmetry will support this outcome.
- By providing signals for future financial performance. Revaluers with a successful status (low DER level) have signalled to stakeholders that these companies were meant to provide relevant information rather than take economic benefit from carrying out asset revaluation. This advantaged revaluers with regard to the image of potential/ profitable companies in the eyes of investors. Even though their DER was relatively the same as non-revaluers, the revaluers' DER level mean (0.68 per cent) was far above that of non-revaluers (48 per cent). This shows their lower risk compared to the industrial average DER (Table 6.2). This outcome will be supported by providing future signal motives for asset revaluation.

Furthermore, business impacts as the last element in the conceptual model of asset revaluation (Figure 3.1) are discussed below.

- Increased public trust. As publicly listed companies, relevant information is a priority. A financial statement contains useful information for the users' decision making. Encouraging this disclosure will promote fair competition between them. Therefore, this circumstance will help gain trust from the public.
- Increased sustainable growth through long-term profit/ growth. A supportive business environment, and free and easy relevant information, available for users will support

companies in gaining long-term profits with stable growth. Therefore, all parties, namely investors, creditors, employees, government and the community, will enjoy these benefits.

- If the above two impacts are to be achieved consistently, they will contribute towards the prosperity of future generations.

CHAPTER 7
CONCLUSIONS, IMPLICATIONS, LIMITATIONS, and RECOMMENDATIONS

7.0 INTRODUCTION

Chapter seven is the last chapter in the thesis. This comprises four sections such as:

i) Conclude the study's context in accounting standards convergence, and the statistical results in the form of descriptive and hypothesis testing findings.

ii) Provide implications to business sectors and other relevant parties.

iii) Provide limitations of the study.

iv) Provide recommendations for future research.

7.1 CONCLUSIONS

7.1.1 Overview of the Research

The comparability of global accounting standards (IFRS) encouraged IFASB to revise IFASS 16 – 2007, which offered PLCs the cost or revaluation models for fixed asset measurement. IFRS provides benefits in enhancing the quality and transparency of financial reporting and improving its comparability between PLCs. However, implementation of international accounting standards might disregard local values and accounting systems by fully adopting the IFRS (without being adjusted to national customs and taking into consideration national perspectives such as politics, economy and culture). Responding to these issues, the research aimed to assess Indonesian PLCs' motives for revaluing fixed assets or not, and the effects of their decisions. In this study, revaluations practised by Indonesian PLCs were discussed and predictive logistic regression models developed using the asset revaluation conceptual framework.

Previously, only the cost model was allowed to be applied in Indonesian accounting practice because the IFASS referred to US accounting standards. Since January 1, 2008, Indonesian PLCs have considered what aspect (either relevance or reliability of information) is prioritised in their financial report. Measuring fixed assets using market value is relevant for providing public information but PLCs need to monitor its value regularly and appraise it if required. The efforts to provide the latest (updated) values of companies' fixed assets requires higher costs to maintain the revaluation model. PLCs will not meet these circumstances if they choose the cost model. The underlying factors relating to PLCs in choosing fixed asset measurement could bias the value of fixed assets in the financial statements because IFASS 16 - 2007 freed them to choose from two options, the cost or revaluation model. A conflict of interest has arisen because an agent and stockholders hold different perspectives on these options. An agent could take benefits to the cost of stockholders and *vice-versa*.

The use of stratified random sampling helped the study to achieve the representativeness of the population. Three categories were applied to the stratification process, namely company age (young, middle and old), size (small, medium and large) and nine IDX industry classifications. 2,136 financial statements from the period of 2008-2012 were collected and reviewed to group PLCs either as revaluers or non-revaluers. Furthermore, 325 cases were set aside as the main sample taken from this population.

7.1.2 Descriptive Findings

Only 2.83 per cent of the total of 460 Indonesian PLCs (as of 2012) have applied the revaluation model. Other countries scored higher percentages due to their earlier adoption of IAS 16. For example, Korea (18 per cent), New Zealand (28.1 per cent), and the UK (11 per cent). During the five year research period (2008-2012), five sectors acquired revaluation practices:

infrastructure, trade, finance, agriculture and basic industry. None of the PLCs from other IDX sectors revalued their assets, i.e. mining, miscellaneous, consumer goods and property. The infrastructure sector had the most revaluers, with a total of five. The reasons for fewer PLCs applying the revaluation model (revaluers) was historically grounded in Indonesia's adoption of the cost model in accounting standards (under US GAAP influence); this led to PLCs being cautious in adopting the new model. Other reasons were advantages and disadvantages with regard to cost-benefits aspects; and higher tax paid for upward revaluation, which will burden PLCs' cash flows.

Some revaluers had a higher debts ratio (DER and DTA). These debts were intended to acquire various fixed assets, to increase operating incomes and to manage sustainable growth. Except for one revaluer (BLTA), which was involved in debt restructuring, they could control the principal and interest payments. Additionally, most revaluers' DER was below the industrial average. This indicated that asset revaluations were augmented to provide more relevant information to the users of financial statements. Although almost all revaluers did not have a foreign representative office, most of their sales values had contributions from their foreign buyers. Revaluers might consider that measuring a fixed asset in market value to overseas users of financial statements is an important matter.

Some revaluers also maintained a positive CMS and CFFO but these were still insufficient to cover the amount that should be allocated for capital expenditures. Therefore, PLCs' FCF were varied both in positive and negative values. Furthermore, in all three proxies relating to company size (total assets, sales and operating income), the revaluers' mean was lower than the non-revaluers' mean. The imbalanced data between the 27 revaluers and 328 non-revaluers was one of the reasons for this. Another factor involved the high market capitalisation of most of

the PLCs who did not revalue their assets during the research period. In addition, the lower scores of revaluers' means on MBR and PER indicated that the information which had been shown by revaluers was more value relevant, reflected economic reality and met the financial statement users' expectations with regard to disclosure.

7.1.3 Hypothesis Testing Findings

This study conducted three testing hypotheses scenarios using logistic regression. These included 325 cases with combined cases of revaluers and non-revaluers, balanced cases of 27 revaluers and 27 non-revaluers and natural logarithm modifications. These scenarios produced different results for R^2, F-test and t-test and provided important opportunities to interpret the results in every scenario. Therefore, by comparing them, this study ensured the appropriateness of the prediction model in the different cases applied.

In the 325 combined cases (before the addition of 30 new cases due to outliers), the overall test/ goodness of fit (F test) showed that the prediction model was significant. The prediction powers of the three R2 were -2 Log-likelihood R^2 with 38.69 per cent, Nagelkerke R^2 with 44.8 per cent and Cox & Snell R^2 with 18 per cent. In the partial test (t-test), four proxies were found significant to predict asset revaluation decision making, namely fixed asset intensity, DER, DER level and export sales among 17 proxies at a five per cent significance level ($p = 0.05$). The significant result produced by the fixed asset intensity proxy in this research supports previous studies conducted by Lin and Peasnell (2000a) and Tay (2009). The significance of DER was in line with Iatridis and Kilirgiotis (2012). Furthermore, the successful status of PLCs using DER level was similar to the findings of Gaermnynck and Veugelers (1999).

Finally, the significant result of export sales as a proxy of disclosure complied with Piera (2007). A validation test of the model was conducted using 325 cases plus an additional 30 new cases. The validation results were compared to the original statistical results produced from the modelling of 325 cases. The results indicate that the validation model generated relatively similar results in 12 out of the 17 items compared, or 70.59 per cent compliance. Thus, the basic prediction model was consistent and reliable.

To increase its prediction power with more significant proxies, the research modified the data by using a balanced case of 27 revaluers and 27 non-revaluers, and a natural logarithm for the proxy that measures in monetary/ currency units which have positive values. In the balanced cases, the goodness of fit test was significant and all four significant proxies remained the same as the basic model (325 cases). The prediction power increased significantly to 59.88 per cent of -2 Log likelihood R^2, 56.4 per cent of Nagelkerke R^2 and 48.6 per cent of Cox Snell R^2. However, if a natural logarithm was used, the R^2 of -2 Log likelihood, Nagelkerke, and Cox Snell were 57.69, 56.4 and 75.2 per cent respectively. Therefore, the prediction model using Nagelkerke R^2 scored the highest among all the R^2 computed, at 75.2 per cent. In this scenario (i.e. natural logarithm), two additional significant proxies, CMS and operating income, made six significant proxies in total. These findings support those of previous scholars, namely Barlev *et al.* (2007), Lin and Peasnell (2000a) for the CMS proxy, and Seng and Su (2010) for operating income proxy, who identified that those proxies were factors that should be considered before deciding to revalue an asset or not.

Thus, based on these factors, the research suggests that five motives underlie fixed asset revaluation decision making. PLCs should carefully consider the costs-benefits calculation and its potential implications for both internal and external parties. The motives include: to gain

economy/efficiency benefits; to reduce debt contracting costs; to reduce political costs; to provide signals for stakeholders; and to reduce information asymmetry.

7.2 IMPLICATIONS

The extensive research conducted produced a series of findings that have potential implications for both internal (e.g. CFO and PLC) and external parties (e.g. investors, creditors, ICMFISA, tax agencies, IFASB, and academia). Specifically, these implications are:

7.2.1 Implications to Business

- Publicly listed companies

  Several reasons underpinned the use of a revaluation model for publicly listed companies. First, a company with a higher fixed asset intensity ratio should apply a revaluation model for their asset measurement because it will help them to show their market value. Second, PLCs which predominantly have export sales values rather than domestic sales values should consider applying a revaluation model as that model is perceived by foreign buyers as a way of increasing information disclosure in financial statements. Third, PLCs which have greater reliance on debt than equity should consider applying the revaluation model because this model will enable their fixed assets value to follow the market price, which normally increases. This will therefore help them to comply with creditor requirements such as low DTA and increased fixed assets value as a basis for additional loan proposals, and reduce withholding tax as a consequence of higher depreciation expenses.

- Investors

  Because the desire to reduce information symmetry is an underlying motive in revaluation decisions, investors can rely on financial statements. This information is relevant for them to evaluate their investments and also expedite decision making, thus increasing the efficiency and effectiveness of fixed asset utilization. Subsequently, reducing information asymmetry through providing more disclosed information will lower a company's business risk and expected return.

- Creditors

  The two statistically significant proxies of DER and DER level suggest that companies were aware of their debt covenants, and that they tried to avoid unnecessary costs/ consequences that could breach the contract between a company and a creditor. Fixed asset revaluations were used to reduce DER, to comply with debt agreement and to propose additional loans from creditors. These actions raise creditors' risk. PLCs should also be far more prudent, because asset revaluation could signal their position in debt restructuring. Well-informed creditors may lower their expected return set for the lower risky company with more transparency financial performances. Therefore, the investors, PLCs and buyers will gain benefit from more available and more efficient products or services in the market.

- ICMFISA

  The agency should monitor the degree of disclosure/ transparency with regard to the content found in financial statements. Disclosure can be used to reduce debt contracting costs and to gain economic benefits and efficiency motives, both of which can be viewed as opportunistic behaviour. The wider implementation of revaluation model will increase the role of capital market bridging public funds and enhance public trust to invest their money in capital market

system. Conversely, publishing relevant information which can reduce information asymmetry (another motive for revaluation decisions) benefits users when interpreting financial statements.

7.2.2 Implications to Other Relevant Parties

- Indonesian Tax Agency

  The facts have shown that fewer PLCs applied the revaluation model due to a 10 per cent tax on the increased value in upward revaluation. This condition burdened PLCs' cash flows and constrained them in disclosing more relevant information on the market value of fixed assets. On the other hand, PLCs were encouraged by ICMFISA to publish more detailed information to reduce information asymmetry and to increase market transactions in the capital market. Moreover, the number and frequency of revaluations allowed by the Indonesian Tax Agency and Indonesian FASB are different. Thus, the Indonesian Tax Agency should consider two important matters; namely, removal of the 10 per cent revaluation tax and to allow PLCs to revalue their fixed assets annually following IFASS 16 - 2007.

  Furthermore, the use of revaluation model will boost the use of market value in business sector and market value of fixed assets will be easily found. Therefore, it will help users of financial statements in assessing that relevant value and also help tax agency in increasing the country's value added tax.

- IFASB

  The board should regularly monitor the implementation of revaluation model and encourage more PLCs in applying that model for the purpose of providing more disclose and relevant

information to the public. They should also identify barriers that prevent the implementation of the revaluation model and conduct more intensive inter-institutional coordination between regulators such as the Indonesian FASB, Tax Agency and ICMFISA. The barriers include aspects such as tax, the need for higher disclosure of financial statement items and the need to disseminate the benefits of a revaluation model in a broader perspective, such as increased market capitalisation and the economy.

- Academia

  Measuring fixed assets using fair value is an emerging topic in financial accounting that requires further investigation. This first study of IFASS 16 implementation conducted in Indonesia challenges academia to conduct further research in this area. These include a comparative study between revaluers and non-revaluers with regard to their motives and effects because of revaluation decision making.

  Moreover, further research can be extended to other disciplines, namely culture (domestic response in adopting international accounting standards); education (the teaching aspect of a new accounting standard); and psychology (different perspectives of human interactions among financial statement preparers, accounting standards bodies, government, and investors). Through this extension, the research can investigate new awareness of fields such as changes in organisational culture; incentives behind accounting policy decision making; and the effect of educational level disparity in adoption of the new accounting standards and interpretation of financial statements.

7.3 LIMITATIONS

Whilst conducting this research, it became apparent that the field of study was extensive and that this work would only resolve part of the overarching problem. Various limitations were therefore identified.

- Due to the low level of data on revaluers available up to 2012, the research could not predict the effects of revaluation decision making on PLCs' future operating incomes, CFFO and stock prices. Only 13 out of 460 PLCs, or 2.83 per cent, applied the revaluation model. This limited amount of data is insufficient to run a robust prediction model for the effects of revaluation decision making. A minimum of 30 revaluers are required (Triola, 2004; Hogg and Tanis, 2005), and the period of revaluation should last for one to three years in order to develop valid prediction (Aboody *et al.*, 1999; Lopes and Walker, 2012).
- The research acknowledges that the imbalanced number of 27 revaluers and 328 non-revaluers may have a significant impact upon any generalisations that can be made. In this circumstance, the study found low prediction power. Therefore, a modified case of 27 revaluers and 27 non-revaluers was also made to anticipate generalisation in the conclusions and in these balanced cases, a higher level of prediction power was achieved. It can be concluded that the use of imbalanced cases potentially misled the study and weakened the model's predictive power.

7.4 RECOMMENDATIONS

The culmination of the research undertaken has uncovered a series of future research paths that should be undertaken to add further knowledge to this field of study. Specifically, future research is required to:

- Develop the effects of the prediction model during the period after the revaluation decision was made. This model should use a minimum of 30 revaluers in order to conduct parametric and deterministic tests such as multiple regression. Based on the annual number of new revaluers (trend), this proposed future work could be achieved after the 2015 financial statements are released.
- Secure a more balanced sample of revaluers and non-revaluers to enable a comparative study between them on predicting the motives for, and effects of, revaluation decisions in the following scenarios: large versus small size PLCs; bona fide status versus non-bona fide status PLCs; increasing versus decreasing income accounting methods; pre- and post- revaluations; young versus old PLCs; and service versus trading and manufacturing companies.
- Interview CFOs to gain another (more qualitative) perspective on their decision to revalue fixed assets or not (such work would augment the quantitative study conducted here and provide additional depth and clarity).

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Appendix 1. Quantitative Variables Measurements – Motives

N0	Motive	Independent Variable	Measurement Objective	Proxy	Source	Expected Sign
1	Economic Benefits and Efficiency	• Liquidity (LIQ)	To measure the ability to pay debt and borrowing capacity for future financing, and its relationship to asset revaluation.	• Cash and Marketable Securities • Cash Flows from Operation	• Whittred and Chan, 1992; Cotter, 1999. • Cotter and Zimmer, 1995; Cotter, 1999; Choi *et al.,* 2009; Seng and Su, 2010; Piera, 2007.	Negative
		• Ownership (OWN)	To measure the influence of ownership control, and investment strategy to asset revaluation.	• Share Ownership • Acquisition	• Piera, 2007; Iatridis, and Kilirgiotis, 2012.	Positive
		• Asset Intensity & Expenditures (ASSET)	To measure investment opportunities and intensity of fixed asset in proportion of total asset.	• Fixed Asset intensity	• Lin and Peasnell, 2000a; Barlev *et al.*, 2007.	Positive
2	Reduce Debt Contracting Costs	• Leverage (LEV)	To measure companies' leverage level that enables them to expand their asset value, and its relationship to asset revaluation.	• Debt Equity Ratio • Debt to Asset	• Brown *et al.,* 1992; Lin and Peasnell, 2000a; Piera, 2007; Barlev *et al.*, 2007. • Easton *et al.,* 1993; Cotter, 1999; Jaggi and Tsui, 2001; Choi *et al.,* 2009; Chainirun and Narktabtee 2009; Seng and Su, 2010.	Positive
3	Reduce Political Cost	• Size (SIZE)	To measure the impact of lowering companies' size to avoid reporting excessive profits, and its relationship to asset revaluation.	• Total Assets • Sales • Operating Revenue	• Brown *et al.,* 1992; Barlev *et al.*, 2007; Choi *et al.,* 2009. • Lin and Peasnell, 2000a. • Seng and Su, 2010.	Positive
4	Opportunistic Behaviour	• Leverage Covenant (COV)	To categorize companies' debt restrictions that may affect a technical default and cause higher contracting costs, and its relationship to asset revaluation.	• Existence of Debt Covenant	• Brown *et al.,* 1992; Cotter, 1999	Positive
5	Provide Value Relevance Information	• Fair Value (FAIR)	To measure companies' objective in presenting relevant information to stake- holders, and its relationship to asset revaluation.	• True and Fair Financial Statements	• Easton *et al.,* 1993	Positive
6	Provide Signals	• Successful Firms (SUC)	To measure signals provided by high performances companies, and its relationship to asset revaluation.	• Future Cash Flow • Low Debt Equity Ratio	• Gaermynck and Veugelers, 1999.	Positive
7	Reduce Information Asymmetry	• Growth (GRO)	To measure companies' potential growth regard to availability of information to the public, and its relationship to asset revaluation.	• Market to Book Ratio • Price Earnings Ratio • Foreign Operation	• Whittred and Chan, 1992; Cotter, 1999; Seng and Su, 2010. • Brown *et al.,* 1992. • Iatridis and Kilirgiotis, 2012. • Piera, 2007.	Positive Positive

• Disclosure of Foreign Transactions (DIS)	To measure level of disclosure due to types of transactions, and its relationship to asset revaluation.	• Export Sales

Appendix 2. Quantitative Variables Measurements – Effects

N0	Approach	Measurement Objective	Effect / Dependent Variable	Independent Variable	Source	Expected Sign
1	Company-based	To predict companies' future financial performances.	• Operating Income (OPINC) • Cash Flow From Operations (CFFO)	• Revaluation Decision • Operating Income • Market to Book value • Asset • Revaluation Decision • Market to Book value • CFFO • Working Capital • Asset	• Aboody *et al.,* 1999. • Jaggi and Tsui, 2001. • Barlev *et al.* 2007	Positive
2	Market-based	To predict the effect of asset revaluation from the benefit of investors' decision-making.	• Share Price (PRICE) • Share Returns (RETURNS)	• Revaluation Decision • Earnings per Share • Book value per Share • Revaluation Decision • Net Income	• Sharpe and Walker 1975. • Standish and Ung, 1982. • Emanuel 1989. • Easton *et al.,* 1993. • Barth and Clinch, 1998. • Cahan *et al.* 2000. • Jaggi and Tsui 2001.	Positive

Appendix 3. Main Samples

No	PLC Code	Year	PLC Name	Industry	Sub-industry
1	AALI	2010	Astra Agro Lestari	Agriculture	Plantation
2	ADRO	2012	Adaro Energy	Mining	Coal Mining
3	ADRO	2009	Adaro Energy	Mining	Coal Mining
4	ADRO	2008	Adaro Energy	Mining	Coal Mining
5	AGRO	2011	BRI Agroniaga	Finance	Bank
6	AIMS	2012	Akbar Indomakmur Stimec	Trade	Wholesale
7	AKKU	2012	Alam Karya Unggul	Basic Industry	Plastics and Packaging
8	AKKU	2011	Alam Karya Unggul	Basic Industry	Plastics and Packaging
9	AKKU	2010	Alam Karya Unggul	Basic Industry	Plastics and Packaging
10	AKKU	2008	Alam Karya Unggul	Basic Industry	Plastics and Packaging
11	AKRA	2009	AKR Corporindo	Trade	Wholesale
12	AKSI	2012	Majapahit Securities	Finance	Securities
13	ALMI	2011	Alumindo Light Metal Ind.	Basic Industry	Metal
14	AMRT	2009	Sumber Alfaria Trijaya	Trade	Others
15	AMRT	2008	Sumber Alfaria Trijaya	Trade	Others
16	ARTI	2011	Ratu Prabu Energi	Mining	Petroleum and Gas
17	ASII	2012	Astra International	Misc. Industry	Automotive
18	ASII	2011	Astra International	Misc. Industry	Automotive
19	ASII	2010	Astra International	Misc. Industry	Automotive
20	ASII	2009	Astra International	Misc. Industry	Automotive
21	ASII	2008	Astra International	Misc. Industry	Automotive
22	ASRI	2012	Alam Sutera Realty	Property	Real Estate
23	ASRI	2011	Alam Sutera Realty	Property	Real Estate
24	ASRI	2010	Alam Sutera Realty	Property	Real Estate
25	ASRI	2009	Alam Sutera Realty	Property	Real Estate
26	ASRI	2008	Alam Sutera Realty	Property	Real Estate
27	ATPK	2012	ATPK Resources	Mining	Coal Mining
28	ATPK	2011	ATPK Resources	Mining	Coal Mining
29	BACA	2012	Bank Capital Indonesia	Finance	Bank
30	BACA	2011	Bank Capital Indonesia	Finance	Bank
31	BATA	2012	Sepatu Bata	Misc. Industry	Footwear
32	BATA	2011	Sepatu Bata	Misc. Industry	Footwear
33	BATA	2010	Sepatu Bata	Misc. Industry	Footwear
34	BATA	2009	Sepatu Bata	Misc. Industry	Footwear
35	BATA	2008	Sepatu Bata	Misc. Industry	Footwear
36	BBCA	2012	Bank Central Asia	Finance	Bank
37	BBCA	2011	Bank Central Asia	Finance	Bank
38	BBCA	2010	Bank Central Asia	Finance	Bank
39	BBCA	2009	Bank Central Asia	Finance	Bank
40	BBCA	2008	Bank Central Asia	Finance	Bank
41	BBNI	2012	Bank Negara Indonesia	Finance	Bank
42	BBNI	2011	Bank Negara Indonesia	Finance	Bank
43	BBNI	2010	Bank Negara Indonesia	Finance	Bank
44	BBNI	2009	Bank Negara Indonesia	Finance	Bank
45	BBNI	2008	Bank Negara Indonesia	Finance	Bank
46	BBRI	2012	Bank Rakyat Indonesia	Finance	Bank

No	PLC Code	Year	PLC Name	Industry	Sub-industry
47	BBRI	2011	Bank Rakyat Indonesia	Finance	Bank
48	BBRI	2010	Bank Rakyat Indonesia	Finance	Bank
49	BBRI	2009	Bank Rakyat Indonesia	Finance	Bank
50	BBRI	2008	Bank Rakyat Indonesia	Finance	Bank
51	BBTN	2012	Bank Tabungan Negara	Finance	Bank
52	BCIC	2012	Bank Mutiara	Finance	Bank
53	BCIC	2009	Bank Mutiara	Finance	Bank
54	BCIC	2008	Bank Mutiara	Finance	Bank
55	BFIN	2012	BFI Finance Indonesia	Finance	Financial Institution
56	BIMA	2010	Primarindo Asia Infra	Misc. Industry	Footwear
57	BIMA	2008	Primarindo Asia Infra	Misc. Industry	Footwear
58	BIPI	2010	Benakat Integra	Mining	Petroleum and Gas
59	BKDP	2010	Bukit Darmo Property	Property	Real Estate
60	BKSW	2012	Bank QNB Kesawan	Finance	Bank
61	BKSW	2011	Bank QNB Kesawan	Finance	Bank
62	BKSW	2010	Bank QNB Kesawan	Finance	Bank
63	BKSW	2009	Bank QNB Kesawan	Finance	Bank
64	BKSW	2008	Bank QNB Kesawan	Finance	Bank
65	BLTA	2010	Berlian Laju Tanker	Infrastructure	Transportation
66	BLTA	2009	Berlian Laju Tanker	Infrastructure	Transportation
67	BLTA	2008	Berlian Laju Tanker	Infrastructure	Transportation
68	BMRI	2012	Bank Mandiri	Finance	Bank
69	BMRI	2011	Bank Mandiri	Finance	Bank
70	BMRI	2010	Bank Mandiri	Finance	Bank
71	BMRI	2009	Bank Mandiri	Finance	Bank
72	BMRI	2008	Bank Mandiri	Finance	Bank
73	BNBA	2008	Bank Bumi Arta	Finance	Bank
74	BNBR	2010	Bakrie Brothers	Trade	Investment
75	BNBR	2009	Bakrie Brothers	Trade	Investment
76	BNBR	2008	Bakrie Brothers	Trade	Investment
77	BORN	2010	Borneo Lumbung Energi	Mining	Coal Mining
78	BRPT	2012	Barito Pacific Timber	Basic Industry	Chemicals
79	BTEK	2012	Bumi Teknokultura	Agriculture	Others
80	BTEK	2011	Bumi Teknokultura	Agriculture	Others
81	BTEK	2010	Bumi Teknokultura	Agriculture	Others
82	BTEK	2009	Bumi Teknokultura	Agriculture	Others
83	BTEK	2008	Bumi Teknokultura	Agriculture	Others
84	BUDI	2012	Budi Starch	Basic Industry	Chemicals
85	BULL	2012	Buana Listya Tama	Infrastructure	Others
86	BULL	2011	Buana Listya Tama	Infrastructure	Others
87	BUMI	2011	Bumi Resources	Mining	Coal Mining
88	BUMI	2010	Bumi Resources	Mining	Coal Mining
89	BUMI	2009	Bumi Resources	Mining	Coal Mining
90	BUMI	2008	Bumi Resources	Mining	Coal Mining
91	BYAN	2009	Bayan Resources	Mining	Coal Mining
92	BYAN	2008	Bayan Resources	Mining	Coal Mining
93	CASS	2012	Cardig Aero Services	Infrastructure	Transportation
94	CASS	2011	Cardig Aero Services	Infrastructure	Transportation

No	PLC Code	Year	PLC Name	Industry	Sub-industry
95	CITA	2008	Cita mineral Investindo	Mining	Metal and Mineral
96	CMPP	2012	Centris Multi	Infrastructure	Transportation
97	CMPP	2011	Centris Multi	Infrastructure	Transportation
98	CMPP	2010	Centris Multi	Infrastructure	Transportation
99	CMPP	2009	Centris Multi	Infrastructure	Transportation
100	CPDW	2012	Indosetu Bara	Mining	Coal Mining
101	CPDW	2011	Indosetu Bara	Mining	Coal Mining
102	CPDW	2010	Indosetu Bara	Mining	Coal Mining
103	CPDW	2009	Indosetu Bara	Mining	Coal Mining
104	CPDW	2008	Indosetu Bara	Mining	Coal Mining
105	CTBN	2010	Citra Tubindo	Basic Industry	Metal
106	CTRS	2009	Ciputra Surya	Property	Real Estate
107	DAVO	2008	Davomas Abadi	Consumer Goods	Food and Beverages
108	DEFI	2012	Danasupra Erapacific	Finance	Financial Institution
109	DEFI	2011	Danasupra Erapacific	Finance	Financial Institution
110	DEFI	2010	Danasupra Erapacific	Finance	Financial Institution
111	DKFT	2008	Central Omega	Mining	Metal and Mineral
112	DSSA	2011	Dian Swastatika	Trade	Wholesale
113	ELTY	2012	Bakrieland Develop	Property	Real Estate
114	EPMT	2008	Enseval Putra	Trade	Wholesale
115	ERTX	2010	Eratex Djaja	Misc. Industry	Others
116	ERTX	2009	Eratex Djaja	Misc. Industry	Others
117	EXCL	2011	XL Axiata	Infrastructure	Telecommunication
118	FAST	2011	Fast Food Indonesia	Trade	Restaurant
119	FAST	2010	Fast Food Indonesia	Trade	Restaurant
120	FMII	2010	Fortune Mate	Property	Real Estate
121	FREN	2009	Smartfren Telecom	Infrastructure	Telecommunication
122	FREN	2008	Smartfren Telecom	Infrastructure	Telecommunication
123	GDST	2009	Gunawan Dianjaya	Basic Industry	Metal
124	GDYR	2012	Goodyear Indonesia	Misc. Industry	Automotive
125	GDYR	2011	Goodyear Indonesia	Misc. Industry	Automotive
126	GDYR	2010	Goodyear Indonesia	Misc. Industry	Automotive
127	GDYR	2009	Goodyear Indonesia	Misc. Industry	Automotive
128	GDYR	2008	Goodyear Indonesia	Misc. Industry	Automotive
129	GGRM	2010	Gudang Garam	Consumer Goods	Tobacco
130	GJTL	2010	Gajah Tunggal	Infrastructure	Others
131	GJTL	2009	Gajah Tunggal	Infrastructure	Others
132	GJTL	2008	Gajah Tunggal	Infrastructure	Others
133	GMCW	2011	Grahamas Citrawisata	Trade	Hotel
134	HMSP	2012	HM Sampoerna	Consumer Goods	Tobacco
135	HMSP	2010	HM Sampoerna	Consumer Goods	Tobacco
136	ICBP	2012	Indofood CBP SM	Consumer Goods	Food and Beverages
137	ICBP	2011	Indofood CBP SM	Consumer Goods	Food and Beverages
138	ICBP	2010	Indofood CBP SM	Consumer Goods	Food and Beverages
139	IMAS	2012	Indomobil SI	Infrastructure	Others
140	IMAS	2011	Indomobil SI	Infrastructure	Others

No	PLC Code	Year	PLC Name	Industry	Sub-industry
141	INCO	2008	Vale Indonesia	Mining	Metal and Mineral
142	INDF	2012	Indofood SM	Consumer Goods	Food and Beverages
143	INDF	2011	Indofood SM	Consumer Goods	Food and Beverages
144	INDF	2010	Indofood SM	Consumer Goods	Food and Beverages
145	INDF	2009	Indofood SM	Consumer Goods	Food and Beverages
146	INDF	2008	Indofood SM	Consumer Goods	Food and Beverages
147	INDS	2010	Indospring	Trade	Others
148	INDS	2012	Indospring	Trade	Others
149	INDX	2010	Tanah Laut	Infrastructure	Transportation
150	INKP	2012	Indah Kiat PP	Basic Industry	Pulp and Paper
151	INKP	2011	Indah Kiat PP	Basic Industry	Pulp and Paper
152	INKP	2010	Indah Kiat PP	Basic Industry	Pulp and Paper
153	INKP	2009	Indah Kiat PP	Basic Industry	Pulp and Paper
154	INKP	2008	Indah Kiat PP	Basic Industry	Pulp and Paper
155	INTP	2009	Indocement TP	Basic Industry	Cement
156	INVS	2011	Inovisi Infracom	Infrastructure	Telecommunication
157	INVS	2010	Inovisi Infracom	Infrastructure	Telecommunication
158	INVS	2009	Inovisi Infracom	Infrastructure	Telecommunication
159	ISAT	2012	Indosat	Infrastructure	Telecommunication
160	ISAT	2011	Indosat	Infrastructure	Telecommunication
161	ISAT	2010	Indosat	Infrastructure	Telecommunication
162	ISAT	2009	Indosat	Infrastructure	Telecommunication
163	ISAT	2008	Indosat	Infrastructure	Telecommunication
164	ITMA	2009	Sumber Energi Andalan	Basic Industry	Metal
165	ITMA	2008	Sumber Energi Andalan	Basic Industry	Metal
166	ITTG	2011	Indo Tambangraya	Mining	Coal Mining
167	ITTG	2010	Indo Tambangraya	Mining	Coal Mining
168	JAWA	2012	Jaya Agrie Wattie	Agriculture	Plantation
169	JAWA	2011	Jaya Agrie Wattie	Agriculture	Plantation
170	JKSW	2012	Jakarta Kyoei Steel	Basic Industry	Metal
171	JKSW	2011	Jakarta Kyoei Steel	Basic Industry	Metal
172	JRPT	2012	Jaya Real Property	Property	Real Estate
173	JSMR	2010	Jasa Marga	Infrastructure	Toll Road
174	JTPE	2009	Jasuido Tiga Perkasa	Trade	Media
175	KARW	2012	ICTSI Jasa Prima	Misc. Industry	Textile and Garment
176	KARW	2011	ICTSI Jasa Prima	Misc. Industry	Textile and Garment
177	KARW	2010	ICTSI Jasa Prima	Misc. Industry	Textile and Garment
178	KARW	2009	ICTSI Jasa Prima	Misc. Industry	Textile and Garment
179	KBRI	2009	Kertas Basuki Rahmat	Basic Industry	Pulp and Paper
180	KBRI	2008	Kertas Basuki Rahmat	Basic Industry	Pulp and Paper
181	KICI	2012	Kedaung Indah Can	Consumer Goods	Houseware
182	KICI	2010	Kedaung Indah Can	Consumer Goods	Houseware
183	KICI	2011	Kedaung Indah Can	Consumer Goods	Houseware
184	KICI	2009	Kedaung Indah Can	Consumer Goods	Houseware
185	KICI	2008	Kedaung Indah Can	Consumer Goods	Houseware

No	PLC Code	Year	PLC Name	Industry	Sub-industry
186	KONI	2012	Perdana Bangun Pusaka	Trade	Wholesale
187	KONI	2010	Perdana Bangun Pusaka	Trade	Wholesale
188	KONI	2008	Perdana Bangun Pusaka	Trade	Wholesale
189	LAPD	2009	Leyand International	Infrastructure	Energy
190	LCGP	2009	Eureka Prima Jakarta	Property	Real Estate
191	LCGP	2008	Eureka Prima Jakarta	Property	Real Estate
192	LPCK	2010	Lippo Cikarang	Property	Real Estate
193	LPCK	2008	Lippo Cikarang	Property	Real Estate
194	LPKR	2012	Lippo Cikarang	Property	Real Estate
195	LPKR	2011	Lippo Cikarang	Property	Real Estate
196	LPKR	2009	Lippo Cikarang	Property	Real Estate
197	LPKR	2008	Lippo Cikarang	Property	Real Estate
198	LPLI	2010	Star Pacific	Trade	Media
199	LPPS	2010	Lippo Securities	Finance	Securities
200	LTLS	2010	Lautan Luas	Trade	Wholesale
201	LTLS	2009	Lautan Luas	Trade	Wholesale
202	LTLS	2008	Lautan Luas	Trade	Wholesale
203	MAPI	2009	Mitra Adiperkasa	Trade	Retail
204	MASA	2010	Multistrada Arah Sarana	Trade	Others
205	MICE	2011	Multi Indocitra	Trade	Wholesale
206	MICE	2010	Multi Indocitra	Trade	Wholesale
207	MIDI	2011	Midi Utama Indonesia	Trade	Retail
208	MIDI	2010	Midi Utama Indonesia	Trade	Retail
209	MIRA	2012	Mitra International	Infrastructure	Information
210	MITI	2012	Mitra Investindo	Mining	Coal Mining
211	MITI	2011	Mitra Investindo	Mining	Coal Mining
212	MITI	2010	Mitra Investindo	Mining	Coal Mining
213	MITI	2009	Mitra Investindo	Mining	Coal Mining
214	MLBI	2011	Multi Bintang Indonesia	Consumer Goods	Food and Beverages
215	MLBI	2010	Multi Bintang Indonesia	Consumer Goods	Food and Beverages
216	MLBI	2009	Multi Bintang Indonesia	Consumer Goods	Food and Beverages
217	MLBI	2008	Multi Bintang Indonesia	Consumer Goods	Food and Beverages
218	MLIA	2012	Mulia Industrindo	Basic Industry	Ceramics
219	MLIA	2011	Mulia Industrindo	Basic Industry	Ceramics
220	MRAT	2011	Mustika Ratu	Consumer Goods	Cosmetics
221	MRAT	2010	Mustika Ratu	Consumer Goods	Cosmetics
222	MTDL	2009	Metrodata Electronics	Trade	Computer
223	MTSM	2012	Metro Realty	Property	Real Estate
224	MTSM	2011	Metro Realty	Property	Real Estate
225	MYOH	2009	Samindo Resources	Mining	Coal Mining
226	MYOH	2008	Samindo Resources	Mining	Coal Mining
227	MYOR	2008	Mayora Indah	Consumer Goods	Food and Beverages
228	NIPS	2012	Nipress	Trade	Others
229	NIPS	2011	Nipress	Trade	Others

No	PLC Code	Year	PLC Name	Industry	Sub-industry
230	NIPS	2010	Nipress	Trade	Others
231	NIPS	2009	Nipress	Trade	Others
232	NISP	2010	Bank OCBC NISP	Finance	Bank
233	NISP	2009	Bank OCBC NISP	Finance	Bank
234	NISP	2008	Bank OCBC NISP	Finance	Bank
235	OKAS	2009	Ancora Indonesia	Trade	Wholesale
236	OKAS	2008	Ancora Indonesia	Trade	Wholesale
237	PAFI	2011	Panasia Filament	Misc. Industry	Textile and Garment
238	PALM	2012	Provident Agro	Agriculture	Plantation
239	PGAS	2012	Perusahaan Gas Negara	Infrastructure	
240	PGAS	2011	Perusahaan Gas Negara	Infrastructure	
241	PGAS	2010	Perusahaan Gas Negara	Infrastructure	
242	PGAS	2009	Perusahaan Gas Negara	Infrastructure	
243	PGAS	2008	Perusahaan Gas Negara	Infrastructure	Energy
244	PKPK	2011	Perdana Karya Perkasa	Mining	Coal Mining
245	PNIN	2009	Paninvest	Finance	Insurance
246	PSAB	2011	J Resources Asia Pasifik	Mining	Metal and Mineral
247	PSAB	2009	J Resources Asia Pasifik	Mining	Metal and Mineral
248	PSAB	2008	J Resources Asia Pasifik	Mining	Metal and Mineral
249	PTIS	2012	Indo Straits	Infrastructure	Others
250	PTIS	2011	Indo Straits	Infrastructure	Others
251	PTRO	2009	Petrosea	Infrastructure	Non-Build Construction
252	PTSN	2011	Sat Nusapersada	Misc. Industry	Electronics
253	PWSI	2010	Panca Wiratama Sakti	Property	Real Estate
254	PWSI	2009	Panca Wiratama Sakti	Property	Real Estate
255	PWSI	2008	Panca Wiratama Sakti	Property	Real Estate
256	PYFA	2009	Pyridam Farma	Miscl Industry	Others
257	RAJA	2008	Rukun Raharja	Infrastructure	Energy
258	RBMS	2010	Ristia Bintang Mahkota	Property	Real Estate
259	RBMS	2009	Ristia Bintang Mahkota	Property	Real Estate
260	RBMS	2008	Ristia Bintang Mahkota	Property	Real Estate
261	RELI	2012	Reliance Securities	Finance	Securities
262	SDMU	2012	Sidomulyo Selaras	Infrastructure	Transportation
263	SIMA	2012	Siwani Makmur	Basic Industry	Plastics and Packaging
264	SIMA	2011	Siwani Makmur	Basic Industry	Plastics and Packaging
265	SIMA	2010	Siwani Makmur	Basic Industry	Plastics and Packaging
266	SIMP	2012	Salim Ivomas Pratama	Agriculture	Plantation
267	SIMP	2011	Salim Ivomas Pratama	Agriculture	Plantation
268	SMAR	2012	Smart	Agriculture	Plantation
269	SMAR	2011	Smart	Agriculture	Plantation
270	SMAR	2010	Smart	Agriculture	Plantation
271	SMAR	2009	Smart	Agriculture	Plantation
272	SMAR	2008	Smart	Agriculture	Plantation
273	SMDM	2011	Samudera Indonesia	Property	Real Estate

No	PLC Code	Year	PLC Name	Industry	Sub-Industry
274	SMGR	2008	Semen Indonesia	Basic Industry	Cement
275	SMMT	2012	Golden Eagle Energy	Mining	Coal Mining
276	SMMT	2008	Golden Eagle Energy	Mining	Coal Mining
277	SOBI	2010	Sorini Agro Asia	Basic Industry	Chemicals
278	SONA	2011	Sona Topas Tourism	Trade	Tourism
279	SQMI	2009	Renuka Coalindo	Mining	Metal and Mineral
280	STAR	2012	Star Petrochem	Misc. Industry	Textile and Garment
281	STAR	2011	Star Petrochem	Misc. Industry	Textile and Garment
282	SUGI	2012	Sugih Energy	Trade	Others
283	TBLA	2010	Tambang Baru Lampung	Agriculture	Plantation
284	TBMS	2008	Tembaga Mulia Semanan	Basic Industry	Metal
285	TELE	2011	Tiphone Mobil Indonesia	Trade	Retail
286	TFCO	2012	Tifico Fiber Indonesia	Misc. Industry	Textile and Garment
287	TKGA	2012	Toko Gunung Agung	Misc. Industry	Textile and Garment
288	TLKM	2012	Telekomunikasi Indonesia	Infrastructure	Telecommunication
289	TLKM	2011	Telekomunikasi Indonesia	Infrastructure	Telecommunication
290	TLKM	2010	Telekomunikasi Indonesia	Infrastructure	Telecommunication
291	TLKM	2009	Telekomunikasi Indonesia	Infrastructure	Telecommunication
292	TLKM	2008	Telekomunikasi Indonesia	Infrastructure	Telecommunication
293	TMAS	2008	Pelayanan Tempuran	Infrastructure	Transportation
294	TOBA	2012	Toba Bara Sejahtera	Mining	Coal Mining
295	TOTL	2012	Total Bangun Persada	Property	Building Construction
296	TOTO	2010	Surya Toto	Basic Industry	Ceramics
297	TOTO	2009	Surya Toto	Basic Industry	Ceramics
298	TOTO	2008	Surya Toto	Basic Industry	Ceramics
300	TOWR	2011	Sarana Menara Indonesia	Infrastructure	Non-Building Construction
301	TOWR	2010	Sarana Menara Indonesia	Infrastructure	Non-Building Construction
302	TRIL	2008	Triwira Insanlestari	Trade	Wholesale
303	TRUS	2011	Trust Finance	Finance	Financial Institution
304	ULTJ	2012	Ultra Jaya Milk	Consumer Goods	Food and Beverages
305	UNIT	2012	Nusantara Inti Corp	Finance	Securities
306	UNIT	2010	Nusantara Inti Corp	Finance	Securities
307	UNIT	2009	Nusantara Inti Corp	Finance	Securities
308	UNIT	2008	Nusantara Inti Corp	Finance	Securities
309	UNSP	2012	Bakrie Sumatra	Agriculture	Plantation
310	UNSP	2011	Bakrie Sumatra	Agriculture	Plantation
311	UNSP	2010	Bakrie Sumatra	Agriculture	Plantation
312	UNSP	2009	Bakrie Sumatra	Agriculture	Plantation
313	UNSP	2008	Bakrie Sumatra	Agriculture	Plantation
314	UNTR	2012	United Tractors	Trade	Wholesale

No	PLC Code	Year	PLC Name	Industry	Sub-Industry
315	UNTR	2011	United Tractors	Trade	Wholesale
316	UNTR	2009	United Tractors	Trade	Wholesale
317	UNVR	2012	Unilever Indonesia	Consumer Goods	Cosmetics and Household
318	UNVR	2011	Unilever Indonesia	Consumer Goods	Cosmetics and Household
319	UNVR	2010	Unilever Indonesia	Consumer Goods	Cosmetics and Household
320	UNVR	2009	Unilever Indonesia	Consumer Goods	Cosmetics and Household
321	UNVR	2008	Unilever Indonesia	Consumer Goods	Cosmetics and Household
322	YPAS	2012	Yanaprima Hasta	Basic Industry	Plastic and Packaging
323	YPAS	2008	Yanaprima Hasta	Basic Industry	Plastic and Packaging
324	YULE	2010	Yulie Sekurindo	Finance	Securities
325	ZBRA	2008	Zebra Nusantara	Infrastructure	Transportation

Appendix 4. Descriptive Statistics 325 Main Samples in Million Rupiahs Except for Categorical Variables

	Rev	CMS	CFFO	Own	Acq	FAInten	DER	DTA	Asset	Sales	Opr Income	Debt	Free CF	DER Level	MBR	PER	Foreign	Export
N Valid	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325
Missing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean	.07	3024951	1814957	.519042	.10	.3094259	1.968654	.645261	33846806.25	10397703.06	2308215.07	.01	506742.09	.50	3.0836	22.2719	.13	.47
Std. Er of Mean	.014	454402	378723	.0124433	.017	.01445631	.2299378	.0294168	5180553.579	1237695.647	386315.330	.005	408143.791	.028	.42520	5.37023	.018	.028
Median	.00	194165.00	66739	.523500	.00	.2643000	1.220000	.563200	2004367.00	1324828.00	115759.00	.00	4081.00	.00	1.5200	9.9300	.00	.00
Mode	0	69	1041872[a]	.8500	0	.00460[a]	.0100[a]	.8940	3235[a]	78295[a]	6101[a]	0	-46445505[a]	0	.55[a]	6.28	0	0
Std. Deviation	.257	8191856	6827539	.2243256	.298	.26061485	4.1452617	.5303180	93393757	22312875.591	6964398.651	.096	7357916.836	.501	7.66539	96.81321	.333	.500
Variance	.066	6.711E13	4.662E13	.050	.089	.068	17.183	.281	8.722E15	4.979E14	4.850E13	.009	5.414E13	.251	58.758	9372.797	.111	.250
Range	1	72738825	92606354	.9682	1	.98390	59.7900	5.1264	635615473	188052604	105475961	1	93037508	1	119.25	1568.67	1	1
Minimum	0	2	-38270667	.0317	0	.00000	-44.7100	.0025	3235	396	-6949961	0	-46445505	0	-31.32	-294.67	0	0
Maximum	1	72738827	54335687	.9999	1	.98390	15.0800	5.1289	635618708	188053000	98526000	1	46592003	1	87.93	1274.00	1	1
Sum	23	983109244	589861347	168.688	32	100.56342	639.8125	209.7098	11000212031	3379253496	750169898	3	164691180	161	1002.17	7238.36	41	153

Appendix 5. Descriptive Statistics of 325 Main Samples with 23 New Samples Change in Million Rupiahs Except for Categorical Variables

	Rev	CMS	CFFO	Own	Acq	FAInten	DER	DTA	Asset	Sales	Opr Income	Debt	Free CF	DER Level	MBR	PER	Foreign	Export
N Valid	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325	325
Missing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mean	.06	2184708	1590776	.522917	.09	.3064191	2.060531	.626654	27885130.56	9183582.91	1980303	.01	340950	.50	2.5963	16.1645	.14	.49
Std. Error of Mean	.013	269230	256663	.0127252	.016	.01425062	.1766131	.0258109	4335693.444	918158.100	244688	.004	273548	.028	.24165	2.38733	.019	.028
Median	.00	221226	81376.00	.524400	.00	.2585000	1.220000	.560700	2454961.00	1597135.00	189428	.00	5697.00	.00	1.4700	10.4200	.00	.00
Mode	0	69	1237709[a]	.8500	0	.00460[a]	.5600	.8940	3235[a]	78295[a]	6101[a]	0	-27807254[a]	0	.55[a]	6.28	0	0
Std. Deviation	.241	4853621	4627072	.2294074	.286	.25690662	3.1839371	.4653131	78162825	16552330.550	4411184	.078	4931468	.501	4.35647	43.03821	.343	.501
Variance	.058	2.356E13	2.141E13	.053	.082	.066	10.137	.217	6.109E15	2.740E14	1.946E13	.006	2.432E13	.251	18.979	1852.288	.117	.251
Range	1	38954019	44025331	.9682	1	.98390	29.2800	3.0584	635615473	138448495	41630406	1	60585014	1	46.37	522.17	1	1
Minimum	0	11	-14213727	.0317	0	.00000	-14.2000	.0025	3235	396	-6949961	0	-27807254	0	-7.40	-239.39	0	0
Maximum	1	38954030	29811604	.9999	1	.98390	15.0800	3.0609	635618708	138448891	34680445	1	32777760	1	38.97	282.78	1	1
Sum	20	710030283	517002297	169.9481	29	99.58622	669.6725	203.6627	9062667431	2984664447	643598610	2	110809029	162	843.79	5253.47	44	158

Appendix 6. The Change of 23 Main Samples

No	Old PLC	Year	Proxy	New PLC Code	New PLC Name	Year
1	AGRO	2011	CMS	ADRO	Adaro Energy	2011
2	ASII	2012	Sales	ADRO	Adaro Energy	2010
3	ASII	2011	Sales	BBTN	Bank Tabungan Negara	2011
4	ASII	2010	Sales, and Operating Income	BBTN	Bank Tabungan Negara	2010
5	BBCA	2011	CFFO, and FCF	BBTN	Bank Tabungan Negara	2009
6	BBCA	2009	CMS	BDMN	Bank Danamon Indonesia	2012
7	BBCA	2008	CMS	BNBR	Bakrie and Bothers	2012
8	BBRI	2012	FCF	BWPT	BW Plantation	2010
9	BBRI	2010	CFFO, and FCF	ELTY	Bakrieland Development	2010
10	BKSW	2010	PER	GGRM	Gudang Garam	2012
11	BMRI	2010	CFFO	GGRM	Gudang Garam	2011
12	BTEK	2011	PER	GIAA	Garuda Indonesia	2012
13	CMPP	2012	PER	GIAA	Garuda Indonesia	2011
14	CMPP	2011	PER	GJTL	Gajah Tunggal	2008
15	GDYR	2008	PER	HMSP	HM Sampoerna	2008
16	INKP	2009	FCF	INTP	Indocement Tunggal Prakasa	2011
17	KARW	2012	DER	LPKR	Lippo Karawaci	2010
18	KARW	2011	DTA	NISP	Nipress	2012
19	MYOH	2009	MBR	NISP	Nipress	2011
20	MYOH	2008	MBR	SDPC	Millenium Pharmacon	2011
21	RAJA	2008	PER	SMGR	Semen Indonesia	2012
22	TLKM	2011	CFFO	SMGR	Semen Indonesia	2011
23	UNVR	2012	MBR	TKIM	Pabrik Kertas Tjiwi Kimia	2012

Appendix 7. 30 Hold-out Samples

No	PLC Code	Year	PLC Name
1	AALI	2008	Astra Agro Lestari
2	ADHI	2012	Adhi Karya
3	BNGA	2008	Bank CIMB Niaga
4	BNII	2009	Bank International Indonesia
5	BRNA	2012	Berlina
6	BSDE	2008	Bumi Serpong Damai
7	BTEL	2009	Bakrie Telecom
8	CMNP	2009	Citra Marga Nusantara Persada
9	DSFI	2012	Dharma Samudera Fishing Indonesia
10	ENRG	2010	Energi Mega Persada
11	FREN	2010	Smartfren Telecom
12	GGRM	2009	Gudang Garam
13	GIAA	2010	Garuda Indonesia
14	GJTL	2012	Gajah Tunggal
15	HEXA	2011	Hexindo Adiperkasa
16	HMSP	2011	HM Sampoerna
17	IMAS	2008	Indomobil Sukses Internasional
18	JSMR	2011	Jasa Marga
19	LTLS	2012	Lautan Luas
20	MDRN	2012	Modern Internasional
21	MICE	2012	Multi Indocitra
22	MLIA	2010	Mulia Industrindo
23	NIPS	2008	Nipress
24	POLY	2012	Asia Pacific Fibers
25	PSAB	2010	J Resources Asia Pasifik
26	PTBA	2009	Tambang Batubara Bukit Asam
27	SDMU	2011	Sidomulyo Selaras
28	SMGR	2009	Semen Indonesia
29	TLKM	2011	Telekomunikasi Indonesia
30	UNTR	2008	United Tractors

Appendix 8. A Comparative Results between Main Samples and Validation Samples

No	Item	Main Samples	Validation Samples	Difference	Percentage	Description
1	F test / Overall model	0.00	0.00	0	0	Both samples are Significant
2	Nagelkerke R^2	44.80	41.9	2.900	6.47	Relatively the Same
3	-2 Log likelihood	38.69	35.38	3.310	8.56	Relatively the Same
4	Cox & Snell R^2	18.00	17.80	0.200	1.11	Relatively the Same
5	t-test (number of sig variables)	4	4	0	0	The Same
6	Wald Value significant 1	0.000	0.000	0	0	The Same
7	Wald Value significant 2	0.000	0.004	- 0.004	0	The Same
8	Wald Value significant 3	0.009	0.017	- 0.008	- 88.89	Relatively the Same (in term of percentage)
9	Wald Value significant 4	0.004	0.001	0.003	75.00	Relatively the Same (in term of difference)
10	Beta Coefficient - CMS	0.000	0.000	0	0	The Same
11	CFFO	0.000	0.000	0	0	The Same
12	OWN	-0.669	-0.453	- 0.216	32.29	Different
13	Acquisition	1.668	1.166	0.502	30.10	Different
14	FA Intensity	5.613	4.877	0.736	13.11	Relatively the Same
15	DER	0.478	0.315	0.163	34.10	Different
16	DTA	-0.036	-0.063	0.027	- 75.00	Relatively the Same (in term of difference)
17	Asset	0.000	0.000	0	0	The Same
18	Sales	0.000	0.000	0	0	The Same
19	Operating Income	0.000	0.000	0	0	The Same
20	Debt Restructuring	-16.190	-16.472	0.282	- 1.74	The Same
21	Free Cash Flows	0.000	0.000	0	0	The Same
22	DER Level	1.801	1.385	0.416	23.10	Different
23	MBR	-0.265	-0.281	0.016	- 6.04	Relatively the Same
24	PER	-0.009	-0.008	- 0.001	11.11	Relatively the Same
25	Foreign Operation	-0.719	-0.898	0.179	- 24.90	Relatively the Same
26	Export Sales	-1.936	1.857	- 3.793	195.92	Different
27	Constanta	-4.665	-5.505	0.840	- 18.01	Different

Appendix 9. Summary of Hypotheses Testing

No	Motive	Detail	Proxy	Sig/ Not	Hypotheses Expected Sign	Scenario 1 Actual Sign	Scenario 2 Actual Sign	Scenario 3 Actual Sign	Scenario 4 Actual Sign
1	Economic Benefits and Efficiency	Liquidity	CMS	NO	-	0	0	NA	NA
			CFFO	NO	-	0	0	NA	NA
		Ownership	Share Ownership	NO	+	-	-	-	-
			Acquisition	NO	+	+	+	+	+
		Asset	Fixed Asset Intensity	SIG	+	+	+	+	+
2	Reduce Debt Contracting Costs	Leverage	DER	SIG	+	+	+	+	+
			DTA	NO	+	-	+	+	NA
3	Reduce Political Costs	Size	Total Assets	NO	+	0	0	NA	NA
			Sales	NO	+	0	0	NA	NA
			Operating Income	NO	+	0	0	NA	0
4	Opportunistic Behaviour	Debt Restructuring	Existence of Debt Restructuring	NO	+	-	-	-	NA
5	Provide Signals	Successful Status	Free CF	NO	+	0	0	NA	NA
			DER Level	SIG	+	+	+	+	+
6	Reduce Information Asymmetry	Growth	MBR	NO	+	-	-	-	-
			PER	NO	+	-	-	-	-
		Disclosure	Foreign Operation	NO	+	-	-	-	NA
			Export Sales	SIG	+	-	-	+	-

Appendix 10. List of Revaluers

No	PLC Code	PLC Name	Year Revalued	Industry
1	NIPS	Nipress	2008	Trade
2	BLTA	Berlian Laju Tanker	2009	Infrastructure
3	NIPS	Nipress	2009	Trade
4	BLTA	Berlian Laju Tanker	2010	Infrastructure
5	MICE	Multi Indocitra	2010	Infrastructure
6	MLIA	Mulia Industrindo	2010	Basic Industry
7	NIPS	Nipress	2010	Trade
8	TOWR	Sarana Menara Nusantara	2010	Infrastructure
9	BACA	Bank Capital Indonesia	2011	Finance
10	BULL	Buana Listya Tama	2011	Infrastructure
11	MICE	Mulia Indocitra	2011	Infrastructure
12	MLIA	Mulia Industrindo	2011	Basic Industry
13	NIPS	Nipress	2011	Trade
14	PTIS	Indo Straits	2011	Infrastructure
15	SDMU	Sidomulyo Selaras	2011	Infrastructure
16	TOWR	Sarana Menara Nusantara	2011	Infrastructure
17	BACA	Bank Capital Indonesia	2012	Finance
18	BCIC	Bank Mutiara	2012	Finance
19	BULL	Buana Listya Tama	2012	Infrastructure
20	DSFI	Dharma Samudera Fishing Indonesia	2012	Trade
21	INDS	Indospring	2012	Trade
22	MICE	Mulia Indocitra	2012	Infrastructure
23	MLIA	Mulia Industrindo	2012	Basic Industry
24	NIPS	Nipress	2012	Trade
25	PALM	Provident Agro	2012	Agriculture
26	PTIS	Indo Straits	2012	Infrastructure
27	SDMU	Sidomulyo Selaras	2012	Infrastructure
28	TOWR	Sarana Menara Nusantara	2012	Infrastructure

Appendix 11. Revaluers' Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Revaluation	28	1	1	1.00	.000
CMS	28	2,525	1,665,302	358,185.89	518,238.739
CFFO	28	-28,007	1,991,400	285,792.71	521,521.277
Ownership	28	.1683	.9999	.467114	.1997991
Acquisition	28	0	1	.07	.262
FA Intensity	28	.01280	.85580	.5350357	.25037176
DER	28	-10.3400	11.2500	1.862857	3.6097849
DTA	28	.1200	1.1100	.603021	.2490915
Asset	28	197,859	27,227,350	5,035,564.71	7,243,437.406
Sales	28	100,310	5,981,255	1,391,235.79	1,687,115.060
Operating Income	28	-936,434	900,162	117,173.14	317,609.524
Debt Restructuring	28	0	0	.00	.000
Free Cash Flows	28	-2,515,017	1,277,974	-8,978.25	681,831.043
DER Level	28	0	1	.68	.476
MBR	28	-1.15	6.72	1.2693	1.64192
PER	28	-13.55	52.45	10.1618	15.40933
Foreign Branch	28	0	1	.07	.262
Export Sales	28	0	1	.71	.460
Valid N (listwise)	28				

Appendix 12. Non-Revaluers' Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Revaluation	327	0	0	.00	.000
CMS	327	2	72,738,827	3,119,136.49	8,165,438.793
CFFO	327	-38,270,667	54,335,687	1,992,113.14	7,015,600.970
Ownership	327	.0317	.9999	.524059	.2238915
Acquisition	327	0	1	.10	.302
FA Intensity	327	.00000	.98390	.2935707	.25350724
DER	327	-44.7100	17.7800	1.854839	4.7793664
DTA	327	.0025	5.1289	.649435	.5448966
Asset	327	3,235	635,618,708	34,679,101.09	93,191,262.357
Sales	327	396	188,053,000	11,185,155.35	22,596,970.102
Operating Income	327	-6,949,961	98,526,000	2,511,386.65	7,055,129.915
Debt Restructuring	327	0	1	.01	.095
Free Cash Flows	327	-46,445,505	46,592,003	658,181.62	7,522,972.101
DER Level	327	0	1	.48	.500
MBR	327	-31.32	167.56	3.5861	11.92853
PER	327	-294.67	1274.00	22.8898	96.89240
Foreign Branch	327	0	1	.13	.342
Export Sales	327	0	1	.45	.498
Valid N (listwise)	327				

Appendix 13. Indonesian PLCs by the Year of Establishment

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
1	AALI	Astra Agro Lestari	09/12/1997	03/10/1988
2	ABBA	Mahaka Media	03/04/2002	28/11/1992
3	ABDA	Asuransi Bina Dana Arta	06/07/1989	27/10/1982
4	ABMM	ABM Investama	06/12/2011	01/06/2006
5	ACES	Ace Hardware Indonesia	06/11/2007	03/02/1995
6	ADES	Akasha Wira International	13/06/1994	01/01/1985
7	ADHI	Adhi Karya	18/03/2004	11/03/1960
8	ADMF	Adira Dinamika Multi Finance	31/03/2004	13/11/1990
9	ADMG	Polychem Indonesia	20/10/1993	01/01/1986
10	ADRO	Adaro Energy	16/07/2008	28/07/2004
11	AGRO	Bank Rakyat Indonesia Agroniaga	08/08/2003	27/09/1989
12	AHAP	Asuransi Harta Aman Pratama	14/09/1990	28/05/1982
13	AIMS	Akbar Indomakmur Stimec	20/07/2001	07/05/1997
14	AISA	Tiga Pilar Sejahtera Food	11/06/1997	21/06/1990
15	AKKU	Alam Karya Unggul	01/11/2004	06/05/2001
16	AKPI	Argha Karya Prima Industry	18/11/1992	07/03/1980
17	AKRA	AKR Corporindo	03/10/1994	28/11/1977
18	AKSI	Majapahit Securities	13/07/2001	12/02/1990
19	ALDO	Alkindo Naratama	12/07/2011	31/01/1989
20	ALKA	Alakasa Industrindo	12/07/1990	21/02/1972
21	ALMI	Alumindo Light Metal Industry	02/01/1997	26/06/1978
22	ALTO	Tri Banyan Tirta	10/07/2012	03/06/1997
23	AMAG	Asuransi Multi Artha Guna	23/12/2005	14/11/1980
24	AMFG	Asahimas Flat Glass	08/11/1995	07/10/1971
25	AMRT	Sumber Alfaria Trijaya	15/01/2009	22/02/1989
26	ANTM	Aneka Tambang	27/11/1997	05/07/1968
27	APIC	Pacific Strategic Financial	18/12/2002	22/02/1989
28	APLI	Asiaplast Industries	01/05/2000	05/08/1992
29	APLN	Agung Podomoro Land	11/11/2010	30/07/2004
30	APOL	Arpeni Pratama Ocean Line	22/06/2005	04/10/1975
31	ARGO	Argo Pantes	07/01/1991	12/07/1977
32	ARII	Atlas Resources	08/11/2011	01/01/2007
33	ARNA	Arwana Citramulia	17/07/2001	22/02/1993
34	ARTA	Arthavest	05/11/2002	29/06/1990
35	ARTI	Ratu Prabu Energi	30/04/2003	31/03/1993
36	ASBI	Asuransi Bintang	29/11/1989	17/03/1955
37	ASDM	Asuransi Dayin Mitra	15/12/1989	01/04/1982
38	ASGR	Astra Graphia Tbk	15/11/1989	31/10/1975
39	ASIA	Asia Natural Resources	20/10/1994	16/11/1989
40	ASII	Astra International	04/04/1990	01/01/1957
41	ASJT	Asuransi Jasa Tania	23/11/2003	25/06/1979

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
42	ASRI	Alam Sutera Realty	18/12/2007	19/09/2007
43	ASRM	Asuransi Ramayana	19/03/1990	06/10/1956
44	ASSA	Adi Sarana Armada	12/11/2012	17/12/1999
45	ATPK	ATPK Resources	17/04/2002	12/01/1988
46	AUTO	Astra Otoparts	15/06/1998	20/09/1991
47	BABP	Bank ICB Bumiputera	15/07/2002	31/07/1989
48	BACA	Bank Capital Indonesia	04/10/2007	20/04/1989
49	BAEK	Bank Ekonomi Raharja	08/01/2008	15/05/1989
50	BAJA	Saranacentral Bajatama	21/12/2011	04/10/1993
51	BAPA	Bekasi Asri Pemula	14/01/2008	20/10/1993
52	BATA	Sepatu Bata	24/03/1982	15/10/1931
53	BAYU	Bayu Buana	30/10/1989	17/10/1972
54	BBCA	Bank Central Asia	31/05/2000	10/10/1955
55	BBKP	Bank Bukopin	10/07/2006	10/07/1970
56	BBLD	Buana Finance	07/05/1990	07/06/1982
57	BBNI	Bank Negara Indonesia	25/11/1996	07/07/1946
58	BBNP	Bank Nusantara Parahyangan	10/01/2001	18/01/1972
59	BBRI	Bank Rakyat Indonesia	10/11/2003	18/12/1968
60	BBTN	Bank Tabungan Negara	17/12/2009	09/02/1950
61	BCAP	Bhakti Capital Indonesia	08/06/2001	15/07/1999
62	BCIC	Bank Mutiara	25/06/1997	01/10/2004
63	BCIP	Bumi Citra Permai	11/12/2009	02/05/2000
64	BDMN	Bank Danamon Indonesia	06/12/1989	16/07/1956
65	BEKS	Bank Pundi Indonesia	13/07/2001	11/09/1992
66	BEST	Bekasi Fajar Industrial Estate	10/04/2012	24/08/1989
67	BFIN	BFI Finance Indonesia	16/05/1990	07/04/1982
68	BHIT	Bhakti Investama	24/11/1990	02/11/1989
69	BIMA	Primarindo Asia Infrastructure	30/08/1994	01/07/1988
70	BIPI	Benakat Petroleum Energy	11/02/2010	19/04/2007
71	BIPP	Bhuwanatala Indah Permai	23/10/1995	21/12/1981
72	BISI	Bisi International	28/05/2007	22/06/1983
73	BJBR	Bank Pembangunan Daerah Jawa Barat dan Banten	08/07/2010	21/03/1961
74	BJTM	Bank Pembangunan Daerah Jawa Timur	12/07/2012	17/10/1961
75	BKDP	Bukit Darmo Property	15/06/2007	12/07/1989
76	BKSL	Sentul City	28/07/1997	16/04/1993
77	BKSW	Bank QNB Kesawan	21/11/2002	01/04/2013
78	BLTA	Berlian Laju Tanker	26/03/1990	01/01/1979
79	BMRI	Bank Mandiri	14/07/2003	02/10/1998
80	BMSR	Bintang Mitra Semestaraya	29/12/1999	16/11/1989

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
81	BMTR	Global Mediacom	17/07/1995	30/06/1981
82	BNBA	Bank Bumi Arta	31/12/2006	03/03/1967
83	BNBR	Bakrie & Brothers	28/08/1989	13/03/1951
84	BNGA	Bank CIMB Niaga	29/11/1989	26/09/1955
85	BNII	Bank Internasional Indonesia	21/11/1989	15/05/1959
86	BNLI	Bank Permata	15/01/1990	17/12/1954
87	BORN	Borneo Lumbung Energi & Metal	26/11/2010	15/03/2006
88	BPFI	Batavia Prosperindo Finance	01/06/2009	12/12/1994
89	BRAM	Indo Kordsa	05/09/1990	08/07/1981
90	BRAU	Berau Coal Energy	19/08/2010	01/09/2005
91	BRMS	Bumi Resources Minerals	09/12/2010	06/10/2003
92	BRNA	Berlina	06/11/1989	18/10/1969
93	BRPT	Barito Pacific	01/10/1993	04/04/1979
94	BSDE	Bumi Serpong Damai	06/06/2008	16/01/1984
95	BSIM	Bank Sinarmas	13/12/2010	18/10/1989
96	BSSR	Baramulti Suksessarana	08/11/2012	31/10/1990
97	BSWD	Bank of India Indonesia	01/05/2002	28/09/1968
98	BTEK	Bumi Teknokultura Unggul	14/05/2004	06/06/2001
99	BTEL	Bakrie Telecom	03/02/2006	13/10/1993
100	BTON	Betonjaya Manunggal	18/07/2001	27/02/1995
101	BTPN	Bank Tabungan Pembangunan Nasional	12/03/2008	16/02/1985
102	BUDI	Budi Acid Jaya	08/05/1995	15/01/1979
103	BULL	Buana Listya Tama	23/05/2011	12/05/2005
104	BUMI	Bumi Resources	30/07/1990	28/11/1973
105	BUVA	Bukit Uluwatu Villa	12/07/2010	15/12/2000
106	BVIC	Bank Victoria International	30/06/1999	28/10/1992
107	BWPT	BW Plantation	27/10/2009	06/11/2000
108	BYAN	Bayan Resources	12/08/2008	07/10/2004
109	CASS	Cardig Aero Services	05/12/2011	16/07/2009
110	CEKA	Cahaya Kalbar	09/07/1996	03/02/1968
111	CENT	Centrin Online	01/11/2001	11/02/1987
112	CFIN	Clipan Finance Indonesia	02/10/1990	15/01/1982
113	CITA	Cita Mineral Investindo	20/03/2002	27/06/1992
114	CKRA	Citra Kebun Raya Agri	19/05/1999	19/09/1990
115	CLPI	Colorpak Indonesia	30/11/2001	15/09/1988
116	CMNP	Citra Marga Nusaphala Persada	10/01/1995	13/04/1987
117	CMPP	Centris Multi Persada Pratama	08/12/1994	25/07/1989
118	CNKO	Exploitasi Energi Indonesia	20/11/2001	13/09/1999
119	CNTX	Centex	22/05/1979	22/05/1970

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
120	COWL	Cowell Development	19/12/2007	25/03/1981
121	CPDW	Cipendawa	18/06/1990	25/11/1970
122	CPIN	Charoen Pokphand Indonesia	18/03/1991	07/01/1972
123	CPRO	Central Proteinaprima	28/11/2006	30/04/1980
124	CSAP	Catur Sentosa Adiprana	12/12/2007	31/12/1983
125	CTBN	Citra Tubindo	28/11/1989	23/08/1983
126	CTRA	Ciputra Development	28/03/1994	22/10/1981
127	CTRP	Ciputra Property	07/11/2007	22/12/1994
128	CTRS	Ciputra Surya	15/01/1999	01/03/1989
129	CTTH	Citatah	03/07/1996	26/09/1974
130	DART	Duta Anggada Realty	08/05/1990	30/12/1983
131	DAVO	Davomas Abadi	22/12/1994	01/01/1993
132	DEFI	Danasupra Erapacific	06/07/2001	11/11/1994
133	DEWA	Darma Henwa	29/09/2007	08/10/1991
134	DGIK	Nusa Konstruksi Enjiniring	19/12/2007	11/01/1982
135	DILD	Intiland Development	04/09/1991	10/06/1983
136	DKFT	Central Omega Resources	21/11/1997	22/02/1995
137	DLTA	Delta Djakarta	12/02/1984	15/06/1970
138	DNET	Dyviacom Intrabumi	11/12/2000	16/11/1995
139	DOID	Delta Dunia Makmur	15/06/2001	26/11/1990
140	DPNS	Duta Pertiwi Nusantara	08/08/1990	18/03/1982
141	DSFI	Dharma Samudera Fishing Industry	24/03/2000	02/10/1973
142	DSSA	Dian Swastatika Sentosa	10/12/2009	02/10/1996
143	DUTI	Duta Pertiwi	02/11/1994	29/12/1972
144	DVLA	Darya-Varia Laboratoria	11/11/1994	05/02/1976
145	EKAD	Ekadharma International	14/08/1990	20/11/1981
146	ELSA	Elnusa	06/02/2008	25/01/1969
147	ELTY	Bakrieland Development	30/10/1995	12/06/1990
148	EMDE	Megapolitan Developments	12/01/2011	10/09/1976
149	EMTK	Elang Mahkota Teknologi	12/01/2010	03/10/1983
150	ENRG	Energi Mega Persada	07/06/2004	16/10/2001
151	EPMT	Enseval Putra Megatrading	01/08/1994	26/10/1988
152	ERAA	Erajaya Swasembada	14/12/2011	08/10/1996
153	ERTX	Eratex Djaja	21/08/1990	12/10/1972
154	ESSA	Surya Esa Perkasa	01/02/2012	24/03/2006
155	ESTI	Ever Shine Textile Industry	13/10/1992	11/12/1973
156	ETWA	Eterindo Wahanatama	16/05/1997	06/03/1992
157	EXCL	XL Axiata	29/09/2005	06/10/1989
158	FAST	Fast Food Indonesia	11/05/1993	19/06/1978

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
159	FASW	Fajar Surya Wisesa	01/12/1994	13/06/1987
160	FISH	FKS Multi Agro	18/01/2002	27/06/1992
161	FMII	Fortune Mate Indonesia	30/06/2000	24/06/1989
162	FORU	Fortune Indonesia	17/01/2004	05/05/1970
163	FPNI	PT Lotte Chemical Titan	21/03/2002	09/02/1987
164	FREN	Smartfren Telecom	29/11/2006	02/12/2002
165	GAMA	Gading Development	11/07/2012	18/12/2003
166	GDST	Gunawan Dianjaya Steel	23/12/2009	08/04/1989
167	GDYR	Goodyear Indonesia	01/12/1980	26/01/1917
168	GEMA	Gema Grahasarana	12/08/2002	07/12/1984
169	GEMS	Golden Energy Mines	17/11/2011	13/03/1997
170	GGRM	Gudang Garam	27/08/1990	30/06/1971
171	GIAA	Garuda Indonesia	11/02/2011	31/03/1950
172	GJTL	Gajah Tunggal	08/05/1990	24/08/1951
173	GLOB	Global Teleshop	10/07/2012	01/03/2007
174	GMCW	Grahamas Citrawisata	14/02/1995	14/09/1989
175	GMTD	Gowa Makassar Tourism Development	11/12/2000	14/05/1991
176	GOLD	Golden Retailindo	07/07/2010	08/11/1995
177	GPRA	Perdana Gapura Prima	10/10/2007	21/05/1987
178	GREN	Evergreen Invesco	09/07/2010	18/09/2003
179	GSMF	Equity Development Investment	13/10/1989	01/11/1982
180	GTBO	Garda Tujuh Buana	09/07/2009	10/06/1996
181	GWSA	Greenwood Sejahtera	23/12/2011	16/04/1990
182	GZCO	Gozco Plantations	15/05/2008	10/08/2001
183	HADE	HD Capital	12/04/2004	10/02/1998
184	HDFA	HD Finance	10/05/2011	20/09/1972
185	HDTX	Panasia Indo Resources	06/06/1990	06/04/1973
186	HERO	Hero Supermarket	02/12/1989	05/10/1971
187	HEXA	Hexindo Adiperkasa	13/02/1995	28/11/1988
188	HITS	Humpuss Intermoda Transportasi	15/12/1997	21/12/1992
189	HMSP	HM Sampoerna	15/08/1990	19/10/1963
190	HOME	Hotel Mandarine Regency	17/07/2008	28/10/1986
191	HRUM	Harum Energy	06/10/2010	12/10/1995
192	IATA	Indonesia Air Transport	13/09/2006	10/09/1968
193	IBST	Inti Bangun Sejahtera	31/08/2012	28/04/2006
194	ICBP	Indofood CBP Sukses Makmur	07/10/2010	02/09/2009
195	ICON	Island Concepts Indonesia	08/07/2005	11/07/2001
196	IDKM	Indosiar Karya Media	13/08/2004	19/07/1991
197	IGAR	Champion Pacific Indonesia	05/11/1990	30/10/1975

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
198	IIKP	Inti Kapuas Arowana	20/10/2002	16/03/1999
199	IKAI	Intikeramik Alamasri Industri	04/06/1997	26/06/1991
200	IKBI	Sumi Indo Kabel	21/01/1991	23/07/1981
201	IMAS	Indomobil Sukses Internasional	15/09/1993	06/11/1997
202	INAF	Indofarma	17/04/2001	26/01/1996
203	INAI	Indal Aluminium Industry	05/12/1994	16/07/1971
204	INCF	Amstelco Indonesia	18/12/1989	23/02/1982
205	INCI	Intanwijaya Internasional	24/07/1990	14/11/1981
206	INCO	Vale Indonesia	16/05/1990	25/07/1968
207	INDF	Indofood Sukses Makmur	14/07/1994	14/08/1990
208	INDR	Indorama Synthetics	03/08/1990	03/04/1974
209	INDS	Indospring	10/08/1990	05/05/1978
210	INDX	Tanah Laut	17/05/2001	19/09/1991
211	INDY	Indika Energy	11/06/2008	19/10/2000
212	INKP	Indah Kiat Pulp & Paper	16/07/1990	07/12/1976
213	INPC	Bank Artha Graha Internasional	29/08/1990	07/09/1973
214	INPP	Indonesian Paradise Property	01/12/2004	14/06/1996
215	INRU	Toba Pulp Lestari	18/06/1990	26/04/1983
216	INTA	Intraco Penta	23/08/1993	10/05/1975
217	INTD	Inter-Delta	18/12/1989	15/11/1976
218	INTP	Indocement Tunggal Prakarsa	05/12/1989	16/01/1985
219	INVS	Inovisi Infracom	03/07/2009	11/05/2007
220	IPOL	Indopoly Swakarsa Industry	09/07/2010	24/03/1995
221	ISAT	Indosat	19/10/1994	10/11/1967
222	ITMA	SUMBER ENERGI ANDALAN	10/12/1990	20/11/1987
223	ITMG	Indo Tambangraya Megah	18/12/2007	02/09/1987
224	ITTG	Leo Investments	26/11/2001	25/03/1999
225	JAWA	Jaya Agra Wattie	30/05/2011	20/01/1921
226	JECC	Jembo Cable Company	18/11/1992	17/04/1973
227	JIHD	Jakarta International Hotels & Development	29/02/1984	07/11/1969
228	JKON	Jaya Konstruksi Manggala Pratama	04/12/2007	23/12/1982
229	JKSW	Jakarta Kyoei Steel Works	06/08/1997	07/01/1974
230	JPFA	JAPFA Comfeed Indonesia	23/10/1989	18/01/1971
231	JPRS	Jaya Pari Steel	08/10/1989	18/07/1973
232	JRPT	Jaya Real Property	29/06/1994	25/05/1979
233	JSMR	Jasa Marga	12/11/2007	01/03/1978
234	JSPT	Jakarta Setiabudi Internasional	12/01/1998	02/07/1975
235	JTPE	Jasuindo Tiga Perkasa	16/04/2002	10/11/1990

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
236	KAEF	Kimia Farma	04/07/2001	16/08/1971
237	KARK	Dayaindo Resources International	20/07/2001	21/04/1994
238	KARW	ICTSI Jasa Prima	20/12/2008	18/02/1978
239	KBLI	KMI Wire and Cable	06/07/1992	19/01/1972
240	KBLM	Kabelindo Murni	01/06/1992	11/10/1979
241	KBLV	First Media	25/02/2000	06/01/1994
242	KBRI	Kertas Basuki Rachmat Indonesia	11/07/2008	14/02/1978
243	KDSI	Kedawung Setia Industrial	29/07/1996	09/01/1973
244	KIAS	Keramika Indonesia Assosiasi	08/12/1994	28/11/1968
245	KICI	Kedaung Indah Can	28/10/1993	11/01/1974
246	KIJA	Kawasan Industri Jababeka	10/01/1995	12/01/1989
247	KKGI	Resource Alam Indonesia	01/07/1991	08/07/1981
248	KLBF	Kalbe Farma	30/07/1991	10/09/1966
249	KOBX	Kobexindo Tractors	05/07/2012	28/09/2002
250	KOIN	Kokoh Inti Arebama	09/04/2008	06/07/2001
251	KONI	Perdana Bangun Pusaka	22/08/1995	07/10/1987
252	KPIG	MNC Land	30/03/2000	11/06/1990
253	KRAS	Krakatau Steel	10/11/2010	27/10/1971
254	KREN	Kresna Graha Sekurindo	28/06/2002	10/09/1999
255	LAMI	Lamicitra Nusantara	18/07/2001	29/01/1988
256	LAPD	Leyand International	17/07/2001	07/06/1990
257	LCGP	Laguna Cipta Griya	13/07/2007	17/05/2004
258	LION	Lion Metal Works	20/08/1993	01/01/1980
259	LMAS	Limas Centric Indonesia	28/12/2001	04/06/1996
260	LMPI	Langgeng Makmur Industri	17/10/1994	16/08/1972
261	LMSH	Lionmesh Prima	04/06/1990	14/12/1982
262	LPCK	Lippo Cikarang	24/07/1997	22/04/1988
263	LPGI	Lippo General Insurance	22/07/1997	06/09/1963
264	LPIN	Multi Prima Sejahtera	05/02/1990	07/01/1982
265	LPKR	Lippo Karawaci	28/06/1996	15/10/1990
266	LPLI	Star Pacific	23/10/1989	28/05/1983
267	LPPF	Matahari Department Store	09/10/1989	01/04/1982
268	LPPS	Lippo Securities	28/03/1994	20/06/1989
269	LSIP	PP London Sumatra Indonesia	05/07/1996	18/12/1962
270	LTLS	Lautan Luas	21/07/1997	18/01/1951
271	MAIN	Malindo Feedmill	10/02/2006	10/06/1997
272	MAMI	Mas Murni Indonesia	09/02/1994	27/07/1990
273	MAPI	Mitra Adiperkasa	10/11/2004	23/01/1995
274	MASA	Multistrada Arah Sarana	09/06/2005	20/06/1988
275	MAYA	Bank Mayapada Internasional	29/08/1997	07/09/1989

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
276	MBBS	Mitrabahtera Segara Sejati	06/04/2011	24/03/1994
277	MBTO	Martina Berto	13/01/2011	01/06/1977
278	MCOR	Bank Windu Kentjana International	03/07/2007	02/04/1974
279	MDLN	Modernland Realty Ltd	18/01/1993	08/08/1983
280	MDRN	Modern Internasional	16/07/1991	12/05/1971
281	MEDC	Medco Energi Internasional	12/10/1994	09/06/1980
282	MEGA	Bank Mega	17/04/2000	06/04/1969
283	MERC	Merck	23/07/1981	14/10/1970
284	META	Nusantara Infrastructure	18/07/2001	01/09/1995
285	MFIN	Mandala Multifinance	06/09/2005	13/08/1983
286	MFMI	Multifiling Mitra Indonesia	29/12/2010	09/07/1992
287	MICE	Multi Indocitra	02/11/2005	11/01/1990
288	MIDI	Midi Utama Indonesia	30/11/2010	28/06/2007
289	MIRA	Mitra International Resources	30/01/1997	24/04/1979
290	MITI	Mitra Investindo	16/07/1997	16/09/1993
291	MKPI	Metropolitan Kentjana	10/07/2009	29/03/1972
292	MLBI	Multi Bintang Indonesia	17/01/1994	03/06/2029
293	MLIA	Mulia Industrindo	17/01/1994	05/11/1986
294	MLPL	Multipolar	06/11/1989	04/12/1975
295	MNCN	Media Nusantara Citra	22/06/2007	17/06/1997
296	MPPA	Matahari Putra Prima	21/12/1992	11/03/1986
297	MRAT	Mustika Ratu	27/07/1995	14/03/1978
298	MREI	Maskapai Reasuransi Indonesia	04/09/1989	04/06/1953
299	MSKY	MNC Sky Vision	09/07/2012	08/08/1988
300	MTDL	Metrodata Electronics	09/04/1990	17/02/1983
301	MTFN	Capitalinc Investment	16/04/1990	11/11/1983
302	MTLA	Metropolitan Land	20/06/2011	16/02/1994
303	MTSM	Metro Realty	08/01/1992	07/02/1980
304	MYOH	Samindo Resources	27/07/2000	15/03/2000
305	MYOR	Mayora Indah	04/07/1990	17/02/1977
306	MYRX	Hanson International	31/10/1990	07/07/1971
307	MYTX	APAC Citra Centertex	10/10/1989	10/02/1987
308	NELY	Pelayaran Nelly Dwi Putri	11/10/2012	03/02/1977
309	NIKL	Pelat Timah Nusantara	14/12/2009	19/08/1982
310	NIPS	Nipress	24/07/1991	24/04/1975
311	NIRO	Nirvana Development	13/09/2012	18/12/2003
312	NISP	Bank OCBC NISP	20/10/1994	04/04/1941
313	OCAP	ONIX Capital	10/11/2003	06/10/1989
314	OKAS	Ancora Indonesia Resources	29/03/2006	15/09/2003
315	OMRE	Indonesia Prima Property	22/10/1994	23/04/1983

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
316	PADI	Minna Padi Investama	09/01/2012	28/05/1998
317	PAFI	Panasia Filament Inti	22/07/1997	31/12/1987
318	PALM	Provident Agro	08/10/2012	02/11/2006
319	PANR	Panorama Sentrawisata	01/01/1950	22/07/1995
320	PANS	Panin Sekuritas	31/12/2000	27/07/1989
321	PBRX	Pan Brothers	16/08/1990	21/07/1980
322	PDES	Destinasi Tirta Nusantara	08/07/2008	30/10/1999
323	PEGE	Panca Global Securities	24/06/2005	13/08/1999
324	PGAS	Perusahaan Gas Negara	15/12/2003	01/01/1859
325	PGLI	Pembangunan Graha Lestari	05/04/2000	05/03/1994
326	PICO	Pelangi Indah Canindo	23/09/1996	26/09/1983
327	PJAA	Pembangunan Jaya Ancol	02/07/2004	10/07/1992
328	PKPK	Perdana Karya Perkasa	11/07/2007	07/12/1983
329	PLAS	Polaris Investama	16/03/2001	23/07/1992
330	PLIN	Plaza Indonesia Realty	15/06/1992	05/11/1983
331	PNBN	Bank Pan Indonesia	29/12/1982	17/08/1971
332	PNIN	Panin Insurance	20/09/1983	24/10/1973
333	PNLF	Panin Financial	14/06/1993	19/07/1974
334	PNSE	Pudjiadi & Sons	01/05/1990	17/12/1970
335	POLY	Asia Pacific Fibers	12/03/1991	22/02/1984
336	POOL	Pool Advista Indonesia	20/05/1991	26/08/1958
337	PRAS	Prima Alloy Steel Universal	12/07/1990	20/02/1984
338	PSAB	J Resources Asia Pasifik	01/12/2007	14/01/2002
339	PSDN	Prasidha Aneka Niaga	18/10/1994	16/04/1974
340	PSKT	Pusako Tarinka	19/09/1995	10/04/1989
341	PTBA	Tambang Batubara Bukit Asam	23/12/2002	02/03/1981
342	PTIS	Indo Straits	12/07/2011	21/01/1985
343	PTTP	Pembangunan Perumahan	09/02/2010	26/08/1983
344	PTRO	Petrosea	21/05/1990	21/02/1972
345	PTSN	Sat Nusapersada	08/11/2007	01/06/1990
346	PTSP	Pioneerindo Gourmet International	30/05/1994	13/12/1983
347	PUDP	Pudjiadi Prestige	18/11/1994	09/11/1980
348	PWON	Pakuwon Jati	09/10/1989	02/09/1982
349	PWSI	Panca Wiratama Sakti	10/04/1994	01/09/1986
350	PYFA	Pyridam Farma	16/10/2001	27/11/1976
351	RAJA	Rukun Raharja	19/04/2006	24/12/1993
352	RALS	Ramayana Lestari Sentosa	24/07/1996	14/12/1983
353	RANC	Supra Boga Lestari	07/06/2012	28/05/1997
354	RBMS	Ristia Bintang Mahkotasejati	19/12/1997	22/05/1985
355	RDTX	Roda Vivatex	14/05/1990	27/09/1980

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
356	RELI	Reliance Securities	13/07/2005	22/02/1993
357	RICY	Ricky Putra Globalindo	22/01/1998	22/12/1987
358	RIGS	Rig Tenders	26/03/1990	22/01/1974
359	RIMO	Rimo Catur Lestari	10/11/2000	25/03/1987
360	RMBA	Bentoel International Investama	05/03/1990	01/01/1987
361	RODA	Pikko Land Development	22/10/2001	15/10/1984
362	ROTI	Nippon Indosari Corpindo	28/06/2010	08/03/1995
363	RUIS	Radiant Utama Interinsco	12/07/2006	22/08/1984
364	SAFE	Steady Safe	15/08/1994	21/12/1971
365	SAIP	Surabaya Agung Industry Pulp	03/05/1993	31/08/1973
366	SCBD	Danayasa Arthatama	19/04/2002	01/04/1987
367	SCCO	Supreme Cable Manufacturing Corporation	20/07/1982	09/11/1970
368	SCMA	Surya Citra Media	16/07/2002	29/01/1999
369	SCPI	Schering Plough Indonesia	08/06/1990	07/03/1972
370	SDMU	Sidomulyo Selaras	12/07/2011	13/01/1993
371	SDPC	Millennium Pharmacon International	07/05/1990	20/10/1952
372	SDRA	Bank Himpunan Saudara 1906	15/12/2006	15/06/1974
373	SGRO	Sampoerna Agro	18/06/2007	07/06/1993
374	SHID	Hotel Sahid Jaya	08/05/1990	23/05/1969
375	SIAP	Sekawan Intipratama	17/10/2008	05/11/1994
376	SIMA	Siwani Makmur	03/06/1994	07/06/1985
377	SIMM	Surya Intrindo Makmur	28/03/2000	29/07/1996
378	SIMP	Salim Ivomas Pratama	09/06/2011	12/08/1992
379	SIPD	Sierad Produce	2712/96	06/09/1985
380	SKBM	Sekar Bumi	05/01/1993	12/04/1973
381	SKLT	Sekar Laut	08/09/1993	19/07/1976
382	SKYB	Skybee	07/07/2010	10/06/1995
383	SMAR	SMART	20/11/1992	18/06/1962
384	SMCB	Holcim Indonesia	10/08/1997	15/06/1971
385	SMDM	Suryamas Dutamakmur	12/10/1995	21/09/1989
386	SMDR	Samudera Indonesia	05/12/1999	13/11/1964
387	SMGR	Semen Indonesia	08/07/1991	25/03/1953
388	SMMA	Sinar Mas Multiartha	05/07/1995	20/10/1982
389	SMMT	Golden Eagle Energy	01/12/2007	14/03/1980
390	SMRA	Summarecon Agung	07/05/1990	26/11/1975
391	SMRU	SMR Utama	10/10/2011	11/11/2003
392	SMSM	Selamat Sempurna	09/09/1996	19/01/1976
393	SOBI	Sorini Agro Asia Corporindo	03/08/1992	07/02/1983
394	SONA	Sona Topas Tourism Industry	12/07/1992	25/08/1978

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
395	SPMA	Suparma	16/11/1994	25/08/1976
396	SQBB	Taisho Pharmaceutical Indonesia	29/03/1983	28/07/1970
397	SQMI	RENUKA COALINDO	15/07/2004	21/03/2000
398	SRAJ	Sejahteraraya Anugrahjaya	11/04/2011	20/05/1991
399	SRSN	Indo Acidatama	11/01/1993	07/12/1982
400	SSIA	Surya Semesta Internusa	27/03/1997	15/06/1971
401	SSTM	Sunson Textile Manufacturer	20/08/1997	18/11/1972
402	STAR	Star Petrochem	13/07/2011	19/05/2008
403	STTP	Siantar Top	16/12/1996	12/05/1987
404	SUGI	Sugih Energy	19/06/2002	26/03/1990
405	SULI	Sumalindo Lestari Jaya	21/03/1994	03/06/1980
406	SUPR	Solusi Tunas Pratama	11/10/2011	25/07/2006
407	TAXI	Express Transindo Utama	02/11/2012	11/06/1981
408	TBIG	PT Tower Bersama Infrastructure	26/10/2010	08/11/2004
409	TBLA	Tunas Baru Lampung	14/02/2000	22/12/1973
410	TBMS	Tembaga Mulia Semanan	30/09/1993	03/02/1977
411	TCID	Mandom Indonesia	23/09/1993	05/11/1969
412	TELE	Tiphone Mobile Indonesia	12/01/2012	25/06/2008
413	TFCO	Tifico Fiber Indonesia	26/02/1980	25/10/1973
414	TGKA	Tigaraksa Satria	11/06/1990	17/11/1986
415	TIFA	Tifa Finance	08/07/2011	14/06/1989
416	TINS	Timah	19/10/1995	02/08/1976
417	TIRA	Tira Austenite	27/07/1993	08/04/1974
418	TIRT	Tirta Mahakam Resources	13/12/1999	22/04/1981
419	TKGA	Permata Prima Sakti	06/01/1992	01/01/1973
420	TKIM	Pabrik Kertas Tjiwi Kimia	03/04/1990	02/10/1972
421	TLKM	Telekomunikasi Indonesia	14/11/1995	27/03/1984
422	TMAS	Pelayaran Tempuran Mas	09/07/2003	17/09/1987
423	TMPI	AGIS	26/01/1995	09/01/1981
424	TMPO	Tempo Inti Media	08/01/2001	27/08/1996
425	TOBA	Toba Bara Sejahtra	06/07/2012	03/08/2007
426	TOTL	Total Bangun Persada	25/07/2006	04/09/1970
427	TOTO	Surya Toto Indonesia	30/10/1990	11/07/1977
428	TOWR	Sarana Menara Nusantara	08/03/2010	02/06/2008
429	TPIA	Chandra Asri Petrochemical	26/05/2008	02/11/1984
430	TRAM	Trada Maritime	10/09/2008	26/08/1998
431	TRIL	Triwira Insanlestari	28/01/2008	22/04/1981
432	TRIM	Trimegah Securities	31/01/2000	09/05/1990
433	TRIO	Trikomsel Oke	14/04/2009	21/08/1996
434	TRIS	Trisula International	28/06/2012	13/12/2004

No	Code	Company Name	Listed Date	Year Established as of Dec 31, 2012
435	TRST	Trias Sentosa	02/07/1990	23/11/1979
436	TRUB	Truba Alam Manunggal Engineering	16/10/2006	01/02/2001
437	TRUS	Trust Finance Indonesia	28/11/2002	12/02/1990
438	TSPC	Tempo Scan Pacific	17/06/1994	20/05/1970
439	TURI	Tunas Ridean	06/05/1995	24/07/1980
440	ULTJ	Ultra Jaya Milk Industry	02/07/1990	02/11/1971
441	UNIC	Unggul Indah Cahaya	06/11/1989	07/02/1983
442	UNIT	Nusantara Inti Corpora	18/04/2002	30/05/1988
443	UNSP	Bakrie Sumatera Plantations	06/03/1990	01/01/1911
444	UNTR	United Tractors	19/09/1989	13/10/1972
445	UNTX	Unitex	16/06/1989	14/05/1971
446	UNVR	Unilever Indonesia	11/01/1982	05/12/1933
447	VIVA	Visi Media Asia	21/11/2011	08/11/2004
448	VOKS	Voksel Electric	20/12/1990	19/04/1971
449	VRNA	Verena Multi Finance	25/06/2008	21/07/1993
450	WAPO	Wahana Pronatural	22/06/2001	07/08/1993
451	WEHA	Panorama Transportasi	31/05/2007	11/09/2001
452	WICO	Wicaksana Overseas International	08/10/1994	19/01/1973
453	WIIM	Wismilak Inti Makmur	18/12/2012	14/12/1994
454	WIKA	Wijaya Karya	29/10/2007	29/03/1961
455	WINS	Wintermar Offshore Marine	29/11/2010	18/12/1995
456	WOMF	Wahana Ottomitra Multiartha	13/12/2004	23/03/1982
457	WSKT	Waskita Karya	19/12/2012	01/01/1961
458	YPAS	Yanaprima Hastapersada	05/03/2008	14/12/1995
459	YULE	Yulie Sekurindo	10/12/2004	08/08/1989
460	ZBRA	Zebra Nusantara	01/10/1991	12/10/1987

Appendix 14. Market Capitalization as of December 31st, 2012

No	Code	Company Name	No of Outstanding Shares ('000,000)	Closing Price as of December 31, 2012	Market Capitalization ('000,000) Rupiahs
1	ASII	Astra International	40,483	7,600	307,675,003
2	HMSP	H.M. Sampoerna	4,383	59,900	262,541,700
3	BBCA	Bank Central Asia	24,408	9,100	222,116,977
4	BMRI	Bank Mandiri	23,099	8,100	187,109,999
5	TLKM	Telekomunikasi Indonesia	20,159	9,050	182,447,993
6	BBRI	Bank Rakyat Indonesia	24,422	6,950	169,736,169
7	UNVR	Unilever Indonesia	7,630	20,850	159,085,500
8	PGAS	Perusahaan Gas Negara	24,241	4,600	111,510,937
9	GGRM	Gudang Garam	1,924	56,300	108,326,154
10	SMGR	Semen Gresik	5,931	15,850	94,014,592
11	INTP	Indocement Tunggal Prakasa	3,681	22,450	82,643,651
12	UNTR	United Tractors	3,730	19,700	73,483,662
13	BBNI	Bank Negara Indonesia	18,462	3,700	68,310,028
14	CPIN	Charoen Pokphand Indonesia	16,398	3,650	59,852,700
15	KLBF	Kalbe Farma	50,780	1,060	53,826,876
16	BDMN	Bank Danamon Indonesia	9,488	5,650	53,611,702
17	INDF	Indofood Sukses Makmur	8,780	5,850	51,365,495
18	ADRO	Adaro Energy	31,985	1,590	50,857,679
19	EXCL	XL Axiata	8,526	5,700	48,599,776
20	ITMG	Indo Tambangraya Megah	1,129	41,550	46,948,383
21	ICBP	Indofood CBP Sukses Makmur	5,830	7,800	45,481,441
22	JSMR	Jasa Marga (Persero) Tbk.	6,800	5,450	37,060,000
23	ISAT	Indosat	5,433	6,450	35,048,871
24	MNCN	Media Nusantara Citra	13,956	2,500	34,890,316
25	PTBA	Tambang Batubara Bukit Asam	2,304	15,100	34,792,390
26	BMTR	Global Mediacom	13,967	2,400	33,523,106
27	AALI	Astra Agro Lestari	1,574	19,700	31,022,476
28	BTPN	Bank Tabungan Pensiunan Nasional	5,781	5,250	30,354,893
29	SMMA	Sinarmas Multiartha	6,235	4,575	28,529,394
30	BYAN	Bayan Resources	3,333	8,450	28,166,668
31	BNGA	Bank CIMB Niaga	24,880	1,100	27,368,319

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
32	TBIG	Tower Bersama Infrastructure	4,796	5,700	27,340,199
33	INCO	Vale Indonesia	9,936	2,350	23,350,395
34	TOWR	Sarana Menara Nusantara	1,020	22,700	23,160,639
35	LPKR	Lippo Karawaci	23,077	1,000	23,077,689
36	BNII	Bank Internasional Indonesia	55,719	405	22,566,264
37	SMCB	Holcim Indonesia	7,662	2,900	22,222,410
38	EMTK	Elang Mahkota Teknologi	5,640	3,900	21,996,126
39	SCMA	Surya Citra Media	9,750	2,250	21,937,500
40	AMRT	Sumber Alfaria Trijaya	3,774	5,250	19,818,512
41	BSDE	Bumi Serpong Damai	17,496	1,110	19,421,666
42	BHIT	Bhakti Investama	35,688	540	19,271,653
43	SMAR	Smart	2,872	6,550	18,812,866
44	INVS	Inovisi Infracom	2,568	7,100	18,239,351
45	SIMP	Salim Ivomas Pratama	15,816	1,150	18,188,756
46	TSPC	Tempo Scan Pacific	4,500	3,725	16,762,500
47	HRUM	Harum Energy	2,703	6,000	16,221,270
48	AKRA	AKR Corporindo	3,851	4,150	15,983,490
49	LSIP	PP London Sumatra Indonesia	6,822	2,300	15,692,587
50	MLBI	Multi Bintang Indonesia	21	740,000	15,591,800
51	MYOR	Mayora Indah	766	20,000	15,331,680
52	PNBN	Bank Pan Indonesia	23,837	630	15,017,716
53	GIAA	Garuda Indonesia	22,640	660	14,943,057
54	BBTN	Bank Tabungan Negara	10,250	1,450	14,863,283
55	IMAS	Indomobil Sukses Internasional	2,765	5,300	14,655,975
56	AUTO	Astra Otoparts	3,855	3,700	14,266,409
57	HERO	Hero Supermarket	3,294	4,325	14,247,415
58	ACES	Ace Hardware Indonesia	17,150	820	14,063,000
59	GEMS	Golden Energy Mines	5,882	2,375	13,970,588
60	BNLI	Bank Permata	10,569	1,320	13,951,564
61	SMRA	Summarecon Agung	7,213	1,900	13,705,442
62	TPIA	Chandra Asri Petrochemical	3,066	4,375	13,414,609
63	JPFA	Japfa Comfeed Indonesia	2,132	6,150	13,112,443
64	NISP	Bank OCBC NISP	8,463	1,530	12,949,007

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
65	BUMI	Bumi Resources	20,773	590	12,256,306
66	ANTM	Aneka Tambang	9,538	1,280	12,209,228
67	CTRA	Ciputra Development	15,165	800	12,132,652
68	MEGA	Bank Mega Tbk.	3,609	3,350	12,091,815
69	ASRI	Alam Sutera Realty	19,649	600	11,789,647
70	TRAM	Trada Maritime	9,731	1,150	11,191,388
71	MAPI	Mitra Adiperkasa	1,660	6,650	11,039,000
72	PWON	Pakuwon Jati	48,159	225	10,835,910
73	DSSA	Dian Swastatika Sentosa	770	13,600	10,479,511
74	IDKM	Indosiar Karya Media	10,128	1,030	10,431,911
75	MAYA	Bank Mayapada Internasional	3,060	3,400	10,407,088
76	BJBR	Bank Pembangunan Daerah Jawa Barat dan Banten	9,599	1,060	10,175,287
77	KRAS	Krakatau Steel	15,775	640	10,096,000
78	ADMF	Adira Dinamika Multi Finance	1,000	9,800	9,800,000
79	GTBO	Garda Tujuh Buana	2,500	3,900	9,750,000
80	BORN	Borneo Lumbung Energi & Metal	17,693	540	9,554,220
81	WIKA	Wijaya Karya	6,102	1,480	9,031,465
82	VIVA	Visi Media Asia	15,474	560	8,665,774
83	RALS	Ramayana Lestari Sentosa	7,096	1,220	8,657,120
84	ERAA	Erajaya Swasembada	2,900	2,950	8,555,000
85	JRPT	Jaya Real Property	2,750	3,100	8,525,000
86	ABMM	ABM Investama	2,753	3,000	8,259,495
87	SUGI	Sugih Energy	24,676	320	7,896,572
88	LPPF	Matahari Department Store	2,917	2,700	7,878,378
89	GJTL	Gajah Tunggal	3,484	2,225	7,753,680
90	TINS	Timah	5,033	1,540	7,750,850
91	APLN	Agung Podomoro Land	20,500	370	7,585,333
92	INDY	Indika Energy	5,210	1,420	7,398,472
93	ROTI	Nippon Indosari Corpindo	1,012	6,900	6,985,284
94	BIPI	Benakat Petroleum Energy	35,213	196	6,901,752
95	HEXA	Hexindo Adiperkasa	840	8,150	6,846,000
96	BRAU	Berau Coal Energy	34,900	195	6,805,500
97	MPPA	Matahari Putra Prima	5,576	1,150	6,413,028

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
98	BRMS	Bumi Resources Minerals	25,570	250	6,392,537
99	BEST	Bekasi Fajar Industrial Estate	9,361	680	6,365,960
100	FASW	Fajar Surya Wisesa	2,477	2,550	6,318,616
101	BKSL	Sentul City	31,396	189	5,934,015
102	PLIN	Plaza Indonesia Realty	3,550	1,620	5,751,000
103	IBST	Inti Bangun Sejahtera	1,028	5,500	5,655,723
104	DUTI	Duta Pertiwi	1,850	3,050	5,642,500
105	BJTM	Bank Pembangunan Daerah Jawa Timur	14,768	380	5,612,033
106	BWPT	BW Plantation	4,051	1,380	5,591,358
107	FAST	Fast Food Indonesia	460	12,000	5,524,999
108	MEDC	Medco Energi International	3,332	1,630	5,431,895
109	KPIG	MNC Land	3,544	1,500	5,316,316
110	TURI	Tunas Ridean	5,580	930	5,189,400
110	BSSR	Baramulti Suksessarana	2,616	1,980	5,180,670
112	SSIA	Surya Semesta Internusa	4,705	1,080	5,081,669
113	BBKP	Bank Bukopin	7,890	620	4,892,197
114	IIKP	Inti Agri Resources	3,360	1,440	4,838,400
115	TRIO	Trikomsel Oke	4,761	1,000	4,761,500
116	EPMT	Enseval Putera Megatrading	2,708	1,750	4,740,120
117	SGRO	Sampoerna Agro	1,890	2,500	4,725,000
118	RODA	Royal Oak Development Asia	13,475	350	4,716,507
119	BNBR	Bakrie & Brothers	93,721	50	4,686,085
120	ARII	Atlas Resources	3,000	1,510	4,530,000
121	CTRS	Ciputra Surya	1,978	2,250	4,452,445
122	NIRO	Nirvana Development	18,000	245	4,410,000
123	JKON	Jaya Konstruksi Manggala Pratama	2,935	1,500	4,403,300
124	WSKT	Waskita Karya (Persero)	9,632	450	4,334,506
125	RMBA	Bentoel Internasional Investama	7,240	580	4,199,202
126	MASA	Multistrada Arah Sarana	9,182	450	4,132,326
127	KAEF	Kimia Farma	5,554	740	4,109,960
128	MTLA	Metropolitan Land	7,579	540	4,092,839
129	DLTA	Delta Djakarta	16	255,000	4,083,361
130	MAIN	Malindo Feedmill	1,695	2,375	4,025,625

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
131	PTPP	Pembangunan Perumahan	4,842	830	4,019,222
132	KIJA	Kawasan Industri Jababeka	19,816	200	3,963,378
133	ULTJ	Ultra Jaya Milk Industry & Trading Company	2,888	1,330	3,841,548
134	MDLN	Modernland Realty Ltd.	6,266	610	3,822,585
135	PNLF	Panin Financial	28,036	135	3,784,874
136	PSAB	J Resources Asia Pasifik	756	5,000	3,780,000
137	INKP	Indah Kiat Pulp & Paper	5,470	680	3,720,268
138	MKPI	Metropolitan Kentjana	948	3,900	3,697,956
139	CTRP	Ciputra Property	6,150	600	3,690,000
140	SUPR	Solusi Tunas Pratama	735	5,000	3,675,000
141	SMSM	Selamat Sempurna	1,439	2,525	3,635,163
142	AMFG	Asahimas Flat Glass	434	8,300	3,602,200
143	CTBN	Citra Tubindo	800	4,400	3,520,000
144	GAMA	Gading Development	10,005	350	3,501,750
145	DILD	Intiland Development	10.365	335	3,472,561
146	MERK	Merck	22	152,000	3,404,800
147	MSKY	MNC Sky Vision	1,412	2,400	3,390,662
148	CMNP	Citra Marga Nusaphala Persada	2,000	1,680	3,360,000
149	ENRG	Energi Mega Persada	40,584	82	3,327,897
150	TOTO	Surya Toto Indonesia	495	6,650	3,294,144
151	SMMT	Golden Eagle Energy	900	3,625	3,262,500
152	ADHI	Adhi Karya (Persero)	1,801	1,760	3,170,323
153	MDRN	Modern Internasional	4,158	760	3,160,700
154	AISA	Tiga Pilar Sejahtera Food	2,926	1,080	3,160,080
155	ESSA	Surya Esa Perkasa	1,000	3,100	3,100,000
156	BFIN	BFI Finance Indonesia	1,520	2,025	3,079,374
157	TOTL	Total Bangun Persada	3,410	900	3,069,000
158	ARNA	Arwana Citramulia	1,835	1,640	3,009,986
159	TFCO	Tifico Fiber Indonesia	4,823	620	2,990,307
160	BRPT	Barito Pacific	6,979	420	2,931,554
161	TELE	Tiphone Mobile Indonesia	5,366	540	2,897684
162	SCBD	Danayasa Arthatama	3,322	830	2,757,336
163	TKIM	Pabrik Kertas Tjiwi Kimia	1,335	1,980	2,644,690

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
164	BAEK	Bank Ekonomi Raharja	2,643	1,000	2,643,300
165	TMPI	AGIS	5,502	475	2,613,489
166	KIAS	Keramika Indonesia Assosiasi	14,929	175	2,612,592
167	TOBA	Toba Bara Sejahtra	2,012	1,270	2,555,863
168	META	Nusantara Infrastructure	13,694	184	2,519,749
169	KKGI	Resource Alam Indonesia	1,000	2,475	2,475,000
170	SRAJ	Sejahteraraya Anugrahjaya	5,535	440	2,435,510
171	BKSW	Bank QNB Kesawan	3,526	690	2,433,057
172	TBLA	Tunas Baru Lampung	4,942	490	2,421,628
173	BISI	BISI International	3,000	790	2,370,000
174	ELTY	Bakrieland Development	43,521	54	2,350,183
175	DKFT	Central Omega Resources	5,612	415	2,329,127
176	PALM	Provident Agro	4,927	470	2,316,153
177	PANS	Panin Sekuritas	720	3,200	2,304,000
178	BSIM	Bank Sinarmas	10,148	225	2,283,488
179	MIDI	Midi Utama Indonesia	2,882	790	2,277,058
180	BLTA	Berlian Laju Tanker	11,550	196	2,263,962
181	LPCK	Lippo Cikarang	696	3,225	2,244,600
182	DART	Duta Anggada Realty	3,141	710	2,230,387
183	TCID	Mandom Indonesia	201	11,000	2,211,733
184	BCAP	Bhakti Capital Indonesia	1,344	1,630	2,192,149
185	CPRO	Central Proteinaprima	40,470	53	2,144,948
186	PNIN	Panin Insurance	4,068	520	2,115,528
187	INRU	Toba Pulp Lestari	1,373	1,400	1,922,954
188	DVLA	Darya-Varia Laboratoria	1,120	1,690	1,892,800
189	TAXI	Express Transindo Utama	2,145	870	1,866,672
190	ASGR	Astra Graphia	1,348	1,350	1,820,853
191	GWSA	Greenwood Sejahtera	7,800	230	1,794,174
192	JSPT	Jakarta Setiabudi Internasional	2,318	750	1,739,052
193	WINS	Wintermar Offshore Marine	3,609	480	1,732,715
194	MBSS	Mitrabahtera Segara Sejati	1,750	990	1,732,526
195	MYRX	Hanson International	5,847	285	1,666,664

No	Code	Company Name	No of Outstanding Shares ('000,000)	Closing Price as of December 31, 2012	Market Capitalization ('000,000) Rupiahs
196	JIHD	Jakarta International Hotels & Development	2,329	700	1,630,328
197	TGKA	Tigaraksa Satria	918	1,750	1,607,362
198	WIIM	Wismilak Inti Makmur	2,099	760	1,595,904
199	MLPL	Multipolar	7,727	205	1,584,146
200	BUVA	Bukit Uluwatu Villa	3,096	500	1,548,015
201	SDRA	Bank Himpunan Saudara 1906	2,293	670	1,536,894
202	BTEL	Bakrie Telecom	30,584	50	1,529,229
203	CFIN	Clipan Finance Indonesia	3,774	405	1,528,792
204	CNKO	Exploitasi Energi Indonesia	4,246	360	1,528,758
205	CASS	Cardig Aero Services	2,086	730	1,523,473
206	FREN	Smartfren Telecom	17,795	84	1,494,853
207	HDTX	Panasia Indo Resources	1,532	950	1,455,942
208	ASSA	Adi Sarana Armada	3,397	425	1,443,937
209	PBRX	Pan Brothers	3,065	470	1,440,602
210	JAWA	Jaya Agra Wattie	3,774	380	1,434,380
211	ADMG	Polychem Indonesia	3,889	365	1,419,550
212	PADI	Minna Padi Investama	1,300	1,080	1,404,178
213	BCIC	Bank Mutiara	28,066	50	1,403,333
214	SAIP	Surabaya Agung Industri Pulp & Kertas	5,509	250	1,377,393
215	STTP	Siantar Top	1,310	1,050	1,375,500
216	KOBX	Kobexindo Tractors	2,272	600	1,363,500
217	BRAM	Indo Kordsa	450	3,000	1,350,000
218	BSWD	Bank Of India Indonesia	859	1,560	1,340,539
219	PTRO	Petrosea	1,008	1,320	1,331,358
220	HITS	Humpuss Intermoda Transportasi	4,661	285	1,328,437
221	INDS	Indospring	315	4,200	1,323,000
222	CKRA	Citra Kebun Raya Agri	5,056	260	1,314,768
223	GLOB	Global Teleshop	1,111	1,170	1,300,001
224	BEKS	Bank Pundi Indonesia	10,647	120	1,277,707
225	UNSP	Bakrie Sumatra Plantations	13,720	93	1,276,003
226	ELSA	Elnusa	7,298	173	1,262,640
227	RANC	Supra Boga Lestari	1,564	800	1,251,590
228	DOID	Delta Dunia Makmur	8,168	153	1,249,779
229	MYOH	Samindo Resources	1,470	840	1,235,535

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
230	GZCO	Gozco Plantations	6,000	200	1,200,000
231	PJAA	Pembangunan Jaya Ancol	1,599	740	1,183,999
232	BBLD	Buana Finance	1,645	710	1,168,515
233	ABDA	Asuransi Bina Dana Arta	620	1,830	1,136,076
234	ADES	Akasha Wira International	589	1,920	1,132,601
235	MTFN	Capitalinc Investment	4,008	275	1,102,225
236	DEWA	Darma Henwa	21,853	50	1,092,686
237	BTEK	Bumi Teknokultura Unggul	1,102	990	1,091,947
238	PLAS	Polaris Investama	1,184	920	1,089,464
239	CITA	Cita Mineral Investindo	3,370	315	1,061,781
240	FISH	FKS Multi Agro	480	2,200	1,056,000
241	KBLV	First Media	1,741	600	1,045,138
242	INAF	Indofarma	3,099	330	1,022,758
243	INTA	Intraco Penta	2,160	450	972,013
244	TRST	Trias Sentosa	2,808	345	968,760
245	KARK	Dayaindo Resources International	19,324	50	966,224
246	INPC	Bank Artha Graha Internasional	8,489	111	942,315
247	RDTX	Roda Vivatex	268	3,500	940,800
248	BULL	Buana Listya Tama	17,650	53	935,450
249	GSMF	Equity Development Investment	5,226	178	930,287
250	INDR	Indo-Rama Synthetics	654	1,420	929,179
251	BAJA	Saranacentral Bajatama	1,800	510	918,000
252	BABP	Bank ICB Bumiputera	5,431	168	912,444
253	GDST	Gunawan Dianjaya Steel	8,200	108	885,600
254	KREN	Kresna Graha Sekurindo	3,169	275	871,576
255	VOKS	Voksel Electric	831	1,030	856,054
256	INPP	Indonesian Paradise Property	2,481	340	843,813
257	SCCO	Supreme Cable Manufacturing & Commerce	205	4,050	832,612

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
258	IATA	Indonesia Air Transport	4,188	195	816,807
259	DGIK	Nusa Konstruksi Enjiniring	5,541	144	797,927
260	MFIN	Mandala Multifinance	1,325	600	795,000
261	TRUB	Truba Alam Manunggal Engineering	15,799	50	789,972
262	BATA	Sepatu Bata	13	60,000	780,000
263	UNIC	Unggul Indah Cahaya	383	2,000	766,662
264	SMDM	Suryamas Dutamakmur	4,006	191	765,295
265	BVIC	Bank Victoria International	6,538	117	765,061
266	SONA	Sona Topas Tourism Industry	331	2,300	761,760
267	MCOR	Bank Windu Kentjana International	4,240	178	754,721
268	SOBI	Sorini Agro Asia Corporindo	925	810	749,421
269	KBLI	KMI Wire & Cable	4,007	187	749,352
270	COWL	Cowell Development	4,871	143	696,583
271	CENT	Centrin Online	575	1,210	695,886
272	LAPD	Leyand International	3,966	175	694,111
273	IPOL	Indopoly Swakarsa Industry	6,440	106	682,694
274	FMII	Fortune Mate Indonesia	2,721	245	666,645
275	CSAP	Catur Sentosa Adiprana	2,895	230	665,858
276	MREI	Maskapai Reasuransi Indonesia	388	1,710	664,067
277	AMAG	Asuransi Multi Artha Guna	2,873	230	660,856
278	SMDR	Samudera Indonesia	163	4,025	659,117
279	JTPE	Jasuindo Tiga Perkasa	1,769	370	654,781
280	BKDP	Bukit Darmo Property	7,315	88	643,721
281	FPNI	Titan Kimia Nusantara	5,566	115	640,137
282	DAVO	Davomas Abadi	12,403	50	620,185
283	APIC	Pacific Strategic Financial	2,940	199	585,159
284	SMRU	SMR Utama	1,500	390	585,000

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
285	OMRE	Indonesia Prima Property	1,745	335	584,575
286	LTLS	Lautan Luas	780	740	577,200
287	RAJA	Rukun Raharja	1,019	560	570,791
288	NIKL	Pelat Timah Nusantara	2,523	220	555,137
289	MYTX	Apac Citra Centertex	1,466	375	549,999
290	AKPI	Argha Karya Prima Industry	680	800	544,000
291	PTSP	Pioneerindo Gourmet International	220	2,450	540,979
292	LION	Lion Metal Works	52	10,400	540,966
293	BACA	Bank Capital Indonesia	4,500	120	540,058
294	BBNP	Bank Nusantara Parahyangan	412	1,300	536,052
295	AGRO	Bank Rakyat Indonesia Agroniaga	3,583	147	526,835
296	GDYR	Goodyear Indonesia	41	12,300	504,300
297	ALTO	Tri Banyan Tirta	1,550	315	488,250
298	MIRA	Mitra International Resources	3,961	123	487,258
299	BRNA	Berlina	690	700	483,000
300	POLY	Asia Pacific Fibers	2,495	193	481,680
301	SIPD	Sierad Produce	9,391	50	469,555
302	EMDE	Megapolitan Developments	3,350	140	469,000
303	IKBI	Sumi Indo Kabel	306	1,530	468,180
304	NELY	Pelayaran Nelly Dwi Putri	2,350	199	467,650
305	BUDI	Budi Acid Jaya	4,098	114	467,285
306	PTIS	Indo Straits	550	840	462,138
307	RELI	Reliance Securities	900	510	459,000
308	YPAS	Yanaprima Hastapersada	668	670	447,560
309	CLPI	Colorpak Indonesia	306	1,460	447,254
310	TRIM	Trimegah Securities	3,655	121	442,255
311	KBRI	Kertas Basuki Rachmat Indonesia	8,687	50	434,399
312	APOL	Arpeni Pratama Ocean Line	8,670	50	433,523
313	SPMA	Suparma	1,492	290	432,693

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
314	LPPS	Lippo Securities	2,588	167	432,237
315	GPRA	Perdana Gapuraprima	4,276	100	427,665
316	TMAS	Pelayaran Tempuran Emas	1,141	370	422,181
317	HDFA	HD Finance	1,540	270	415,800
318	ARTI	Ratu Prabu Energi	1,568	260	407,680
319	MBTO	Martina Berto	1,070	380	406,600
320	SHID	Hotel Sahid Jaya International	1,119	360	402,957
321	PAFI	Panasia Filament Inti	1,611	250	402,766
322	PNSE	Pudjiadi & Sons	778	510	396,960
323	IGAR	Champion Pacific Indonesia	1,050	375	393,750
324	KARW	ICTSI Jasa Prima	587	670	393,392
325	CEKA	Cahaya Kalbar	297	1,300	386,750
326	BNBA	Bank Bumi Arta	2,286	165	377,338
327	WOMF	Wahana Ottomitra Multiartha	2,000	185	370,000
328	MTDL	Metrodata Electronics	2,246	164	368,344
329	BCIP	Bumi Citra Permai	1,429	250	357,478
330	OKAS	Ancora Indonesia Resources	1,765	200	353,185
331	POOL	Pool Advista Indonesia	204	1,680	344,013
332	TRIS	Trisula International	1,000	340	340,000
333	ARGO	Argo Pantes	335	1,000	335,557
334	SKBM	Sekar Bumi	851	390	332,042
335	ESTI	Ever Shine Tex	2,015	160	322,433
336	LPLI	Star Pacific	1,170	275	321,869
337	MLIA	Mulia Industrindo	1,323	235	310,905
338	SRSN	Indo Acidatama	6,020	50	301,000
339	ETWA	Eterindo Wahanatama	968	310	300,172
340	LPGI	Lippo General Insurance	150	1,990	298,500
341	GREN	Evergreen Invesco	4,694	63	295,729
342	PSDN	Prasidha Aneka Niaga	1,440	205	295,200
343	KOIN	Kokoh Inti Arebama	980	300	294,253
344	ICON	Island Concepts Indonesia	726	400	290,600
345	SKYB	Skybee	585	495	289,575
346	JECC	Jembo Cable Company	151	1,900	287,280

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
347	RIGS	Rig Tenders Indonesia	609	455	277,154
348	SDMU	Sidomulyo Selaras	900	300	270,210
349	SULI	Sumalindo Lestari Jaya	2,472	108	266,980
350	TIFA	Tifa Finance	1,079	240	259,128
351	ALDO	Alkindo Naratama	550	470	258,500
352	LMPI	Langgeng Makmur Industri	1,008	255	257,172
353	JPRS	Jaya Pari Steel	750	330	247,500
354	LAMI	Lamicitra Nusantara	1,148	215	246,909
355	EKAD	Ekadharma International	698	350	244,571
356	SQMI	Renuka Coalindo	301	800	240,960
357	STAR	Star Petrochem	4,800	50	240,000
358	LCGP	Laguna Cipta Griya	1,407	170	239,275
359	PANR	Panorama Sentrawisata	1,200	197	236,400
360	SQBI	Taisho Pharmaceutical Indonesia	0.9	238,000	231,336
361	MICE	Multi Indocitra	600	380	228,000
362	ABBA	Mahaka Media	2,755	80	220,410
363	BMSR	Bintang Mitra Semestaraya	1,159	190	220,248
364	MITI	Mitra Investindo	2,566	83	213,015
365	ASRM	Asuransi Ramayana	214	980	210,268
366	MRAT	Mustika Ratu	428	490	209,720
367	TRUS	Trust Finance Indonesia	400	510	204,000
368	KDSI	Kedawung Setia Industrial	405	495	200,475
369	ALMI	Alumindo Light Metal Industry	308	650	200,200
370	BIPP	Bhuwanatala Indah Permai	1,902	101	192,106
371	BPFI	Batavia Prosperindo Finance	1,000	180	180,000
372	INCF	Amstelco Indonesia	56	3,150	178,185
373	PTSN	Sat Nusapersada	1,771	100	177,144
374	MTSM	Metro Realty	232	700	162,993
375	LPIN	Multi Prima Sejahtera	21	7,650	162,562
376	PEGE	Panca Global Securities	708	225	159,379

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
377	SSTM	Sunson Textile Manufacture	1,170	134	156,901
378	PUDP	Pudjiadi Prestige	308	500	154,000
379	KBLM	Kabelindo Murni	1,120	135	151,200
380	RUIS	Radiant Utama Interinsco	770	195	150,150
381	PRAS	Prima Alloy Steel Universal	588	255	149,940
382	PICO	Pelangi Indah Canindo	568	260	147,777
383	MFMI	Multifiling Mitra Indonesia	757	190	143,940
384	ASDM	Asuransi Dayin Mitra	192	740	142,080
385	ARTA	Arthavest	446	315	140,702
386	ASJT	Asuransi Jasa Tania	300	460	138,000
387	PKPK	Perdana Karya Perkasa	600	225	135,000
388	APLI	Asiaplast Industries	1,500	86	129,000
389	DPNS	Duta Pertiwi Nusantara	331	385	127,485
390	GEMA	Gema Grahasarana	320	395	126,400
391	BTON	Betonjaya Manunggal	180	700	126,000
392	SKLT	Sekar Laut	690	180	124,333
393	TBMS	Tembaga Mulia Semanan	18	6,750	123,977
394	BAYU	Bayu Buana	353	350	123,627
395	ITTG	Leo Investments	1,379	88	121,352
396	ATPK	ATPK Resources	914	129	117,947
397	MAMI	Mas Murni Indonesia	2,307	50	115,361
398	PDES	Destinasi Tirta Nusantara	715	160	114,400
399	ASIA	Asia Natural Resources	2,275	50	113,750
400	GOLD	Golden Retailindo	286	395	112,970
401	SCPI	Schering Plough Indonesia	3	31,250	112,500
402	IKAI	Intikeramik Alamasri Industri	791	142	112,376
403	RICY	Ricky Putra Globalindo	641	174	111,658
404	HOME	Hotel Mandarine Regency	1,213	92	111,629
405	TMPO	Tempo Intimedia	725	150	108,750
406	HADE	HD Capital	2,120	50	106,000

No	Code	Company Name	No of Outstanding Shares ('000,000)	Closing Price as of December 31, 2012	Market Capitalization ('000,000) Rupiahs
407	TRIL	Triwira Insanlestari	1,200	87	104,400
408	TIRA	Tira Austenite	58	1,740	102,312
409	VRNA	Verena Multi Finance	1,002	102	102,204
410	DSFI	Dharma Samudera Fishing Industries	1,857	55	102,142
411	LMSH	Lionmesh Prima	9	10,500	100,800
412	SQBB	Taisho Pharmaceutical Indonesia	9	10,500	97,314
413	AHAP	Asuransi Harta Aman Pratama	500	190	95,000
414	PYFA	Pyridam Farma	535	177	94,709
415	BAPA	Bekasi Asri Pemula	661	139	91,988
416	OCAP	Onix Capital	273	325	88,790
417	ASBI	Asuransi Bintang	174	490	85,354
418	NIPS	Nipress	20	4,100	82,000
419	CMPP	Centris Multipersada Pratama	54	1,500	81,000
420	BIMA	Primarindo Asia Infrastructure	86	900	77,400
421	ZBRA	Zebra Nusantara	655	115	75,401
422	WEHA	Panorama Transportasi	428	170	72,805
423	SIAP	Sekawan Intipratama	600	120	72,000
424	CTTH	Citatah	1,230	58	71,388
425	INAI	Indal Aluminium Industry	158	450	71,280
426	TIRT	Tirta Mahakam Resources	1,011	70	70,824
427	DEFI	Danasupra Erapacific	67	1,000	67,600
428	WICO	Wicaksana Overseas International	1,268	53	67,254
429	GMTD	Gowa Makassar Tourism Development	101	660	67,015
430	SDPC	Millennium Pharmacon International	728	92	66,976
431	FORU	Fortune Indonesia	465	131	60,944
432	PSKT	Pusako Tarinka	82	700	57,400
433	ALKA	Alakasa Industrindo	101	550	55,843
434	PGLI	Pembangunan Graha Lestari Indah	488	110	53,680
435	AKSI	Majapahit Securities	720	72	51,840

No	Code	Company Name	No of Outstanding Shares (‘000,000)	Closing Price as of December 31, 2012	Market Capitalization (‘000,000) Rupiahs
436	ITMA	Sumber Energi Andalan	34	1,500	51,000
437	GMCW	Grahamas Citrawisata	58	860	50,602
438	INTD	Inter Delta	118	420	49,713
439	ERTX	Eratex Djaja	146	325	47,551
440	RBMS	Ristia Bintang Mahkotasejati	326	143	46,721
441	DNET	Dyviacom Intrabumi	184	250	46,000
442	INDX	Tanah Laut	312	146	45,668
443	INCI	Intanwijaya Internasional	181	245	44,353
444	RIMO	Rimo Catur Lestari	340	116	39,440
445	LMAS	Limas Centric Indonesia	787	50	39,392
446	AKKU	Alam Karya Unggul	230	164	37,720
447	KICI	Kedaung Indah Can	138	270	37,260
448	YULE	Yulie Sekurindo	255	140	35,700
449	SAFE	Steady Safe	391	85	33,302
450	WAPO	Wahana Pronatural	520	61	31,720
451	UNTX	Unitex	8	3,700	29,853
452	AIMS	Akbar Indo Makmur Stimec	110	240	26,400
453	UNIT	Nusantara Inti Corpora	75	345	26,020
454	CNTX	Century Textile Industry	3	6,700	23,450
455	KONI	Perdana Bangun Pusaka	76	250	19,000
456	JKSW	Jakarta Kyoei Steel Works	150	88	13,200
457	TKGA	Toko Gunung Agung	52	250	13,000
458	SIMA	Siwani Makmur	92	128	11,840
459	CPDW	Indo Setu Bara Resources	34	229	7,831
460	PWSI	Panca Wiratama Sakti	82	61	5,032

Table 15. Summary of Results and Analysis

No	Motive	Detail	Proxy	Beta Meaning	Sig/No	Rational
1	Economic Benefits and Efficiency	Liquidity	CMS	This is not a proxy to predict Y. No effect to increase / decrease Y nor sig	SIG	Maybe extremely different value of each PLC (big, medium, small) Maybe: in crisis 2008 high variety, though negative but following years were positive, still has liquidity (no need additional cash),
			CFFO	This is not a proxy to predict Y. No effect to increase / decrease Y nor sig	NO	Maybe extremely different value of each PLC Maybe: positive, or if negative still subsidized by investing, financing,
		Ownership	Share Ownership	The lesser % owned the more revaluation conducted	NO	Reasons: Growth and More control
			Acquisition	The more acquisition conducted the more revaluation taken	NO	Most of the PLCs do not apply revaluation model. Acquisition is the way to revalue fixed asset using market value.
		Asset	Fixed Asset Intensity	The higher fixed asset intensity the more revaluation conducted	SIG	As the FA intensity is higher for the majority of PLCs, revaluation is important to keep their assets' significance in the portion of total assets.
2	Reduce Debt Contracting Costs	Leverage	DER	The higher DER the more revaluation conducted	SIG	PLC with higher DER won't violate debt covenant. Revaluation helps to increase equity so that it can lower DER.
			DTA	The lesser DTA the more revaluation conducted (-) The more DTA (+) the more revaluation conducted	NO	(-) more settled PLC no need to revalue their assets (+) PLC in growth phase needs more debt so that they revalue their asset.
3	Reduce Political Costs	Size	Total Assets	This is not a proxy to predict Y	NO	Most of non-revaluers are big size companies so that it imbalances with revaluers.
			Sales	This is not a proxy to predict Y	NO	Most of non-revaluers are big size companies so that it imbalances with revaluers.
			Operating Income	This is not a proxy to predict Y	SIG	Asset revaluation as a way to decrease income and reduce political costs
4	Opportunistic Behaviour	Debt Restructuring	Existence of Debt Restructuring	The lesser debt restructuring the more revaluation conducted	NO	Most of the PLCS do not in the debt restructuring. PLCs can grow their business operation with lower risk due to less debt owned/debt restructuring.

5	Provide Signals	Successful Status	Free CF	This is not a proxy to predict Y	NO	Too varied capital expenditures so that free cash flows became positive or negative
			DER Level	The more low DER level the more revaluation conducted	SIG	Low DER PLCs (bona fide) use revaluation to provide relevant information to the public (reduce information asymmetry).
6	Reduce Information Asymmetry	Growth	MBR	The lesser MBR the more revaluation conducted	NO	If market value and book value is not significantly different, it means the PLCs have provided the relevant information (private information) to the public. Information provided on financial statements reflects the information shown for public.
			PER	The lesser PER the more revaluation conducted	NO	By investing less funds with the higher earnings, it attracts investors, and encourages PLCs' growth.
		Disclosure	Foreign Operation	The lesser foreign operation the more revaluation conducted	NO	Most of the PLCs' assets are located in Indonesia (domestic) so that it needs to be revalued.
			Export Sales	The lesser export sales the more revaluation conducted	SIG	Growth, more disclose of relevant information to foreign buyer.