Quality, acceptability, and enforceability of accounting standards and value relevance of accounting earnings : cross-country study

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**QUALITY, ACCEPTABILITY, AND
ENFORCEABILITY OF ACCOUNTING
STANDARDS AND THE VALUE RELEVANCE OF
ACCOUNTING EARNINGS:
A CROSS-COUNTRY STUDY**

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A dissertation submitted to the Nanyang Technological University
in fulfilment of the requirement for the degree of
Doctor of Philosophy

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TABLE OF CONTENTS

ACKNOWLEDGEMENT	i
TABLE OF CONTENTS	ii
LIST OF FIGURE AND TABLES.....	v
ABBREVIATION.....	vi
ABSTRACT.....	ix
CHAPTER 1 INTRODUCTION	1
1.1. Objectives and Motivation.....	1
1.2. Organization of the Study	7
CHAPTER 2 INSTITUTIONAL FACTORS AFFECTING THE VALUE RELEVANCE OF ACCOUNTING INFORMATION AND THE RESEARCH PROBLEM	8
2.1. The National Institutional Environment.....	10
2.1.1. The Legal Environment	10
2.1.2. Cultural Environment	13
2.2. Market Factors	16
2.2.1. The Level of capital Market Development and Economic Development	16
2.2.2. Corporate Financing	18
2.3. Accounting Institutional Environment (AIE).....	23
2.3.1. Accounting Standards Quality	23
2.3.2. Accounting Standards Setting and Acceptability of Standards	25
2.3.3. Accounting Standards Enforcement Mechanism	27
2.4. The National Institutional Environment, Market Factors, and the Accounting Institutional Environment	29
2.5. Research Motivation and the Purpose of the Study	32
2.6. Summary	35
CHAPTER 3 HYPOTHESES DEVELOPMENT	37
3.1. Hypotheses Development	37
3.1.1. Quality of Accounting Standards.....	38
3.1.2. Acceptability of Accounting Standards	40
3.1.3. The Enforcement Mechanism for Accounting Standards	41
3.1.4. Accounting Institutional Environments	45
3.1.5. Accounting Institutional Environment and Legal Environment ...	47
3.1.6. Control Variables	49
3.2. Model Designs	51
3.3. Summary	53
CHAPTER 4 ACCOUNTING INSTITUTIONAL ENVIRONMENT AND VALUE RELEVANCE OF EARNINGS	56
4.1. Accounting Institutional Environment	56
4.2. Quality of Accounting Standards	57

4.3. Acceptability of Accounting Standards.....	61
4.4. Enforcement Mechanism of Accounting Standards.....	64
4.4.1 Preventive Enforcement	65
4.4.2. Punitive Enforcement	73
4.5. Summary	74
CHAPTER 5 RESEARCH METHOD	77
5.1. Independent Variables Measurement	77
5.1.1. Accounting Standards.....	77
5.1.2. Acceptability and Enforceability of Accounting Standards.....	81
5.1.3. Accounting Institutional Environment	88
5.1.4. Control Variables	89
5.2. Value Relevance of Accounting Earnings	90
5.3. Sample Selection	92
5.4. Summary	95
CHAPTER 6 EMPIRICAL RESULTS	98
6.1. Descriptive Statistics	98
6.1.1. Independent Variables	98
6.1.2. Dependent Variable	100
6.2. Bivariate Correlations	100
6.3. Multivariate Tests Results.....	102
6.3.1. Hypothesis 1	102
6.3.2. Hypothesis 2	102
6.3.3. Hypothesis 3a	103
6.3.4. Hypothesis 3b	105
6.3.5. Hypothesis 4	105
6.3.6. Hypothesis 5	106
6.4. Diagnostics and Sensitivity Analyses	117
6.4.1. Diagnostic Tests	117
6.4.2. Un-weighted Measure of Accounting Standards.....	118
6.4.3. Un-ranked Measures of Acceptability and Enforceability of Accounting Standards.....	119
6.4.4. Components of Preventive Enforcement of Accounting Standards.....	119
6.4.5. Other Control Variables	121
6.4.6. Factor Analysis of Acceptability and Enforceability of Accounting Standards	121
6.5. Additional Analyses	124
6.5.1. Horizontal Analysis of the Index of Acceptability and Enforceability of Accounting Standards.....	124
6.5.2. Value Relevance of Accounting Earnings	129
6.6. Summary	133
CHAPTER 7 CONCLUSIONS	137
7.1. Summary and Conclusions	137
7.2. Contribution to the Literature	141
7.3. Limitations and Further Extensions	144

FIGURE AND TABLES 147

APPENDIX 173

REFERENCES 190

LIST OF FIGURE AND TABLES

Figure 3.1.	Financial Reporting Structure & Accounting Regulatory Environment..	147
Table 5.1.	Quality of Accounting Standards Weighted Index	148
Table 5.2.	Responses received from distribution of enforcement index.....	149
Table 5.3.	Indexes of Acceptability and Enforceability of Accounting Standards per 2000/2001	150
Table 5.4.	Reliability Analysis of the Indexes of Acceptability and Enforcement Arrangement.....	151
Table 5.5.	Indexes of Acceptability and Enforceability of Accounting Standards Across Countries per 2000/2001	152
Table 5.6.	Value Relevance of Earnings across Countries and Years.....	155
Table 5.7.	Distribution of firm-year observations by country and year	158
Table 6.1.	Descriptive Statistics.....	159
Table 6.2.	Comparison of Value Relevance of Earnings in Different Studies	160
Table 6.3.	Correlation between Variables	161
Table 6.4.	OLS Regression Results for the Relation between Value Relevance of Accounting Earnings and Quality. Acceptability. and Enforceability of Accounting Standards	162
Table 6.5.	Comparison between Accounting Regulatory Environment and Legal Enforcement	163
Table 6.6.	Clusters of Accounting Standards	165
Table 6.7.	Clusters of Acceptability and Enforceability of Accounting Standards...	166
Table 6.8.	Relationship between Value Relevance of Earnings and ARE for sub- Samples	167
Table 6.9.	Factor Analysis of Accounting Enforcement	168
Table 6.10.	Accounting Standard-Setting Body across Countries	170
Table 6.11.	Auditing Standard-Setting Body across Countries	170
Table 6.12.	Institutional Oversight Mechanism for Financial Statements of Listed Companies	171
Table 6.13.	Value relevance of earnings for 1 year stock return for a period of 9 months before and 3 months after fiscal-year end and for a period according to the reporting requirement in a country	172

ABBREVIATIONS

- ACCEPT_c: indicates the level of acceptability of accounting standards in a country during 2000-2001. The countries in the sample were ranked and then mean centered.
- ADB: Asian Development Bank
- APB: Accounting Principles Board
- AIE_c: a composite variable to represent an accounting institutional environment of a country; as a result factorization of STD_QUAL_c, ACCEPT_c, PRE_ENF_c, and PUN_ENF_c.
- AUDITING: indicates the level of preventive enforcement in a country, specifically related to auditing activities, based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.
- CAP: Committee on Accounting Procedure
- CIFAR: refers to index created by examining and rating companies' 1990 annual reports on their inclusion or omission of 90 items (La Porta et al, 1998)
- CORRUPTION: refers to assessment of the corruption in government (La Porta et al, 1998). Lower scores mean higher level of corruption.
- D_DEV_c: the classification of a country as a developed or emerging country based on GNP per capita in year 2001; it takes 1 for developed country, 0 for others.
- EXPROPRIATION: refers to assessment of the risk of "outright confiscation" or "forced nationalization" (La Porta et al, 1998). Lower scores indicate higher risks.
- FACTOR 1: factorization of the indexes of acceptability and enforceability of accounting standards; deals with openness of standard setting process and disclosure system

- FACTOR2: factorization of the indexes of acceptability and enforceability of accounting standards; deals with the strength of supervisory body
- FACTOR 3: factorization of the indexes of acceptability and enforceability of accounting standards; deals with the independence of accounting standard setting body.
- FACTOR A: a composite variable as a result of factorization of D_DEV_c , $LISTED_c$, and $LEGALSYS$, to control different aspect of country variables that affect value relevance of earnings.
- FASB: Financial Accounting Standards Board
- FEE: Federation des Experts Comptables Europeens
- GAAP: Generally Accepted Accounting Principles.
- IAS: International Accounting Standards
- IASB: International Accounting Standards Board
- IASC: International Accounting Standards Committee
- IFRS: International Financial Reporting Standards
- JUDICIAL: refers to efficiency and integrity of judicial system (La Porta et al, 1998). Lower scores mean lower efficiency level.
- LEGALENF: a variable created through factorization of six legal enforcement (JUDICIAL, RULE OF LAW, CORRUPTION, EXPROPRIATION, REPUDIATION, CIFAR) as mentioned in La Porta et al (1998).
- LEGALENF+: a variable created through factorization of six legal enforcement (JUDICIAL, RULE OF LAW, CORRUPTION, EXPROPRIATION, REPUDIATION, CIFAR) plus Antidirector rights as mentioned in La Porta et al (1998).
- LEGALSYS_c: indicate the legal system of a country; it takes 1 for common law legal system, 0 for code law legal system countries.
- LISTED_c: the average of 2000 and 2001 ratios of the number of domestic listed companies in a country to the population of that country. It reflects the level of capital market development in a country.

PRE_ENF_c: indicates the level of preventive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

PUN_ENF_c: indicates the level of punitive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

REPUDIATION: refers to assessment of the "risk of modification in a contract taking the form of repudiation, postponement or scaling down (La Porta et al, 1998). Lower scores mean higher risks.

RULE OF LAW: refers to assessment of the law and order tradition in the country (La Porta et al, 1998). Lower scores indicate less tradition for law and order.

SEC: Securities Exchange Commission

STD_QUAL_c: quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. For the final regression, the ranks were mean centered.

STD_QUAL(NW)_c: quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. The type of difference is given weight according to its possible impact on financial statements. For the final regression, the ranks were mean centered

SUPERVISION: indicates the level of preventive enforcement in a country, specifically related to supervisory body activities, based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

VAL-NI_c: value relevance of earnings is the market-adjusted return for the ANI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio.

Abstract

I examine the effects of the three institutional parameters, accounting standards quality, acceptability of accounting standards and enforceability (preventive and punitive) of accounting standards on the value relevance of earnings. I also assess the effectiveness of the overall institutional arrangement by factorizing those parameters into one composite variable called the accounting institutional environment.

The standards of the International Accounting Standards Board were used as the benchmark for measuring the quality of accounting standards of a country. I develop indexes based on the extant institutional arrangements for accounting standards in my sample countries to measure the acceptability and enforceability of accounting standards. My sample is comprised of thirty-five countries from Africa, Asia, Australasia, Europe and North America.

I find a positive association between value relevance of earnings and quality of accounting standards, acceptability of the standards, and punitive enforcement of the standards. The accounting institutional environment is also strongly related to the value relevance of earnings. I find that the accounting institutional environment has a stronger positive association with the value relevance of earnings than the legal environment has. The greater proximity of the accounting institutional infrastructure to the financial statement preparation process may explain the outcome. I also find that the association between accounting institutional environment and the value relevance of earnings is stronger for code law and emerging market countries than for common law developed countries. Overall, my results suggest that the quality, acceptability, and enforceability of accounting standards are important for the usefulness of accounting earnings in a country.

CHAPTER I

INTRODUCTION

1.1. Objectives and Motivations

International accounting organizations, such as the International Accounting Standards Board (IASB), the Financial Accounting Standards Board (FASB) and the Federation des Experts Comptables Europeens (FEE), have called for more value relevant accounting standards to improve the quality of accounting information and to promote convergence towards global accounting standards (FEE, 2000; GAAP, 2000; 2001). These institutions expect that value relevant, harmonious accounting standards will help create a credible common accounting framework for a globalized capital market.

However, value relevant, harmonious accounting standards alone are not sufficient to improve the financial reporting environment. To be effective, the accounting standards have to be acceptable (Zeff, 1988; Solomons, 1986) and enforced (Kothari, 2000; Ball, 2001; Benston et al., 2003). Shleifer and Vishny (1993) and La Porta et al. (1998) support this viewpoint by arguing that legal regulation is a foundation for good law enforcement and that strong law enforcement could substitute for weak rules because well-established courts could protect investors from the management. They also demonstrated that the quality of legal enforcement differed across countries, which, they demonstrated, affected investor protection. Modigliani and Perotti (2000) demonstrated that proper enforcement of rules and not rules alone was important for securities market development. In addition, Bhattacharya and Daouk (2002) showed that enforcement of insider trading laws and not the establishment of insider trading laws, was associated with reduced cost of equity.

The analyses of recent accounting scandals and the Asian financial crisis, lend credence to the views of the researchers that besides the quality of accounting regulations, the process of adoption and enforcement of accounting regulations plays a major role in determining the quality of financial information (Saudagaran and Diga, 2000; ADB, 2000; 2001; SEC, 2000; World Bank, 2000; FEE, 2001). Several policy reports of international organisations strongly recommend the need for accounting institutional infrastructure to ensure that the accounting standards are rigorously interpreted and implemented by the preparers of financial statements (Rahman, 1994; ADB, 2000; Rahman, 2000; SEC, 2000; World Bank, 2000; Ball, 2001; FEE, 2001).

This study focuses on the accounting institutional arrangements composed of accountings standards quality, acceptability of accounting standards and enforceability of accounting standards. I argue that these arrangements would have a more direct effect on the value relevance of accounting earnings as they are more specific to the practice of accounting than their legal counterparts that were used in earlier studies to proxy for accounting institutional arrangements. I also explain that these accounting institutional parameters complement each other in enhancing the value relevance of earnings. Therefore, the purpose of this study is to examine the effects of the three institutional parameters (accounting standards quality, acceptability of accounting standards and enforceability of accounting standards) and the overall accounting institutional environment (a combination of the three parameters) on the value relevance of earnings.

Prior studies in accounting mostly focused only on the relevance of quality of accounting standards. They covered both single country environments (Ely and Waymire, 1999; Fan and Wong, 2002) and multi-country environments (Alford et al., 1993; Ball, Kothari and Robin, 2000; Ashbaugh and Pincus, 2001; Hung, 2001; Ball,

Robin and Wu, 2003). Several early examinations of institutional arrangements of specific countries have revealed that acceptability of accounting standards is important for compliance with the standards, and that an open standard setting process receptive to the views of important constituents is essential for improving acceptability (Zeff, 1988; Solomons, 1986; Rahman 1991). These studies focused only on the structural designs of standard setting processes. They did not empirically examine the influence of acceptability on the value relevance of earnings. Some recent studies empirically examine the enforcement environment of accounting standards (Klapper and Love, 2002; Hope, 2003). These studies explore the influence of broad legal parameters on the enforceability of accounting standards. Others have examined effects of certain market parameters (e.g. Fan and Wong, 2002) but using firm specific financing parameters such as ownership. Such parameters do not reflect the quality of the accounting environment of a country or a firm.

Some of the studies, such as Graham and King (2000), Chen et al. (2002), and Ball et al., (2003) indicate the need for further investigation of the institutional environments of accounting standards because the use of the country legal variables do not lead to a clear explanation of the influence of enforcement on the value relevance of accounting information. For example, Ball et al. (2003) found some common law countries had timeliness of earnings similar to those of code law countries.

Value relevance of earnings measures the association between accounting earnings and their market effects, such as stocks returns. I posit that this association could be influenced by inter-country differences in accounting standards quality, acceptability and enforceability. The improvement in these three parameters of the accounting institutional environment, it is argued, leads to improvements in the perceptions of the users of accounting information about the quality of accounting earnings. Users would

then base their pricing decisions on accounting information such as earnings, thereby aligning share prices to the value indicated by accounting information. The improved predictive-ability of accounting information would reduce the information asymmetry problem, which is the root cause of agency problems. I, therefore, argue and show that the improved parameters of the accounting institutional environment enhance the value relevance of accounting information.

I operationalize the accounting standard quality concept using IASs as a benchmark of the quality of accounting standards of a country. IASs are important benchmarks because IASs provide high quality of accounting standards (Ashbaugh and Pincus, 2000; Leuz, 2003) and regulators of all global capital markets are moving towards adopting or harmonizing with the IASs. To assess the adoption and enforcement mechanism of accounting regulation across countries, three indexes are developed based on the extant institutional arrangements for accounting standards in my sample countries. The first index of 5 items measures the acceptability of standards based on how receptive the standard setting systems are to its constituents. The second and third indexes deal with the enforceability of accounting standards. The second index of 16 items measures the preventive enforcement arrangements within a country. Finally, the third index of 12 items measures the punitive enforcement arrangements in a country.

In addition to testing the effectiveness of individual institutional parameters, I also examine the effectiveness of the overall institutional arrangement. To do this, I factorize the four parameters (quality of accounting standards, acceptability of accounting standards, and preventive and punitive enforcement of accountings standards) into one composite variable.

My sample is comprised of thirty-five countries from Africa, Asia, Australasia, Europe and North America. Following Alford et al (1993), Ali and Hwang (2000) and Hung (2001), I examine value relevance at the country level using firm level data (24,462 firm-years observations for the period 1996-2001). I control for omitted variables using level of economic development. I argue and also conduct sensitivity tests to show that other national and market variables are sufficiently substituted by the accounting institutional environment.

The results, after controlling for the level of economic development, provide strong support for the value relevance of quality of accounting standards, acceptability of the standards and punitive enforcement of the standards. I also find that the composite variable, the accounting institutional environment, is strongly associated with the value relevance of accounting earnings. The accounting institutional arrangement also has stronger positive association with the value relevance of accounting earnings than legal environment has with the value relevance of earnings. This, I argue, is due to the proximity of the accounting institutional infrastructure to the financial statement preparation process.

I also find that the association between accounting institutional environment and the value relevance of accounting earnings is stronger for code law and emerging market countries than for common law developed countries. This suggests that improvement of the accounting institutional environment will be more beneficial in code law and emerging market countries.

This study contributes to our understanding of how the accounting institutional environment influences the relevance of accounting information. Alford et al. (1993), Ali and Hwang (2000), Hung (2001), Klapper and Love (2002) and Hope (2003) broadly examined the effects of various legal, economic and accounting practice

variables on value relevance of earnings. I focus only on the influence of accounting institutional environment on value relevance of earnings and systematically identify the incremental contributions of the major components of the same variable. Therefore, my contribution is in terms of providing a systematic empirical evaluation of the relation between one of the most immediate and important institutional variable that affects accounting practice, the accounting institutional environment, and value relevance of accounting earnings.

Additionally, the robustness of the proxy used suggests that a measure more closely linked to the accounting practice can capture more immediate changes in the financial reporting environment and, therefore, is more dominant in enhancing the value relevance of earnings than the broad legal and market variables that were adopted in prior studies (Ball et al., 2000; 2003; Jaggi and Low, 2000; Hung, 2001; Fan and Wong, 2002; Klapper and Love, 2002; Hope, 2003; Leuz et al., 2003). This is an important methodological development for a proxy for the accounting institutional environment.

By better articulating the accounting institutional arrangements, this study provides a new perspective on the usefulness of accounting institutional arrangements. In addition, this study facilitates the understanding of the ways in which high quality financial reporting rule infrastructures can be better implemented across different countries. This study also provides useful evidence about the effectiveness of accounting institutional arrangements that support a transparent and high quality financial reporting environment worldwide. Furthermore, this study demonstrates that the impact of the variations in the accounting institutional environment varies between the countries of the two legal systems, thus the countries of different legal systems

may require different accounting policy prescriptions for improving the value relevance of accounting information.

1.2. Organization of the Study

This study is organized as follows: Chapter 2 has an extensive literature review on the accounting institutional variables, and how it links with the national institutional and market variables as well as with the value relevance of accounting information. From this discussion, I draw the research motivation and purpose of the study in the same chapter. In Chapter 3 I derive the hypotheses and specifying the model designs to test the hypotheses. In Chapter 4 I provide the details of the main variables employed in this study, i.e. accounting standards quality, acceptability of accounting standards and enforcement arrangements of accounting standards. The discussions in the chapter also explain how these accounting institutional environment variables relate to the value relevance of earnings. I discuss the research method to address the research problem in Chapter 5. In Chapter 6 I discuss and analyze the empirical results. This is followed by the summary of the thesis, limitations of the study and future extensions in Chapter 7.

CHAPTER 2

INSTITUTIONAL FACTORS AFFECTING THE VALUE RELEVANCE OF ACCOUNTING INFORMATION AND THE RESEARCH PROBLEM

The Statement of Financial Accounting Concept (SFAC) No. 2 of the Financial Accounting Standards Board (FASB) identifies decision-making as the primary quality of accounting information for the users of such information. The two characteristics that make accounting information useful for decision-making are relevance and reliability. Relevance of accounting information relates to the ability of the information to influence the users' decisions by changing or confirming their expectations about the results of consequences of actions or events. To be relevant, information must be timely, i.e. information should be available to a decision maker before it loses its capacity to influence decisions. Reliability refers to the *"the quality of information that assures that information is reasonably free from error and bias and faithfully represents what it purports to represent"* (SFAC 2, p. 10). Thus, the reliability of information depends on its degree of faithfulness in the representation of events.

The usefulness of accounting information for economic decision-making is regarded as the value relevance of accounting information in the accounting research literature. The value relevance of published accounting information is ascertained by measuring the association between an item of accounting information and stock price change (Ali and Hwang, 2000). Publicly available accounting information is an important source of corporate performance information for investors (Botosan, 1997).

Its association with stock return is a concern not only for investors but also for standard setters, market regulators, and researchers.

The value relevance of financial information of accounting reports is affected by many factors. Prior studies in accounting have extensively dealt with the issue that a country's institutional arrangements affects the value relevance of accounting information and that effective accounting institutional arrangements can improve the value relevance of such information. In this chapter, I review this literature and propose that there is a need to find empirical support for the argument that accounting institutional arrangements such as accounting standards quality, standard setting, and standards enforcement arrangements are value relevant because they improve the value relevance of accounting information.

The chapter is organized in the following sequence. I first review the literature dealing with the influence of national institutional environment on the value relevance of accounting information. Second, I also review the literature which examines how the value relevance of accounting information is influenced by market factors, such as the level of development of capital market and corporate financing. Third, I review the literature that links quality of accounting institutional environment with the value relevance of accounting information. Fourth, I review the link between the national institutional factors, market factors, and the accounting institutional environment. Fifth, I identify a research purpose based on the view that there is a need to empirically establish that accounting institutional arrangements are value relevant. Finally, I provide a summary to the chapter.

2.1. The National Institutional Environment

Prior studies investigating the relation between national institutional factors and value relevance of accounting information can be grouped into two sets. The first set of studies examines the role of legal environment in improving value relevance of accounting information and the second set associates cultural environment with the value relevance of accounting information.

2.1.1. The Legal Environment

Most recent studies on the legal approach to regulating corporate activities have taken a corporate governance viewpoint. Bushman and Smith (2001) in their review of accounting studies dealing with corporate governance have appreciated this view and linked value relevance of accounting with corporate governance. Although most studies reviewed by Bushman and Smith (2001) are studies dealing with firm level governance issues, studies such as Hung (2001) have demonstrated that legal institutional arrangements of a country can also impact upon the value relevance of accounting information.

A legal approach to corporate governance considers that the protection of investors (shareholders and creditors) is important because expropriation of wealth of minority shareholders and creditors by the controlling shareholders can be extensive (Beck et al., 2001; Berndt, 2000; La Porta et al., 1997, 2000; Shleifer and Vishny, 1997). Expropriation is related to the agency problem, where the agent consumes the perquisites at the expense of the principal. To control this agent behavior, the legal approach emphasizes that the key mechanism in corporate governance should be the protection of outside investor through the legal system (Beck et al., 2001; Berndt, 2000). The legal system or environment is influenced by its legal origin, and different

legal origins protect the investor rights to differing degrees (La Porta et al., 1997, 2000).

By employing a sample of 49 countries, La Porta et al. (1997; 1998; 2000) divided the legal rules in those countries according to their legal origins: English (common law), French, German, and Scandinavian (the last 3 are considered civil law). In terms of protection against expropriation by insiders they showed that legal rules in common law countries protected the creditors and shareholders' interests the most, whereas French civil law countries provided the least protection to the investors. German civil law countries were inclined towards the French civil law group and Scandinavian civil law countries were in the middle between German civil law and common law countries.

Stronger investor protection means that there is better information provided to the investors. With better information, particularly accounting information, investors can conduct better decision making, which eventually protect investors' interests. Prior literature has extensively attempted to examine the relation between legal system and accounting practice. In general, they confirm that a country's legal system is a significant predictor of membership in a particular accounting practice cluster (Salter and Douppnik, 1992). Recent studies in accounting examine the impact of different legal systems, with different degrees of investor protection, on accounting practice, that eventually influence the quality of accounting information.

Employing the investor protection framework, Francis et al. (2003) extends the La Porta et al. (1997, 1998)'s work into the accounting area. Specifically, Francis et al. (2003) show that as a result of stronger investor protection in common law countries, those countries have more timely (accrual based) and transparent accounting as well as have greater demand for auditing as an enforcement mechanism. Hung (2001) also

confirms that stronger shareholder protection in common law countries improves the effectiveness of accrual accounting. In addition, she emphasizes the importance of considering shareholder protection when developing accounting policies related to accruals.

Legal environment also has significant impact on the development of capital markets and corporate financing, including the ownership structure. Studies by La Porta et al (1997), Wurgler (2000) and Francis et al. (2003) discuss and provide evidence regarding the role of legal environment in capital market development. Equity markets are both broader and more valuable in countries with good legal protection of minority shareholders. Shleifer and Vishny (1997) and La Porta et al (1999; 2000) discuss and explore further the relation between legal environment and the general structure of ownership and corporate financing. La Porta et al (1999) draws a connection between ownership concentration of the largest companies in countries worldwide and the nature of their legal environment drawing the conclusion that higher shareholder concentration is a corporate governance substitute to weak governance provided by the legal environment. Shleifer and Vishny (1997) and La Porta et al (2000) argue that investor legal protection is a better way to understand corporate governance than the distinction between bank-versus market centered financial systems across countries.

In addition to legal rules, law enforcement is an important factor for legal environment. La Porta et al. (1998) argued that the quality of law enforcement should complement quality of legal rules. In terms of the quality of legal enforcement, La Porta et al. (1998) ranks countries from the best to the worst as follows: Scandinavian civil law, German civil law, common law, and French civil law countries. To measure the quality of legal enforcement, they employ six proxies: efficiency of the judicial

system, rule of law, corruption, risk of expropriation, likelihood of contract repudiation by the government, and CIFAR index of accounting disclosure.

Employing La Porta (1998)'s legal enforcement proxies, Hope (2003) demonstrated that companies in countries having strong law enforcement are related to higher analysts' forecast accuracy. This means strong law enforcement encourages managers to follow accounting standards that eventually reduces analysts' uncertainty about future earnings. Leuz et al. (2003) provide empirical evidence to show that investor protection and legal enforcement are negatively related to earnings management. This means countries that have better legal enforcement face less earnings management and, therefore, better quality of earnings.

2.1.2. Cultural Environment

Culture is defined as a system of beliefs that shape the actions of individuals within a society (Stulz and Williamson, 2001), while in turn influences the development of institutional systems within a country (Licht et al., 2001). This means that the behavior of investors and actions of managers are influenced by the culture they are associated with. In addition, the investors should also act within the boundaries of the country's legal system, otherwise they may get penalized. Employing religion and language as proxies for culture, Stulz and Williamson (2001) provide evidence that cultural values help understand the diversity in investor protection across countries. They show that investor protection, especially creditor rights, is strongly related to culture.

Licht, Goldschmidt, and Schwartz (2001) also examine the relations between investors' legal rights and national cultural profiles across countries. The concept of values was used as a proxy for national culture (Licht et al., 2001). Values refer to

enviable goals and to the modes of conduct to promote these goals, such as select actions, evaluate people and events, and explain or justify their actions and evaluations. A set of value dimensions shapes a system of value priorities in a culture. Licht et al. (2001) employed two sets of value dimension drawn from Schwartz and Hofstede.

Schwartz's value dimensions consist of harmony/mastery, hierarchy/egalitarianism, embeddedness/affective autonomy and intellectual autonomy. Hofstede value dimensions consist of power distance, uncertainty avoidance, individualism/collectivism, and masculinity/femininity. Using seven value dimensions, Schwartz identifies six cultural groups of nation: English Speaking, Western European, Eastern European, Far Eastern, Latin American, and African. Based on his value dimensions and by employing hierarchical cluster analysis, Hofstede distinguishes the following culture regions: Anglo, Germanic, Nordic, More Developed Latin, Less Developed Latin, More Developed Asian, Less Developed Asian, and Near Eastern. As a result of examining the relations between investor protection and national culture, Licht et al. (2001) found that corporate governance laws exhibit systematic cultural characteristics. A comparison between a taxonomy of corporate governance regimes according to legal origins and a classification of countries according to their shared cultural values shows that the legal approach provides only a partial portrayal of the variation of corporate governance framework. Dividing investor protection regimes according to groups of culturally similar nations is informative. The evidence substantiates the uniqueness of common law regimes in better protecting minority shareholders. However, in certain cultural regions, such as the Far Eastern region, combining a cultural value approach and legal approach gives a better picture in understanding its corporate governance. This is because the superior

investor protection of common law in Far Eastern countries is not accompanied with the effectiveness of statutory law in these countries, which may result from cultural influence.

Prior studies, at the country level, show that the cultural environment also affects the choice of ownership structure and corporate financing (La Porta et al., 1999; Hackethal and Schmidt, 2001; Fan and Wong 2002). Ownership profiles in East Asian countries are characterized by substantial family holdings (Fan and Wong 2002; ADB, 2001), meanwhile in other countries such as USA, dispersed ownership characterizes most of the publicly listed companies (La Porta et al., 1999). Empirical evidence also shows that financing patterns of the US, German and Japanese companies differ substantially from one another (Hackethal and Schmidt, 2001). Equity is an important source of financing in the US, whereas debt is the dominant source of external financing in Germany and Japan. The value priorities followed by people in certain cultural regions characterize their behavior as economic agents. For instance, Asian people value collectivism as their priority, which in turn is reflected in the way they run the company, whereby they prefer high ownership concentration in a company and the use of debt financing to prevent ownership dilution. Thus, prior studies provide evidences regarding the influence of culture on ownership structure and corporate financing.

Relationship between culture and accounting has attracted numerous researchers to examine further the effect of culture on accounting. Cultural environment has been indicted as one of the main reasons for diversity in accounting practice worldwide (Gray, 1988; Douppnik and Salter, 1995; Nobes, 1998). Overall, those studies suggest that culture could be a determinant of worldwide accounting diversity. Jaggi and Low (2000) have tried to examine the impact of cultural variables on financial disclosures

of companies from different countries. They provide evidence that the impact of cultural values on financial disclosures in common law countries are insignificant, and there are mixed signals for code law countries.

2.2. Market Factors

In addition to the national institutional variables, market variables also influence the value relevance of accounting information. These variables are capital market development and the structure corporate financing. Corporate financing has been examined in the literature using debt and equity prevalence in the market and ownership structure, meaning the level of ownership control by large shareholders. In this section I discuss how these factors influence the value relevance of accounting information and to what extent they are simply surrogates of the national institutional variables.

2.2.1. The Level of Capital Market Development and Economic Development

Asymmetric information is a critical obstacle that stands between a company issuing shares and the public investors in securities market. Adverse selection problem is a common problem for investors wanting to invest in publicly listed companies. Adverse selection is caused by investors not getting credible information from companies and, therefore making inappropriate investment choices. Thus, they discount the stock-offering price.

Another major obstacle in securities market is self-dealing, which can be in the form of direct self-dealing (company engages in transactions that enrich the company's insiders) and indirect self-dealing (insiders use information to transact with less informed investors)¹. One of the capital market functions is to ensure, through

¹ Further discussion on self-dealing transaction can be found in Black (2000) paper.

regulations and public institutions, that public investors have access to the true information, thereby reducing asymmetric information and self-dealing problem (Black, 2000). The role of capital market in protecting public investors' interest varies due to the level of capital market development.

Empirical studies show that there is a direct association between the level of capital market development and legal environment, specifically with respect to the degree of investor protection. Rajan and Zingales (1988) state that the legal protection of shareholder rights and strong accounting rules predict strong capital market, and the portion of this stock market development predicts future economic growth. La Porta et al. (1997) emphasize that the more developed the capital market tends to be the better they are in protecting investors' interest through regulations. Additionally, Wurgler (2000) concludes that strong minority shareholders rights are related to better capital allocation, which characterizes developed financial markets. Francis et al. (2001) found that civil law countries with weak investor protection laws have less developed financial markets than common law countries.

A well-developed capital market tends to have better regulation to ensure that market for corporate control functions in a fair and transparent manner. Takeovers are much more common in the US and the UK, where ownership is diffused (with well-developed capital markets), than in Continental Europe and East Asia where ownership is more concentrated (ADB, 2001). Thus, the market for corporate control varies due to the level of capital market development. The market for corporate control offers disciplining devices for the management of publicly listed companies with the threat of losing control. Legal arrangements for takeovers are usually written in company laws or capital market laws.

There is evidence that corporations throughout the world become increasingly dependent on capital markets to finance their expansion (Aylward and Glen, 2000; Harvey and Roper, 1999). The move toward equity based financing through capital market has a significant impact on corporate governance. The growing significance of public investors as a source of capital for companies is raising demand for more transparency as well as minority shareholder protection (Maher and Andersson, 2000).

The level of capital market development is closely related to the level of economic development, since setting up capital markets might have increasing returns to scale activity. Likewise, more developed economies have larger capital markets (La Porta et al., 1997). In relation to degree of transparency of accounting information, Salter (1998) found that firms in developed market economies have a significantly higher mean level of effective disclosure than those in emerging market economies. The importance of capital markets and a relatively low level of the uncertainty avoidance culture variable modify these differing levels of disclosure. Furthermore, Douppnik and Salter (1995) found that more developed economies have improved institutions and necessary infrastructure to sustain better accounting system. This setting can be construed to affect the use of information in the capital markets.

2.2.2. Corporate Financing

The literature examining the influence of corporate financing generally investigates this influence from two different perspectives. One set examines the effects of debt versus equity financing on accounting practices, while the other set examines the effects of the structure of equity financing on accounting practices.

2.2.2.1. Capital Structure (Debt vs. Equity)

Agency problem, conflict of interest that occurs between equity and debt holders, is one factor that influences corporate financing. The debt contract provides that if an investment obtains returns well above the face value of the debt, equity holders capture most of the gain. On the other hand, if the investment fails, due to limited liability, debt holders bear the effect. Thus, equity holders may benefit from investing in very risky projects by borrowing. Correspondingly, to cover the probability of failure, debt holders may require higher returns. In other words, debtholders can be distinguished from shareholders based on their rights, contractual rights and residual control rights, respectively (Hart, 1995). As a consequence, changing the capital structure of the firm means changing the allocation of power between the outside investors and the insiders (La Porta et al., 2000).

From a different perspective, there is no obligation for a company to provide return to equity holders via dividends, whereas for debt holders, company has obligation to provide return via interests and installments or it may lose of its control rights. Therefore, debt can be used as a means to reduce free cash flow as well as to bond the management (Jensen, 1986).

There is some empirical evidence that suggests that determination of corporate financing also influences the environment where the company operates. Hackethal and Schmidt (2001) provide empirical evidence that the financing patterns of the US, Germany and Japan differ substantially from one another and this influences their corporate governance. In the US, equity is an important source of financing, while in Germany and Japan debt is the dominant source of external financing. Additionally, ADB states that heavy reliance on debt financing characterizes most of the financing decisions in East Asian companies (ADB, 2001).

This financing pattern, eventually, affects the way investors interpreting the financial accounting information. In equity-oriented system, investors are likely to rely on accounting disclosures to obtain information in assessing securities valuation and monitoring management. On the contrary, in a debt-oriented system, banks are a major source of financing. Because of that banks have direct access to company information, decreasing the demand for published accounting information. In this case, accounting information in equity-oriented systems provide greater value relevance than in debt-oriented systems (Ali and Hwang, 2000).

Shleifer and Vishny (1997) and La Porta et al (2000) contend that the distinction between bank-versus market centeredness is not a useful way to distinguish financial systems across countries. Besides the difficulty of classifying financial system of a country into bank-and market centered, they argue that investor rights protection is a better way to explain differences among countries.

In the literature, debt-based markets are generally in code law countries, and equity financed markets are generally in common law countries. Therefore, the classes within legal origin and corporate finance are substitutes (La Porta et al., 2000).

2.2.2.2. Ownership Structure

Equity financing leads to the separation of ownership and control, the main basis of agency theory. Shareholders as owners of the firm have to rely on the managers, the agent, to run the firm. Since both parties are utility maximizers, there is a tendency that they will act in their own best interest. The level of ownership concentration in a company determines the sharing of power between its managers and shareholders. When ownership is dispersed, shareholder control tends to be weak because of poor shareholder monitoring. A small shareholder would not be interested in monitoring

because he would bear all the monitoring costs, but only share a small proportion of the benefit. When ownership is concentrated, large shareholders could play a significant role in monitoring management. Fama and Jensen (1983) state that where share ownership is widely held, the potential for conflict of interest between principals and agents is greater than in closely held companies.

The ownership structure determines the nature of the agency problem within the firm. When ownership is widely diffused, as is typical in the US, an agency problem follows from the conflict of interest between managers and shareholders (Jensen and Meckling, 1976). When ownership is concentrated, a common case in Asian countries, agency problems stem from the conflict of interests between the controlling owners and minority shareholders (Fan and Wong, 2002). This conflict between interests occurs because the controlling shareholders hold more voting control rights (rights to control the assets) than cash flow rights (a right to get a share of the generated profits). The large shareholders obtain control through stock pyramids, cross-holding ownerships, and use of multiple classes of stocks (Claessens et al., 2000; Fan and Wong, 2002). The difference between the cash flow rights and control rights creates incentives for controlling shareholders to expropriate minority shareholders' wealth. This is due to the fact that the ultimate owners bear less cost but receive a disproportionately high share of the benefit. This expropriation can take the form of self-dealing transaction or the pursuit of objective, which is not in the best interest of all shareholders (ADB, 2001; Claessens et al., 2001; Fan and Wong, 2002; Shleifer and Vishny, 1997).

La Porta et al (1999) empirically investigates ownership concentration of the largest corporations in countries around the world. They provide evidence that weak legal and institutional environments are associated with the highly concentrated share

ownership of companies. The private enforcement of property rights is an apparent reason for the concentrated ownership, which confront weak legal system and poor law enforcement. This explanation shows how the national institutional environment, in fact, influences the general structure of ownership of the firms across boundaries. Thus, corporate ownership structure can be proxied by the legal environment.

The ultimate owner's voting rights and the separation of cash flow and voting rights have a negative effect on accounting earnings informativeness (Fan and Wong, 2002). Fan and Wong argue that the ownership structure provides the controlling shareholders the ability and incentive to manipulate earnings for outright expropriation or to report uninformative earnings to avoid detection of their expropriation activities. They also argue that this is due to the proprietary information, which means that they try to conceal their specific knowledge about the companies' activities from their potential competitors. In short, Fan and Wong (2002) conclude that concentrated ownership is associated with low earnings informativeness.

Another issue in equity ownership structure is managerial ownership of firm's shares. On one side, the managerial ownership will reduce the agency problem between managers and shareholders, which can be achieved through alignment of interest between both conflicting parties. On the other side, managers who own significant portions of their firms' shares have more incentive to pursue their own interest rather than pursuing the interest of all shareholders.

The level of managerial ownership is positively associated with the informativeness of accounting earnings (Warfield et al., 1995). It means that earnings of companies with low managerial ownership are less informative than those of companies with higher managerial ownership. Most studies regarding managerial ownership are conducted in a diffused ownership country setting, e.g. the USA (Denis

and Sarin, 1999; Morck et al., 1988; Warfield et al., 1995; Himmelberg et al., 1999; Coles et al., 2001). Limited public information regarding managerial ownership in concentrated ownership country setting prevents similar studies to be conducted in an international setting. Thus, generalizability of the results of such studies in different country setting remains questionable.

2.3. Accounting Institutional Environment

Several studies have emphasized the importance of the impact of different aspects of accounting institutional environment on the value relevance of accounting information. In this section, I discuss the literature according to the three main aspects of accounting institutional environment, which are accounting standards quality, accounting standard setting processes and accounting standards enforcement mechanism in a country.

2.3.1. Accounting Standards Quality

Accounting standards are important regulatory devices to guide accounting practice. They serve as a template contract among parties who participate in a firm, such as management, creditors, and shareholders (Sunder, 2002). Financial reporting standards provide guidance on how accounting information should be recorded, reported, and interpreted. The broad terms used in generally accepted accounting principles leave some flexibility for firms to design and choose their own alternatives. Accounting standards facilitate comparability of accounting information across periods and firms, which is crucial since investment and other business contracts typically rely on accounting measures to initiate a certain action. Furthermore, accounting standards facilitate the interpretability and comparability of information across companies that ultimately simplify financial contracting (Levine et al., 2000).

Private financial contracts that typically employ some measures of a company's income or assets can only be enforced if accounting measures are apparent. Therefore, accounting standards provide confidence and protection to investors to a certain degree.

Accounting standards determine how the accounting earnings information should be measured and reported. The quality of standards influences the users' perception of quality of financial information. A better perception of the standards would lead to the standards being used creating accounting information that are more readily used by the information users that eventually enhance the value relevance of accounting information.

Prior studies examining accounting standards demonstrate that the quality of standards influences the quality of accounting information (Ball et al., 2000; Ashbaugh and Pincus, 2001). Improvement in the quality of accounting information as a consequence of implementation of a higher quality set of accounting standards can result in reduced information asymmetry (Ball et al., 2000) or improvement in the earnings forecast accuracy (Ashbaugh and Pincus, 2001).

The quality of accounting standards could also be judged in terms of the value relevance of accounting numbers produced using such standards. Graham and King (2000) provide evidence regarding the relation between value relevance of accounting numbers and accounting standards in six Asian countries. They found that differences in accounting procedures, namely accounting for goodwill, asset revaluations, leases, research and development expenditures, and equity method of accounting for affiliated companies, related to differences in value relevance of earnings. In single country studies, the empirical evidence from German (Bartov, Goldberg, and Kim, 2002) and Swiss companies (Babalyan, 2001) show that accounting earnings prepared under

different accounting standards produced different levels of value relevance of accounting information. The results imply that quality of accounting standards matter for the value relevance of financial accounting information.

2.3.2. Accounting Standard Setting and Acceptability of Standards

According to Ball et al. (2000) and Bushman and Smith (2001), standard setting can be considered as a regulatory reaction to failures in the supply of information to capital markets. Since managers as insiders, who produce information, have information advantage over the investors as outsiders, there is a tendency that they will manage the information supply. In response to this, accounting standard setters take measures to mediate the conflicting interests between investors and managers. By regulating the flow of information, the standard setter can reduce the agency problems between managers and investors, and thus level the playing field for investors and managers. Hence, the main problem in accounting standard setting is how to balance the differing information needs between managers and investors and, thereby, minimize the information asymmetry problem.

Prior studies such as Horngren (1973), Gerboth (1973), Zeff (1988), and Rahman (1991) have emphasized the importance of acceptability of accounting standards to their constituents. Specifically, Gerboth (1973) argued that '*.., the fundamental concern of accounting inquiry can no longer be with the verity of the accounting rule that result from a decision-making process; it must rather be with the acceptability of the process itself*' (p.479). He explained that acceptability would both enhance the credibility of the standards to the user of accounting information and improve the compliance with the standards by the preparers of financial reports, which in turn would improve the value relevance of accounting information. Therefore, I construe

that acceptability would be an important factor in the accounting standards setting process that would improve the value relevance of accounting earnings.

Many interests are considered to set up an acceptable accounting standard. In a private sector standard setting system, the interests of the preparer would come first. If the standard is prepared by the government, it is more likely that the standard will satisfy regulatory needs, for example to fulfill the compliance with government policies and macroeconomic plans (Choi and Mueller, 1992). If the accounting standard is primarily determined by private sector, such as the accounting profession then the purpose could be to gather accounting thought and bring it into the standards to guide accounting practice (Wyatt, 1997).

The relation between accounting standard setting and accounting information is that a high quality of accounting standard as a result of good standard setting process is essential to ensure the transparency of the financial performance of the firms. This leads to better corporate monitoring by shareholders. In countries where the private sector is more involved in the accounting standard setting process (such as in common law countries), the accounting standards provide better transparency in terms of timeliness and conservatism, particularly in incorporating losses (Ball et al., 2000). In addition, Ali and Hwang (2000) provide evidence that in countries where private sector plays active role in the standard setting process, financial reporting is more value relevant than in countries where private sector bodies do not actively participate in standard setting. This is because the private sector bodies are more likely to deal with the needs of capital providers (Choi and Mueller, 1992) instead of satisfying the regulatory requirements. As a result, the decisions of capital providers will be influenced by the accounting standard setting bodies.

Ely and Waymire (1999) provide little evidence to support the hypothesis that earnings relevance is higher following the introduction of US accounting standard setting bodies and subsequent reorganizations of the standard setting process. However, this result is counteracted by cross-country studies of Ali and Hwang (1999), which provide strong evidence regarding the role of private standard-setting bodies in improving the value relevance of accounting earnings. Since private standard setting bodies are associated with higher levels of acceptability, Ali and Hwang's (1999) results indirectly support the issue of acceptability of standards to its constituents.

2.3.3. Accounting Standards Enforcement Mechanism

Kothari (2000), Ball (2001), and Benston (2003) have argued that accounting standards on their own are ineffective mechanism of regulation. They argue that infrastructural arrangements for implementing and enforcing standards are also important in giving accounting standards the capability to make accounting information relevant for capital markets. High quality financial reporting regulatory infrastructure, according to these recent studies, will make investors perceive financial reports as truthfully reflecting the firm's fundamentals. The perception of truthful reporting, according to these authors, will increase the value relevance of financial accounting information of the companies of that country.

Some recent studies empirically investigated the additional roles of the institutional environment of accounting standards. Hope (2003) and Leuz, Nanda, and Wysocki (2003) investigate the association of legal enforcement with analysts' forecasts accuracy and earnings management. One significant implication of these studies is that legal enforcement plays a major role in ensuring that accounting rules

are properly implemented, which in turn lends credence to agency contract. Both studies employ a broad measure of La Porta (1998)'s legal enforcement proxies, which consist of efficiency of the judicial system, rule of law, corruption, risk of expropriation, likelihood of contract repudiation by the government, and CIFAR index of accounting disclosure. Thus, it is not clear to what degree the enforcement measures in those studies capture the effect of enforcement of accounting standards on accounting earnings (Pope, 2003). This suggests that a more immediate measure of enforcement of accounting standards is necessary to provide a better depiction of accounting standards enforcement.

Recent policy studies have indicated the need for an examination of the accounting standards enforcement infrastructure. Reviews relating to the Asian financial market's anomalies suggest that a lack of an effective accounting enforcement mechanism also may result in low quality financial reporting, regardless of whether or not national accounting standards are in conformity with high quality accounting standards such as the international accounting standards (Rahman, 2000). In a study of accounting practices in East Asia, Rahman (1998) found that a large number of companies in the region did not comply with internationally accepted accounting standards. His conclusion is derived from an assessment of accounting disclosure in financial statements using selected international accounting standards. Such disclosure deficiencies in financial reporting failed to provide investors with early warning signals about deteriorating financial condition, which adversely affected investors' decision-making. ADB (2001) stated that one of the main contributors to vulnerabilities that led to the 1997 Asian financial crisis was lack of adequate disclosure; and the major reason for this obvious discrepancy was ineffective enforcement of accounting standards. Saudagaran and Diga (2000) supported this

finding while highlighting the attributes that may have contributed to the financial crisis.

Abundant studies provide evidence regarding the importance of enforcement of accounting standards and related rules for the credibility of accounting information. Chen et al. (2002) contended that weak enforcement of accounting standards led to low quality accounting practice regardless of the quality of the standards. Sivakumar and Waymire (2003) provide evidence that enforceable accounting rules affect income measurement by protecting investors' interest and lessen insiders' informational advantage derived from smoothed income numbers. Additionally, prior studies also showed that announcement of investigations by regulatory body leads to a negative market response (Feroz et al., 1991; Nourayi, 1994). While Feroz et al. (1991) argued that the negative market reaction was due to changed expectations of targets' future earnings, Nourayi (1994) argued that it might be due to a signaling effect of future legal costs of litigation.

Prior studies dealing with enforcement have either theoretically mooted the usefulness of enforcement or have empirically examined the value relevance of partial parameter of enforcement, such as specific types of investigation or litigation.

2.4. The National Institutional Environment, Market Factors, and the Accounting Institutional Environment

Prior reviews have examined the association between the national institutional environment, market factors and accounting institutional environment on the one hand and the value relevance of earnings on the other.

Studies such as Stulz and Williamson (2001) and Licht et al. (2001) have highlighted the interaction between national institutional variables, i.e. legal and

cultural environment. Stulz and Williamson (2001) find that law matters more than culture for shareholder rights, but less than culture for creditor rights.

National institutional variables are also acknowledged as having significant influences on the market variables (La Porta et al., 1997; 1999; 2000; Shleifer and Vishny, 1997; Fan and Wong, 2002, Francis et al., 2003). Broader and more developed capital markets characterized countries that provide good investor rights protection (La Porta et al., 1997; Wurgler, 2000). As explained earlier, the legal system closely reflects financing systems, with common law systems supporting equity-based markets and code law systems supporting debt-based markets. Also, as demonstrated by Fan and Wong (2002), the general nature of ownership structure would offset strengths and weaknesses of the legal system. Thus, the classes within legal origin are substitutes for the classes within corporate finance (La Porta et al., 2000).

Prior reviews also show how the national institutional factors and market factors affect accounting information (Hope, 2003; Leuz et al., 2003; Fan and Wong, 2002). Meanwhile, numerous studies in accounting examine the impact of national institutional factors on accounting institutional environment (Gray, 1988; Joos and Lang, 1994; Douppnik and Salter, 1995; Nobes, 1998; Nobes and Parker, 1998). Various institutional factors, namely financing system, colonial inheritance, legal system, and culture, have been investigated to see the influence of those factors on the differences of accounting practices and information worldwide.

Gray (1988) explores and proposes hypotheses regarding the association between cultural characteristics and the development of accounting systems, the regulation of accounting profession, and attitudes towards financial management and disclosure. He argues that cultural environment play a significant role in influencing the accounting institutional environment. Douppnik and Salter (1995) proposed several reasons for

international accounting differences. They mentioned the cultural and institutional variables, such as legal system, capital market, tax, inflation levels, level of education, and level of economic development, create differences in accounting practices. Joos and Lang (1994) demonstrate that cross-country diversity in accounting measurement practices affects the comparability of accounting information. They show that significant difference in relative importance of the law, providers of capital, and the link between tax and financial reporting leads to differences between accounting practices of countries.

Nobes (1998) argues that the strength of the equity markets and the degree of cultural dominance are significant explanatory factors influencing the international differences in accounting practices. Specifically, for self-sufficient countries, the class of the predominant accounting system depends on the strength of the equity market. For culturally dominated countries, the class of accounting system is determined by the cultural influence. However, as equity market develop or certain companies may be interested in foreign equity market, it will lead to the development of appropriate accounting system, which will eventually explain the existence of more than one class of accounting in one country (Nobes, 1998).

Based on the differences in accounting measurements and disclosures, accounting practices all over the world can be grouped into several categories based on similarities and differences of business environment (Mueller et al., 1997). The similarities and differences of business environment mirror the influence of the national institutional and market factors on the practice of accounting.

The above reviews show that the accounting institutional environment, specifically the financial reporting practices, is influenced by the national institutional environment and market factors. Thus, the legal system, the cultural environment, and financing

system of a country are important predictors of accounting systems worldwide. Following from this argument, I construe that the accounting institutional environment can be a substitute for the national institutional variables and market variables.

2.5. Research Motivation and the Purpose of the Study

To improve comparability of financial accounting information and to boost the quality of financial reporting worldwide through harmonization of accounting standards, the FASB and IASB have agreed to develop high quality, compatible accounting standards for both domestic and cross-border financial reporting (Street, 2002a). These well-respected accounting standard setters have put high priority to improve the quality of accounting information and remove differences between IAS and US GAAP. However, these measures alone would not guarantee the convergence of accounting practice. Chen et al. (2002) showed that harmonization of accounting standards with IAS in China was not sufficient to harmonize accounting practice. They indicate the lack of effective financial reporting infrastructure as a main contributor for the earnings gap between Chinese GAAP and IAS.

Several other studies indicated the need to further investigate the institutional environment of accounting standards to understand its impact on the value relevance of accounting information. Graham and King (2000) studied the value relevance of accounting numbers in six Asian countries. They find that the differences in the value relevance of accounting data, in general, are consistent with differences in accounting procedures that affected book value and residual earnings. However, for Korea, whereby its accounting practices are strongly influenced by tax laws, the high value relevance number was not consistent with the general result. Ball et al. (2003) examined the influence of institutional factors on the properties of reported accounting

numbers. They found that the timeliness of accounting income in four East Asian common law countries was similar to that of code law countries. This meant that the use of dichotomy of legal framework, as a proxy for quality of accounting standards, to classify various countries' financial reporting quality was misleading. Accordingly, they suggest that researchers should look beyond legal environment and accounting standards to the all-inclusive determinants of financial accounting information.

The legal infrastructure, although could be influential in making agency relations effective, their impact on accounting practice may be less onerous than the accounting institutional arrangements. It is established in previous sections that accounting institutional factors proxies for the national legal environment, the cultural environment and the financing environment (Gray, 1988; Douppnik and Salter, 1995; Nobes, 1998; Nobes and Parker, 1998). Given the proximity of the accounting institutional environment to the accounting preparation process, it is likely that this environmental factor would be a better predictor of the relevance of a country's accounting information than the legal infrastructure of the country.

Similarly, studies that use a subset of the accounting institutional environment (Ball et al., 2003; Leuz, 2003) do not provide a comprehensive explanation for the cross-country variances in the value relevance of accounting information. Therefore, a comprehensive examination of the accounting institutional infrastructure would better explain the differences in the value relevance of earnings than the legal system variables and the partial measures of accounting institutional environment used by prior studies.

Although prior studies have found an association between legal institutions and value relevance of accounting information, the link established between the institutional arrangements through this procedure is very tenuous. Through this

procedure one can only speculate and not clearly establish what causes the variations in value relevance. To deal with this deficiency, I propose an examination of the association between accounting institutional variables and value relevance of accounting information. Such an examination is needed to establish whether or not the key accounting institutional variables are indeed value relevant.

In all, the literature dealing with accounting regulations suggests that there are three components of the accounting institutional environment that would influence the value relevance of earnings. These components are quality of accounting standards, acceptability of accounting standards and the enforceability of accounting standards. It is also important to note that these components would complement each other in determining the overall institutional environment. This complementariness is further established in the hypothesis chapter (Chapter 3). Therefore, the purpose of this study is to examine the effects of the three accounting institutional parameters (accounting standards quality, acceptability of accounting standards and enforceability of accounting standards) and the overall accounting institutional environment (a combination of the three parameters) on the value relevance of earnings in a cross-country.²

In terms of contribution, apart from making a contribution through the use of a more comprehensive accounting institutional variable, I also have added two new variables not used in prior empirical tests of value relevance to the examination encompassing accounting institutional environment. These variables are acceptability of accounting standards and enforcement of accounting standards. Both of these variables have been put forth in the accounting research literature and accounting policy literature for improving compliance with the accounting standards. However,

² The details of the accounting institutional environment constructs will be discussed in Chapter 4

they have yet to be empirically examined with respect to their efficacy in improving the value relevance of accounting information.

2.6. Summary

In this chapter I review the literatures that deal with the effects of the national institutional environment, the market factors, and the accounting institutional arrangements on the value relevance of accounting information. I find that the two national institutional factors commonly cited in the literature influence the value relevance of accounting information. These are legal and cultural environment. Prior accounting studies show that the legal and cultural environments affect the value relevance of accounting information. Likewise, I find from the literature that market factors, such as level of development and the nature of financing in the capital markets can also influence the value relevance of accounting information. I also find that certain aspects of the accounting institutional environment can affect the value relevance of accounting information.

The literature also suggests that the national institutional environment is associated with the level of capital market development and the general corporate financing. I also note from the literature that the national institutional environment also affects the various elements of the accounting institutional environment, quality of accounting standard, the standard-setting process and the enforcement of accounting standards, which in their own right eventually influence the value relevance of accounting information. Therefore, I regard the nature of accounting institutional arrangements to be a substitute for the national and market variables.

With this literature review in mind, I determine the research motivation and the purpose of my study. Basically, this study focuses on the relation between accounting

institutional environment and the value relevance of accounting information. Prior studies mostly examine the association between quality of accounting standards and the value relevance of earnings in single country settings. This study is a cross-country study that empirically examines the relation between quality of accounting standards, the acceptability of accounting standards, and the enforcement of accounting standards on the one hand, and the value relevance of accounting information on the other. The accounting institutional variables are measures of institutional arrangements that are more proximate to accounting practice than the broad national institutional proxies used in prior studies. An examination of the effects of accounting institutional arrangements on value relevance of accounting information will provide a deeper insight into the relation between institutional arrangements and value relevance of accounting information than the studies that examine the effects of national institutional and market arrangements on value relevance of accounting information.

CHAPTER 3

HYPOTHESES DEVELOPMENT

Prior research has reviewed the association between national institutional environment and value relevance of accounting information and the association between accounting institutional environment and value relevance of accounting information. The national institutional environment also influences the quality of accounting standard, the standard-setting process, and the enforcement of accounting standards, which in turn influence the value relevance of accounting information. Based on the literature review in chapter 2, I also identified and explained the research problem. In this chapter, I devise relevant hypotheses and an appropriate research design to address the research problem.

The chapter is laid out as follows. Section 3.1 proposes the hypotheses. The model design to examine the hypotheses is established in Section 3.2. Finally, Section 3.3 summarizes and reviews the chapter.

3.1. Hypotheses Development

Early literature (1926-1972) in accounting standard setting emphasized the importance of good quality accounting standards for relevant and reliable accounting information (Zeff, 1972). The second generation of standard setting literature (1972-2000) emphasized openness and authority of the standard setting body to enhance acceptability of the standards (e.g. the creation of FASB in 1973, and the reformation of IASC into IASB at the beginning of 2001). More recently, circumstances in the capital markets across the globe have led to calls for greater enforcement of the standards (Kothari, 2000; Ball, 2001; Benston, 2003). In this setting, I draw

hypotheses to identify the relations between value relevance of accounting earnings and the three aspects of accounting standards, quality of standards, acceptability of standards, and the enforcement of standards to identify which of these aspects are value relevant. Because, as shown in Chapter 2, these aspects are complimentary, I also seek to identify the value relevance of the combined effect of these variables under a composite variable called accounting institutional environment.

3.1.1. Quality of Accounting Standards

High quality accounting standards are expected to provide consistent, comparable, relevant and reliable financial information to the investor that is useful to make informed investment decision. High quality of accounting standards creates a high quality accounting information, specifically information regarding firms' earnings.

Prior studies show that the effectiveness of accounting information in mitigating information asymmetry depends on the quality of accounting standards (Ball, et al., 2000). Ball et al. (2000) found that enhanced common law disclosure standards lower the agency costs of monitoring managers. Furthermore, Ball et al. (2000) showed that accounting earnings in enhanced common-law accounting standards countries are substantially more timely and conservative than code law countries', particularly in incorporating losses. Ashbaugh and Pincus (2001) demonstrate that differences in countries' accounting standards relative to IAS and earning forecast errors of analysts are positively related. This means that the smaller the difference of national accounting standards with IAS, the smaller the earnings forecast errors. Additionally, they also found improvement in analyst forecast accuracy after firms adopt IAS. This suggests that firms' financial accounting information become more predictable following adoption of IAS. In general, both studies provide evidence that accounting standards

directly contribute to the computation and quality of earnings. Therefore, good quality and credible accounting standards could enhance the quality of accounting earnings; which, eventually, improves the association between earnings and stock return.

Differences in the quality of accounting standards under which financial accounting information is prepared determines the value relevance of accounting data. Prior studies showed the positive association between value relevance of accounting numbers and accounting standards, either in a cross country study (Graham and King, 2000) or in single country studies (Babalyan, 2001; Bartov et al., 2002). While Graham and King (2000) examine the differences in accounting practices, as a result of implementation of different accounting standards, and how it affects the value relevant of accounting numbers, both Babalyan (2001) and Bartov et al. (2002)' studies employ the association of the stock returns and reported earnings as a measure of quality of accounting standards. In brief, the above studies show that quality of accounting standards affect investors' perception regarding quality of financial reporting, especially earnings information. A better perception of the standards would lead to the standards being used creating accounting data that are more readily used by the information users, which in turn would enhance the value relevance of earnings.

One common ground from the above arguments is that high quality accounting standards reduce analyst forecast errors and information asymmetry between preparers and users of financial reports. Better quality financial information, as a result, will mitigate the agency problem between contracting parties. In addition, high quality accounting standards also influences the investors' perception regarding quality of accounting information, The above arguments lead to the following hypothesis, which is an extension of the extant studies to a cross-country setting using country-level data.

H1: The value relevance of accounting earnings is positively associated with the quality of accounting standards.

3.1.2. Acceptability of Accounting Standards

There are several factors beyond accounting standards that contribute to the credibility of financial reports (Dyckman, 1988). One important factor is how the accounting standards are set. Solomon (1986) highlighted the importance of acceptability of the accounting standards as a way to achieve the purpose of comparability and preserving the credibility of financial reports. Greater approval from the financial community is necessary for accounting standards to allow proper implementation. As Horngren (1973) commented on the FASB: *'the key to a successful enterprise is to generate a product that is acceptable to customers'* (p.62).

Openness of the standard setting process has been considered instrumental to the enhancement of the acceptability of the standard (Zeff, 1988; Rahman, 1991). Openness of the process entails providing a public exposure of proposed standards to garner feedback from interested parties. Openness of standard setting is synonymous to the notion of "due process" in lawmaking (Zeff, 1988). In the 'due process' of setting accounting standards, ideas from interested parties are openly sought not only during new standards agenda building but also at the final stage through public hearing of the standards (Rahman, 1991). An extensive user participation in accounting standard setting is expected to increase the public support for the standards that lead to improvement in the credibility of the financial statements.

The involvement of third parties or stakeholders in standard setting body can also enhance the acceptability of the standards to the preparers of financial statements (Zeff, 1992; Saudagaran and Diga, 2000). Zeff (1992) noted an increased sympathy for

current value accounting as a consequence of the involvement of non-accountants constituents on the standard setting body. Aside from the wider acceptance of the standards, openness and third party participation in the standard setting process directs different interests toward a more common objective in improving the credibility of financial reporting standards. A credible accounting standard leads to alleviating the information asymmetry between interested parties, which eventually acts as a guide for more credible financial accounting information. Ali and Hwang (2000) and Ball et al. (2000) provide evidence that heavy involvement of private sector bodies in the standard setting process relates to higher value relevance of accounting earnings. Private sector standard setting bodies are more likely to address the needs of investors than to satisfy the government needs; therefore, such standards are more acceptable by the users of financial reports and make them more value relevant. Therefore, it is posited that:

H2: The value relevance of accounting earnings is positively associated with the acceptability of accounting standards.

3.1.3. The Enforcement Mechanism for Accounting Standards

Financial reports may lack relevance if conceptually sound accounting standards are not rigorously interpreted and enforced (Zeff, 1988). Both acceptability and enforceability of the standards are important factors influencing the level of compliance with professional accounting standards and associated rules (Tower et al., 1992). A strong enforcement of disclosure standards quality can result in an increase in the demand for public disclosure. These eventually force improvement in financial accounting disclosure, regardless of the quality of mandated accounting standards (Kothari, 2000). Hope (2003) demonstrates that higher forecast accuracy is related to

strong enforcement of accounting and related rules. He suggests that enforcement encourages managers to follow prescribed accounting rules, thereby reduces analysts' uncertainty about future earnings. Leuz et al. (2003) showed that investor protection plays a significant role in influencing international differences in earnings management. Specifically, they revealed that strong enforcement of outsiders' rights limits insiders' ability to acquire private control benefits, which reduce insiders' incentives to manage earnings.

Saudagaran and Diga (2000) classified enforcement mechanism into preventive and punitive enforcement mechanisms and defined them as ex-ante and ex-post enforcement methods. Realizing that for enforcement action to take place requires mechanisms of enforcement of standards, I define preventive arrangements as mechanisms that encourage and facilitate compliance, and punitive arrangements as mechanisms which force compliance or lead to penalties for non-compliance. In this regard, preventive methods relate to regulations concerning the authorities, responsibilities, and activities of the auditor and supervisory body to prevent unlawful accounting activities in the capital markets and provide favorable conditions to create high quality financial reporting. Punitive methods relate to the mechanisms for enforcing the standards and actual enforcement actions taken by the professional accounting body and supervisory body against the management of the company, the company itself and its auditors for not complying with the accounting standards or related rules.

Numerous studies provide evidence regarding the importance of preventive accounting rules for the credibility of accounting information. These studies examine preventive arrangements such as the role of auditor and audit committee. Regarding the role of auditor in enhancing the credibility of financial reports, Choi and Jeter

(1992) provide evidence of the significant decline in the market's responsiveness to earnings announcement after the issuance of qualified audit reports. This suggests of the value of audit opinion in enhancing the credibility of financial statements. Klein (2002) shows the effect of independence of audit committee members on earnings management. The evidence indicates the negative association between abnormal accrual (proxy for earnings management) and the percent of outside directors on the audit committee. Chen et al. (2002) contended that weak enforcement of accounting standards as manifested in the quality of audit and professional requirements for auditors led to low quality accounting practice regardless of the quality of the standards. Chen et al. (2002) show that eventhough Chinese accounting standards have been harmonized with IASs, it was not sufficient to improve its accounting practice. Sivakumar and Waymire (2003) provide evidence that enforceable accounting rules affect income measurement. The rules they investigated were preventive in nature and were intended to protect investors' interest and lessen insiders' informational advantage derived from smoothed income numbers. The regulators were empowered to enforce such rules to increase compliance. Following the issuance of such rules, Sivakumar and Waymire (2003) found lower income smoothness and increased conservatism in financial reporting.

The above proofs lead to the conclusion that preventive regulations can enhance the relevance and reliability of accounting information. The improvement in the credibility of accounting information is a result of the alleviation of the agency problem between investors and the firm's management. The reduction in agency problem is provided through the existence and independence of external auditors, audit committee, and enforceable accounting rules. Thus, it is hypothesized that:

H3a: The value relevance of accounting earnings is positively associated with effective preventive enforcement mechanisms for accounting standards.

Prior studies also provide evidence that punitive enforcement of accounting regulation have significant impact on the credibility of financial accounting information. Feroz et al. (1991) and Nourayi (1994) provide evidence that announcement of investigations by regulatory body leads to a negative market response. Feroz et al. (1991) examined the impact of US SEC enforcement actions on companies and found that market reacts negatively to the investigation news even when there was prior public disclosure of the violation. This is due to changed expectations of targets' future earnings as mirrored in financial analysts' reduced earnings estimated after the disclosure. Nourayi (1994) demonstrated that the stock price response to litigation releases is directly associated with the severity of the enforcement actions. The negative equity price response may be due to a signaling effect of future legal costs of litigation.

In case of auditors, such negative publicity of the litigation announcement also impairs their reputation (Rollins and Bremser, 1997). Rollins and Bremser (1977) found that punitive enforcement actions performed by regulatory body against auditors are related to audit firm characteristics. The larger audit firms had a lower likelihood of SEC sanctions. Their findings support the 'brand name' value of audit firms. Their study was based on enforcement actions taken by US SEC.

Threat of an investigation represents a viable sanction that can make the companies and auditors maintain the credibility of financial statements. Thus, effective punitive enforcement will increase the confidence level of investors on the credibility of financial reports since any violation of standards will be punished accordingly. The punitive enforcement will also mitigate the agency problem between preparers and

users of accounting information by reducing the uncertainty in the implementation of accounting-based agency contract. In such conditions, accounting earnings are likely to be highly correlated with the market returns. Therefore, it is hypothesized that:

H3b: The value relevance of accounting earnings is positively associated with effective punitive enforcement mechanisms for accounting standards.

3.1.4. Accounting Institutional Environment

There is a growing agreement among international institutions, such as ADB, FEE, SEC, and World Bank, that financial reporting constitutes a significant underpinning of a country's financial structure. In order to have a sound financial system, high quality generally acceptable accounting standards and effective enforcement mechanism have to be present concurrently (Kothari, 2000; Ball, 2001; Benston et al, 2003). Kothari (2000) stated that if the enforcement of standards is weak, the quality of accounting disclosure tends to be poor, regardless of the quality of the disclosure standards. Some of these institutions have assessed the quality and acceptability of accounting standards as well as enforcement arrangements across boundaries within their scope of authority in the effort to develop higher quality accounting environments and improve investor confidence in the capital markets (ADB, 2000; World Bank, 2000; FEE, 2000; 2001).

High quality accounting standards, with wide acceptance and effective enforcement mechanism, are necessary to create a conducive environment for investors to make well-informed decisions. Acceptability and enforceability of accounting standards are important for compliance with accounting standards (Zeff, 1988; Tower et al., 1992). Kothari (2000) and Rahman (2000) argued that the quality of accounting information is a function of both the quality of accounting standards and

the enforcement of those standards. Benston et al. (2003) regarded accounting standards and the mechanism to implement and enforce the standards as components of an accounting institutional environment.

The accounting institutional environment can be portrayed as a financial reporting infrastructure in a country, whereby its components are complimentary to each other. There are four primary elements of financial reporting regulatory infrastructure that affect acceptability and enforcement of accounting standards, namely: (1) accounting and auditing standards setters; (2) management of the company; (3) auditor; and (4) supervisory body (see figure 1). An absence or underperformance of one of these elements of infrastructure may result in low quality of accounting standards and unreliable financial reporting (Rahman, 2000).

Zeff (1995) highlights the importance of collaboration between a private-sector standard setting body and a government regulatory body within a regulatory system for financial reporting. Ball (2001) argues that an economically efficient system of public financial reporting requires many institutional features, namely professional and independent auditors, an independent standard setting body, and an effective and an independent regulatory enforcement body. These collective features are necessary in the regulatory system for financial reporting to effectively resolve information asymmetry problems between the users and preparers of financial statements. These infrastructural features collectively provide the ingredients for a high quality financial reporting environment. In other words, such features contribute to the quality of accounting standards, acceptability of accounting standards, and a comprehensive, effective enforcement mechanism, for the accounting standards (SEC, 2000). The infrastructural elements contribute variously to the environmental elements. Eventually, the effectiveness of the accounting environment is derived from the

effective contribution of these infrastructural elements to the different elements of the accounting environment. The overall strength of the accounting environment is measurable through the derivation of a composite measure based on the four environmental elements.

In a country with a high quality accounting institutional environment, the investors who evaluate financial reports of firms from that country will perceive the reports as truly reflecting the firm's fundamental conditions and this will be reflected in the equity prices. This would eventually minimize the perceived information asymmetry problems between the preparers and users of financial reports. Therefore, it is posited that:

H4: The value relevance of accounting earnings is positively associated with the overall quality of the accounting institutional environment.

3.1.5. Accounting Institutional Environment and Legal Environment

Based on the notion of investor protection, La Porta et al. (1997) demonstrated that the quality of the legal environment, both legal rules and their enforcement, varies in different countries and plays a significant role in influencing the ability of firms to raise external finance. Specifically, La Porta et al. (1997; 1998) contended that the legal rules vary systematically by legal origins: English (common law), French, German, or Scandinavian (all are code laws). Legal rules originating in the common law tradition tend to protect investors more than code law countries. Law enforcement differs significantly between countries. German code law and Scandinavian countries, according to La Porta et al. (1998), have the best quality of law enforcement.

Recent empirical studies in accounting have employed La Porta's legal framework to examine the impact of the legal environment on the properties and quality of

financial reporting (e.g. Ball et al., 2000; 2003; Jaggi and Low, 2000; Hung, 2001; Hope, 2003). Some of them, particularly, employ legal system dichotomy, code law versus common law, to examine the association of legal systems with financial disclosure, return-earnings relations, and economic activities (e.g. Ball et al., 2000; 2003; Jaggi and Low, 2000; Guenther and Young, 2000). Most of them confirmed the usefulness of such legal frameworks in explaining the phenomena they examined. However, Ball et al. (2003) found irregularities with respect to four Asian common law countries. Accounting in these countries, they found, resembled code law countries.

More recent papers pay more attention on the enforcement aspect of the rules (Klappers and Love, 2002; Hope, 2003; Leuz et al., 2003). These studies also employ La Porta's broad measure of legal enforcement that consist of: efficiency of the judicial system, rule of law, corruption, risk of expropriation, likelihood of contract repudiation by the government, and CIFAR index of accounting disclosure. The extant accounting studies provide evidence regarding the important role of legal enforcement on the forecast accuracy and earnings management (Hope, 2003; Leuz et al., 2003).

In comparison to the legal environment, the accounting institutional environment directly deals with the quality of financial accounting information. Accounting institutional arrangement consists of quality, acceptability, and enforceability of accounting standards. Quality of accounting standards mirrors the quality of published information. Openness of standard setting process and involvement of stakeholders in the process leads to the wide acceptance of the standards. Enforceability of standards is central to ensure proper implementation of the standards. Thus, high quality generally accepted accounting standards that is properly implemented will results in high quality accounting information. Given the closeness of accounting institutional

infrastructure with the quality of accounting information, it is likely, therefore, that a good accounting institutional environment would more directly influence the relevance of country information than legal environment would. Even though, the legal arrangements play significant role in ensuring effectiveness of agency relationships, their impact on accounting practice may be less onerous than the accounting institutional arrangements. Therefore, it is hypothesized that:

H5: Accounting institutional environment has a stronger positive association with the value relevance of accounting earnings than legal environment has with the value relevance of accounting earnings.

3.1.6. Control Variables

Accounting information issued by publicly listed companies is related to the regulation imposed by the capital market institutions. The quality of the regulation is related to the strength of the capital market. There are two basic requirements to support a strong capital market: sound legal environment and high quality institutions (Black, 2000). These requirements are necessary to provide investors good information about the firm value and confidence that their investment will not be misappropriated. Black (2000) states that the core institutions that may be used to control information asymmetry and self-dealing problems in capital markets include: effective regulator and court, financial disclosure, reputational intermediaries, company and insider liability, market transparency, culture and other informal institutions. Therefore, besides legal environment, these institutions are essential elements for developing a strong capital market. The better the condition of the legal environment and those institutions in a country, the higher would be the level of capital market development because the legal environment would protect the public investors' interests.

In addition to quality and acceptability of accounting standards and standards enforcement, there are many aspects of a capital market that influence the valuation of firms by investors. A control variable is employed in this study to control for the effects of such variables on the value relevance of earnings. Prior studies (Gray, 1988; Joos and Lang, 1994; Doupnik and Salter, 1995; Nobes, 1998; Nobes and Parker, 1998) suggested that numerous institutional factors, namely financing system, colonial inheritance, legal system, culture, inflation, and level of education influence the quality of accounting information worldwide. Considering that level of capital market development and economic development are correlated, and that the overall level of economic development is a broader variable than the level of capital market development, I employ the level of economic development as a control variable. Classification of country as a developed or emerging country, which reflects the level of economic development within a country, is used to control for the effects of omitted variables at the country level. Accordingly, it is expected that this broad variable can cover other capital markets variables, such as the level of capital market development and the level of development of the legal systems.

La Porta et al. (2000) pointed out that the quality of enforcement is higher in richer countries. Salter (1998) suggests that more developed countries tend to have higher quality of financial reporting that makes financial information more credible and reliable. Also, Bhattacharya and Daouk (2002) show that the enforcement of insider trading laws is more common in developed markets (82%) compared to emerging markets (25%). This enforcement will reduce self-dealing problems; and ultimately increase the investors' confidence in the capital market.

3.2. Model Designs

Employing the value relevance of earnings data as a dependent variable and controlling for level of economic development, the following models are employed to examine previously proposed hypotheses.

Hypothesis 1 is examined using model 1. Model 1 illustrates the relation between value relevance of earnings and the quality of accounting standards.

$$VAL_NI_c = \beta_0 + \beta_1 STD_QUAL_c + \beta_2 D_DEV_c + \epsilon_c \quad (\text{Model 1})$$

$H_0: \beta_1 > 0$.

VAL_NI_c : Value relevance of accounting earnings

STD_QUAL_c : Quality of accounting standards in a country

D_DEV_c : The classification of a country as a developed or emerging country.

Hypothesis 2 investigates the relation between value relevance of earnings and acceptability of accounting standards. It is examined using the following model.

$$VAL_NI_c = \beta_0 + \beta_1 STD_QUAL_c + \beta_2 ACCEPT_c + \beta_3 D_DEV_c + \epsilon_{i,t} \quad (\text{Model 2})$$

$H_0: \beta_2 > 0$.

Where,

$ACCEPT_c$: indicates the level of acceptability of accounting standards in a country.

Hypothesis 3a is examined using the following model. It investigates the relation between value relevance of earnings and preventive enforcement arrangement for accounting standards.

$$VAL_NI_c = \beta_0 + \beta_1 STD_QUAL_c + \beta_2 ACCEPT_c + \beta_3 PRE_ENF_c + \beta_4 D_DEV_c + \epsilon_{i,t}$$

(Model 3a)

$H_0: \beta_3 > 0$.

Where,

PRE_ENF_c: indicates the level of preventive enforcement in a country.

Hypothesis 3b is examined using the following model. It investigates the relation between value relevance of earnings and punitive enforcement arrangement for accounting standards.

$$VAL_NI_c = \beta_0 + \beta_1 STD_QUAL_c + \beta_2 ACCEPT_c + \beta_3 PRE_ENF_c + \beta_4 PUN_ENF_c + \beta_5 D_DEV_c + \varepsilon_{i,t}$$

(Model 3b)

$H_0: \beta_4 > 0$

Where,

PUN_ENF_c: indicates the level of punitive enforcement in a country.

The following model is employed to examine hypothesis 4. It examines the association between value relevance of accounting earnings and accounting institutional environment.

$$VAL_NI_c = \beta_0 + \beta_1 AIE_c + \beta_2 D_DEV_c + \varepsilon_c \quad (\text{Model 4})$$

$H_0: \beta_1 > 0$.

Where,

AIE_c: Accounting institutional environment, a composite variable determined through factorization of GAAP_c, ACCEPT_c, PRE_ENF_c, and PUN-ENF_c. This measure signifies that and accounting institutional environment is by itself a variable comprising of four essential components, the quality of accounting standards, acceptability of accounting standards and the preventive and punitive accounting enforcement mechanisms.

To investigate hypothesis 5 the following models are employed. Hypothesis 5 examines the relative importance of accounting institutional environment and legal environment to the value relevance of accounting earnings.

$$VAL_NI_c = \beta_0 + \beta_1 AIE_c + \beta_2 LEGALSYS_c + \beta_3 D_DEV_c + \varepsilon_c \quad (\text{Model 5a})$$

$$H_0: \beta_1 > 0, \beta_2 > 0, \text{ and } \beta_1 < \beta_2.$$

Where,

LEGALSYS_c: indicates the legal framework followed by the country.

$$VAL_NI_c = \beta_0 + \beta_1 LEGALSYS_c + \beta_2 D_DEV_c + \varepsilon_c \quad (\text{Model 5b})$$

$$H_0: \beta_1 > 0.$$

3.3. Summary

High quality accounting standards create high quality accounting information. Prior studies suggest that accounting standards directly contribute to the computation and quality of earnings. In addition, the quality of accounting standards also influence investors' perception regarding quality of financial reporting, especially earnings information; which is reflected in the equity price. Thus, it is argued that there is a positive association between value relevance of accounting earnings and the quality of accounting standards.

It is argued in the chapter that acceptability and enforceability of standards are essential for the implementation of good quality accounting standard for the purpose of good quality accounting reports. Openness of standard setting and involvement of stakeholders in standard setting bodies, it is argued would, enhance the acceptability of the accounting standards. This could lead to the improvement in the credibility of standards and financial reporting. Hence, it is hypothesized that value relevance of

accounting information is positively associated with acceptability of accounting standards.

Recent studies also highlight the importance of enforcement of accounting standards for creating high quality financial reporting. Based on the views held in the relevant literature, I categorize enforcement into two categories, preventive and punitive method. Preventive regulations can enhance the relevance and reliability of accounting information by requiring the mechanisms that promote the use of accounting standards. These mechanisms would include existence and independence of external auditors and audit committee, and presence of enforceable accounting standards. It is posited in the chapter that the value relevance of earnings is positively related to preventive enforcement of accounting standards as they promote preparation of good quality accounting information.

Punitive enforcement of accounting regulation, it is explained in the chapter, also has a significant impact on the credibility of financial accounting information. The confidence level of investors is likely to increase since any violation of standards would be penalized. This, it is argued, would reduce the uncertainty in the implementation of accounting standards. Therefore, it is argued that value relevance of earnings is positively related to the presence of effective punitive enforcement mechanisms.

A higher quality of disclosed accounting information is determined by high quality and acceptability of accounting standards and the mechanism to enforce the standards. Those components form an accounting institutional environment. Prior theoretical and policy papers state that the quality of accounting institutional environment is important for the quality of published accounting information. High quality accounting standards, acceptability of accounting standards and the enforcement of the standards can result

in a high quality accounting institutional environment. High quality accounting environment can improve investor confidence in the capital markets, and as a result, investors' perception of the financial statements as truly reflecting a firm's fundamental condition. This, in turn, will increase the value relevance of financial accounting information. This argument, therefore, leads to the hypothesis that value relevance of earnings is positively associated with the accounting institutional environment.

I further argue that the impact of high quality accounting institutional environment on the value relevance of financial reporting is stronger than the value relevance of the legal environment because of the more direct impact of the accounting institutional environment on the accounting practice. This leads to the last hypothesis examined in this study that the accounting institutional environment has a stronger positive association with the value relevance of accounting earnings than legal environment has with the value relevance of accounting earnings.

This study is conducted at the country-level. Therefore the variations between a firm's accounting information within the same country reporting environment are not captured. Additionally, another limitation of a cross-country study is that of few degrees of freedom due to smaller sample sizes. The number of sample countries puts constraints on the number of control variables which can be employed in the models. An increasing number of sample countries may provide opportunity to explore other control variables that may affect the relation between the dependent and the main independent variables.

CHAPTER 4

ACCOUNTING INSTITUTIONAL ENVIRONMENT & VALUE RELEVANCE OF EARNINGS

The main variables that were identified for testing the hypotheses in the last chapter are described in greater detail in this chapter. These variables are the quality, acceptability and enforcement of accounting standards. This chapter describes in detail these three variables and how they relate to the value relevance of accounting earnings. The complementarities between these variables leading to the constitution of the accounting institutional environment is also discussed.

In Section 4.1 I discuss the accounting institutional environment, as a composite variable of the three institutional arrangements, and how it affects the value relevance of accounting information. Sections 4.2, 4.3 and 4.4 are dedicated to each of the components of the accounting institutional environment, namely the quality, acceptability and enforceability of accounting standards. Section 4.5 provides the conclusions to the chapter.

4.1. Accounting Institutional Environment

The overall accounting institutional environment (AIE) can be described as a system of accounting regulations, institutions, and mechanisms that involve and contribute to the creation and development of accounting practice in a country. The quality of AIE will be mirrored in the accounting standards and other mechanisms put in place to ensure that the accounting standards are properly implemented. Compliance with the standards depends on the acceptance and enforcement of the standards (Zeff, 1988; Tower et al., 1992). Proper implementation of the standards results in high

quality financial reporting that will be perceived by the investors as truly reflecting the fundamental condition of a firm. This perception will be reflected in the price of a company's equity. Therefore, the value relevance of financial accounting numbers of companies from a country that has high quality AIE will be high.

Many international institutions emphasize the importance of quality, acceptability, and enforcement of accounting regulation to increase the quality of accounting information (SEC, 2000; World Bank, 2000; FEE, 2000; 2001). Explicitly, they state that the existence of a sound infrastructure, such as clear accounting standards, common guidance for implementation of standards, high quality auditing, external supervision to protect investors' interest, and effective sanctions, are required conditions for high quality financial reporting. Awareness of the importance of accounting institutional environment for improving the credibility of financial reporting worldwide will strengthen the architecture of the international financial system (World Bank, 2000).

4.2. Quality of Accounting Standards

Accounting standards, as products of the financial reporting infrastructure, are important for the development of the economy because decisions about capital allocation mostly rely on credible financial accounting information. SEC (2000) states that: *"High quality accounting standards consist of a comprehensive set of neutral principles that require consistent, comparable, relevant and reliable information that is useful for investors, lenders and creditors, and others who make capital allocation decisions"* (p. 3).

To assess the quality of the accounting standards, SEC (2000, p.7) emphasizes that the accounting standards must²:

- a) Result in a consistent application that will allow meaningful comparison of performance across time and companies.
- b) Provide for transparency, so that the nature and the accounting treatment of the underlying transactions are obvious to the user.
- c) Provide full disclosure, which includes information that supplements the basic financial statements, puts the presented information in context and facilitates an understanding of the accounting practice applied.

The issue of quality of accounting standards has received a lot of attention from public investors since standards determine the quality of financial information. Determining the quality of standards is not an easy task. To determine the relative quality of standards, several studies have tried to employ a certain set of GAAP as a benchmark and then they have compared the quality of other GAAPs with the benchmark. US GAAP has been used as a benchmark in cross-country studies by Alford et al. (1993) and Ali and Hwang (2000). Meanwhile, Ashbaugh and Pincus (2001) employ International Accounting Standards (IAS) as the benchmark when investigating whether or not the variation in domestic accounting standards across countries relative to IAS has an impact on the ability of financial analysts to forecast earnings. They noted that there is improvement in analyst forecast accuracy after firms adopt IAS. This finding suggests that firms' accounting information become more predictable following adoption of IAS.

² In an effort to encourage the development of accounting standards to be considered for use in cross-border filings, SEC issued "SEC Concept Release: International Accounting Standards" (2000). In this release, SEC discusses a number of issues related to the infrastructure for high quality financial reporting, which is necessary to modify current requirements for companies that reports using IASC standards. To evaluate the quality of IASs, SEC employed these criteria.

Furthermore, some studies have tried to assess and compare directly the quality of different standards under certain specific conditions. The empirical evidence from German (Bartov et al., 2002) and Swiss companies (Babalyan, 2001) show that accounting earnings prepared under US GAAP demonstrate greater value relevance than earnings prepared under either IAS or German or Swiss accounting standards. The results imply that US GAAP has higher quality compared to IAS, German or Swiss accounting standards. More recent studies, such as Leuz (2003), by comparing earnings under US GAAP and earnings under IAS, provide a different conclusion. The study was conducted under a condition that provides the flexibility for firms to determine which accounting standards they are going to use and for a more recent set of IAS than earlier studies used. Recent IAS are more stringent in limiting accounting choices than earlier IAS. He found that the difference in the bid ask spread and share turnover across IAS and US GAAP firms are small and statistically insignificant. The findings suggest that US GAAP and IASs are comparable sets of accounting standards in reducing information asymmetries in the capital markets. Furthermore, the empirical evidence do not support the claims that US GAAP produce financial reports of higher informational quality than IAS.

Leuz (2003)'s conclusion that IAS provides a high quality accounting standards is supported by other theoretical and empirical studies (Street, 2000b; Schipper, 2000; Ashbaugh and Pincus, 2001; Chen et al, 2002; Garrido, et al., 2002). In addition to high quality of standards, those studies argue that IAS is a convergence of worldwide accounting practices, therefore, IAS could be used as a benchmark comparison across countries. Those studies propose the following reasons for their contention:

- a) The International Organization of Securities Commissions (IOSCO) recommended in May 2000 that the country regulators to allow multi-national issuers to use IAS for cross-border offerings and listings.
- b) The European Commission recently approved a regulation that requires Europe's listed companies to prepare their consolidated financial statements in accordance with IAS from 2005 onward.
- c) The seven largest accounting firms with their partners in International Forum on Accountancy Development (IFAD) have recommended that the national accounting standards be aligned with the IAS/International Financial Reporting Standards (IFRS) serving as the benchmarks. IAS/IFRS are a set of accounting standards promulgated by International Accounting Standards Committee (IASC)/International Accounting Standards Board (IASB)³. IFAD's members include the IMF, IFAC, IASB, IOSCO, OECD, World Bank, ADB, etc.
- d) Regulatory bodies across the world are actively considering how their national accounting standards differ from IAS and how to reduce those differences.

The use of common worldwide approach increases comparability and transparency of accounting information across national borders. In line with IOSCO approval, the European Union (EU) and IFAD also support the use of IAS as a single set of global accounting standards that investors can trust. This facilitates access by not only European companies but also other companies around the world to other capital markets for equity financing (FEE, 2000).

³ Effective 1 April 2001, the IASB assumed accounting standard setting responsibilities from its predecessor body, the IASC. Standards issued by the IASC carry the global name IAS, while the product of IASB is referred to as IFRS. Since I use the standards in 2000 & 2001, the standards are referred to as IASs.

SEC, as a regulatory oversight body responsible for implementing the US GAAP, also encourages convergence towards a high quality global financial reporting framework internationally (SEC, 2000). They argue that as capital markets becoming increasingly global, there is an urgent need for them to increase their involvement in developing a globally accepted, high quality financial reporting framework.

Furthermore, in October 2002, IASB and FASB as standards setters of IAS/IFRS and US GAAP, respectively, acknowledged the issuance of memorandum of understanding (The Norwalk Agreement) marking a significant step toward formalizing their commitment to the convergence of IFRS and US GAAP. Both IASB and FASB commit to the development of high-quality compatible accounting standards that could be used for both domestic and cross-border financial reporting. To follow up their commitment, both IASB and FASB have embarked on a convergence project to remove key differences between the two sets of standards, IFRS and US GAAP⁴.

Following from the above arguments, I employ IAS as a benchmark for comparison of quality of the accounting standards across countries.

4.3. Acceptability of Accounting Standards

Simply designing a set of high quality accounting standards is not enough to ensure that investors will have access to high quality financial reports. Standards will only be upheld if there is acceptability and a clear enforcement mechanism for deliberate noncompliance.

Accounting standard setting can be defined as the process by which rules on measurement and disclosure of account are established (Saudagaran and Diga, 2000).

⁴ Further information about the convergence project can be found in: http://www.fasb.org/project/short-term_intl_convergence.shtml.

The inclusion of the adoption of accounting standards is important because the manner in which the standards are established can have an impact on the level of compliance with the standards (Solomon, 1986; Tower et al., 1992). For example, greater involvement of the preparers in the standard setting process could lead to higher levels of acceptance from them on the standards that are set.

An effective standard setting process to assure acceptability of standards may have the following features (FEE, 2000; SEC, 2000; World Bank, 2000):

- a) An independent accounting standard-setting body,
- b) Independently funded standard-setting organization,
- c) Openness in standard-setting process,
- d) Interpretation guidelines produces by standard-setter or supervisory body.

High quality accounting standards can be produced only by an effective and independent standard setter (SEC, 2000). The quality of standard setter has crucial implications for the development and acceptance of the standards, which involve providing a right response to development of the latest financial transactions in a timely fashion. The independence and status of standard setter have implication on their standards, which in turn affected the quality of financial reporting. Choi and Mueller (1992) argue that if accounting standards are determined by a private sector body, the interests of the preparer would come first and it means it is more likely to deal with the needs of capital providers. If the standard is prepared by the government, it is more likely that the standard will satisfy regulatory needs, for example to fulfill the compliance with government policies and macroeconomic plans. Ali and Hwang (2000) provide empirical evidence that support this argument. They found that for countries where private sector bodies are heavily involved in the standard-setting process, the value relevance of accounting data is higher.

Ball et al. (2000a) provides different argument regarding the status of standard setter. They contend that in code law countries, whereby the law originates from collective planning in the public sector; the government set code law accounting standards. In contrast, the standard setters of all common law countries are independent from government influence. This is because common law, including accounting standards, stems from individual action in the private sector that evolves by becoming generally accepted in practice. As a result, in countries where the private sector is more involved in the accounting standard setting process (such as in common law countries), the accounting standards provide better transparency in terms of timeliness and conservatism, particularly in incorporating losses (Ball et al., 2000a).

The status of the standard-setter will determine how the organization is funded. Government standard-setter body will be totally financed by the government; thus, it is independent from professional body's interest. For a private standard-setter organization, the professional accounting body will contribute heavily to the funding of the standard setter. In this regard, it would not be surprised that the interest of the professional accounting body would come first (Choi and Mueller, 1992); consequently, the standards could be headed toward the accounting profession interest only.

Openness in standard setting process is necessary to ensure the acceptance and appropriate adoption of the standards by the preparers, auditors, and users of financial accounting information (Gerboth, 1973; Zeff, 1988; Rahman, 1991; Tower et al., 1992). Openness in standard setting process means the exposure drafts of the standards are widely distributed to the public and a hearing process is conducted before a standard is issued (Rahman, 1991; FEE, 2000). It is expected that standards which

resulted from this kind of process will be more user-friendly, and this will enhance the reliability and relevance of the standards.

Common guidance about the way in which the standards are to be applied is needed to ensure their proper implementation as well as to provide interpretations in relation to urgent issues that need further clarification (FEE, 2000). These interpretation guidelines are usually produced by the standards setter or a supervisory body, or through an urgent issues task force of the standard setter (FEE, 2000). Such guidance provides clarity in interpreting and implementing the standards to prepare financial reports. Consequently, investors would perceive the financial reports to be more credible and reliable.

4.4. Enforcement Mechanism of Accounting Standards

“Enforcement is a system to whenever possible prevent, and thereafter identify and correct, material errors or omission in the application of IFRS in financial information and other regulatory statements issued to the public” (FEE, 2002a, p.31). Enforcement mechanisms for accounting standards help to ensure that accounting standards are properly adopted and implemented. Thus, they help to ensure that financial reporting reflects the economic conditions of the firms. It can be expected, then, there would not be much difference between the views that the market holds and the information that the insiders have. The following discussion will examine each element of the enforcement mechanism and how it affects value relevance of accounting information. Discussion will be focused on the two different mechanisms of enforcement of accounting standards, preventive and punitive arrangements, introduced earlier in Chapter 3.

4.4.1. Preventive Enforcement

Discussion on the preventive mechanism of accounting standards will be performed according to the elements of financial reporting regulatory infrastructure, namely accounting and auditing standards setters, management of the company, auditor, and supervisory body. This will provide identification of the parties involved in the implementation of the preventive measures.

4.4.1.1. Accounting standard setter

To prevent improper activities relating to the implementation of accounting standards, an effective high quality standard-setter or professional accounting organization should have the following characteristics (FEE, 2000; SEC, 2000; World Bank, 2000):

- a) Authority of standard-setter or professional accounting body to enforce the standards,
- b) Legal backing of accounting and auditing standards,
- c) External quality review performed at regular period.

Authority to enforce the standards is an important attribute for standards setters or professional accounting bodies. It ensures that their standards are implemented and also used as a means to discipline the preparers of accounting reports. Standard setters with the power to enforce will be perceived by the market as authoritative and credible regulatory institutions. As a result, their standards would be perceived as reliable.

A standard, in its legal term, means a guidance to follow which is not obligatory. Hence, to make it mandatory for companies to implement the standards, the standards need legal backing. Legal backing of accounting and auditing standards means there are requirements in the law that support the implementation of the accounting and

auditing standards (Craig and Diga, 1996; World Bank, 2000). In other word, there is recognition that the accounting and auditing standards are legal pronouncements, and not only professional pronouncements. Without legal backing, failure to comply with standards is a disciplinary and not a legal breach. Preparers will tend to follow standards with a legal backing more cautiously to avoid criminal actions. Thus, financial reporting will be more transparent and this will influence the investors' perception regarding credibility of financial information.

The practice of quality review of auditor's work is designed to guarantee the quality of audit of the financial reports (World Bank, 2000; FEE, 2001). Under such practice, the quality control procedures and compliance of all audit practices with ethical, auditing, and accounting standards are monitored. This will provide assurance that a high standard of independent professional work is maintained, which eventually leads to high quality financial reporting. This review may be performed by supervisory body with the professional accounting body or just by the professional organization of accountants.

4.4.1.2. Management of the company

The company managements are responsible for implementing and properly applying generally accepted accounting standards in preparing the financial statements (Rahman, 2000; SEC, 2000). A statement of this responsibility in the law will provide a legal backup for investors to bring a lawsuit against the management negligence. This eventually will create a business environment that requires preparers of financial reports to comply with the accounting regulations and increase the reliability of financial statements.

The existence of an audit committee provides a bridge between management and shareholders in the areas of external financial reporting and internal control (PwC, 1999; Saudagaran and Diga, 2000). The audit committee can help to ensure that high quality financial reports are produced by management through reinforcement of the independence of external auditors. Wild (1994) demonstrates that the magnitude of the market's reaction to earnings reports is significantly greater after the formation of the audit committee, suggesting that the audit committee improves the quality of reported accounting earnings.

4.4.1.3. Auditor

Auditors are responsible for providing assurance for compliance of the preparers with the established accounting standards (Rahman, 2000; SEC, 2000). Without competent, independent audit firm and high quality auditing procedures to support the implementation of accounting standards, the accounting standards may not be properly applied, resulting in a lack of transparent, comparable, and consistent accounting information. Therefore, there should be a system to ensure quality in performance of auditing engagements. Necessary elements of the system may include (Saudagaran and Diga, 2000; SEC, 2000; World Bank, 2000; Sarbanes-Oxley Act, 2002):

- a) Requirement of audited financial statements by law,
- b) Practical training requirement for obtaining license as auditor,
- c) Continuing professional education requirements,
- d) Mandatory rotation of auditors,
- e) Restrictions on non-audit service,
- f) Disclosure of audit fee,
- g) Disclosure of non-audit fee,
- h) An independent auditing standard-setting body,

Requirement of audited financial reports of publicly listed companies by law increase its credibility. To investigate whether audit opinion has value and related to the credibility of financial reports, Choi and Jeter (1992) showed that the market's responsiveness to earnings announcements declines significantly after the issuance of qualified audit reports.

The issue of trust in accounting service is important for the auditors. This issue includes the production of trust in the competence of the service and trust in its probity (Donabedian, 1993). For the enhancement of trust in the competence of service, training requirement for obtaining a license to provide audit service and continuing professional education requirements play a significant role. For the production of trust in the probity of accountants, the enforcement of professional ethics code may play a part. The issue of trust is also related to the quality of assurance service provided by the auditor (SEC, 2000). Practical training requirement as well as continuing professional education requirement will enhance the auditor's quality as provider of assurance services. High quality assurance service will provide more confidence to investors to make well informed decisions based on reliable audited financial statements (FEE, 2002b).

The main function of auditor is to alleviate an agency problem between investors as the principals and management as the agent. Thus, independence is a crown for auditor. Recent accounting scandals in the US raise concern regarding the independence of auditors. Many measures have been introduced to safeguard the auditors' independence when conducting their works, for instance: mandatory rotation of auditors, restriction on non-audit service, disclosure of audit fee, and non-audit fee (FEE, 2002b; ICAEW, 2002; ICANZ, 2002; Sarbanes-Oxley Act, 2002). It is expected

that increase in the auditors' independence will increase the investors' confidence in the audited financial reports.

Mandatory rotation of auditors is deemed necessary to safeguard the threat of excessive familiarity (ICAEW, 2002; ICANZ, 2002; Sarbanes-Oxley Act, 2002). It is believed that auditor independence will be strengthened if companies were forced to replace their auditor after a fixed number of years. This is because it would place pressure on audit firms to maintain high standards of audit for fear that its work would in due course be subject to examination by a successor audit firm. Consequently, the audit quality will improve and it will increase the credibility of audited financial statements.

The provision of non-audit services by auditors to audit clients is considered to be a threat to auditor independence (ICAEW, 2002; ICANZ, 2002; Sarbanes-Oxley Act, 2002). As auditors know well about the dynamic of business, they may offer non-audit services to their audit clients; and this may be perceived by public investors as a sign that compromise their independence. This may lead to lower credibility of audited financial reports.

Disclosures of audit fee and non-audit fee are also believed as necessary measures to safeguard auditors' independence (ICAEW, 2002; ICANZ, 2002; Sarbanes-Oxley Act, 2002). Although such disclosure does not allow investors to decide whether the auditors compromise their independence, at least it facilitates public investors to evaluate the nature and value of the non-audit services provided by the auditors. Hence, this practice will enhance the financial reports' credibility.

4.4.1.4. Supervisory body

Active regulatory oversight (oversight by the government supervisory authority, and self-regulatory organization) plays a significant role in the implementation of accounting standards (Zeff, 1995; Saudagaran and Diga, 1997; Rahman, 2000; SEC, 2000; FEE, 2001). An effective supervisory body may have characteristics as follows (Saudagaran and Diga, 1997; 2000; FEE, 2001):

- a) Existence of institutional oversight mechanism for financial statements,
- b) Authority to enforce accounting and auditing standards,
- c) Authority to issue regulation regarding financial reporting,
- d) Mechanism for imposing sanctions on violators,
- e) Proactive approach of enforcement orientation,
- f) Require publication of financial statements in newspapers,
- g) Require submission of annual and quarterly financial reports,
- h) Requirement for continuous disclosure obligation.

The existence of an institutional oversight mechanism system contributes to the effectiveness of enforcement of accounting regulation (Zeff, 1995; Saudagaran and Diga, 1997; Rahman, 2000; SEC, 2000; FEE, 2001). This regulatory oversight authority strengthens the application of accounting standards by registrants and their auditors in a systematic and consistent manner. It also supports a high quality audit function as well as promotes high quality financial reporting. The institutional oversight system for the enforcement of accounting regulation differs from country to country and may not exist in all countries (FEE, 2001). Different types of institutional oversight mechanism for listed companies affect the way they enforce the regulation. Nevertheless, the existence of regulatory oversight helps improving the relevance and reliability of financial accounting information.

Authority of supervisory body as institutional oversight mechanism to enforce accounting and auditing standards is crucial (Saudagaran and Diga, 1997; FEE, 2001). Regulatory authorities monitor compliance of public companies with generally accepted accounting principles and take necessary measures against non-compliance (Rahman, 2000). This authority will influence market perception regarding the quality of financial reporting.

Authority of securities regulatory body to establish accounting standards, such that to supplement, override or amend private sector accounting standards will influence the quality of financial reporting (SEC, 2000). With such authority, the oversight body may differentiate accounting requirements for public companies and non-public companies. As public companies obtain public funds from numerous investors and also in line with its function to protect investors' interest, regulatory oversight body may impose stronger accounting standards and reinforce its implementation. Consequently, investors should perceive financial reporting of public companies in markets with regulatory oversight having this authority to have higher quality.

Formal mechanism at the regulatory bodies to impose appropriate penalties for violation is necessary to create incentives for companies to comply with the regulation (FEE, 2001). Without clarity in mechanism to determine the existence of violation in accounting regulation and to impose sanction on violators, it will give the wrong signal to the market that people can manipulate the regulation without fear of being punished. Thus, the existence of formal mechanism to impose sanctions may influence investors' perception to judge the seriousness of regulatory body in enforcement of accounting standards and associated rules.

In several countries, the supervisory body proactively monitors the capital market activities and takes necessary actions to prevent unlawful activities (FEE, 2001;

ICANZ, 2002). This means they systematically review the listed companies' financial information and if they find mistakes they may require the listed companies to restate their financial reports. On the other hand, the supervisory body may just react to a case which is drawn to its attention. The way the supervisory body monitors the financial information may affect investor perception. Proactive approach of enforcement accounting regulation may result in high quality financial reporting, and thus, induce positive perception to investors.

Supervisory or regulatory bodies may require publication of company's financial statements in newspapers to encourage transparency (KPMG, 2001). Widely distributed financial information makes it easier for investors to assess the listed companies' performance. Publication of financial statements in newspapers provide easy, cheap, and widely accessible information for investors to make well-informed decision making; which in turn encourage them to make more investment in capital markets. It is expected that this measure will reduce the gap between financial information and equity price.

Theoretically, more frequent reporting should reduce surprises to the market that come about through less frequent reporting as well as increasing transparency (ICANZ, 2002; PwC, 2002). In addition, the accuracy and timeliness of financial reporting that has been highlighted recently as the changing economic conditions have caused companies to issue the financial information more frequently (ICANZ, 2002; PwC, 2002). However, quarterly reporting would entail a greater level of compliance costs.

Continuous disclosure requirement is related to obligation of publicly listed companies to disclose price-sensitive information as soon as possible (PwC, 2002). This practice encourages listed companies to respond to market rumors and price

movement continuously. It is expected that such practice will bring stock prices closer to the company fundamentals.

In brief, implementation of the above preventive measures makes the accounting information production process is being monitored by the auditors and the supervisory body. This process will provide positive influence on the market perception regarding the quality of accounting information being produced, and consequently, would improve the association of the accounting information with the equity price.

4.4.2. Punitive Enforcement

Discussion on punitive enforcement is focused on two aspects: enforcement against officers, directors and the company and enforcement against auditors.

4.4.2.1. Enforcement against Officers, Directors, and Company

Incidents of punitive actions being enforced on officers, directors or listed companies are expected to signal important messages about the financial conduct or reporting by the public companies violating the market regulation. Prior studies show that enforcement target companies are associated with negative abnormal returns (Feroz, Park, and Pastena, 1991). This decline in returns is positively associated with the relative income impact of the accounting dispute.

Disclosure of enforcement actions may produce negative equity price responses since the litigation may signal future legal costs of litigation (Nourayi, 1994). The practice of 'naming and shaming' may form an effective element of the enforcement mechanism as well as the deterrence effect from such practice (FEE, 2001). Previous enforcement studies support this argument by providing evidence that announcement of investigations is associated with a negative market response (Feroz, et al., 1991; Nourayi, 1994). This violation had larger negative price impacts if the company or the

press reaction comes prior to the regulatory body announcement. Furthermore, the stock price responses to litigation releases directly related to the severity of the enforcement actions. This means that enforcement actions against a company and its disclosures directly influences the investors' perception regarding the company's performance.

4.4.2.2. Enforcement against Auditors.

An audit firm receiving legal action faces a number of different costs, such as legal fees, sanction fees, and impairment of auditor reputation due to the negative publicity of the litigation process (Rollins and Bremser, 1997). Rollins and Bremser (1997) provide empirical evidence that audit firm characteristics and type of financial reporting violations related to the enforcement actions against auditors, specifically by regulatory body. Larger audit firms have a lower likelihood of enforcement actions. Their study was based on real enforcement actions taken by US SEC which issue Accounting and Auditing Enforcement Releases (Rollins and Bremser, 1997).

The result of the study suggests that the risk of public and press reactions to publication of auditor misconduct would provide pressure on auditors to avoid having their reputation damaged (FEE, 2001). Thus, the real enforcement actions and its publications can have a positive impact on the proper implementation of accounting and auditing standards, which leads to more reliable financial reporting.

4.5. Summary

Accounting institutional environment plays a major role in shaping the accounting practice in a country. This environment is depicted as a financial reporting structure consisting of high quality accounting standards, an open standard setting process encouraging acceptance of standards and an effective enforcement system. The quality

financial reporting infrastructure is reflected in accounting standards and mechanisms to ensure proper application of the standards. High quality financial reporting environment will make investors perceive financial reports as truly reflecting a firm's fundamentals condition. This in turn will increase the value relevance of financial accounting numbers of company from that country.

Prior studies concerning accounting standards show that value relevance of earnings number is related to quality of accounting standards. As standards regulate all aspects of income statements, different qualities of standards will result in different qualities of accounting information. Investors' perception will be influenced directly by the quality of account information.

Acceptability of standards is important to ensure proper implementation of the standards. Openness and greater involvement of the preparers in the standard setting process could lead to higher levels of acceptance of the standards. In addition, independence of the standard setting body and participation of private sector in the standard setting body also influences the acceptance of the standards by the preparers and users of accounting information. High levels of the acceptance of the standards will results in high quality accounting information which will directly influence the value relevance of accounting information.

Enforcement arrangement of accounting standards plays a key role in adoption and proper implementation of accounting standards. Improper application of accounting standards may mislead the users of financial reports. Thus, the mechanism to impose sanctions on violation of regulations is important for development of high quality financial reporting. Prior studies demonstrate that each element of effective accounting and auditing standard setting and enforcement relate and contribute to the value relevance of accounting numbers.

Many institutional organizations have conducted studies to assess the level of enforcement of accounting standards across countries in their area of jurisdiction, and some prior studies have also tried to develop a measure for assessing accounting enforcement. This study tries to extend these prior studies by combining the results of both lines of studies to develop indexes of accounting acceptability and enforceability of accounting standards. The indexes are employed to measure the level of acceptability and enforcement of accounting standards in a country. These indexes, then, are combined into a single summary measure of accounting institutional environment, which reflects the combined effect of the three institutional arrangements on accounting practice and eventually the relevance and reliability of accounting information.

CHAPTER 5

RESEARCH METHOD

This chapter describes the research method adopted for the test of the hypotheses posited in Chapter 3. Since the independent variables whose influences on value relevance are to be tested are country level variables, I propose tests for the hypotheses using country level measures of value relevance of accounting earnings. Accounting earnings is used as a proxy for accounting information in this study. I follow prior studies dealing with cross-country measures of value relevance to design my measures of value relevance. The sample selected for the tests are countries. However, the computations of value relevance of countries are based on actual firm level data. For the measurement of institutional and control variables, I follow the concepts laid down in chapters 3 and 4.

This chapter is set out as follows. In Section 5.1., I describe how the independent variables were computed. In Section 5.2., I show the computations of value relevance. The sample selection is described in Section 5.3. Section 5.4 provides a summary for the chapter.

5.1. Independent Variables Measurement

5.1.1. Accounting Standards

Since this is a cross-country study, the quality of accounting standards of a country is assessed through a comparison of the accounting standards of the country with a benchmark. This study, as explained earlier in Chapter 4, employs IAS as a benchmark for this assessment.

GAAP 2000 and GAAP 2001 reports are used in this study to prepare an index of quality of accounting standards. These reports contain summary comparisons of national accounting standards against IASs. Since the comparisons are with IASs, we can consider the comparisons as measurements against an international benchmark of accounting standards quality. GAAP 2000 and 2001 are surveys based on the responses of partners of the seven largest accounting firms in 53 and 62 countries, respectively. They focus on standards in force for the financial reporting period ending December 31,2000, and December 31,2001. These partners made assessments of how local accounting standards in their countries compared with IASs on approximately 60 and 80 key accounting measures in GAAP 2000 and GAAP 2001, respectively. Although the survey method may be considered as subjectivity, the measures emanating from the survey are reasonably reliable because they are the outcome of the views of several senior accounting professionals.

The basis of measuring the quality of accounting standards across countries in this study is the distance of country accounting standards from the IASs. The GAAP 2000 and GAAP 2001 reports provide a measure of this distance for each of the sample countries. In the GAAP 2000 and GAAP 2001 reports, the differences of country accounting standards from IASs are determined based on:

- A) the absence of specific national rules on recognition and measurements on an accounting issue
- B) the absence of specific rules for a particular item of disclosure
- C) inconsistencies between national and IAS rules that could lead to differences for many enterprises in certain areas of accounting
- D) other issues, in certain enterprises, that could lead to differences of practice from IAS stipulated practice.

I regard these differences as type A, B, C, and D, respectively. Examples for type A difference cited in GAAP 2000 and 2001 are capitalization of leases and measurement of impairment of assets. Examples for type B are disclosure of earnings per share and segment reporting. For type C, examples are extraordinary items being defined more widely than the IAS and hedge accounting allowed under different criteria. Type D examples are lessors recognizing finance lease income on the basis of net cash investment not the net investment, or that there are no requirements concerning the translation of the financial statements of subsidiaries in hyperinflationary countries.

The number of items in a country summary in the two reports or the total number of differences mentioned in the reports is not a sufficient indication of the extent of variation between national accounting standards and IAS. In developing the index of accounting standards quality, the type of difference is given weight according to the importance of the difference. The importance of the difference is based on the possible impact of the deviation of national accounting standard from the corresponding IAS. In this regard, "the absence of specific national rules on recognition and measurements" (type A difference) is considered to have the largest impact on the financial statements presented, while "other issues in certain enterprises that could lead to differences from IAS" (type D difference) is considered to have the least influence on accounting information. The weights given to each type of difference are as follows:

Weight	Type of Difference
4	the absence of specific national rules on recognition and measurements
3	the absence of specific rules on disclosure
2	inconsistencies between national and IAS rules that could lead to differences for many enterprises in certain areas
1	other issues, in certain enterprises, that could lead to differences from IAS

The summary regulation scores based on GAAP 2000 and GAAP 2001 are in Table 5.1. The final score is the average of the scores of GAAP 2000 and GAAP 2001. For instance the calculation of the index value for Argentina, the difference of its national standards from IAS in year 2000 for type A, B, C, and D are 8, 4, 14, and 8 respectively. These differences are then multiplied by the weights for each type of difference. Thus, the total difference for Argentina for year 2000 was 80. The same procedure was performed for year 2001, resulting in a total difference of 101. The total differences of Argentina national accounting standards from IAS for year 2000 and 2001 was averaged and this resulted in the index value of 90.5. On the whole, the larger the index value for a country is the greater is the difference between its national accounting standards and IAS. With the IAS being a benchmark for quality accounting standards, these indexes indicate the level of quality of accounting standards in a country.

The purpose of the country regulation measurement exercise is not to determine accurate measures of accounting standards quality. In any case due to the nature of what constitutes accounting standards, such measures tend to be inherently subjective. The differences in the scores simply signify a ranking of the quality of the accounting standards around a particular time zone. I, therefore, rank the scores in a descending

sequence whereby the lowest score gets a rank of 1 and others follow thereafter. For example, Switzerland, with the largest score of 106 is assigned the lowest rank of 1, Poland with a score of 99.5 is in the second lowest rank of 2, and Greece a with score of 95 is in the third lowest rank of 3. Therefore, the higher the rank for a country, the better is the perceived quality of accounting standards in that country relative to IAS.

For final regressions, the ranks of the index value for measuring accounting standards were mean centered to reduce multicollinearity (Neter et al., 1996). Mean centering of predictor variable is also useful to reduce the effects of outliers in the sample data.

5.1.2. Acceptability and Enforceability of Accounting Standards

Discussion on the measurement of the acceptability and enforceability of accounting standards are divided into two parts. First, I discussed the development of the indexes and then I describe the data collection process. After that, I describe the composition of the indexes.

5.1.2.1. Development of the Indexes of Acceptability and Enforceability of Accounting Standards

Three indexes were developed to measure how the accounting standards are established and enforced in a country (see table 5.3). The first index related to the process of adoption of accounting standards (ACCEPT). The second and third indexes measured the preventive (PRE_ENF) and punitive enforcement (PUN-ENF) arrangements for accounting standards. The main sources for the items for these indexes were an index of enforcement methods developed by Saudagaran and Diga (2000), elements of financial reporting structure discussed in Rahman (1994), Rahman (2000), SEC (2000), and Ball (2001), assessment of accounting standard setting and

enforcement mechanism in Europe identified in FEE (2000 and 2001), and a questionnaire for assessing accounting and auditing environment used by World Bank (2000).⁵ With the range sources considered, it is expected that the indexes will provide a comprehensive assessment of the differences between adoption and enforcement of accounting standards in the sample countries.

Consideration to include an item in the indexes is based on prior studies that show whether or not the item is beneficial to establish acceptable accounting standards or enforce accounting standards and associated rules in the capital market or reinforce the implementation of financial reporting standards, which leads to a high quality financial reporting environment. In other words, each item in the indexes has direct implications for the value relevance of accounting information.

The assessment of accounting standards adoption and enforcement in each country is conducted by providing a dichotomous measure (1 for yes, and 0 for no) for each item mentioned in the indexes identifying whether or not the country has the item. The indexes are computed by equally weighting the 33 acceptability and enforceability-related items for each country. The scores for all items in the indexes were then added to determine the level of acceptability and enforceability of accounting standards in that country. Thus, the larger the value of the indexes, the better the acceptance and enforcement of accounting standards is in the country.

To operationalize the indexes, this study obtained support from three Big-4 accounting firms, PricewaterhouseCoopers, Ernst and Young and Deloitte Touche

⁵ This questionnaire is a diagnostic tool to support the review of observance with accounting and auditing standards in a number of countries, which is part of the Reports on the Observance of Standards and Codes (ROSC). The review is aimed to assess the comparability of national accounting and auditing standards with IAS and International Standards on Auditing (ISA), respectively; and the degree to which corporate entities adhere to the extant accounting and auditing standards in the country. For an update of ROSC see the website: (http://www.worldbank.org/ifa/rosc_aa.html)

Tohmatsu. These accounting firms distributed the indexes through their network firms around the world to obtain a first-hand assessment of accounting adoption and enforcement in the sample countries. The countries covered were those of GAAP 2000. 51 responses were received from 34 countries. The responses received were used as a starting point to develop the indexes of acceptability and enforceability of accounting standards.

The data received for the indexes were then checked with the published information (e.g. FEE, World Bank and ADB). Such published information included reports assessing accounting standard setting and enforcement in different countries. If information in the response received was different from the information available from published documents, information in the published document was used. If there was no information in the published document to justify the response received, information of the response was employed in the indexes.

For European countries, the main published sources employed were the publications of FEE and KPMG. FEE conducted a survey on accounting standard setting in Europe (FEE, 2000) and enforcement mechanism in Europe (FEE, 2001) to obtain a better understanding of the structure of accounting standard setting and enforcement systems in Europe as well as to accomplish a target for the establishment of an effective enforcement arrangements for IFRS at latest by 2005 (FEE, 2002a). KPMG with the main editor Dieter Ordelheide published Transnational Accounting to provide an understanding of accounting regulation and practice that were embedded in a country's legal and institutional framework (KPMG, 2001). It covered not only European countries, but also some developed countries such as: Argentina, Canada, USA, Australia, and Japan. For some Asian countries, ADB published a report on financial management and governance issues in selected developing countries which

described accounting and auditing arrangements and practice in those countries (ADB, 2000a; 2000b). World Bank along with International Monetary Fund (IMF) has embarked on a joint pilot exercise preparing "*Reports of the Observance of Standards and Codes*" (ROSCs). As part of the ROSCs, World Bank undertook reviews of observance with accounting and auditing standards in a number of countries, such as the Philippines, Poland, and South Africa.

Following the aforementioned, every item in the indexes was checked with the information published in the websites of the country's accounting and auditing standard setters, professional accounting body, supervisory body, and the stock exchange. In addition, where necessary, published information data for the sample countries were obtained from big public accounting firms, research journals and other sources to validate the information included in the acceptability and enforceability indexes.

The use of many sources for gathering information increases the validity of the data collected. However, it may also create some problems, especially if the information is different from different sources. For example, there was some ambiguity in determining the independence of the auditing standard setting body in Netherlands. The auditing standard setting organization there was considered to be independent if it was not part of the professional accounting body. Although a guidance to fill in the indexes was provided, the responses received indicated that they were independent. An examination of KPMG (2001) showed that the auditing standards were determined by the Royal Netherlands Institute of Chartered Accountants (Royal NIVRA), a professional body for chartered accountants. In other words, the standard setter was not independent.

Another problem with the assessment of accounting regulation enforcement was to ensure that the arrangements mentioned in the indexes were for the period 2000-2001. Recent accounting scandals in the US as well as developments in financial industries have led to the strengthening of regulations regarding auditor independence, audit committee, independence of accounting standard setter, and establishment of regulatory body for various financial industries in some countries. This causes changes in regulations that took place after 2001. Some responses referred to these recent regulations in the indexes, but they were ignored as they did not relate to my data period.

Another difficulty involved the assessment of accounting enforcement including obtaining information regarding the punitive actions. Usually that kind of information could be obtained from annual reports of regulatory body or accounting professional organization, but organizations in some countries did not disclose the punitive information or the websites of those organizations were not in English. For this information, I mostly relied on the information provided by the respondent.

Since enforcement arrangements constitute a complex organizational system it is impossible to set up a linear measurement scheme to measure its effectiveness. In this regard my measurement scheme is simply a means of ranking countries into countries with more or less effective adoption and enforcement arrangement for accounting standards. Therefore, I converted the index scores to ranks (Sekaran, 2003). For the purpose of empirical tests, the countries were also ranked using the scores for acceptability, preventive arrangement and punitive arrangements of accounting standards. The higher the rank for a country index, the better would be the country's acceptability of accounting standards or enforcement of accountings standards. The ranks were mean centered for the empirical analyses.

5.1.2.2. Composition of the Indexes of Acceptability and Enforceability of the Accounting Standards

To determine the composition of the indexes of acceptability and enforceability of the accounting standards, a reliability analysis was conducted. The reliability analysis procedure calculates the extent to which the items in the questionnaire are related to each other and also provides internal consistency of the scale as a whole (Hair et al., 1995). Hair et al. (1995) define *"Reliability is a measure of the internal consistency of the construct indicators, depicting the degree to which they "indicate" the common latent (unobserved) construct"* (p. 641).

Model of internal consistency used in this study was Alpha (Cronbach), which is based on the average inter-item correlation. The recommended threshold value for acceptable reliability is 0.70, even though values below 0.70 have been considered acceptable if the research is exploratory in nature (Hair et al., 1995). Another measure of reliability, called the Variance Extracted Measure, suggest that the value should exceed 0.50 for a construct.

As discussed earlier, there are four primary elements of financial reporting regulatory infrastructure. The elements include accounting and auditing standards setters, management of the company, auditor; and supervisory body. Various accounting literature have notified the important role of financial reporting infrastructure in enhancing the quality of accounting information (Rahman, 1994; ADB, 2000; Rahman, 2000; SEC, 2000; World Bank, 2000; Ball, 2001; FEE, 2001).

At first, the indexes of acceptability and enforceability of accounting standards was developed as one index by considering the four elements of accounting regulatory infrastructure (see Appendix 2). The index was divided into two main parts. The first

part of the index consisted of 5 items relating to the process of adoption of accounting standards. The second part of the index consisted of 28 items relating to the enforceability of accounting standards. Saudagaran and Diga (2000) stated that enforcement method can be classified into preventive (ex-ante) and punitive (ex-post) enforcement. Following this classification, preventive enforcement consisted of 21 items, and punitive enforcement consisted of 7 ex-post enforcement actions. Furthermore, the preventive enforcement items were classified according to the elements of financial reporting infrastructure. The purpose was to facilitate identification of the parties involved in the accounting regulation enforcement process. Thus, preventive measures were divided into 4 subsections: accounting and auditing standards setter (3 items), management of the company (2 items), auditor (8 items), and supervisory body (8 items).

Based on this classification, the Alpha (Cronbach) was computed (see Appendix 3). Overall, the Alpha value for the whole index of acceptability and enforceability of accounting standards was 0.5484. This Alpha value was considered to be acceptable, since this exercise is an investigation into the nature of the acceptability and enforcement index. This suggests that there is reasonable internal consistency in the index. This also means the relation between individual items in the index are homogenous and reliable.

However, the Alpha values for several subsections of the index, especially preventive measures, were quite low. For instance for management of the company it was 0.000 and standard setters it was 0.1085. The low Alpha values indicated the lack of cohesiveness of the items in those subsections. Considering that the Alpha value for acceptability part (0.3056 for 5 items) was tolerable, consequently, only the enforceability index was rearranged to improve coherence.

A rearrangement of the index was done by reforming preventive and punitive enforcement index. The preventive enforcement arrangements for accounting standards consisted of 16 items, and the punitive enforcement consisted of 12 items (see Table 5.3). The reliability analysis of PRE_ENF (see Table 5.4) was quite low (-0.0075), which suggest the lack of cohesiveness of elements of PRE_ENF. Further investigation of the items that made up PRE_ENF suggested that there were two main sub-components, namely AUDITING and SUPERVISION. The Cronbach Alpha of both AUDITING and SUPERVISION were 0.3717 and 0.2690, respectively. This suggested that PRE-ENF consisted of different preventive rules, the auditing rules and the supervisory body rules. The results also mean that AUDITING and SUPERVISION, in fact, move in different directions because when they were combined it results in low Cronbach Alpha for PRE-ENF. After some rearrangements of the preventive items into the punitive index, the Alpha statistic for punitive measure increased slightly from 0.7021 to 0.7111, which is above the acceptable Alpha level of 0.70. This suggests the cohesiveness of the punitive measure was made up of related items.

Based on this rearrangement of the indexes, the final indexes for acceptance and enforcement of accounting standards across 35 sample countries can be seen in Table 5.5.

5.1.3. Accounting Institutional Environment (AIE)

As discussed in Chapter 3, quality, acceptability, and enforceability of accounting standards are components of the composite accounting institutional environment. Those variables, therefore, are reduced to a single variable to represent an overall measure of the accounting institutional environment or AIE. The quality (STD_QUAL), acceptability (ACCEPT), and enforceability (PRE_ENF and

PUN_ENF) variables were factorized to arrive at Accounting Institutional Environment (AIE). The variables of STD_QUAL, ACCEPT, PRE_ENF, and PUN-ENF, had been ranked and mean centered before they were factorized. STD_QUAL, ACCEPT, PRE_ENF, and PUN-ENF had different loadings into AIE (factor loading of 0.542, 0.385, 0.156, and 0.569, respectively), however they were all positively loaded into AIE.

The variable AIE as well as its rank for each country are shown in Table 6.1. On the whole, US has the highest AIE (1.933) followed by the UK (1.719), and Austria (-1.846) has the lowest value of AIE followed by Greece (-1.436). A high AIE means that, overall, the quality of a country's accounting institutional environment is more effective than the ones with low AIE.

5.1.4. Control Variables

As mentioned in the previous chapter, a control variable representing country and market level influences is employed in this study. The control variable used was the classification of the countries into developed or emerging categories. This broad variable would control for both national, market and other omitted variables at the country level.

The classification of a country as a developed or emerging country reflects the country's level of economic development. The classification is based on whether the country's average Gross National Income (GNP) per capita in year 2000 and 2001 is above or below the World Bank's threshold for "high income countries" (US\$ 9,206 in 2001)⁶. Prior studies employing similar market classification show that more developed countries have higher levels of disclosure than emerging countries (Salter, 1998). Salter (1998) explaining that the level of national income may impact not only

⁶ Based on "2002 and 2003 World Development Indicators".

on the ability of a country to have more extensive disclosure regulation but also to afford the establishment and enforcement of extensive disclosure regulation. La Porta et al. (2000) support this argument and demonstrated that the quality of legal enforcement is higher in more developed countries. This suggests that more developed countries tend to have higher quality of financial reporting standards which could make financial reporting more credible and reliable.

5.2. Value Relevance of Accounting Earnings

The dependent variable employed in this study is the value relevance of accounting earnings. Accounting earnings is a common proxy for accounting information in the value relevance literature. To measure value relevance, a hedge-portfolio return approach is employed following Alford et al (1993), Francis and Schipper (1999), Ali and Hwang (2000), and Hung (2001)⁷. Basically, this approach measures the value relevance as the total return that could be earned from a portfolio based on perfect foresight of earnings. Prior research showed that the use of this method is better in handling market volatility across markets and years compared to the regression approach (Francis and Schipper, 1999; Hung, 2001). Therefore, the hedge portfolio approach is preferable for cross country studies. However, unlike prior studies (Alford et al., 1993; Francis and Schipper, 1999; Ali and Hwang, 2000; Hung, 2001) that employ 15-month compound returns ending 3 months after the fiscal year-end, I employ 12 months return lagged by 3 months. The 12-month window allows comparison of the value relevance with the one-year value relevance of earnings surrounding the securities/companies law required date for disclosure of earnings. The

⁷ The hedge portfolio method used to compute the dependent variable eliminates the need to include the time and firm dummies in the model employed

3-month lagged 12-month window also allows for a better match between the annual earnings with annual returns.

Following previously mentioned studies, the procedure to calculate value relevance of accounting earnings for a country is as follows:

- 1) Data was gathered for multiple years, 7 years (1995-2001), for each country. The data included net income before extraordinary items, beginning of year market value of equity, one year market return for period spanning 9 months before and 3 months after the fiscal year end.
- 2) Earnings, change in earnings and market adjusted returns were then calculated. The earnings (NI) were the reported earnings before extraordinary items deflated by the beginning-of-year market value. Market-adjusted return refers to the stock return minus the return on the equally weighted market portfolio in the company's country.
- 3) For every country, earnings portfolio was formed and the return for earnings portfolio was calculated for each year. Earnings portfolio refers to the equally weighted hedge portfolio formed on the basis of change in earnings that is long positions with the highest 40% of earnings change stocks in the given country sample, and short positions in the lowest 40% of earnings change stocks of each year. To calculate return for earnings portfolio, companies were first ranked based on change in earnings. Next, the adjusted stock return were computed for the portfolio, which is the return for stocks in the top 40% minus the bottom 40% and then scaled by the number of companies included in those 80% of stocks. The result for year 1996 can be seen in Table 5.6 Panel A Column 3.

- 4) Adjusted returns (AdjRet) portfolio was created and the return for this portfolio was calculated for each year in every country. AdjRet portfolio refers to the equally weighted hedge portfolio formed on the basis of AdjRet that is long positions with the highest 40% of AdjRet stocks in the given country sample, and short positions in the lowest 40% of AdjRet stocks of each year. To calculate return for AdjRet portfolio, at first companies were ranked based on AdjRet. Next, I computed the adjusted stock return for the portfolio that is the return for stocks in top 40% minus the bottom 40% and then scaled by the number of companies included in those 80% of stocks. The result for year 1996 can be seen in Table 5.6 Panel B Column 10.
- 5) Steps 3) and 4) were repeated for every year during the sample period. Then the yearly earnings portfolio returns were averaged to obtain the average return for the earnings portfolio for a country (Table 5.6 Panel A column 9) and the yearly AdjRet portfolio returns were averaged to obtain average return for the AdjRet portfolio (Table 5.6 Panel B column 16).
- 6) Finally, value relevance of earnings number was calculated. This number (Table 5.6 Panel B column 17) was the average market-adjusted return for the earnings portfolio (Table 5.6 Panel A column 9) scaled by the average market-adjusted return for the AdjRet portfolio (Table 5.6 Panel B column 16).

The value relevance of earnings numbers for the 35 sample countries is employed as the dependent variable in the final regressions for examining the hypotheses.

5.3. Sample Selection

Similar to Alford et al. (1993), Ali and Hwang (2000), and Hung (2001), this study examines value relevance at the country level using firm level data. My initial country

sample comprised of 52 countries surveyed in GAAP 2000. These 52 countries were also surveyed in GAAP 2001. Both GAAP 2000 and GAAP 2001 reports were used as sources for quality of accounting standards. The availability of data for acceptability and enforcement of accounting regulation indices for each country, discussed in section 5.1.2., was essential for keeping a country in the sample. Another requirement for including a country in the sample was the adequacy number of company data in the Global Vantage database to calculate the value relevance of earnings.

The total number of responses received from three Big-4 accounting firms network was 51 from 34 countries, which means some countries had more than one response. To increase the number of sample countries, 9 more countries included in the GAAP 2000 were added to the sample. This was conducted by assessing the acceptability and enforcement mechanism of accounting standards in those countries using the published information available. The additional countries included in the sample as a result of this assessment, consist of Belgium, Canada, Finland, France, Italy, Portugal, Switzerland, South Africa, and USA.

The country sample selection took place as follows:

Number of country in GAAP 2000	= <u>52 countries</u>
Number of responses from 3 Big-4 accounting firms (51 responses)	= 34 countries
Add: Assessment of the acceptability and enforceability indexes	= <u>9 countries</u>
Total number of countries identified	= 43 countries
Less: Country with small number of companies in Global Vantage	= <u>8 countries</u>
Total number of sample country	= <u>35 countries</u>

The Global Vantage database was used for the period 1996-2001. Observations after 2001 were not available at the time of this study. Observations before 1996 were considered to be too remote from the average score of GAAPs for 2000 and 2001 and

the acceptability and enforceability scores which were approximately representative of the conditions around 2000 and 2001. Although the most recent data would be more applicable to the period for which GAAP and acceptability and enforceability data were used, use of about six years data was deemed necessary to have data free from biases pertaining to each year. For example, 1996-1998 were bad years for Asian countries whereas 1999-2001 were low performance years for North American and European countries. Inclusion of data from only a few years would lead to biases caused by macro economic conditions of a country or of the world.

Each firm-year observation was required to satisfy the following requirements. First, the firm-year samples were to include only industrial firms (SIC code 2000-3999 or 5000-5999). This constraint was needed for sample homogeneity and for comparing results of this study with those of prior studies. Prior studies such as Alford et al. (1993), Ali and Hwang (2000), and Hung (2001) used data of industrial firms. Second, I used the most common fiscal year-end of the companies in the country. This makes it easier to compute the return data for the period spanning 9 months before and 3 months after the most common fiscal year-end for all companies in the country.

Third, the availability of data such as net income before extraordinary items, beginning of year market value of equity, and market return was necessary for the computation of value relevance of earnings. Fourth, firm-year observation had to be prepared according to domestic accounting standards, as in Alford et al. (1993) and Hung (2001). This is necessary, since the measure of quality of accounting standards is based on how the country's domestic accounting standards deviate from the IASs. Fifth, financial statements had to be in full-consolidation form such that the earnings number reflected the economic condition of a full economic entity. Korea was an

exception because Korean firms were not required to have consolidated financial statements during the period 1996-1998.

The criteria imposed resulted in a sample of 24,462 firm-year observations for 35 countries for the period 1996-2001. These 35 sample countries covered all countries in the prior studies investigating value relevance of earnings across countries. These prior studies were Alford et al. (1993), Ali and Hwang (2000), and Hung (2001). This study has a much larger sample than that of Hung's (2001). Hung had 21 countries. This study has 35 countries, about 67% more than Hung's study.. This, eventually, will make the results of this study more generalizable than prior studies.

Table 5.7 provides the statistics for the number of firm-year observations per country for the years chosen for this study. All firms except those that did not fit the criteria stated earlier were included in the study. The numbers of observations ranged between 45 and 7647 for the sample countries. The smallest number of observation came from Argentina and the largest came from Japan (Table 5.7).

5.4. Summary

In this chapter, I described the measurement procedures for the independent and dependent variables and the sample selection process. Quality of accounting standards, acceptability and enforcement of accounting standards, control variables and value relevance of earnings were used to perform empirical tests for the five hypotheses. Quality of accounting standards was measured using an index developed based on GAAP 2000 and 2001 reports. The index value for a country was an average of the indexes for year 2000 and 2001.

Indexes were also developed to measure the acceptance and enforcement of accounting standards for the period 2000-2001. The responses received from three big

accounting firms that supported this study was used as a starting point. To validate the data, published information from different sources, such as publications of institutional organizations, websites of accounting authorities, public accounting firms, and research journals, were employed. Reliability analysis was employed to determine the composition of preventive and punitive enforceability indexes.

A control variables used in this study was the level of economic development in 2001. To measure the level of economic development, countries classification into developed or emerging country is employed. Following prior cross-country studies, this study employs the hedge portfolio return approach of measuring value relevance of accounting earnings. The computations of the value relevance of earnings for countries are based on actual firm level data. Data was collected for 7 years (1995-2001) for 35 sample countries.

To make the results of this study comparable to prior studies, the sample selection process basically followed previous studies. Nevertheless, I employ more countries compared to prior studies examining value relevance of earnings across countries. Hence, this study may provide more generalizable results. In addition, this study also employs more Asian countries than prior studies. Thus, this study may provide explanations to the anomaly exposed in the Asian context of prior studies.

It is acknowledged that the assessment method of accounting enforcement which employs a combination of first-hand assessment of public accounting firms and secondary-source information has some limitations compared to the use of direct assessment of accounting enforcement of a country. However, such direct assessment methods could only be achieved in cooperation with authoritative international institutions and expertise in the respective countries.

Additionally, this study also concentrates only on 33 items to measure acceptability and enforceability of accounting standards across countries. The limited number of items in the indexes enables this study to focus on and explore the importance of each item to the value relevance of accounting information; however, it also limits different aspects of accounting institutional arrangements that can be captured and represented by the items of the indexes. As the reliability analysis of the indexes shows, there is still scope for rearranging or adding new items to make the whole indexes more reliable and better represent the overall accounting institutional infrastructure.

CHAPTER 6

EMPIRICAL RESULTS

This chapter provides the results of empirical tests conducted to examine the hypotheses. Apart from the more direct tests based on the models specified in Chapter 3, I also conduct additional analysis to assess whether or not the results are sensitive to other measures of the control variable or to other institutional variables identified in the institutional literature.

The results are organized as follows. Section 6.1 provides the descriptive statistics. Bivariate correlations are discussed in Section 6.2. In Section 6.3, the results of multivariate tests are examined. The hypotheses are then reexamined through robustness checks in Section 6.4. Discussion of additional analysis follows in Section 6.5. The summary of the chapter is in Section 6.6.

6.1. Descriptive Statistics

Table 6.1 and 6.2 provide the descriptive statistics of the independent and dependent variables.

6.1.1. Independent variables

Table 6.1 provides descriptive statistics for quality of accounting standards, acceptability and enforcement of accounting standards, legal system and classification of countries as developed or emerging. It shows the ranks for the main variables, namely STD_QUAL, ACCEPT, PRE_ENF, PUN-ENF, AIE, LEGALSYS, and D-DEV. For STD-QUAL the highest rank of 35 is attained by South Africa. It is followed by Mexico and Ireland. This indicates that these three countries have the

highest quality accounting standards relative to the IAS. The bottom three countries for standards quality relative to the IAS, are Switzerland, Poland and Greece.

There are ten countries that share the highest rank (30.5) for ACCEPT. These include the US, the UK, and Australia. The lowest rank of 1.5 is shared by Austria and Poland. For PRE_ENF, eleven countries, namely the US, the UK, Hong Kong and Singapore scored the highest (30 points) and Philippines the lowest (1 point). For PUN-ENF, the USA, Australia, and Thailand shared the first position (34 points), while Austria (1 point) was at the bottom of the table with the last position. Finally, for AIE the highest rank is obtained by the US, followed by the UK and Australia. Austria has the lowest rank for AIE, followed by Greece and Portugal. It is noteworthy that most countries with low ranks for AIE are code law countries; suggesting that code law countries have weak accounting institutional environments.

There are some interesting findings from the data of AIE. Several countries that earlier had low quality of accounting institutional arrangements, such as Korea and Malaysia, are showing high AIE value in Table 6.1. It should be noted that as after the Asian financial crisis of 1997 these Asian countries had started to revamp their accounting regulatory infrastructure. So by 2000-2001, the time of the infrastructural data for this study, these countries started having higher quality AIE than what they had before the financial crisis.

The skewness for STD_QUAL, ACCEPT, PRE_ENF, PUN_ENF and AIE are between 0 and -0.69. Therefore, these variables are normally distributed. Also, kurtoses for those variables are between -1.41 and -1, which means the distributions are relatively normally distributed (Hair et al., 1995).

Table 6.1 also identifies the legal system of the countries, i.e., common law or code law system; and classification of sample countries either as developed or emerging countries. Twenty-three countries are under the code law legal system and 12 countries are under the common law system. These legal system data were obtained from La Porta et al. (1997). For D-DEV, 11 countries are classified as emerging countries and 24 countries as developed countries.

6.1.2. Dependent Variables

Table 6.2 provides the value relevance of earnings (VAL–NI) measures for the sample countries during the period 1996 to 2001. New Zealand had the highest value relevance (60%) and Poland the least (–8.3%). Even though this study employs a 12-month returns window as compared to the 15-month returns window of prior studies; these value relevance of earnings are quite comparable to those of prior studies such as of Alford et al. (1993), Ali and Hwang (2000) and Hung (2001). The value relevance scores are reported by countries and periods used by the studies in Table 6.2.

6.2. Bivariate correlations

Table 6.3 provides the bivariate Pearson and Spearman correlation coefficients for the dependent and independent variables. The top triangle provides the Pearson correlation. It shows significant positive correlation between VAL–NI and STD_QUAL ($p < 0.05$), ACCEPT ($p < 0.01$), PUN_ENF ($p < 0.05$), AIE ($p < 0.01$) and LEGALSYS ($p < 0.01$). Furthermore, the Spearman correlation in the bottom triangle also confirms these significant positive correlations between VAL–NI and STD_QUAL, ACCEPT, PUN_ENF, and AIE. The results provide a strong support for Hypotheses 1, 2, 3b and 4, that value relevance of earnings is positively associated with the quality and acceptability of accounting standards and effective punitive

enforcement mechanism for accounting standards as well as with accounting institutional arrangements. Table 6.3 also shows strong positive correlation between components of AIE (STD–QUAL, ACCEPT, PRE_ENF, and PUN–ENF) and AIE. This signifies that these components of AIE are well represented by AIE.

Other noticeable correlations are those between STD–QUAL and PUN–ENF. It suggests that countries with good quality accounting standards generally tend to have better levels of punitive enforcement. Additionally, LEGALSYS is strongly correlated with STD_QUAL ($p < 0.01$), PUN_ENF ($p < 0.01$), and AIE ($p < 0.01$). This suggests that common law countries tend to have better quality of accounting standards, higher levels of punitive enforcement, and eventually, better accounting institutional environments. This strong correlation is consistent with findings of prior studies that show significant influence of legal systems on the properties and quality of financial accounting information across national borders (Ball et al., 2000a; 2000b; Jaggi and Low, 2000; Francis et al., 2001; Hung, 2001). Furthermore, the strong correlation between LEGALSYS and AIE also suggests that these variables are substitutes for each other.

The bivariate test also shows that AIE does not correlate with D_DEV. This means that quality of accounting institutional environment is not associated with the level of capital market development of a country. This result does not support Salter (1998)'s finding, which states that more developed countries tend to have higher quality financial reporting.

D–DEV has strong positive correlation with the number of domestic listed companies in a country (LISTED, $p < 0.01$). High correlation between these variables suggests that only one variable of those two can be employed in the regression to avoid multicollinearity effects. As D_DEV, a variable represents the level of economic

development of a country, is broader than LISTED, which represent the level of capital market development, D_DEV was employed as a control variable in the multivariate tests to control for other omitted market variables at the country level.

6.3. Multivariate Test Results

Table 6.4 provides a series of country level ordinary least square (OLS) regression results for the hypotheses formulated in the Chapter 3. The following subsections discuss the regression results for the hypotheses.

6.3.1. Hypothesis 1

Employing VAL_NI as dependent variable, Table 6.4 Model 1 demonstrates that STD_QUAL is significantly and positively associated with VAL_NI and D_DEV as the controlling variable ($p < 0.01$). This finding is consistent with the bivariate correlation results. Therefore, both the multivariate and bivariate results support Hypothesis 1 that the value relevance of accounting earnings is positively associated with the quality of accounting standards.

On the whole, this is in line with the argument that high quality accounting standards provide better protection to investors by providing tools to analyze firm performance as well as providing reliable financial information. This, in turn, minimizes the potential agency conflict between management and investors. These results support and elaborate the findings of prior single country studies, e.g. Babalyan (2001), Bartov et al. (2002) in a cross-country context.

6.3.2. Hypothesis 2

Model 2 of Table 6.4 provides results for Hypothesis 2. The result shows that, consistent with the bivariate correlation results, ACCEPT is positively associated with VAL_NI ($p < 0.05$). After controlling for level of economic development, the results

provide evidence for the argument that value relevance of earnings is positively associated with the acceptability of accounting standards. In addition, by comparing the R^2 s of Model 2 (adjusted $R^2 = 0.350$) with Model 1 (adjusted $R^2 = 0.247$), I construe that the acceptability of accounting standards does enhance the value relevance of accounting earnings. To further examine whether the model including ACCEPT (Model 2) is better than the model without ACCEPT (Model 1), I employ a partial F test (Neter et al., 1996). The results provide evidence that the model with ACCEPT is the more robust of the two models ($p < 0.05$). This means that the market perceives that strong acceptance of accounting standards leads to better financial reports, i.e., the reports better reflect the economic conditions of the firm.

The results also suggest that for the acceptability of the standards, openness and third party participation in the standard setting process, as suggested by prior theoretical papers (e.g. Solomon, 1986; Dyckman, 1988; Zeff, 1988), are important for value relevance of accounting information. A wider acceptance of standard results in more credible accounting standard, that in turn leads to more reliable and relevance financial accounting information. Credible accounting information can mitigate the information asymmetry between users and preparers of financial reports. Additionally, the result also provide support for the finding of the more recent empirical studies, such as Ali and Hwang (2000) and Ball et al. (2000a), regarding the positive influence of private sector bodies involvement in the standard setting process on value relevance of accounting earnings.

6.3.3. Hypothesis 3a

Model 3a of Table 6.4 provides evidence for testing Hypotheses 3a. Consistent with the bivariate correlation, the regression result shows that PR_-ENF was not significantly related to VAL_NI. In addition, a partial F test was conducted to

investigate whether the model including PRE_ENF (Model 3a) is better than the model without PRE_ENF (Model 2) (Neter et al., 1996). By comparing the R^2 s of Model 3a (adjusted $R^2 = 0.351$) with Model 2 (adjusted $R^2 = 0.350$), the results reveal that there was no sufficient evidence that model with PRE_ENF (Model 3a) is better than model without PRE_ENF (Model 2).

On the whole, the findings did not support Hypotheses 3a, i.e., the hypothesis that the value relevance of earnings is positively related to preventive enforcement mechanism for accounting standards. Although prior empirical studies provide evidence that preventive measures lead to more credible financial reports (Choi and Jeter, 1992; Klein, 2002; Sivakumar and Waymire, 2003), those studies are conducted in single developed countries. That means, in a country where high quality accounting standards, openness standard setting process and punitive enforcement mechanisms are already established, the implementation of preventive rules, such as independent audit committee and disclosure of non-audit fee, leads to more credible financial reports. However, in a cross-country study, where the sample countries have different accounting institutional environments, the implementation of such preventive measures does not affect the value relevance of accounting information.

In addition, most of the preventive rules, such as requirement for audit fee, mandatory rotation of auditors, resulted from piecemeal reactions to certain conditions by professional and supervisory bodies. Implementation of such requirements, without considering the existing institutional arrangements, may not lead to a quality accounting institutional arrangement. Consequently, such preventive rules do not improve the value relevance of accounting information.

6.3.4. Hypothesis 3b

Model 3b of Table 6.4 presents OLS results for Hypothesis 3b. The regression shows that VAL_NI is significantly and positively associated with PUN_ENF ($p < 0.05$). This is consistent with the bivariate correlation result. To further investigate whether punitive arrangements do enhance the value relevance of earnings, I perform a partial F test (Neter et al., 1996). The model having PUN_ENF (Model 3b) was compared to the model without PUN_ENF (Model 3a). The results show that the model with PUN_ENF (Model 3b) is the more robust of the two models ($p < 0.05$). Overall, the findings support the Hypothesis 3b that the value relevance of earnings is positively related to effective punitive enforcement mechanisms for accounting standards.

The results in fact support findings of prior studies that found effective punitive enforcements, either against management, company or auditors, increase the confidence level of investors by improving the credibility of financial reports and mitigating the information asymmetry (Feroz et al., 1991 ; Nourayi, 1994; Rollins and Bremser, 1997). Furthermore, the results also enhance and generalize the prior results to an international level.

In addition, the findings also highlight the importance of punitive enforcement of accounting standards rather than preventive measure. In this regard, a focus on the real enforcement actions is considered to have positive and higher influence on the perception of investors regarding the credibility of accounting information than just implementing more preventive accounting measures.

6.3.5. Hypothesis 4

In Table 6.4 Model 4, AIE is regressed against VAL_NI; and the results show that its coefficient is positive and significant ($p < 0.01$). The result is consistent with the

positive and significant bivariate correlation coefficients. Thus, the results provide strong support for Hypotheses 4, i.e., the argument that the value relevance of accounting earnings is positively associated with the overall accounting institutional environment variable. This suggests that high quality and acceptability of accounting standards, and effective enforcement mechanism are complementary to each other in enhancing the value relevance of accounting earnings.

Furthermore, the variance inflation factor (VIF), the indicator of the degree to which each independent variable is explained by the other independent variables are around one for most variables in regressions in Model 1 to 4. As large VIF values indicate a high degree of colinearity or multicollinearity among the independent variables, my results suggest that there is no severe colinearity problem in the regressions (Hair et al., 1995, p. 127).

6.3.6. Hypothesis 5

To describe the test results for Hypothesis 5, the discussion is divided into several subsections. First, I discussed the results for the hypothesis according to the model design proposed in Chapter 3. I also conducted sensitivity analyses using other proxies to measure the legal environment. To obtain a better understanding of the AIE measure, I provided a descriptive cluster analysis on indexes of accounting standards quality and index of acceptability and enforceability of accounting standards. Next, I also performed sensitivity tests by dividing my sample countries into sub samples bearing different characteristics.

6.3.6.1. Regression Results

Models 5a and 5b of Table 6.4 show the result for testing Hypothesis 5. Model 5a reveals that the coefficient of AIE is positive and significant ($p < 0.01$), while coefficient of LEGALSYS is also positive but not significant. This suggests that AIE

has stronger positive relation to VAL_NI compared to what the measure of LEGALSYS has to VAL_NI, which support Hypothesis 5. Comparing Model 5a and Model 4 and using the partial F test to investigate whether the model including LEGALSYS (Model 5a) is better than the model without LEGALSYS (Model 4) also confirm that there is no sufficient evidence that Model 5a is better than Model 4 (Neter et al., 1996).

Realizing that there is colinearity between AIE and LEGALSYS ($p < 0.01$; see Table 6.3), additional tests were conducted to examine whether LEGALSYS itself has a positive and significant association with VALNI, as suggested by prior literature (Ball et al., 2000a; 2000b; Jaggi and Low, 2000; Francis et al., 2001; Hung, 2001). Those prior studies show that legal system plays a significant role in differentiating the quality of accounting information across countries. They argue that there are different approaches to resolve information asymmetry in code law and common law systems, which leads to differences in properties of accounting information. The regression result is presented in Table 6.5 as Model 5b. As expected and akin to prior studies, the LEGALSYS have a significant influence ($p < 0.01$) on VAL–NI. Particularly, common law countries have more value relevance of earnings compared to code law countries. Bivariate correlation also confirms the positive and significant association of LEGALSYS with VAL–NI ($p < 0.01$; see Table 6.3).

However, by comparing Model 5b with Model 4, regression between AIE and VAL–NI, it can be seen that AIE plays a more significant role compared to LEGALSYS in positively influencing VAL–NI. The regression model with AIE has a higher adjusted R^2 (0.367) compared to the model with LEGALSYS ($R^2 = 0.218$), and the significance level of AIE ($p = 0.000$) is better than LEGALSYS ($p = 0.009$). A partial F test conducted on the statistics of the regressions validated that Model 5a was

stronger than Model 5b. It suggests that AIE provides better explanation than LEGALSYS in influencing VAL–NI. This finding further supports Hypothesis 5. However, the strong regression result for LEGALSYS ($p < 0.01$) suggests that it is also a strong determinant of VAL–NI, albeit an indirect one.

A measure of LEGALSYS is based on the origin of the law in each country (La Porta et al., 1997, 1998), while AIE is based on the assessment of the acceptability and enforceability of accounting standards in year 2000 and 2001. The business climate and reporting environment changes in line with developments in the capital market and economic activities, and these changes are reflected in the relation between earnings and equity returns. AIE reflects the financial reporting infrastructure in a country. It has evolved gradually to adjust to different changes in business climate and financial reporting environment. Therefore, the measure of AIE is more closely related to the processing of accounting information than LEGALSYS. Therefore, AIE has a direct influence on the value relevance of accounting earnings and LEGALSYS has more of an indirect influence. In brief, a country with better accounting institutional arrangements is likely to have accounting information that better mitigates the information asymmetry problem.

6.3.6.2. Sensitivity Analyses Using Other Proxies of Legal Environment

Some prior studies in accounting employ measures of legal enforcement (Klapper and Love, 2002; Hope, 2003; Leuz et al., 2003) to investigate the impact of legal environment and enforcement on information asymmetry, forecast accuracy, and firm performance across countries. To further investigate whether the legal enforcement or AIE measure, as developed in this study, provides better association with VAL–NI, the following tests are conducted. The proxies for legal enforcement employed in those studies are from LaPorta et al (1997; 1998).

The empirical tests are performed using the proxies for legal enforcement (JUDICIAL, RULE OF LAW, CORRUPTION, EXPROPRIATION, REPUDIATION, and CIFAR). JUDICIAL refers to the efficiency and integrity of the judicial system. Lower scores mean lower efficiency levels. RULE OF LAW denotes to assessment of the law and order tradition in the country. Lower scores indicate less tradition for law and order. CORRUPTION indicates an assessment of the corruption in the government. Lower scores mean higher levels of corruption. EXPROPRIATION refers to assessment of the risk of "outright confiscation" or "forced nationalization". Lower scores indicate higher risks. REPUDIATION indicates assessment of the "risk of modification in a contract taking the form of repudiation, postponement or scaling down" (La Porta et al., 1998). Lower scores mean higher risks. CIFAR refers to index created by examining and rating companies' 1990 annual reports on their inclusion or omission of 90 items.

As noted earlier, there is high colinearity between legal enforcement variable with control variable (D_DEV; see Table 6.3). Therefore, the regressions were run by including both legal enforcement and AIE variables but without the control variable. The results are reported as Model 1, 2, 3, 4, 5, and 6 in table 6.5⁸. While coefficient of AIE in all regressions are significant ($p < 0.01$), only EXPROPRIATION shows a positive and significant result ($p < 0.10$). The other legal enforcement proxies do not provide significant results. Comparing the legal enforcement variables with AIE in model 1, 2, 3, 4, 5, and 6, I find that the AIE provides better explanation than the legal enforcement measures in explaining VAL-NI.

⁸ For model 1, 2, 3, 4, and 5, $N = 33$, since China and Poland is not covered in La Porta (1998)'s paper, and for model 6, $N = 31$; since data for Indonesia and Ireland are not available. For model 7 and 8, $N = 31$, because it is factorization of all legal enforcement variables.

Hope (2003) developed a proxy for enforcement by factorizing several legal enforcement proxies. I replicate this method and develop a new variable (LEGALENF) by factorizing the six aforementioned legal enforcement proxies. This variable, LEGALENF, along with AIE was regressed against VALNI. The results show that the coefficient for this proxy, was not significant whereas AIE had a significant coefficient (see Model 7 in table 6.5). For similar reasons like LEGALENF, another variable (LEGALENF+) was constructed by including anti-director rights proxy employed in La Porta et al. (1997, 1998). LEGALENF+ was developed by factorizing the six legal enforcement proxies plus anti-director rights proxy. The regression result of LEGALENF+ and AIE against VALNI is reported under Model 8 in Table 6.5. The coefficient of LEGALENF+ was also not significant while AIE was significant (Model 8 in table 6.5). In contrast to the strong role of AIE proxy, the regression results for Model 1, 2, 3, 4, 5, 6, 7, and 8 suggest a weak role of legal enforcement proxies in influencing VAL–NI.

Examining further the role of accounting enforcement and legal enforcement proxies in each of the models, I find that most of the legal enforcement proxies are not significantly associated with VAL–NI. However, AIE proxy is significantly associated with VAL_NI in all of the regressions. This further reveals the benefit of AIE measure compared to legal enforcement measure. These tests suggest that AIE is more closely linked to accounting practice than the broad legal variables that were adopted in prior studies. To sum up, the findings provide strong support for Hypothesis 5 that accounting institutional environment has stronger positive association with the value relevance of earnings than legal environment has with the value relevance of earnings.

6.3.6.3. Cluster Analysis of Accounting Standards

In order to obtain an understanding of how the accounting standards across sample countries are grouped based on similarities of the items in the index of accounting standards quality; a cluster analysis was conducted. Hierarchical cluster analysis was conducted using the raw STD_QUAL values for year 2000 and 2001. The findings show that the sample countries can be grouped into 3 main clusters (see Table 6.6). Comparing the clusters with the rank of STD_QUAL, I found that the sample countries are clustered based on the level of the quality of accounting standards relative to IAS. Therefore, we can call these clusters low, medium, and high quality accounting standards clusters. Countries that fall into the low quality group are Switzerland, Poland and Greece. They are all ranked between 1 and 7 in the STD_QUAL ranking scale. Countries in the medium quality include Germany, Portugal, and France. They are ranked between 8 and 20 in the STD_QUAL ranking level. High level quality of accounting standards countries are South Africa, the UK and the US. Their positions in the STD_QUAL ranking system are between 21 and 35.

Further examinations of the clusters reveal interesting facts. All countries with low quality of accounting standards relative to IAS have code law legal systems. Medium accounting standards quality countries mostly have code law systems. Countries with high quality accounting standards mostly have common law legal systems. Thus, it can be construed that code law legal system countries tend to have low quality accounting standards relative to IAS, while common law countries tend to have high quality accounting standards relative to IAS. This assessment is consistent with the conclusions of prior studies such as Ball et al. (2000a), Jaggi and Low (2000), Francis et al (2001). These prior studies state that accounting standards in common law

countries are of better quality compared to code law accounting standards in terms of timeliness, conservatism, and quality of financial disclosure.

6.3.6.4. Clusters Analysis of Acceptability and Enforceability of Accounting Standards

Previous analysis of the index of acceptability and enforceability of accounting standards was based on comparison of the index value across national boundaries. The index was a vertical summation of scores on the institutional characteristics of each sample country. A cluster analysis was conducted to obtain an understanding of how the acceptability and enforcement arrangements for accounting standards across sample countries are grouped based on similarities of the items in the acceptability and enforcement indexes. Results indicated three main clusters (see Table 6.7).

To further identify the country clusters with similar institutional characteristics, an analysis of variance (ANOVA) test was conducted. The One-Way ANOVA procedure produces a descriptive statistic of means for each CLUSTER as well as a one-way analysis of variance to examine whether those means are equal (Hair et al., 1995). The analysis was conducted by employing several dependent variables, namely ACCEPT, STD_QUAL, PRE_ENF, PUN-ENF, and AIE. The results are presented in Table 6.7 panel A.

The findings suggest that each cluster has different means for each institutional feature. Tests of different means between CLUSTER 1 and 3, and between CLUSTER 2 and 3 show significant results ($p < 0.01$) for STD_QUAL, PUN-ENF and AIE. This suggests that CLUSTER 3 countries can be characterized with low quality of accounting standards and low level of punitive enforcement of standards. Overall, CLUSTER 3 countries are characterized with low quality of accounting institutional

environment. Meanwhile, CLUSTER 1 and 2 share similar characteristics, high quality of accounting standards and high level of punitive enforcement of accounting standards. On the whole, both CLUSTER 2 and 3 have high quality of accounting institutional environments.

Regarding the value relevance of accounting earnings, CLUSTER 3 exhibits lower level of value relevance of earnings than CLUSTER 1 and 2 (see Table 6.7 Panel B). The difference between CLUSTER 3 and 2's average number of the value relevance of earnings is significant ($p < 0.05$). The lower level of the value relevance of accounting number of CLUSTER 3 highlights the importance of accounting institutional arrangements.

Table 6.7 Panel C shows the cluster membership of the sample countries. CLUSTER 1 consists of 11 countries such as US, Argentina, Indonesia, Israel, Italy, Korea, Mexico, Philippine, Thailand, Turkey, and Singapore. This cluster comprises of countries influenced by US accounting standard setting and enforcement arrangements style. The adoption and enforcement mechanism for accounting standards in the US is primarily oriented towards providing capital markets investors with information. This can be in the form of US SEC type for supervisory body that can be found in the Argentina, Indonesia, Israel, Philippine and Thailand. Even, the content and form of regulations issued by regulatory body in Indonesia, Philippine and Thailand are very similar to the regulations of the US SEC. This is not surprising since capital market law in those countries were developed with the assistance of the US SEC.

CLUSTER 2 consists of UK, Australia, Canada, China, Hong Kong, Ireland, Malaysia, Netherlands, New Zealand, Norway, South Africa, and Spain. Cluster 2 reveals a number of countries which are heavily influenced by UK accounting

standard-setting and enforcement mechanism style. Most of countries in cluster 2 are members of British Commonwealth countries. Therefore, their acceptability and enforceability arrangements for accounting standards follow the UK accounting regulatory mechanism framework.

CLUSTER 3 includes 12 countries such as Austria, Belgium, Denmark, Finland, France, Germany, Greece, Japan, Poland, Portugal, Sweden, and Switzerland. All members of cluster 3 have code law legal framework. In addition, most of them are members of European Union (EU) countries; thus they form a Continental accounting institutional arrangement style. EU issues Accounting Directives for their member countries. These directives have been adopted by the individual members into national regulation (KPMG, 2001). Even the Committee of European Securities Regulators (CESR) has gone further by attempting to harmonize the institutional oversight system in Europe.⁹ These efforts are directed to establish effective and harmonized enforcement mechanisms in Europe (FEE, 2002a).

The classification of countries based on similarities in acceptability and enforceability arrangements for accounting standards was in line with the categorization of accounting practice based on sphere of influence introduced by prior accounting literature (Hatfield, 1966; Seidler, 1967; Nobes, 1983; Roberts, 1995). Although having different grounds and methods, those studies come up with similar classifications. They note that there are "mother" countries in accounting in which other countries have identified and reflected their association, through colonial, traditional or political, with the leader countries. The leader accounting systems are namely, American, British, and Continental models (Hatfield, 1966; Seidler, 1967;

⁹ CESR has proposed "Statement of Principles of Enforcement of Accounting Standards in Europe" in 2002, with the hope that harmonization of enforcement system will create an efficient capital markets, level the playing fields, and improve investor confidence in capital markets.

Nobes, 1983; Roberts, 1995). The similarities in classification even go further. For instance, those studies do not classify Netherlands as part of Continental model since its accounting system is commercially driven with strong equity similar to UK system (Nobes, 1983; Roberts, 1995). Japan is classified as part of Continental model since its accounting system is macro uniform, and government-driven with weak equity (Nobes, 1983; Roberts, 1995). In the clusters of accounting standards acceptability and enforceability employed in this study, Netherlands is under influenced by UK system, and Japan is part of Continental cluster.

The resemblance of countries classification provide strong support that the items in the indexes of adoption and enforcement arrangements really represent a country's financial reporting environment that eventually reflects in the country's accounting practice. Further, this also means that the way the countries set up their accounting standard-setting processes and enforcement mechanisms influences the practice of accounting in that country. In order to improve its accounting practice, a country should consider and cautiously implement the elements of the adoption and enforcement arrangements as well as improving the quality of the accounting standards.

6.3.6.5. Analyses by Country Sub-samples

To further understand the relation between VAL–NI and AIE across countries with different characteristics, I investigated this relation by country sub-samples. First, I differentiate between code law and common law countries. For code law countries AIE was significantly positively related to VAL–NI. However, the same association was not significant for common law countries. Second, I divide the sample countries into emerging and developed countries. The results show that AIE in emerging countries is more positively associated with VAL–NI than in developed countries.

Third, I differentiate the sample countries into code law and emerging common law countries, and developed common law countries. The results show that, AIE is significantly and positively associated with VAL–NI in code law and emerging common law countries, while AIE is not significantly related to VAL–NI in developed common law countries. The comparison of AIE in different sub samples can be seen in Table 6.8 Panel A.

Panel B of Table 6.8 suggests that the mean of AIE and VAL_NI for common law countries is significantly higher than that for code law countries, and the standard deviation of AIE and VAL–NI for common law countries is significantly lower than that for code law countries. This suggests that the common law countries have high AIEs and VAL–NIs, generally, but these variables do not vary much between common law countries. Whereas, the code law countries have low AIEs and VAL–NIs, but they vary between countries. These features and the significant association between AIE and VAL–NI for code law countries suggest that AIE has more significant impact on the VAL_NI in code law than in common law countries. Similar findings (albeit mixed) exist for the emerging market and developed countries' comparison. Finally, the significant association between AIE and VAL–NI for code law and emerging market countries group, in comparison to the low association for developed common law countries suggests that the former group can benefit more from good quality AIE.

Overall, the results suggest that international accounting organization that are interested in improving the credibility of accounting information worldwide should focus more their efforts to improve accounting institutional arrangements in code law and emerging countries to obtain better results.

6.4. Diagnostics and Sensitivity Analyses

6.4.1. Diagnostic Tests

The multiple regression analysis is based on some assumptions. These assumptions relate to the relation between the dependent and independent variables that influence the statistical procedures employed for multiple regression analysis (Hair et al., 1995). Departures from the assumptions indicate problems with the regression function. Some of the assumptions to be examined here are linearity of the regression model, the constant variance of the error terms, and the normality of the error term distribution (Hair et al., 1995).

Linear relationship between dependent and independent variables is a critical issue in regression analysis. This is due to the concept of correlation based on linearity (Hair et al., 1995). To investigate whether or not a linear regression function is appropriate for the data being analyzed can be studied from a residual plot against the predictor variable or, consistently, from a residual plot against the predicted value (Netter et al., 1996). Examining the residual plot against either the predictor variables or the predicted value, indicates that the residuals in this study fall within a horizontal line centered around 0, displaying no systematic tendencies to be positive or negative (see Appendix 4 part 1). The test results suggest linearity of the regression functions.

One of the assumptions of the regression model is that the error term is constant. The presence of nonconstancy error variance (heteroscedasticity) will make the residual plot tend to be of the "megaphone" type, which will suggest that the variance may be increasing or decreasing in a systematic manner related to the predictor variable or the predicted value (Netter et al., 1996). A simple test to examine the constancy of the error variance is the Breusch-Pagan test (Netter et al., 1996). This

test assumes that the error terms are independent and normally distributed and that the variance of the error term is related to the level of the predictor variable in a specific way. The test statistic employed is χ^2_{BP} . I calculated the value of χ^2_{BP} . It was 0.295 (see Appendix 4 part 2). By controlling the alpha risk at 0.01, it required chi-square (0.99;1) = 6.63. Since $\chi^2_{BP} = 0.295$ was less than 6.63, it confirmed the constancy of the error variance.

Another assumption of the regression function is the normality of the error terms. The normality of the error terms can be identified directly from the normal probability plot of the residuals. In this plot, the residual is compared with the dependent variable. If a distribution is normal, the residual line closely follows the diagonal. By examining the residual normal probability plot, I conclude the normality of the regression function (see Appendix 4 part 3a). A statistical test, Kolmogorov-Smimov, was also employed for testing the normality of the error terms (Netter et al., 1996). The result indicates an insignificant value of Kolmogorov-Smimov, which suggest that the error terms fit the normal curve well (see Appendix 4 part 3b).

The above explanation shows that none of the regression function assumptions was violated. In brief, I conclude that the multiple regression analysis employed in this study are valid tools for assessing the association between the dependent and independent variables.

6.4.2. Un-weighted Measure of Accounting Standards

As described previously, in developing the index of accounting standards quality, the type of difference mentioned in GAAP 2000 and 2001 reports were weighted according to their importance. To assess the sensitivity of the result that VAL_NI is positively associated with the STD_QUAL, further tests were conducted by employing

un-weighted index. The results, as can be seen as in Appendix 5, show that for Model 1, 2, 3a and 3b, un-weighted scores for STD_QUAL are positively associated with the VAL_NI ($p < 0.05$). In Model 4 and 5a, un-weighted STD_QUAL was incorporated as part of AIE, and the result also provide strong positive relation of AIE to VAL–NI. The findings, therefore, provide stronger support for Hypotheses 1 until 5. In particular, the results strongly support Hypothesis 1, that value relevance of earnings is positively associated with the quality of accounting standards relative to IASs, regardless of whether the measure of accounting standards is weighted or un-weighted.

6.4.3. Un-ranked Measures of Acceptability and Enforceability of Accounting Standards

In the prior tests, the indexes for acceptability and enforcement arrangements were ranked indexes. To examine whether or not the results of ACCEPT, PRE–ENF, and PUN_ENF are influenced by the ranking system; a robustness test was conducted by employing a non-ranked index of adoption and enforcement of accounting standards. The results reveal that the coefficients of un-ranked ACCEPT, PRE–ENF, and PUN_ENF are similar to the results of the ranked indexes (see Appendix 6). The results provide greater support to Hypothesis 2, 3a, 3b, 4 and 5, that value relevance of earnings is positively associated with the acceptability and enforcement of accounting standards.

6.4.4. Components of Preventive Enforcement of Accounting Standards

As discussed earlier, PRE–ENF did not positively relate to VAL–NI. Further examination in chapter 5 showed that PRE–ENF consist of two different groups of preventive rules, namely AUDITING and SUPERVISION. Because of that, a regression consisting both AUDITING and SUPERVISION was conducted to examine

the relative importance of each sub-components of PRE_ENF to VAL-NI. The regression result, as can be seen in Appendix 7, revealed that neither AUDITING nor SUPERVISION was significantly related to VAL-NI.

Exploring further the elements of PRE_ENF, I factorize the 16 elements and come up with 6 factors with Eigen value greater than 1 that explain around 71% of the total variance. The strongest factor, Factor 1 consists of mostly supervision items; while Factor 2 comprises mostly auditing items. Then, I rerun the regression (Model 3a and 3b) by including both Factor 1 and 2. The results show that both Factor 1 and 2 are not significant in both models.

Next, I pick up only the supervision items from Factor 1 to represent the SUPERVISION and auditing items from Factor 2 to represent the AUDITING. After that, I ranked and mean centered the SUPERVISION and AUDITING scores across the sample countries and employed them in regression. The results (Model 3a and 3b) show that both SUPERVISION and AUDITING variables are not significant.

The above findings in fact corroborate previous result that PRE-ENF, which composed of AUDITING and SUPERVISION, was insignificantly associated with the VAL-NI. Some code-law countries may rely on government supervision for implementation of accounting standards, while other common law countries may highly dependent on market or professional forces for enforcement of accounting standards and associated rules. Different orientation of preventive rule arrangements across borders may drive the insignificant results of PRE-ENF relative to the value relevance of accounting data. In addition, PRE-ENF arrangements, like institution of audit committee and independent auditor requirements, are generally in response to crises and, therefore, are piecemeal in nature. Consequently, it is difficult to develop a coherent measure to reflect the overall state of PRE_ENF.

6.4.5. Other Control Variables

As mentioned earlier, there is high collinearity among market or national institutional variables, such as degree of economic development (D-DEV), number of listed companies (LISTED) and legal environment (LEGALSYS). Those market or national institutional variables represent different conditions in country that may affect the value relevance of earnings. LISTED may represent the level of capital market development and LEGALSYS may represent the legal environment condition. Limited number of sample countries limits the number of control variables that can be used in the empirical tests. Factor analysis allows combining several country level variables into a single summary variable of country-level variables. Thus, the three country level variables (D-DEV, LISTED, and LEGALSYS) are factorized into single variable (FACTOR A) and employed as control variable. The result can be seen in Appendix 8.

The results show that AIE is positively and significantly related to VAL-NI. However, by comparing this result with previous regression using D-DEV as control variable (Table 6.4 Model 4) shows that coefficients of FACTOR A and AIE are weaker than D-DEV and AIE in the latter model. The adjusted R^2 of this model (0.341) is also lower than in Model 4 in Table 6.4 (0.367). Similar result was also obtained when AIE was regressed against VAL-NI using LISTED only as a control variable. On the whole, those results strongly support Hypothesis 4 that accounting institutional infrastructure plays a significant role in influencing the value relevance of accounting data regardless of the control variables.

6.4.6. Factor Analysis of Acceptability and Enforceability of Accounting Standards

Factor analysis was conducted to form a better understanding of how the 33 items of the adoption and enforcement index differentiated the 35 sample countries.

Employing principal component analysis 9 factors with Eigen value greater than 1 that explained about 77% of the total variance were extracted. The strongest factor, FACTOR 1, consisted of 7 items. These items dealt mainly with openness of accounting standard setting and enforcement arrangements. Numerous prior studies provide evidence regarding the importance of such institutional arrangements for accounting standards (e.g. Gerboth, 1973; Zeff, 1988; Feroz, et al., 1991; Rahman, 1991; Nourayi, 1994; Rollins and Bremser, 1997).

The second significant factor, FACTOR 2, consists of 6 items, relating to the strength of the regulatory body. This factor reveals the importance of the supervisory body in enforcing accounting and auditing standards. This is consistent with the conclusion of prior studies (Saudagaran and Diga, 1997; Rahman, 2000; SEC, 2000; FEE, 2001) that identified the importance of the role of a supervisory body.

The third most significant factor, FACTOR 3 consisting of 3 items, deals mostly with the independence of accounting standard setting body and the strength of the standards. Recently, some countries, such as in Japan and Singapore, have paid attention to this issue by establishing independent accounting standard setting bodies. The compositions of these factors are shown in Table 6.9 Panel A.

FACTOR 1, 2, and 3 are extracted from the indexes of acceptability and enforceability of accounting standards, therefore, it is expected that these three factors also have positive correlation with VAL–NI. Bivariate correlation in Table 6.9 Panel B shows that FACTOR 1, that is openness of standard setting process and disclosure system, has a strong and positive correlation with VAL–NI ($p < 0.01$). Meanwhile, FACTOR 2 and 3 do not show strong correlation with VAL–NI, although they positively correlated. This suggests that from those 3 factors, in terms of their relation with VAL–NI, FACTOR 1 is dominating the other two factors.

Further multivariate tests are conducted to investigate whether FACTOR 1 is a dominant factor in the relation with VALNI. Table 6.9 Panel C shows a series of OLS regression examining the relationship between FACTOR 1, 2, and 3, and VALNI. To make the OLS regression results comparable with those of prior tests examining the acceptability and enforceability of accounting standards, STD_QUAL and control variables should be included in the regressions. However, since FACTOR 1 is highly correlated with STD_QUAL ($p < 0.01$), the regression was run without STD_QUAL variable. It was found that only FACTOR 1 had significant and positive influence on VALNI ($p < 0.01$). The other two factors have positive influence on VALNI, but they are not significant.

The findings suggest that FACTOR 1, openness of accounting standard setting process and disclosure of enforcement action, is a dominant factor in explaining the variations in VALNI between countries. Hence, the results provide strong support for Hypotheses 2, 3a, 3b and 4 regarding the importance of the role of acceptability and enforceability of accounting standards for the value relevance of accounting information.

Credibility of the standard setting process is necessary for public acceptance of the standards and for their proper implementation (Gerboth, 1973; Zeff, 1988; Rahman, 1991). Opening up standard setting processes and disclosing enforcement actions go hand in hand in providing a strong signal to investors regarding the reliability and credibility of financial accounting information. Openness of the standard setting process will mitigate the "political" pressure from self-interested parties that may be disadvantageous to the interests of other standard users (Zeff, 2002). Zeff (2002) states *"The impact of 'political' pressure is even greater in settings where a strong enforcement mechanism exists, as in the United States"*. In efforts to enhance

enforcement mechanisms, a country should, therefore, focus on the transparency of the standard setting process and disclosure of enforcement actions. Publication of enforcement actions performed by professional accounting body and supervisory body, disclosure of audit fee, and gathering as much information from different parties in setting standards play significant roles in increasing market transparency and it eventually influences investors' perception of the financial information in a country.

6.5. Additional Analyses

6.5.1. Horizontal Analysis of the Index of Acceptability and Enforceability of Accounting Standards

For prior empirical tests, the analysis of the indexes of acceptability and enforceability of accounting standards was based on a vertical summation of scores of each sample country. To obtain an understanding of how each item in the index varies across sample countries, a further analysis was conducted by horizontally summing up the scores of the index.

6.5.1.1. The Structure of Accounting Standards Setter

By analyzing the organization of accounting standard setting bodies across the sample countries, accounting standard setters can be divided into 3 types (see Table 6.10), those appointed by a professional accounting body, a government body, or by an independent body. Of the 35 sample countries, in 13 countries the accounting standards were determined by professional accounting bodies. In 9 countries, accounting standards were set by the government appointed bodies. This means that governments set accounting rules by issuing statutes dealing with accounting, or the standards were determined by a government appointed standard-setting body. An interesting feature in Table 6.10 is that all countries that had government standard

setters had code law legal systems. This is consistent with the notion that code law originates from collective planning in the public sector; in which governments set code law accounting standards. In contrast, the standard setters of all common law countries are independent of government influence (Ball et al., 2000a). This is because common law, including accounting standards, stems from individual action in the private sectors that evolve over time to become generally accepted in practice (Ball et al., 2000a).

For the other 13 countries, the standards were determined by an independent body. This standard setting body, generally, comprises many parties; they are organizationally independent either from government or the professional body. A recent growing interest to improve the quality of accounting information through better representation of many parties' interests, has induced the establishment of independent accounting standard setting bodies in many countries. For instance, Japan established the Accounting Standards Board of Japan (ASBJ) in July 2001; and Singapore established the Council on Corporate Disclosure and Governance (CCDG) in August 2002.

6.5.1.2. The Structure of Auditing Standards Setter

Most of the auditing standards are determined by the professional accounting organizations. Of the 35 sample countries, only 4 countries had government or quasi-governmental bodies as standard setters (see Table 6.11). These 4 countries are Greece, Poland, Spain, and Sweden. They had their accounting standards determined by the government. This shows that the government influences their accounting environment, which is in line with their code law legal environment.

6.5.1.3. Types and Characteristics of Institutional Oversight Mechanism

Different types of institutional oversight mechanisms for listed companies can be seen in Table 6.12. Twenty-two countries in the sample have securities exchange commissions with the responsibility to oversee the capital market activities. Their jurisdiction extends to stock exchanges and listed companies. However, there is a tendency that a single regulator will replace various regulators for financial industries such as banking, insurance, pension fund, and securities markets. Some countries, namely Austria, Germany, and Netherlands, in year 2002 have established a single supervisory body for financial services to replace the securities exchange regulator.

Stock exchange in Switzerland has the responsibility to enforce accounting regulations. Financial supervisory authorities exist in 11 countries. They are meant to oversee the activities of publicly listed companies. In South Africa, however, the stock exchange, actually, plays a greater role in enforcing the accounting regulations. In the UK, a privately organized review panel, FRRP takes a greater role in implementation of accounting standards.

Ireland does not have a specific institutional mechanism to oversee financial reporting of listed companies. Its accounting and auditing standards follows the UK pronouncements, while the UK institutional oversight mechanism for financial reporting, Financial Reporting Review Panel (FRRP), deals only with listed companies in the UK. However, recently, on May 1, 2003, the Irish Financial Service Regulatory Authority was formally established to oversee the financial industries.

Regarding the authority of supervisory bodies to enforce accounting and auditing standards, securities authorities in some countries have strong powers while others simply have review authority. In Austria and Netherlands, their securities exchange

regulators do not have authority to enforce financial reporting standards; however, they do review other financial documents of listed companies.

In some countries, their supervisory bodies have strong powers to regulate the form and content of financial reporting, such as securities exchange commission in USA, Indonesia, Philippine, and Thailand. In contrary to that, in some other countries, namely Canada, Greece, Ireland, Malaysia, Netherlands, Norway, Poland, and Sweden, the regulatory bodies do not have such authority; instead they rely on the accounting standard-setting body.

In terms of approach to enforcement, the supervisory bodies in Austria, Ireland, Netherlands, New Zealand, Philippine, Switzerland, and UK do not systematically review financial reporting of listed companies; while the rest of sample countries have more proactive approaches. Overall, there are some differences in the authorities and characteristics of supervisory or regulatory bodies for listed companies across the sample countries. The history, culture, legal system, and level of capital market and economic development play a part in the diversity of the accounting institutional systems.

6.5.1.4. Punitive Enforcement

Equivalent to preventive actions, punitive actions are important for the success of the enforcement mechanism. In this subsection, discussion is focused on the actual enforcement actions taken by a professional accounting body and a supervisory body against the company's management and auditor in implementing the regulations or to ensure compliance with the accounting standards.

6.5.1.4.1. Enforcement against Officers, Directors, and Company

The prevalence of punitive actions against officers, directors, or listed companies are common among the sample countries. Among the 35 sample countries, 31 countries have imposed sanctions on the offenders. The offenders are prosecuted because of unlawful activities in the capital markets. In 27 countries, the names of the offenders are disclosed by the supervisory body. Prior studies show that enforcement actions against companies influence the investors' perception regarding the company's performance (Feroz, et al., 1991; Nourayi, 1994). Additionally, suspensions or delisting of company from the stock exchange are becoming common practice in all sample countries regardless of the motive behind the action. Globalization of capital markets may involve the stock exchanges and other institutional bodies to take necessary actions to punish law breaking listed companies. Punishment can provide signals to global markets regarding the seriousness of the stock exchange and other bodies to enforce their regulation and make them comparable to other markets.

6.5.1.4.2. Enforcement against Auditors.

Unlike the case of enforcement against officers, directors or listed companies, the judicial actions against auditors were infrequent across the sample countries. During the period 2000-2001, the professional accounting organizations in only 18 countries took the necessary actions against auditors because of misconduct in their auditing related works. Likewise, supervisory bodies in only 12 countries took similar actions. The reason for the low number of sanctions may be that the supervisory bodies are not authorized to discipline auditors.

The publication of auditor misconduct was less common. Only in 13 countries the names of auditors were disclosed in professional publications, while supervisory

bodies in 7 countries published the auditors' name for violation of accounting regulations. Pressure exercised by public and press reactions, actually, could have a great influence on the auditors' reputation and may deter them from breaching the rules (Rollins and Bremser, 1997).

In conclusion, the above analysis shows the existence of different financial reporting infrastructure across countries with different tasks and responsibilities. Different infrastructure affects the way a country accepts and enforces the accounting standards; thus, it may variously contribute and create different accounting institutional environments. As empirically proved earlier, accounting institutional environment contributes significantly to the value relevance of earnings. Hence, there are many ways to improve value relevance of accounting earnings across countries.

6.5.2. Value Relevance of Accounting Earnings

Two aspects of the value relevance of accounting earnings will be examined here: diminishing value relevance of earnings and value relevance of earnings for different reporting periods.

6.5.2.1. Diminishing Value Relevance of Earnings

Francis and Schipper (1999), employing the hedge portfolio approach, provide evidence of decreasing value relevance of earnings information in the USA over the period of 1952-1994. The hedge portfolio approach had been used as well by Alfred et al. (1993), Ali and Hwang (2000) and Hung (2001) in the value relevance studies across countries. By comparing those studies plus this study, which employ the hedge portfolio approach, it is found that the value relevance of earnings data is decreasing over time across a cross-section of countries (see Table 6.2). To investigate this, I calculate the change in value relevance of earnings between years for the countries

covered in Alfred et al (1993), Ali and Hwang (2000) and Hung (2001) and this study (a maximum of 21 countries). Secondly, by averaging the changes between different periods, I obtain the average change of value relevance of earnings data for every country for 20 years. From 21 countries, only 5 countries, namely Finland, Ireland, New Zealand, Singapore, and Spain, show an increasing trend of value relevance of earnings numbers across periods. This could be due to improved quality of accounting standards and enforcement of the standards in those countries. The average change for USA is negative (-0.053), which is supported by Francis and Schipper's (1999) findings. Averaging all 21 countries' changes, it is found that there was a decrease in value relevance of earnings (-0.021) internationally over the 20 years period of 1982 to 2001 (see Appendix 9).

Using my own sample (35 countries) and sample period (1996-2001) and adopting the Francis and Schipper (1999) methodology of computing value relevance¹⁰, I compute value relevance figures across years by countries (see Table 5.6 Panel C). Then I calculate the changes in value relevance number between years for all sample countries. Subsequently, I average the value of changes between years to get the tendency of increasing/decreasing value relevance of earnings for every country during the sample period. Of the 35 sample countries, in 10 countries, Austria, Belgium, China, Finland, Japan, Korea, Philippine, Sweden, Switzerland, and UK, showed increasing tendency, while in the rest of sample countries, the tendency was toward declining value relevance. Average changes for all countries, I found that value relevance of earnings for the whole sample has been decreasing over time (- 0.029; see Appendix 10).

¹⁰ Instead, of calculating market adjusted return for A NI portfolio and return for A *AdjRet* portfolio for the sample period (1996-2001), and then calculating value relevance of earnings by taking the ratio of return from A NI portfolio to return from A *AdjRet* portfolio, I calculate the ratio of return from A NI portfolio to return from A *AdjRet* portfolio for every year for every country.

Employing Francis and Schipper (1999) methodology of computing value relevance of earnings can result in the inclusion of extremely high or low value relevance numbers in certain years by countries. Extreme values seem to be prevalent in countries with few observations. I reran the computations for Table 5.6 after eliminating some value relevance numbers with less than 10 firm-observations per year. The results for the decreasing value relevance of accounting earnings turned out to be higher (-0.047) across countries for the period 1996-2001 (see Appendix 11). The tendency of receding value relevance of earnings does not necessarily mean that earnings are receding in quality terms. In current times there is a lot more information being produced in addition to earnings information. Therefore, the lower value relevance could also mean that the level of dependence of investors on earnings information in investment decision making is diminishing.

6.5.2.2. Value Relevance of Earnings for Different Reporting Periods

Alford et al. (1993) provide evidence that differences in capital market, such as accounting standards, financial reporting requirements and alignment of financial and tax accounting, lead to significant differences in the usefulness of earnings across its 16 countries of their sample firms. To investigate whether the value relevance of earnings is affected by different reporting dates imposed by stock exchanges and the securities law requirements, I compared the one-year (9 months prior to closing dates and three months after, as most stock exchanges had a three month duration for disclosure of preliminary earnings) value relevance of earnings with the one-year value relevance of earnings surrounding the securities/companies law required date for disclosure of earnings for period of 1996-2001. The list of summary of financial reporting requirement from fiscal year-end across 35 sample countries can be seen in Appendix 12.

Since the focus of this study is on publicly listed companies, the reporting requirement (as far as possible) is associated with the obligation of listed companies to submit annual audited financial reports to stock exchange/regulatory body/registrar company for the period 2000-2001. This submission allows public investors to assess the listed company's performance and make informed decision making. Since some countries have recently revised their reporting regulations, the revision that took place after December 2001 was not considered. Most of the sample countries (26 countries) imposed securities/company regulations that required submission of annual audited financial statement at durations longer than 3 months after fiscal year end. Few countries, namely Argentina, Australia, Greece, Israel, Japan, Norway, Singapore, Thailand, and US, impose regulation that require submission of financial reports at duration shorter or equal to 3 months after fiscal year-end.

Table 6.13 Panel A shows differences in value relevance of earnings for 1 year stock return for a period of 9 months before and 3 months after fiscal year end and for a period according to the reporting requirement in the country for 26 sample countries where the preliminary earnings announcement vary from the annual financial reports filing dates. Table 6.14 Panel B shows that the mean value relevance score for the 1-year return (9 months before and 3 months after closing, i.e., preliminary announcement value relevance) is 0.296 while the mean for the value relevance score for 1-year return according to the security/company law reporting requirement is 0.243. Using the Paired-Samples T-Test procedure, it is found that the difference between the means is significant ($p < 0.01$) (see Table 6.13 Panel B).

Since most of the sample countries imposed reporting regulations that required submission of financial reports at durations longer than 3 months, the results suggest that such long durations reduce the value relevance of accounting earnings. In this case,

therefore, the regulatory body should pay more attention to speed up submission of annual audited financial reports to allow investors to make well informed decisions based on more value relevant information.

6.6. Summary

Descriptive statistics of the variables employed in the empirical tests have been presented in this chapter. The descriptives suggest that each variable are normally distributed. Bivariate correlation coefficients were also computed. The results from the bivariate correlations were consistent with hypotheses 1, 2, 3b and 4. There are significant positive correlations between the value relevance of earnings and quality, acceptability, and punitive enforcement of accounting standards. A composite variable, representing the overall accounting institutional environment, is also positively correlated with the value relevance of accounting information. There was only a weak support for preventive enforcement.

Multivariate tests also strongly support the findings of the bivariate analysis. I found support for Hypothesis 1, that value relevance of earnings is positively associated with the quality of accounting standards. Hypothesis 2 which posits a positive relation between value relevance of earnings number and acceptability of the standards is also supported. Hypothesis 3a on the association between value relevance of earnings with preventive enforcement of accounting standards is not supported. Preventive rules may be implemented as a reactive action to certain circumstances without considering the full impact of the regulatory arrangement on the relevance of earnings. Thus, it did not lead to improving the value relevance of accounting information. Nevertheless, hypothesis 3b concerning the association between the value relevance of earnings and effective punitive arrangement is supported. The composite

variable representing accounting institutional environment, determined through factorizing STD_QUAL, ACCEPT, PRE_ENF, and PUN_ENF, is positively associated with the value relevance of accounting earnings. This strongly supports hypothesis 4.

Empirical tests for examining hypothesis 5 show that the measure of accounting institutional environment has a stronger positive association with the value relevance of accounting earnings than the legal environment has with the value relevance of earnings. This is in line with the argument that the accounting institutional environment is more closely linked to the accounting information preparation process, thus, it is more closely associated with the value relevance of earnings than the broad legal and market variables that were adopted in prior studies.

The greater proximity of a measure of accounting institutional environment to accounting practice is supported by the clustering of accounting standards quality index and the indexes of acceptability and enforceability of accounting standards. The cluster of countries based on acceptability and enforceability of accounting standards is in line with categorization of accounting practice based on the spheres of influence introduced by prior literature. The similarities of countries classification provide strong support for argument that the indexes of adoption and enforcement arrangements really represent a country's financial reporting infrastructure that in turn reflects the country's accounting practice. Additionally, the association between value relevance of earnings and accounting institutional arrangements is stronger for code law and emerging countries than for developed common law countries. This means that the former group can benefit more from good quality accounting institutional arrangements. Overall, the results of multivariate tests are strong and are in the hypothesized directions.

Diagnostic tests confirm that the multiple regression analysis used in this study are valid tests to determine the association between dependent and independent variables. Also, it is demonstrated that the use of either weighted or un-weighted measure of accounting standards does not influence the results. Then, the use of ranked or un-ranked measure of acceptability and enforceability of accounting standards also does not alter the conclusion to support the hypotheses. Further tests demonstrate that components of preventive enforcement were not significantly related to the value relevance of accounting information. The use of other control variables in the regressions provided stronger support for the hypothesis that accounting institutional environment significantly influences the value relevance of accounting data regardless of the control variables. Lastly, a factor analysis of the items in the index of adoption and enforcement of accounting standards resulted in three main factors. Empirical tests provide results, consistent to those of prior studies that support the importance of the role of opening up of the standard setting process and disclosing enforcement actions to improve the acceptance and proper implementation of the standards. This, it is found in my results, leads to increased relevance of financial reporting.

An analysis of the indexes of adoption and enforcement arrangement for accounting standards across countries shows some intriguing findings. Three different accounting standard setting bodies are identified, namely a professional accounting body, a government body, and a body independent of the profession and the government. All countries having a government body as the standard setter are code law countries. Also, most auditing standards are determined by professional accounting bodies. Countries having government as auditing standard setters are also code law countries. Different types of institutional oversight mechanisms are identified across sample countries. These are the stock exchange, the securities exchange

regulator, or the financial supervisory authority. The recent tendency is towards a single regulator for various financial industries. Good preventive regulations should be put in place concurrently with strong punitive enforcement proceedings to result in effective enforcement arrangements. The practice to publish violator's name has been implemented by some countries. In spite of these actions, the judicial actions against auditors still seem to be less frequent.

Additional analysis regarding the value relevance of accounting earnings shows the receding trend over time across the sample countries. Further, investigation was conducted to see whether the value relevance of earnings was affected by different reporting dates imposed by the stock exchanges and the securities law filing requirements. The results suggest that long durations for submission of financial reports reduce the value relevance of accounting earnings.

CHAPTER 7

CONCLUSIONS

7.1 Summary and Conclusions

The objective of this study was to examine the effects of three accounting institutional environment parameters, accounting standards quality, acceptability of the standards and enforceability of the standards, and influence of their composite factor, the accounting institutional environment, on the value relevance of earnings. I also argue that the accounting institutional arrangements would have a more direct effect on the value relevance of accounting earnings than the broad national institutional variables, such as legal environment variable, as they are more specific to the practice of accounting than their legal counterparts that were used in prior studies.

I argue that the components of the accounting institutional environment individually and collectively enhance the quality of financial reporting, which helps alleviate the information asymmetry problem that causes the agency problem. Prior studies showed that differences in the quality of accounting standards results in differences in the value relevance of accounting information. However, accounting standards alone are not adequately effective to create high quality financial reports. The acceptability and enforceability of accounting standards are essential elements of the accounting institutional environment. They ensure the proper implementation of accounting standards.

Realizing that quality, acceptability, and enforceability of accounting standards influence the value relevance of accounting earnings, five hypotheses were developed. First, by extending prior studies on quality of accounting standards into the

international setting, I argued that the value relevance of earnings is positively associated with the quality of accounting standards across countries. Second, I reviewed the theoretical papers emphasizing the importance of the wider acceptance of the standards to ensure proper implementation of the standards. I hypothesized that value relevance of accounting numbers is positively related to acceptability of the standards. Third, I noted from the literature that financial reporting may be weak if accounting standards are not rigorously enforced. Enforcement can be classified into preventive and punitive modes. Preventive measures can enhance the relevance of accounting information by requiring, for instance, the existence and independence of external auditors and audit committee. Consequently, it is posited that the value relevance of earnings is positively associated with preventive enforcement of accounting standards. Punitive enforcement of accounting standards also has significant impact on the credibility of financial reports. I posited, therefore, that the value relevance of earnings is also positively associated with effective punitive enforcement arrangements for accounting standards. I further explained that the quality, acceptability, and enforceability of standards are complementary and, therefore, the combined effect of these aspects can have a strong impact on the quality of accounting information. Thus, I posited that the value relevance of earnings is positively associated with the accounting institutional environment. The accounting institutional arrangements are more specific to the accounting practice than their legal environment counterparts employed in recent studies. Hence, I hypothesized that accounting institutional environment has stronger positive association with the value relevance of earnings than legal environment has.

International Accounting Standards of International Accounting Standards Committee were employed as a basis to assess the quality of national accounting

standards. Three indexes were developed to assess the adoption and enforcement mechanisms of accounting standards across countries. The empirical tests to examine the hypotheses were conducted at the country level using firm level data. Data for 35 countries was collected by employing Global Vantage database. Following prior studies, the value relevance of earnings was measured using a hedge portfolio return approach as this approach was believed to be better in handling the market volatility across markets and time.

Akin to prior studies on institutional analysis of value relevance of earnings, this study finds support for the association between quality of accounting institutional variables and value relevance of earnings. Both bivariate correlations and multivariate tests results are in support of all except one of the hypotheses. This study finds that value relevance of accounting earnings is positively associated with the quality of accounting standards. It means that high quality accounting standards provide more relevant accounting information in financial reports for investment decision making. The association of the value relevance of earnings with acceptability of accounting standards is also supported, suggesting that investors perceive the strong acceptance of the standards leads to more credible financial reports.

The hypothesis regarding association between the value relevance of earnings and preventive rules is not supported. Preventive accounting rules may be implemented as a reactive action to certain circumstances without considering the impact of the institutional arrangements on the value relevance of accounting numbers or are employed for direct intervention by shareholders to protect their interests. Thus, it does not necessarily improve the value relevance of accounting data. The value relevance of earnings, however, is positively associated with effective punitive enforcement arrangements of accounting standards. This suggests that the market

perceives that effective punitive enforcement results in financial reports reflecting the economic condition of the firm. In other words, the investors' interests are better protected in a country with effective punitive enforcement, since it sends strong signals to the market that departure from accounting standards is not tolerated.

A composite variable comprising of accounting standards quality, acceptability, and enforcement arrangements, and signifying the accounting institutional environment in the sample countries, was also positively associated with value relevance. This is in line with the argument that high quality, acceptability and effective enforcement of accounting standards are complementary variables that enhance the value relevance of earnings. As expected, the measure of accounting institutional environment has a stronger positive association with the value relevance of earnings than legal environment has. It suggests that the proxies used in this study that are more adaptable to changes in financial reporting environment and more closely linked to the accounting practice are more closely associated with value relevance of earnings than the broad legal and market variables that were adopted in prior studies.

Further tests using exploratory cluster analysis supported this finding. The clusters of countries based on the acceptability and enforceability of accounting standards indexes is consistent with categorization of accounting practice by countries identified in early international accounting literature. In addition, the association between value relevance of earnings and accounting institutional environment is found to be stronger for code law and emerging economies than for developed common law countries. This suggests that the code law and emerging economies can benefit more from good quality accounting institutional environments.

Further tests of components of preventive measures supported prior results that showed that preventive enforcement was not significantly related to the value relevance of earnings. The use of other control variables also yielded similar results. In addition, factors obtained through the factorization of the elements of the indexes of acceptability and enforceability provide strong support for the significance of acceptability and punitive enforcement arrangements. On the whole, the sensitivity analyses provided further support for the hypotheses of this study.

Contrary to beliefs held by prior research that value relevance is stationary or decreasing, this study reveals that the value relevance of accounting earnings fluctuates across years, and has generally declined over time. Further investigations show that the value relevance of earnings is affected by different reporting dates imposed by the stock exchanges and the securities law requirements. The findings suggest that long durations for submission of financial reports reduce the value relevance of accounting earnings.

7.2. Contribution to the Literature

In comparison to prior studies in the accounting literature, this study extends the literature in the following ways. This study contributes to our understanding of how the accounting institutional environment influences the relevance of accounting numbers. Prior studies, such as Alford et al. (1993), Ali and Hwang (2000), Hung (2001), and Hope (2003), broadly examined the effects of legal, economic and accounting practice variables on value relevance of earnings. I extend the work of these studies by systematically examining one of the most proximate and important institutional variables that affects accounting practice, the accounting institutional environment and how it affects the value relevance of accounting earnings. Therefore,

this study provides useful evidence to international standards setters, regulatory bodies, stock exchanges and other institutional organizations about the effectiveness of accounting institutional arrangements that support a transparent and high quality financial reporting environment worldwide.

Many financial regulatory have conducted studies to assess the quality of accounting institutional arrangements in their jurisdictions (ADB, 2000a; 2000b; FEE, 2000; 2001; World Bank, 2000). Some prior studies have tried to propose a measure for assessing the accounting institutional arrangements (e.g. Kothari, 2000; Saudagaran and Diga, 2000; Ball, 2001; Benston et al., 2003). This study extends these prior studies by combining the initiatives of both strands of studies and provides a comprehensive and robust measure of acceptability and enforceability of accounting standards around the world.

The indexes of acceptability and enforcement of accounting standards enable this study to provide empirical evidence on the association between the value relevance of accounting numbers and the level of acceptance of the accounting standards. This means that this study provides empirical evidence that supports the hypotheses of prior theoretical studies that suggested that due process for acceptability of accounting standards was an important ingredient of credible accounting standards (e.g. Gerboth, 1973; Zeff, 1988, Rahman, 1991).

Additionally, the indexes of acceptability and enforcement arrangements represent a country's financial reporting infrastructure that affects the country's accounting practice. A classification of countries based on similarities of accounting institutional arrangement indexes was in line with the categorization of accounting practice based on zone of influence described by prior studies. Therefore, this study extends prior

studies that have tried to classify countries based on similarities of accounting practice (Hatfield, 1966; Seidler, 1967; Nobes, 1983; Roberts, 1995).

Empirically tested, the proxy for accounting institutional arrangement developed in this study has stronger association with the value relevance of earnings than the legal arrangement proxy. The robustness of the proxy used suggests that a measure more closely linked to the accounting practice can capture more recent changes in the financial reporting environment and, therefore, is more dominant in enhancing the value relevance of earnings than the broad legal variables. This study, therefore, extends prior studies that mostly employ measures of La Porta et al. (1997, 1998)'s legal framework to investigate its impact on the returns-earnings relations, financial disclosure, transparency, forecast accuracy, and earnings management across countries (e.g. Ball et al., 2000; 2003; Jaggi and Low, 2000; Hung, 2001; Hope, 2003; Leuz et al., 2003). Apart from demonstrating the greater robustness of the accounting institutional environment, this study shows that the impact of the variations in the accounting institutional environment varies between the countries of the two legal systems. This has a major policy implication in the sense that countries of different legal systems may require different accounting policy prescriptions for improving the value relevance of accounting earnings.

This study also provides a robust measure of quality of accounting standards across countries. By clustering the countries using the accounting standard quality measure, this study provides evidence that common law countries tend to have better quality of accounting standards relative to IAS, which is consistent with the findings of prior studies (Ball et al., 2000; Jaggi and Low, 2000; Francis et al., 2003) claim.

In comparison to prior studies that examine the value relevance of earnings across countries (Alford et al., 1993; Ali and Hwang, 2000; Hung, 2001), this study has a

much larger sample than prior studies in this area. Thus, the results of this study are more generalizable. This study also employs more Asian countries than any of the prior studies. Additionally, while legal enforcement measures employed in La Porta et al. (1998) study data from the time range 1980-1995, this study offers measures of accounting institutional arrangements of more recent years (2000-2001). This may also provide a better picture for understanding studies using more recent financial accounting data.

While prior studies have mainly examined the diminishing tendency of value relevance of accounting numbers in a single country study (Francis and Schipper, 1999; Lev and Zarowin, 1999), this study provides evidence of the receding tendency of value relevance data in a cross-country context. This study also extends Alford et al. (1993), which contends that differences in capital market characteristics, such as financial reporting requirements, lead to differences in the usefulness of earnings across countries. Empirical findings of this study demonstrate that financial reporting requirement for submission of financial reports at durations longer than 3 months after fiscal year-end show low value relevance. The results suggest that such long durations for reporting reduce the value relevance of accounting earnings. This finding would be useful to regulatory bodies to reconsider regulation regarding duration of filing annual audited financial reports.

7.3. Limitations and Further Extensions.

While this study has further developed the theme that quality, acceptability, and enforceability of accounting standards matter for value relevance of accounting earnings, this study is subject to several limitations.

The accounting standards quality variable used in this study only captures those accounting rules that are present in the accounting standards. Accounting standards are a sub-set of the total set of rules for accounting measurement and disclosure practices. Future studies can consider rules from sources such as the stock exchange listing requirements and securities legislation. However, finding a clear benchmark against which quality of such rules can be measured will be an important matter to consider before such rules are used.

As this study employed country level variables, the variations between firms' accounting information within the same country reporting environment are not fully captured. Another limitation of a cross-country study is the few degrees of freedom. Limited number of sample countries limits the number of control variables which can be employed in the models.

Additionally, this study focuses on the accounting institutional arrangements for the period 2000-2001. The accounting standards quality and acceptability and enforcement arrangements may not change frequently, but they do change in response to changes in the accounting environment. Thus, the applicability of the measures developed in this study is subject to temporal limitations.

Also, with the receding value relevance of accounting earnings noted in the study, researchers may have to include other indicators of accounting into the value relevance formulation to better capture the market perception of the quality of accounting information. With the emergence of various forms of disclosure, other parameters of corporate disclosure may also have to be included in the value relevance model to more fully account for the accounting institutional environment of a country.

The hedge portfolio method used in this study to compute value relevance of earnings is based on the assumption that only large international portfolio investors are

interested in the accounting earnings number. Other methods, such as using company level data in the regressions could be an alternative. However, such methods are prone to problems caused by differences in market volatilities between countries.

Furthermore, I use only a returns based value relevance proxy. Future studies could include volume-based proxies to provide an understanding of how stock liquidity is affected by better quality earnings or use bid-ask spread to show the effects of better quality earnings on risk.

The assessment method of accounting institutional arrangement which employs a combination of first-hand assessment of public accounting firms and second-hand source published information has some limitations compared to the use of direct assessment of accounting institutional arrangements. Obtaining information directly from the accounting standard setting body and regulatory body in each country may provide more reliable data. Nevertheless, such direct assessment methods could only be achieved in cooperation with international authoritative institutions and experts in the respective countries, which could involve a prolonged process of data collection. Since institutional arrangements change over time, such a process may lead to dated findings, which may not be useful for giving policy directions

Figure 3.1. Financial Reporting Infrastructure & Accounting Institutional Environment

Table 5.1. Quality of Accounting Standards Weighted Index

Table 5.11. Quantity of Accounting Standards - Weighted Index												
No.	Country	2000				Total	2001				Total	Average
		Type of differences					Type of differences					
		A	B	C	D		A	B	C	D		
	Weight	4	3	2	1		4	3	2	1		
1	Argentina	8	4	14	8	80	10	5	18	10	101	90.5
2	Australia	5	3	6	5	46	6	3	13	6	65	55.5
3	Austria	4	8	17	4	78	8	8	20	6	102	90
4	Belgium	3	6	13	10	66	4	7	15	11	78	72
5	Canada	0	3	11	4	35	0	4	17	4	50	42.5
6	China	5	6	5	5	53	8	6	10	2	72	62.5
7	Denmark	4	4	7	3	45	5	5	13	4	65	55
8	Finland	5	7	16	4	77	8	8	19	5	99	88
9	France	5	5	14	7	70	5	6	19	10	86	78
10	Germany	5	6	16	8	78	5	7	20	8	89	83.5
11	Greece	7	8	16	3	87	8	9	20	4	103	95
12	Hong Kong	5	3	13	10	65	4	2	8	4	42	53.5
13	Indonesia	3	3	8	7	44	3	3	8	6	43	43.5
14	Ireland	0	0	11	4	26	0	0	15	5	35	30.5
15	Israel	0	2	8	3	25	4	3	9	4	47	36
16	Italy	4	5	16	5	68	6	6	19	4	84	76
17	Japan	4	4	12	6	58	6	5	15	2	71	64.5
18	Korea	3	2	7	3	35	4	3	7	3	42	38.5
19	Malaysia	11	4	5	0	66	13	4	9	0	82	74
20	Mexico	0	0	8	4	20	0	0	9	4	22	21
21	Netherlands	5	2	5	9	45	4	2	5	11	43	44
22	New Zealand	4	2	6	7	41	4	2	11	6	50	45.5
23	Norway	4	0	2	7	27	4	3	5	7	42	34.5
24	Philippines	8	4	9	0	62	12	2	10	1	75	68.5
25	Poland	10	4	15	7	89	13	5	18	7	110	99.5
26	Portugal	8	7	8	5	74	9	7	12	5	86	80
27	Singapore	3	2	12	3	45	3	1	10	0	35	40
28	South Africa	0	0	4	0	8	2	1	2	0	15	11.5
29	Spain	5	8	17	2	80	7	9	22	2	101	90.5
30	Sweden	3	3	6	6	39	3	4	11	7	53	46
31	Switzerland	10	8	11	1	87	17	7	17	2	125	106
32	Thailand	5	0	5	0	30	8	4	4	0	52	41
33	Turkey	7	6	7	5	65	9	6	9	5	77	71
34	UK	0	0	11	5	27	0	0	15	6	36	31.5
35	US	3	0	8	9	37	2	2	9	9	41	39

Sources:

GAAP 2000: A survey of National Accounting Rules in 53 countries; and

GAAP 2001: A Survey of National Accounting Rules Benchmarked against IAS

Type of Differences from IAS:

- Absence of specific national rules on recognition and measurements
- Absence of specific rules on disclosure
- Inconsistencies between national and IAS rules that could lead to differences for many enterprises in certain areas
- Other issues, in certain enterprises, that could lead to differences from IAS.

Table 5.2. Responses received from distribution of enforcement index

No.	Country	PwC	EY	DTT	Notes
1	Argentina		✓		
2	Australia	✓			
3	Austria	✓			
4	Belgium				
5	Canada				
6	China	✓	✓		
7	Cyprus	✓	✓		excluded, not enough company data
8	Czech	✓			excluded. not enough company data
9	Denmark		✓		
10	Egypt	✓	✓		excluded, not enough company data
11	Finland				
12	France				
13	Germany	✓			
14	Greece	✓	✓		
15	Hong Kong	✓	✓		
16	Hungary		✓		excluded, not enough company data
17	India		✓		excluded. not enough company data
18	Indonesia	✓			
19	Ireland	✓			
20	Israel	✓			
21	Italy				
22	Japan	✓	✓		
23	Korea	✓	✓	✓	
24	Malaysia	✓	✓		
25	Mexico	✓	✓		
26	Netherlands	✓	✓		
27	New Zealand		✓		
28	Norway	✓			
29	Pakistan	✓	✓		excluded, not enough company data
30	Peru		✓		excluded, not enough company data
31	Philippine	✓	✓		
32	Poland	✓	✓		
33	Portugal				
34	Russia	✓			excluded, not enough company data
35	Singapore		✓	✓	
36	South Africa				
37	Spain	✓			
38	Sweden		✓		
39	Switzerland				
40	Thailand		✓		
41	Turkey	✓	✓		
42	UK	✓	✓		
43	USA				
Total		25	24	2	

Definitions:

PwC : PricewaterhouseCoopers
 EY : Ernst and Young
 DTT : Deloitte Touche Tohmatsu

Table 5.3 Indexes of Acceptability and Enforceability of Accounting Standards per 2000/2001.

I. ACCEPTABILITY	
1	An independent accounting standards setting body (from government)
2	An independent accounting standards setting body (from professional accounting body)
3	Independently funded organization (from professional accounting body)
4	Openness in standard setting process
5	Interpretation guidelines produced by standards setter or supervisory body
II. ENFORCEABILITY	
A. PREVENTIVE	
1) AUDITING	
1	Requirement of audited financial statements by law
2	Practical training requirement for obtaining a license as auditor
3	Continuing professional education requirements
4	Mandatory rotation of auditors
5	Restrictions on non-audit service
6	Disclosure of audit fee
7	Disclosure of non-audit fee
8	Requirement for an audit committee
9	An independent auditing standards setting body (from professional accounting body)
10	External audit

Table 5.4. Reliability Analysis of the Indexes of Acceptability and Enforcement Arrangement

Variable	Alpha (Cronbach)
TOTAL INDEX	0.5484
I) ACCEPTABILITY	0.3056
II) ENFORCEABILITY	0.5058
A) PREVENTIVE ENFORCEMENT	-0.0075
Auditing	0.3717
Supervision	0.2690
B) PUNITIVE ENFORCEMENT	0.7111

Table 5.5. Indexes of Acceptability and Enforceability of Accounting Standards Across Countries per 2000/2001.

No.	Institutional Variable	Country											
		ARG	AUS	AUT	BEL	CAN	CHN	DNK	FIN	FRA	DEU	GRC	HKG
I	ACCEPTABILITY												
1	An independent accounting standards setting body (from government)	1	1	1	0	1	0	1	0	0	1	0	1
2	An independent accounting standards setting body (from prof. acctg body)	0	1	0	1	0	1	0	1	1	1	1	0
3	Independently funded organization (from professional accounting body)	0	1	0	1	0	1	0	1	1	1	1	0
4	Openness in standard setting process	1	1	0	0	1	1	1	1	1	1	0	1
5	Interpretations guidelines produced by std setter or regulatory body	0	1	0	1	1	1	1	1	1	1	1	1
	Subtotal of Acceptability	2	5	1	3	3	4	3	4	4	5	3	3
II	ENFORCEABILITY												
A	PREVENTIVE												
	AUDITING												
1	Requirement of audited financial statements by law	1	1	1	1	1	1	1	1	1	1	1	1
2	Practical training requirement for obtaining a license as auditor	0	1	1	1	1	1	1	1	1	1	1	1
3	Continuing professional education requirements	0	1	1	1	1	1	0	1	1	1	1	1
4	Mandatory rotation of auditors	0	0	1	0	0	0	0	0	0	1	0	0
5	Restrictions on non-audit service	0	0	1	0	0	0	0	0	0	0	0	1
6	Disclosure of audit fee	1	1	0	0	0	0	1	0	0	0	0	1
7	Disclosure of non-audit fee	0	1	0	0	0	0	1	0	0	0	0	0
8	Requirement for an audit committee	0	0	1	0	1	0	0	1	0	0	0	0
9	An independent auditing standards setting body (from prof.acctg body)	0	0	0	0	0	0	0	0	0	0	1	0
10	External quality review performed at regular period.	0	1	1	1	1	1	1	0	1	1	0	1
	SUPERVISION												
1	Existence of institutional oversight mechanism for financial reports	1	1	1	1	1	1	1	1	1	1	1	1
2	Authority to issue regulation regarding financial reporting	1	1	1	1	0	1	1	1	1	1	0	1
3	Proactive approach of enforcement orientation	1	1	0	1	1	1	1	1	1	1	1	1
4	Require publication of financial statements in newspapers	1	0	0	1	0	1	0	0	1	1	1	1
5	Require submission of annual and quarterly financial reports	1	0	1	1	1	0	0	1	0	0	1	0
6	Requirement for continuous disclosure obligation	1	1	0	0	1	1	1	0	1	1	0	1
	Subtotal Preventive	8	10	10	9	9	9	9	8	9	10	8	11
B	PUNITIVE												
	Mechanism for Enforcement of Accounting Standards												
1	Responsibility of company directors for the fin. reports as stated in the law	1	1	1	1	1	1	1	1	1	1	1	1
2	Authority of std setter or professional acctg body to enforce the standards	1	1	0	0	1	1	0	0	1	0	1	1
3	Legal backing of accounting & auditing standards	1	1	1	1	1	1	1	1	1	1	1	1
4	Authority of supervisory body to enforce accounting & auditing standards	1	1	0	1	1	1	1	1	1	1	1	1
5	Mechanism in supervisory body for imposing sactions on violators	1	1	0	1	1	1	1	1	1	1	1	1
	Enforcement against Officers, Directors, or Company												
1	Prosecution of company officers, directors, or company	1	1	0	1	1	1	0	1	1	1	1	1
2	Suspension or delisting of companies from capital mkt	1	1	1	1	1	1	1	1	1	1	1	1
3	Publication of company's name by supervisory body	1	1	0	0	1	1	0	0	0	1	1	1
	Enforcement against Auditors												
1	Prosecution of auditors by professional accounting body	1	1	0	0	1	1	0	0	0	0	0	1
2	Prosecution of auditors by supervisory body	1	1	0	0	0	0	0	0	0	0	0	0
3	Publication of auditor's name by professional accounting body	0	1	0	0	1	1	0	0	0	0	0	0
4	Publication of auditor's name by supervisory body	0	1	0	0	0	0	0	0	0	0	0	0
	Subtotal Punitive	10	12	3	6	10	10	5	6	7	7	8	9
	Total	20	27	14	18	22	23	17	18	20	22	19	23

Symbol's definition:

ARG = Argentina

AUS = Australia

AUT = Austria

BEL = Belgium

CAN = Canada

CHN = China

DNK = Denmark

FIN = Finland

FRA = France

DEU = Germany

GRC = Greece

HKG = Hong Kong

Table 5.5. Indexes of Acceptability and Enforceability of Accounting Standards Across Countries per 2000/2001.

No.	Institutional Variable	Country											
		IDN	IRL	ISR	ITA	JPN	KOR	MYS	MEX	NLD	NZL	NOR	PHL
I	ACCEPTABILITY												
1	An independent accounting standards setting body (from government)	1	1	1	1	0	1	1	1	1	1	1	1
2	An independent accounting standards setting body (from prof. acctg body)	0	1	1	0	1	1	1	0	1	1	1	0
3	Independently funded organization (from professional accounting body)	1	1	0	0	1	0	1	1	1	1	1	0
4	Openness in standard setting process	1	1	1	1	1	1	1	1	1	1	1	1
5	Interpretations guidelines produced by std setter or regulatory body	1	1	0	1	1	1	1	1	1	1	1	1
	Subtotal of Acceptability	4	5	3	3	4	4	5	4	5	5	5	3
II	ENFORCEABILITY												
A	PREVENTIVE												
	AUDITING												
1	Requirement of audited financial statements by law	1	1	1	1	1	1	1	1	1	1	1	1
2	Practical training requirement for obtaining a license as auditor	1	1	1	1	1	1	1	1	1	1	1	0
3	Continuing professional education requirements	1	1	1	0	1	1	1	1	1	1	1	0
4	Mandatory rotation of auditors	0	0	0	1	0	0	0	0	0	0	0	0
5	Restrictions on non-audit service	0	0	1	1	0	0	1	0	0	0	1	0
6	Disclosure of audit fee	0	1	0	0	0	0	1	0	0	1	1	0
7	Disclosure of non-audit fee	0	0	0	0	0	0	1	0	0	1	1	0
8	Requirement for an audit committee	0	1	1	1	1	0	1	0	1	0	0	0
9	An independent auditing standards setting body (from prof.acctg body)	0	0	0	0	0	0	0	0	0	0	0	0
10	External quality review performed at regular period.	0	1	0	1	1	1	0	0	1	1	1	0
	SUPERVISION												
1	Existence of institutional oversight mechanism for financial reports	1	0	1	1	1	1	1	1	1	1	1	1
2	Authority to issue regulation regarding financial reporting	1	0	1	1	1	1	0	1	0	1	0	1
3	Proactive approach of enforcement orientation	1	0	1	1	1	1	1	1	0	0	1	0
4	Require publication of financial statements in newspapers	1	0	1	1	1	1	0	1	1	0	0	0
5	Require submission of annual and quarterly financial reports	1	0	1	1	0	1	1	1	0	0	1	1
6	Requirement for continuous disclosure obligation	0	0	1	0	1	1	1	1	1	1	1	1
	Subtotal Preventive	8	6	11	11	10	10	11	9	8	9	11	5
B	PUNITIVE												
	Mechanism for Enforcement of Accounting Standards												
1	Responsibility of company directors for the fin. reports as stated in the law	1	1	1	1	1	1	1	1	1	1	1	1
2	Authority of std setter or professional acctg body to enforce the standards	1	1	1	0	1	1	1	1	1	1	1	0
3	Legal backing of accounting & auditing standards	1	1	0	0	1	1	1	1	1	1	1	1
4	Authority of supervisory body to enforce accounting & auditing standards	1	0	1	1	1	1	1	1	0	1	1	1
5	Mechanism in supervisory body for imposing sactions on violators	1	0	1	1	1	1	1	1	1	1	1	1
	Enforcement against Officers, Directors, or Company												
1	Prosecution of company officers, directors, or company	1	0	1	1	1	1	1	1	1	1	1	1
2	Suspension or delisting of companies from capital mkt	1	1	1	1	1	1	1	1	1	1	1	1
3	Publication of company's name by supervisory body	1	1	1	0	1	1	1	1	1	1	1	1
	Enforcement against Auditors												
1	Prosecution of auditors by professional accounting body	1	1	1	0	0	0	1	1	1	1	0	0
2	Prosecution of auditors by supervisory body	1	0	1	1	1	1	0	1	0	0	0	0
3	Publication of auditor's name by professional accounting body	0	1	0	0	0	0	1	0	1	1	0	0
4	Publication of auditor's name by supervisory body	0	0	0	0	1	1	0	0	0	0	0	0
	Subtotal Punitive	10	7	9	6	10	10	10	10	9	10	8	7
	Total	22	18	23	20	24	24	26	23	22	24	24	15

Symbol's definition:

IDN = Indonesia

IRL = Ireland

ISR = Israel

ITA = Italy

JPN = Japan

KOR = Korea

MYS = Malaysia

MEX = Mexico

NLD = Netherlands

NZL = New Zealand

NOR = Norway

PHL = Philippine

Table 5.5. Indexes of Acceptability and Enforceability of Accounting Standards Across Countries per 2000/2001

No.	Institutional Variable	Country											Total
		POL	PRT	SGP	ZAF	ESP	SWE	CHE	THA	TUR	GBR	USA	
I	ACCEPTABILITY												
1	An independent accounting standards setting body (from government)	0	0	1	1	0	1	1	1	1	1	1	26
2	An independent accounting standards setting body (from prof. acctg body)	1	1	0	0	1	1	1	0	0	1	1	22
3	Independently funded organization (from professional accounting body)	0	1	0	0	1	0	1	0	1	1	1	21
4	Openness in standard setting process	0	0	1	1	1	1	1	1	1	1	1	30
5	Interpretations guidelines produced by std setter or regulatory body	0	1	1	1	1	1	1	1	1	1	1	31
	Subtotal of Acceptability	1	3	3	3	4	4	5	3	4	5	5	130
II	ENFORCEABILITY												
A	PREVENTIVE												
	AUDITING												
1	Requirement of audited financial statements by law	1	1	1	1	1	1	1	1	1	1	1	35
2	Practical training requirement for obtaining a license as auditor	1	1	1	1	1	1	1	1	1	1	1	33
3	Continuing professional education requirements	1	0	1	0	1	1	0	0	1	1	1	27
4	Mandatory rotation of auditors	0	0	1	0	0	1	0	0	1	0	0	6
5	Restrictions on non-audit service	1	0	0	0	0	0	0	1	0	0	0	8
6	Disclosure of audit fee	0	0	1	1	0	1	0	0	0	1	1	13
7	Disclosure of non-audit fee	0	0	0	1	0	1	0	0	0	1	0	8
8	Requirement for an audit committee	0	0	1	0	0	0	0	1	0	1	1	13
9	An independent auditing standards setting body (from prof.acctg body)	1	0	0	0	1	1	0	0	0	0	0	4
10	External quality review performed at regular period.	1	1	1	1	1	0	1	0	1	1	1	25
	Subtotal Preventive	11	8	11	8	10	11	6	8	11	11	11	325
B	PUNITIVE												
	Mechanism for Enforcement of Accounting Standards												
1	Responsibility of company directors for the fin. reports as stated in the law	1	1	1	1	1	1	1	1	1	1	1	35
2	Authority of std setter or professional acctg body to enforce the standards	1	1	1	1	1	0	1	1	1	1	1	27
3	Legal backing of accounting & auditing standards	1	1	0	0	1	1	1	1	1	1	1	31
4	Authority of supervisory body to enforce accounting & auditing standards	1	1	1	1	1	1	1	1	1	1	1	32
5	Mechanism in supervisory body for imposing sactions on violators	1	1	1	1	1	1	1	1	1	1	1	33
	Enforcement against Officers, Directors, or Company												
1	Prosecution of company officers, directors, or company	1	1	1	1	1	0	1	1	1	1	1	31
2	Suspension or delisting of companies from capital mkt	1	1	1	1	1	1	1	1	1	1	1	35
3	Publication of company's name by supervisory body	1	0	1	1	1	0	1	1	1	1	1	27
	Enforcement against Auditors												
1	Prosecution of auditors by professional accounting body	0	0	1	1	1	0	0	1	0	1	1	18
2	Prosecution of auditors by supervisory body	0	0	1	0	0	0	0	1	1	0	1	12
3	Publication of auditor's name by professional accounting body	0	0	1	1	1	0	0	1	0	1	1	13
4	Publication of auditor's name by supervisory body	0	0	1	0	0	0	0	1	1	0	1	7
	Subtotal Punitive	8	7	11	9	10	5	8	12	10	10	12	301
	Total	20	18	25	20	24	20	19	23	25	26	28	756

Symbol's definition:

POL = Poland

PRT = Portugal

SGP = Singapore

ZAF = South Africa

ESP = Spain

SWE = Sweden

CHE = Switzerland

THA = Thailand

TUR = Turkey

GBR = United Kingdom

USA = United States

Table 5.6. Value Relevance of Earnings across Countries and Years
Panel A.

No.	Country	A Earnings Portfolio (%)						
		1996	1997	1998	1999	2000	2001	AVG
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	Argentina	16.475	43.955	-11.361	-33.578	18.203	-6.547	4.524
2	Australia	24.433	3.902	27.823	25.893	20.004	20.822	20.479
3	Austria	4.665	8.769	2.072	4.978	-7.336	20.983	5.689
4	Belgium	7.758	-6.225	12.594	8.797	5.297	10.500	6.453
5	Canada	21.589	12.754	14.437	5.140	12.545	15.734	13.700
6	China		-19.501	-15.821	84.662	22.969	8.220	16.106
7	Denmark	20.995	3.680	9.425	1.393	10.001	13.756	9.875
8	Finland	2.897	10.740	10.177	2.519	4.071	10.706	6.852
9	France	20.259	10.433	7.491	25.680	10.746	16.066	15.112
10	Germany	9.781	10.546	3.761	11.454	1.973	2.205	6.620
11	Greece	13.702	39.664	-5.695	7.428	5.434	4.600	10.855
12	Hong Kong	16.463	11.932	12.979	45.788	27.212	7.340	20.286
13	Indonesia	43.130	6.464	16.454	99.023	8.726	-3.225	28.429
14	Ireland	38.015	34.533	-4.966	12.544	6.872	20.864	17.977
15	Israel	23.746	7.666	12.973	20.492	-2.548	18.076	13.401
16	Italy	13.141	-9.857	3.658	22.202	17.674	14.771	10.265
17	Japan	4.361	6.054	20.205	11.262	3.361	6.044	8.548
18	Korea	3.332	5.863	14.668	14.808	6.827	45.701	15.200
19	Malaysia	13.260	-1.203	2.992	63.186	0.698	13.256	15.365
20	Mexico	19.674	28.392	5.711	21.288	11.854	-3.680	13.873
21	Netherlands	14.300	7.215	2.810	13.936	11.164	8.765	9.698
22	New Zealand	31.117	21.051	13.101	7.852	12.859	13.913	16.649
23	Norway	24.953	1.765	8.138	19.536	-2.614	12.938	10.786
24	Philippine	-20.409	15.866	20.987	18.391	-14.513	-8.035	2.048
25	Poland			-11.865	5.327	14.227	-19.102	-2.854
26	Portugal	28.518	-31.639	9.727	29.678	16.769	-2.524	8.422
27	Singapore	12.585	7.658	12.242	23.760	7.300	16.948	13.416
28	South Africa	0.053	11.355	7.360	11.515	20.497	-16.996	5.631
29	Spain	14.420	9.060	11.717	7.185	2.818	12.264	9.577
30	Sweden	-0.041	9.626	12.464	-23.115	-2.630	10.903	1.201
31	Switzerland	2.826	14.186	7.798	11.917	5.624	13.188	9.257
32	Thailand	16.615	27.593	10.216	3.847	12.443	37.962	18.113
33	Turkey	14.006	2.457	32.995	4.329	2.033	11.843	11.277
34	UK	10.345	10.271	16.720	32.859	3.839	16.311	15.058
35	USA	15.721	23.194	15.324	37.705	12.929	14.953	19.971

Table 5.6. Value Relevance of Earnings across Countries and Years
Panel B.

No.	Country	A Adj Ret Portfolio (%)							VAL-NI
		1996	1997	1998	1999	2000	2001	AVG	
(1)	(2)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	Argentina	16.475	43.955	19.041	60.683	29.555	33.041	33.792	0.134
2	Australia	36.937	28.628	44.434	42.147	39.103	53.098	40.725	0.503
3	Austria	33.102	20.150	22.296	23.909	17.514	29.440	24.402	0.233
4	Belgium	24.186	40.799	23.414	29.698	26.967	25.344	28.401	0.227
5	Canada	40.272	46.422	31.775	76.167	34.095	43.236	45.328	0.302
6	China		19.501	15.821	134.785	147.539	24.314	68.392	0.235
7	Denmark	26.179	20.035	18.353	37.808	27.958	32.530	27.144	0.364
8	Finland	33.041	33.362	19.296	47.148	24.128	35.805	32.130	0.213
9	France	31.530	31.489	28.819	60.193	33.534	31.461	36.171	0.418
10	Germany	27.057	28.287	32.061	30.669	29.816	37.728	30.936	0.214
11	Greece	19.767	40.546	162.914	65.126	20.406	21.072	54.972	0.197
12	Hong Kong	37.248	33.481	22.863	147.063	43.210	50.538	55.734	0.364
13	Indonesia	58.983	11.129	46.971	189.692	23.372	55.681	64.305	0.442
14	Ireland	46.872	36.885	21.613	13.333	26.331	50.092	32.521	0.553
15	Israel	24.228	33.817	33.094	77.237	34.571	24.841	37.965	0.353
16	Italy	19.603	58.216	21.825	44.537	31.904	22.903	33.165	0.310
17	Japan	18.442	16.064	48.248	42.333	23.338	21.831	28.376	0.301
18	Korea	9.175	17.607	59.717	75.282	37.695	86.519	47.666	0.319
19	Malaysia	29.847	14.844	20.112	157.457	20.898	36.055	46.535	0.330
20	Mexico	27.191	41.554	19.952	41.974	33.855	43.491	34.669	0.400
21	Netherlands	25.556	22.825	27.367	44.068	30.258	27.030	29.517	0.329
22	New Zealand	31.117	21.051	13.101	28.756	35.062	37.391	27.746	0.600
23	Norway	33.533	31.466	25.290	43.413	32.818	39.021	34.257	0.315
24	Philippine	20.409	15.866	34.078	58.970	38.842	38.207	34.395	0.060
25	Poland			25.083	42.608	30.667	39.081	34.360	-0.083
26	Portugal	43.129	32.917	16.224	39.625	25.898	24.723	30.419	0.277
27	Singapore	19.112	20.021	24.062	68.077	26.632	34.663	32.094	0.418
28	South Africa	16.051	11.355	46.689	21.996	23.584	35.369	25.841	0.218
29	Spain	34.662	42.395	22.791	25.081	18.734	30.824	29.081	0.329
30	Sweden	28.039	19.655	22.172	65.825	24.009	41.971	33.612	0.036
31	Switzerland	16.615	24.002	25.019	48.193	19.433	27.611	26.812	0.345
32	Thailand	33.417	43.447	50.587	97.834	36.714	96.358	59.726	0.303
33	Turkey	14.006	2.457	57.074	77.808	11.188	36.585	33.186	0.340
34	UK	31.831	33.791	34.090	78.662	33.913	40.190	42.080	0.358
35	USA	36.670	49.770	45.234	135.390	48.367	51.407	61.140	0.327

Table 5.6. Value Relevance of Earnings across Countries and Years
Panel C.

No.	Country	VAL-NI 1996	VAL-NI 1997	VAL-NI 1998	VAL-NI 1999	VAL-NI 2000	VAL-NI 2001	VAL-NI AVG
(1)	(2)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
1	Argentina	1.000	1.000	-0.597	-0.553	0.616	-0.198	0.211
2	Australia	0.661	0.136	0.626	0.614	0.517	0.392	0.490
3	Austria	0.141	0.435	0.093	0.208	-0.419	0.713	0.195
4	Belgium	0.321	-0.153	0.538	0.296	0.196	0.414	0.269
5	Canada	0.536	0.275	0.454	0.067	0.368	0.364	0.344
6	China		-1.000	-1.000	0.628	0.156	0.338	-0.176
7	Denmark	0.802	0.184	0.514	0.037	0.358	0.423	0.386
8	Finland	0.088	0.322	0.527	0.053	0.169	0.299	0.243
9	France	0.643	0.331	0.260	0.427	0.320	0.511	0.415
10	Germany	0.362	0.373	0.117	0.373	0.066	0.058	0.225
11	Greece	0.693	0.978	-0.035	0.114	0.266	0.218	0.373
12	Hong Kong	0.442	0.356	0.568	0.311	0.630	0.145	0.409
13	Indonesia	0.731	0.581	0.350	0.522	0.373	-0.058	0.417
14	Ireland	0.811	0.936	-0.230	0.941	0.261	0.417	0.523
15	Israel	0.980	0.227	0.392	0.265	-0.074	0.728	0.420
16	Italy	0.670	-0.169	0.168	0.499	0.554	0.645	0.394
17	Japan	0.236	0.377	0.419	0.266	0.144	0.277	0.287
18	Korea	0.363	0.333	0.246	0.197	0.181	0.528	0.308
19	Malaysia	0.444	-0.081	0.149	0.401	0.033	0.368	0.219
20	Mexico	0.724	0.683	0.286	0.507	0.350	-0.085	0.411
21	Netherlands	0.560	0.316	0.103	0.316	0.369	0.324	0.331
22	New Zealand	1.000	1.000	1.000	0.273	0.367	0.372	0.669
23	Norway	0.744	0.056	0.322	0.450	-0.080	0.332	0.304
24	Philippine	-1.000	1.000	0.616	0.312	-0.374	-0.210	0.057
25	Poland			-0.473	0.125	0.464	-0.489	-0.093
26	Portugal	0.661	-0.961	0.600	0.749	0.648	-0.102	0.266
27	Singapore	0.658	0.383	0.509	0.349	0.274	0.489	0.444
28	South Africa	0.003	1.000	0.158	0.524	0.869	-0.481	0.346
29	Spain	0.416	0.214	0.514	0.286	0.150	0.398	0.330
30	Sweden	-0.001	0.490	0.562	-0.351	-0.110	0.260	0.142
31	Switzerland	0.170	0.591	0.312	0.247	0.289	0.478	0.348
32	Thailand	0.497	0.635	0.202	0.039	0.339	0.394	0.351
33	Turkey	1.000	1.000	0.578	0.056	0.182	0.324	0.523
34	UK	0.325	0.304	0.490	0.418	0.113	0.406	0.343
35	USA	0.429	0.466	0.339	0.278	0.267	0.291	0.345

Table 5.7. Distribution of firm-year observations by country and year

No.	Country	Total	1996	1997	1998	1999	2000	2001
1	Argentina	45	3	3	6	11	11	11
2	Australia	405	54	56	63	70	74	88
3	Austria	170	23	28	35	34	25	25
4	Belgium	219	29	29	32	40	42	47
5	Canada	875	130	142	147	146	154	156
6	China	213		4	4	51	56	98
7	Denmark	243	30	30	43	44	45	51
8	Finland	354	46	44	61	63	60	80
9	France	928	102	110	146	160	182	228
10	Germany	1076	152	162	201	200	193	168
11	Greece	148	7	9	23	36	39	34
12	Hong Kong	177	12	20	22	40	41	42
13	Indonesia	316	39	42	41	77	78	39
14	Ireland	57	9	9	9	10	10	10
15	Israel	92	9	16	16	18	18	15
16	Italy	389	50	47	65	73	76	78
17	Japan	7647	1061	1129	1198	1361	1433	1465
18	Korea	348	15	18	18	82	100	115
19	Malaysia	544	53	57	68	118	123	125
20	Mexico	275	31	35	41	59	55	54
21	Netherlands	407	46	49	69	76	84	83
22	New Zealand	46	7	4	4	8	11	12
23	Norway	196	22	23	30	35	38	48
24	Philippine	99	5	6	9	31	30	18
25	Poland	53			8	20	16	9
26	Portugal	96	7	8	19	20	22	20
27	Singapore	330	34	38	41	66	74	77
28	South Africa	73	6	7	13	15	16	16
29	Spain	250	28	30	45	45	49	53
30	Sweden	486	43	51	68	94	105	125
31	Switzerland	348	41	48	64	58	68	69
32	Thailand	546	60	62	64	117	118	125
33	Turkey	61	2	2	12	16	17	12
34	UK	1252	162	171	220	225	232	242
35	USA	5698	830	884	945	972	1015	1052
Total		24462	3148	3373	3850	4491	4710	4890

Table 6.1. Descriptive Statistics

No.	Country	STD_QUAL	ACCEPT	PRE_ENF	PUN-ENF	AIE	R_AIE	LEGALSYS	D_DEV
1	Argentina	4.5	3	7.5	25.5	-1.073	8	0	0
2	Australia	18	30.5	21.5	34	1.294	33	1	1
3	Austria	6	1.5	21.5	1	-1.846	1	0	1
4	Belgium	13	9.5	15	5	-1.209	7	0	1
5	Canada	25	9.5	15	25.5	0.248	18	1	1
6	China	17	20.5	15	25.5	0.323	19	0	0
7	Denmark	19	9.5	15	2.5	-1.062	9	0	1
8	Finland	7	20.5	7.5	5	-1.228	6	0	1
9	France	10	20.5	15	9	-0.735	12	0	1
10	Germany	8	30.5	21.5	9	-0.282	13	0	1
11	Greece	3	9.5	7.5	13.5	-1.436	2	0	1
12	Hong Kong	20	9.5	30	17.5	0.026	16	1	1
13	Indonesia	24	20.5	7.5	25.5	0.447	23	0	0
14	Ireland	33	30.5	2.5	9	0.349	20	1	1
15	Israel	30	9.5	30	17.5	0.461	24	1	1
16	Italy	11	9.5	30	5	-0.935	10	0	1
17	Japan	16	20.5	21.5	25.5	0.435	22	0	1
18	Korea	29	20.5	21.5	25.5	1.001	30	0	0
19	Malaysia	12	30.5	30	25.5	0.849	27	1	0
20	Mexico	34	20.5	15	25.5	1.062	31	0	0
21	Netherlands	23	30.5	7.5	17.5	0.422	21	0	1
22	New Zealand	22	30.5	15	25.5	0.924	28	1	1
23	Norway	31	30.5	30	13.5	1.128	32	0	1
24	Philippine	15	9.5	1	9	-1.275	4	0	0
25	Poland	2	1.5	30	13.5	-1.246	5	0	0
26	Portugal	9	9.5	7.5	9	-1.380	3	0	1
27	Singapore	27	9.5	30	32	0.992	29	1	1
28	South Africa	35	9.5	7.5	17.5	0.138	17	1	0
29	Spain	4.5	20.5	21.5	25.5	-0.065	15	0	1
30	Sweden	21	20.5	30	2.5	-0.193	14	0	1
31	Switzerland	1	30.5	2.5	13.5	-0.837	11	0	1
32	Thailand	26	9.5	7.5	34	0.500	25	1	0
33	Turkey	14	20.5	30	25.5	0.552	26	0	0
34	UK	32	30.5	30	25.5	1.719	34	1	1
35	USA	28	30.5	30	34	1.933	35	1	1
Mean		18	18	18	18	-6.3E-17	18	0.34	0.69
Median		18	20.50	15	17.50	0.25	18	0	1
Std.									
Deviation		10.25	9.79	9.96	10	1	10.25	0.48	0.47
Skewness		0.00	0.00	-0.08	-0.09	-0.08	0	0.69	-0.84
Kurtosis		-1.20	-1.35	-1.41	-1.21	-1.00	-1.2	-1.62	-1.38

Definitions

VAL_NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio
 STD_QUAL: Quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. To compute the average difference we measured the difference of a country's GAAP from the IAS GAAP for each of the two years, 2000 and 2001. Then we averaged the two years' differences. We ranked the countries by these average differences. For the final regression, the ranks were mean centered.

ACCEPT: indicates the level of acceptability of accounting standards in a country during 2000-2001. The countries in the sample were ranked and then mean centered.

PRE_ENF: indicates the level of preventive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

PUN_ENF: indicates the level of punitive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

LEGALSYS: indicates the legal system of a country, either as a common law or code law country; it takes 1 for common law, 0 otherwise.

D_DEV: The classification of a country as a developed or emerging country based on GNP per capita in year 2000; it takes 1 for developed country, 0 for others.

Table 6.2. Comparison of Value Relevance of Earnings in Different Studies

No.	Study	Alford et al (1993)	Ali & Hwang (2000)	Hung (2001)	This study
	Period	1982-1990	1986-1995	1991-1997	1996-2001
	Nb. of Countries	16	16	21	35
1	Argentina				0.134
2	Australia	0.59	0.444	0.339	0.503
3	Austria				0.233
4	Belgium	0.34	0.333	0.047	0.227
5	Canada	0.46	0.457	0.307	0.302
6	China				0.235
7	Denmark	0.37	0.527	0.24	0.364
8	Finland			0.12	0.213
9	France	0.52	0.412	0.336	0.418
10	Germany	0.39	0.294	0.285	0.214
11	Greece				0.197
12	Hong Kong	0.4	0.564	0.262	0.364
13	Indonesia				0.442
14	Ireland	0.43	0.392	0.327	0.553
15	Israel				0.353
16	Italy		0.429	0.301	0.310
17	Japan	0.37	0.226	0.226	0.301
18	Korea				0.319
19	Malaysia				0.330
20	Mexico				0.400
21	Netherlands	0.61	0.647	0.274	0.329
22	New Zealand			0.557	0.600
23	Norway	0.5	0.453	0.053	0.315
24	Philippine				0.060
25	Poland				-0.083
26	Portugal				0.277
27	Singapore	0.39	0.565	0.362	0.418
28	South Africa	0.52		0.304	0.218
29	Spain			0.214	0.329
30	Sweden	0.31	0.227	0.179	0.036
31	Switzerland	0.48	0.491	0.486	0.345
32	Thailand				0.303
33	Turkey				0.340
34	UK	0.56	0.51	0.341	0.358
35	US			0.38	0.327

Table 6.3. Correlation between variables; Pearson (Spearman) correlation coefficients in the upper (lower triangle);
2-tailed y-values in parentheses

	VAL-NI	STD_ QUAL	ACCEPT	PRE-ENF	PUN-ENF	AIE	LEGAL SYS	D-DEV	LISTED
VAL-NI	1	0.428* (0.010)	0.503** (0.002)	-0.028 (0.871)	0.368* (0.030)	0.541** (0.001)	0.451** (0.007)	0.290 (0.091)	0.313 (0.067)
STD_QUAL	0.430** (0.010)	1	0.252 (0.143)	0.126 (0.469)	0.363* (0.032)	0.736** (0.000)	0.548** (0.001)	-0.088 (0.614)	0.209 (0.229)
ACCEPT	0.455** (0.006)	0.252 (0.143)		0.065 (0.712)	0.257 (0.137)	0.621** (0.000)	0.150 (0.391)	0.204 (0.240)	-0.045 (0.796)
PRE_ENF	0.106 (0.543)	0.126 (0.469)	0.065 (0.712)	1 .	0.165 (0.343)	0.395* (0.019)	0.202 (0.244)	0.160 (0.359)	0.389* (0.021)
PUN-ENF	0.372* (0.028)	0.363* (0.032)	0.257 (0.137)	0.165 (0.343)	1 .	0.754** (0.000)	0.496** (0.002)	-0.340* (0.046)	0.124 (0.478)
AIE	0.602** (0.000)	0.724** (0.000)	0.603** (0.000)	0.404* (0.016)	0.745** (0.000)	1 .	0.576** (0.000)	-0.080 (0.649)	0.226 (0.192)
LEGALSYS	0.435** (0.009)	0.548** (0.001)	0.150 (0.391)	0.202 (0.244)	0.498** (0.002)	0.536** (0.001)	1 .	0.100 (0.568)	0.523** (0.001)
D_DEV	0.195 (0.262)	-0.088 (0.614)	0.204 (0.240)	0.160 (0.359)	-0.340* (0.046)	-0.104 (0.554)	0.100 (0.568)	1 .	0.446** (0.007)
LISTED	0.370* (0.029)	0.158 (0.366)	0.182 (0.295)	0.292 (0.088)	-0.009 (0.957)	0.206 (0.235)	0.465** (0.005)	0.628** (0.000)	1 .

* Correlation at 0.05(2-tailed):

** Correlation at 0.01(2-tailed):...

Definitions:

VAL-NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio.

STD_QUAL: Quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. To compute the average difference we measured the difference of a country's GAAP from the IAS GAAP for each of the two years, 2000 and 2001. Then we averaged the two years' differences. We ranked the countries by these average differences. For the final regression, the ranks were mean centered.

ACCEPT: indicates the level of acceptability of accounting standards in a country during 2000-2001. The countries in the sample were ranked and then mean centered

PRE-ENF: indicates the level of preventive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

PUN-ENF: indicates the level of punitive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

AIE: a composite variable to represent an accounting institutional environment of a country; as a result factorization of STD_QUAL, ACCEPT, PRE-ENF and PUN-ENF.

LEGALSYS: indicates the legal system of a country, either as a common law or code law country; it takes 1 for common law, 0 otherwise.

LISTED: It is the average of 2000 and 2001 ratios of the number of domestic listed companies in a country to the population of that country. It reflects the level of capital market development in a country.

D-DEV, : The classification of a country as a developed or emerging country based on GNP per capita in year 2000; it takes 1 for developed country, 0 for others.

Table 6.4. OLS Regression Results for the Relation between Value Relevance of Accounting Earnings and Quality, Acceptability and Enforceability of Accounting Standards

Independent Variables	Prediction	Model 1	Model 2	Model 3a	Model 3b	Model 4	Model 5a	Model 5b
STD_QUAL	+	0.457	0.359	0.379	0.291			
<i>t-stat</i>		3.062	2.483	17.601	2.071			
<i>p-value</i>		0.004	0.019	0.014	0.047			
ACCEPT	+		0.362	0.361	0.261			
<i>t-stat</i>			2.462	2.456	1.828			
<i>p-value</i>			0.020	0.020	0.078			
PRE_ENF	+			-0.143	-0.211			
<i>t-stat</i>				-1.012	-1.573			
<i>p-value</i>				0.319	0.127			
PUN-ENF	+				0.374			
<i>t-stat</i>					2.400			
<i>p-value</i>					0.023			
AIE	+					0.567	0.485	
<i>t-stat</i>						4.145	2.849	
<i>p-value</i>						0.000	0.008	
LEGALSYS	+						0.140	0.426
<i>t-stat</i>							0.822	2.797
<i>p-value</i>							0.417	0.009
D_DEV	+	0.330	0.248	0.273	0.423	0.335	0.314	0.247
<i>t-stat</i>		17.210	1.734	1.883	2.850	2.447	2.248	1.621
<i>p-value</i>		0.034	0.093	0.070	0.008	0.020	0.032	0.115
Intercept		0.237	0.254	0.249	0.219	0.236	0.227	0.213
<i>t-stat</i>		6.681	7.534	7.315	6.454	7.259	6.540	5.601
<i>p-value</i>		0.000	0.000	0.000	0.000	0.000	0.000	0.000
Adj R Sq		0.247	0.350	0.351	0.439	0.367	0.360	0.218
F-stat		6.584	7.105	5.589	6.332	10.845	7.382	5.738
p-value		0.004	0.001	0.002	0.000	0.000	0.001	0.007
N		35	35	35	35	35	35	35

Dependent variable: VAL-NI

VAL-NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio.STD_QUAL_c: Quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. To compute the average difference we measured the difference of a country's GAAP from the IAS GAAP for each of the two years, 2000 and 2001. Then we averaged the two years' differences. We ranked the countries by these average differences. For the final regression, the ranks were mean centered.ACCEPT_c: indicates the level of acceptability of accounting standards in a country during 2000-2001. The countries in the sample were ranked and then mean centered.

PRE-ENF: indicates the level of preventive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

PUN-ENF: indicates the level of punitive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

AIE_c: a composite variable to represent an accounting institutional environment of a country; as a result factorization of STD_QUAL_c, ACCEPT, PRE-ENF and PUN-ENF.

LEGALSYS: indicates the legal system of a country, either as a common law or code law country; it takes 1 for common law, 0 otherwise.

D_DEV_c: The classification of a country as a developed or emerging country based on GNP per capita in year 2000; it takes 1 for developed country, 0 for others.

Table 6.5. Comparison between Accounting Institutional Environment and Legal Enforcement

Independent Var	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
AIE	0.511	0.526	0.520	0.486	0.505	0.592	0.496	0.492
<i>t-stat</i>	3.266	3.453	3.360	3.266	3.317	3.253	3.194	3.150
<i>p-value</i>	0.003	0.002	0.002	0.003	0.002	0.003	0.003	0.004
JUDICIAL	0.081							
<i>t-stat</i>	0.521							
<i>p-value</i>	0.606							
RULE OF LAW		0.184						
<i>t-stat</i>		1.208						
<i>p-value</i>		0.236						
CORRUPTION			0.094					
<i>t-stat</i>			0.607					
<i>p-value</i>			0.548					
EXPROPRIATION				0.274				
<i>t-stat</i>				1.842				
<i>p-value</i>				0.075				
REPUDIATION					0.195			
<i>t-stat</i>					1.280			
<i>p-value</i>					0.210			
CIFAR						-0.119		
<i>t-stat</i>						-0.656		
<i>p-value</i>						0.517		
LEGALENF							0.238	
<i>t-stat</i>							1.532	
<i>p-value</i>							0.137	
LEGALENF+								0.233
<i>t-stat</i>								1.492
<i>p-value</i>								0.147
Intercept	0.280	0.235	0.272	0.094	0.177	0.392	0.304	0.304
<i>t-stat</i>	4.103	3.446	3.759	0.778	1.632	2.894	17.714	17.679
<i>p-value</i>	0.000	0.002	0.001	0.443	0.113	0.007	0.000	0.000
Adj R Sq	0.230	0.259	0.233	0.302	0.263	0.245	0.293	0.290
F-stat	5.781	6.597	5.848	7.923	6.720	5.878	7.218	7.134
<i>p-value</i>	0.008	0.004	0.007	0.002	0.004	0.007	0.003	0.003
N	33	33	33	33	33	31	31	31

Dependent variable: Value relevance of earnings (VAL_NI)

AIEc: a composite variable to represent an accounting institutional environment of a country; as a result factorization of STD_QUAL_c, ACCEPT, PRE_ENF and PUN_ENF.

JUDICIAL: refers to efficiency of judicial system (La Porta et al, 1998)

RULE OF LAW: refers to assessment of the law and order tradition in the country (La Porta et al, 1998)

CORRUPTION: refers to assessment of the corruption in government (La Porta et al, 1998)

EXPROPRIATION: refers to assessment of the risk of "outright confiscation" or "forced nationalization" (La Porta et al, 1998)

REPUDIATION: refers to assessment of the "risk of modification in a contract taking the form of a repudiation, postponement or scaling down (La Porta et al, 1998)

CIFAR: refers to index created by examining and rating companies' 1990 annual reports on their inclusion or omission of 90 items (La Porta et al, 1998)

LEGALENF: a variable created through factorization of six legal enforcement (JUDICIAL, RULE OF LAW, CORRUPTION, EXPROPRIATION, REPUDIATION, CIFAR) as mentioned in La Porta et al (1998).

LEGALENF+: a variable created through factorization of six legal enforcement (JUDICIAL, RULE OF LAW, CORRUPTION, EXPROPRIATION, REPUDIATION, CIFAR) plus Antidirector rights as mentioned in La Porta et al (1998).

D_DEV_c: The classification of a country as a developed or emerging country based on GNP per capita in year 2000; it takes 1 for developed country, 0 for others.

NB: For model 2, 3, 4, 5 and 6, N= 33, since China and Poland is not covered in La Porta (1998)'s paper, and for model 7, N= 31; since data for Indonesia and Ireland are not available. For model 8 and 9, N= 31, because it is factorization of all legal enforcement variables.

Table 6.6. Clusters of Accounting Standards

No.	Country	3 CLUSTER	Rank of STD_QUAL	LEGALSYS
1	Switzerland	1	1	0
2	Poland	1	2	0
3	Greece	1	3	0
4	Argentina	1	4.5	0
5	Spain	1	4.5	0
6	Austria	1	6	0
7	Finland	1	7	0
8	Germany	2	8	0
9	Portugal	2	9	0
10	France	2	10	0
11	Italy	2	11	0
12	Malaysia	2	12	1
13	Belgium	2	13	0
14	Turkey	2	14	0
15	Philippine	2	15	0
16	Japan	2	16	0
17	China	2	17	0
18	Australia	2	18	1
19	Denmark	2	19	0
20	Hong Kong	2	20	1
21	Sweden	3	21	0
22	New Zealand	3	22	1
23	Netherlands	3	23	0
24	Indonesia	3	24	0
25	Canada	3	25	1
26	Thailand	3	26	1
27	Singapore	3	27	1
28	US	3	28	1
29	Korea	3	29	0
30	Israel	3	30	1
31	Norway	3	31	0
32	UK	3	32	1
33	Ireland	3	33	1
34	Mexico	3	34	0
35	South Africa	3	35	1

Table 6.7. Clusters of Acceptability and Enforceability of Accounting Standards

Institutional Variables	CLUSTER 1	CLUSTER 2	CLUSTER 3
Mean	C1 vs C2	C2 vs C3	C1 vs C3
Test of mean differences	(p-values)	(p-values)	(p-values)
Panel A. Institutional characteristics by cluster			
STD_QUAL	4.045 (0.998)	4.708 (0.002)	-8.417 (0.005)
ACCEPT	-3.182 (0.073)	5.583 (0.135)	-2.667 (0.999)
PRE-ENF	1.091 (1.000)	0.792 (0.882)	-1.792 (0.887)
PUN-ENF	5.545 (0.949)	3.833 (0.000)	-8.917 (0.002)
AIE	0.333 (0.815)	0.613 (0.000)	-0.918 (0.008)
Panel B. Value relevance of earnings by cluster			
VAL-NI	0.310 (0.553)	0.370 (0.042)	0.229 (0.367)
Panel C. Cluster membership of countries			
1	Argentina	Australia	Austria
2	Indonesia	Canada	Belgium
3	Israel	China	Denmark
4	Italy	HongKong	Finland
5	Korea	Ireland	France
6	Mexico	Malaysia	Germany
7	Philippines	Netherland	Greece
8	Singapore	NewZealand	Japan
9	Thailand	Norway	Poland
10	Turkey	South Africa	Portugal
11	US	Spain	Sweden
12		UK	Switzerland

VAL-NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio.

STD_QUAL: Quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. To compute the average difference we measured the difference of a country's GAAP from the IAS GAAP for each of the two years, 2000 and 2001. Then we averaged the two years' differences. We ranked the countries by these average differences. For the final regression, the ranks were mean centered.

ACCEPT: indicates the level of acceptability of accounting standards in a country during 2000-2001. The countries in the sample were ranked and then mean centered.

PRE-ENF: indicates the level of preventive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

PUN-ENF: Indicates the level of punitive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

AIE: a composite variable to represent an accounting institutional environment of a country; as a result factorization of STD_QUAL, ACCEPT, PRE-ENF and PUN-ENF.

Table 6.8. Relationship between Value Relevance of Earnings and AIE for sub-samples

Panel A. OLS Regression

Independent variables	Prediction	Code law countries	Common law countries	Emerging countries	Developed countries	Code law + emg common law countries	Developed common law countries
AIE	+	0.558	0.017	0.892	0.467	0.456	-0.049
<i>t-stat</i>		2.847	0.058	5.929	2.474	2.510	-0.131
<i>p-value</i>		0.010	0.955	0.000	0.022	0.019	0.900
D_DEV	+	0.338	0.542				
<i>t-stat</i>		1.728	1.861				
<i>p-value</i>		0.099	0.096				
Intercept		0.233	0.282	0.227	0.331	0.280	0.427
<i>t-stat</i>		5.925	4.293	10.063	15.007	12.314	6.535
<i>p-value</i>		0.000	0.002	0.000	0.000	0.000	0.000
Adj R Sq		0.238	0.143	0.774	0.182	0.175	-0.140
F-stat		4.444	1919	35.158	6.120	6.299	0.017
<i>p-value</i>		0.025	0.202	0.000	0.022	0.019	0.900
N		23	12	11	24	26	9

Panel B. Oneway ANOVA

Description		Mean	Std Dev	F	p-value
Code law vs Common law countries					
VAL-NI	Code law	0.259	0.127	8.431	0.007
	Common law	0.386	0.113		
AIE	Code law	-0.410	0.918	16.389	0.000
	Common law	0.786	0.616		
Emerging vs Developed countries					
VAL-NI	Emerging	0.245	0.156	3.025	0.091
	Developed	0.329	0.119		
AIE	Emerging	0.116	0.889	0.211	0.649
	Developed	-0.053	1.061		

Dependent variable: Value relevance of earnings (VAL-NI)

VAL-NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio.

AIEc: a composite variable to represent an accounting institutional environment of a country; as a result factorization of STD_QUAL_c, ACCEPT, PRE_ENF and PUN-ENF.

D_DEV_c: The classification of a country as a developed or emerging country based on GNP per capita in year 2000; it takes 1 for developed country, 0 for others.

Table 6.9. Factor Analysis of Accounting Enforcement
Panel A.

FACTOR 1	Publication of auditor's name by professional accounting body Prosecution of auditors by professional accounting body Openness in standard setting process Disclosure of audit fee Publication of company's name by supervisory body Authority of std setter or professional accounting body to enforce the std An independent accounting standards setting body (from government)
FACTOR 2	Mechanism for imposing sanctions on violators Prosecution of company officers, directors, or company Authority to enforce accounting & auditing standards Existence of institutional oversight mechanism for F/S Proactive approach of enforcement orientation Prosecution of auditors by supervisory body
FACTOR 3	An independent accounting standards setting body (from professional accounting body) Independently funded organization (from professional accounting body) Interpretations guidelines produced by std setter or regulatory body

Panel B. Correlation between variables; Pearson (Spearman) correlation coefficients in the upper (lower triangle); 2-tailed p-values in parentheses

	VAL-NI	STD_QUAL	FACTOR 1		
VAL_NI	1	0.428* (0.010)	0.634** (0.000)	0.035 (0.841)	0.055 (0.753)
STD_QUAL	0.430** (0.010)	1	0.611** (0.000)	0.072 (0.679)	-0.229 (0.185)
FACTOR 1	0.617** (0.000)	0.602 (0.000)	1	(0.000) (1.000)	(0.000) (1.000)
FACTOR 2	0.255 (0.140)	0.225 (0.194)	0.196 (0.260)	1	(0.000) (1.000)
FACTOR 3	-0.032 (0.853)	-0.268 (0.119)	-0.011 (0.949)	-0.160 (0.359)	1

* Correlation at 0.05(2-tailed):...

** Correlation at 0.01(2-tailed):...

Panel C. OLS Regressions of FACTOR variables

Independent Variables	Prediction	Model 1			Model 2			Model 3		
		Coeff	t-stat	p-value	Coeff	t-stat	p-value	Coeff	t-stat	p-value
FACTOR 1	+	0.621	4.813	0.000						
FACTOR 2	+				0.154	0.862	0.395			
FACTOR 3	+							-0.020	-0.117	0.908
D_DEV	+	0.259	2.008	0.053	0.343	1.924	0.063	0.295	1.686	0.102
Intercept		0.251	8.186	0.000	0.235	5.640	0.000	0.244	5.924	0.000
Adj R Sq				0.435			0.049			0.027
F-stat				14.110			1.873			1.474
p-value				0.000			0.170			0.244
N				35			35			35

Dependent variable: Value relevance of earnings (VAL-NI)

VAL_NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio.

STD_QUAL_c: Quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. To compute the average difference we measured the difference of a country's GAAP from the IAS GAAP for each of the two years, 2000 and 2001. Then we averaged the two years' differences. We ranked the countries by these average differences. For the final regression, the ranks were mean centered.

FACTOR 1: factorization of the indexes of acceptability and enforceability of accounting standards; deals with openness of standard setting process and disclosure system

FACTOR 2: factorization of the indexes of acceptability and enforceability of accounting standards; deals with the strength of supervisory body

FACTOR 3: factorization of the indexes of acceptability and enforceability of accounting standards; deals with the independence of accounting standard setting body

D_DEV_c: The classification of a country as a developed or emerging country based on GNP per capita in year 2000; it takes 1 for developed country, 0 for others.

Table 6.10. Accounting Standard-Setting Body Across Countries

No	Professional Accounting Body	Public (Government)	Independent Body
1	Argentina	Belgium	Australia
2	Austria	China	Germany
3	Canada	Finland	Ireland
4	Denmark	France	Israel
5	Hong Kong	Greece	Korea
6	Indonesia	Japan	Malaysia
7	Italy	Poland	Netherlands
8	Mexico	Portugal	New Zealand
9	Philippines	Spain	Norway
10	Singapore		Sweden
11	South Africa		Switzerland
12	Thailand		UK
13	Turkey		US

Table 6.11. Auditing Standard-Setting Body Across Countries

No	Professional Accounting Body	Public (Government)
1	Argentina	Korea
2	Australia	Malaysia
3	Austria	Mexico
4	Belgium	Netherlands
5	Canada	New Zealand
6	China	Norway
7	Denmark	Philippines
8	Finland	Portugal
9	France	Singapore
10	Germany	South Africa
11	Hong Kong	Switzerland
12	Indonesia	Thailand
13	Ireland	Turkey
14	Israel	UK
15	Italy	US
16	Japan	

Table 6.12. Institutional Oversight Mechanism for Financial Statements of Listed Companies

No.	Securities Exchange Commission	Stock Exchange	Financial Supervisory Authority	No institutional oversight mechanism
1	Argentina	Switzerland	Australia	Ireland*****
2	Austria*		Belgium****	
3	Canada		Denmark	
4	China		Finland	
5	France		Japan	
6	Germany**		Korea	
7	Greece		Norway	
8	Hong Kong		Singapore	
9	Indonesia		South Africa*****	
10	Israel		Sweden	
11	Italy		UK*****	
12	Malaysia			
13	Mexico			
14	Netherlands***			
15	New Zealand			
16	Philippine			
17	Poland			
18	Portugal			
19	Spain			
20	Thailand			
21	Turkey			
22	USA			

Notes:

*Starting April 1, 2002 the Austrian Financial Market Authority (FMA) replaced the Austrian Securities Authority

** starting May 1, 2002, becoming the Federal Financial Supervisory Authority

***starting March 1, 2002, STE (Securities Board of the Netherlands) becoming AFM (The Netherlands Authority for the Financial Markets)

****The Banking and Finance Commission (BFC) supervises banking and securities markets

***** The Financial Service Board (FSB) does not play a role in fin reporting; it's done by the Johannesburg Stock Exchange (JSE).

***** The Financial Service Authority (FSA) does not oversees the financial reports of listed companies; it's done by the Financial Reporting Review Panel (FRRP)

*****On May 1, 2003, The Irish Financial Services Regulatory Authority was formally established.

Table 6.13. Value relevance of earnings for 1 year stock return for a period of 9 months before and 3 months after fiscal-year end and for a period according to the reporting requirement in a country

Panel A.

No.	Country	VAL_NI	VAL-NI
		(3 mth after FYE)	(per reporting req)
1	Austria	0.233	0.392
2	Belgium	0.227	0.153
3	Canada	0.302	0.180
4	China	0.235	0.055
5	Denmark	0.364	0.312
6	Finland	0.213	0.233
7	France	0.418	0.444
8	Germany	0.214	0.209
9	Hong Kong	0.364	0.350
10	Indonesia	0.442	0.409
11	Ireland	0.553	0.328
12	Italy	0.310	0.252
13	Korea	0.319	0.182
14	Malaysia	0.330	0.295
15	Mexico	0.400	0.267
16	Netherlands	0.329	0.276
17	New Zealand	0.600	0.573
18	Norway	0.315	0.295
19	Philippine	0.060	-0.023
20	Poland	-0.083	-0.142
21	Portugal	0.277	0.325
22	South Africa	0.218	0.106
23	Spain	0.329	0.183
24	Sweden	0.036	0.077
25	Switzerland	0.345	0.336
26	UK	0.358	0.256

Panel B. T – test for Equality of Means on Value Relevance of Earnings for Different Period

	Nb of Countries	Mean	t value	Significance (2-tailed)
VAL-NI (3 months after FYE)	26	0.296	3.357	0.003
VAL-NI (per reporting requirement)	26	0.243		

Definition:

VAL_NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio.

APPENDIX 1

Published Information Used for the Indexes of Acceptability and Enforceability of Accounting Standards

- Asian Development Bank (ADB), 2000a, *Financial Management and Governance Issues in Pakistan*, Narayan and Godden, Manila, Philippine.
- Asian Development Bank (ADB), 2000b, *Financial Management and Governance Issues in People's Republic of China*, Narayan and Reid, Manila, Philippine.
- Asian Development Bank (ADB), 2001, *Corporate Governance and Finance in East Asia: A Study of Indonesia, Republic of Korea, Malaysia, Philippines, and Thailand*.
- FEE (Federation des Experts Comptables European), 2000, *Accounting Standard Setting in Europe*, December 2000.
- FEE (Federation des Experts Comptables European), 2001, *Enforcement Mechanisms in Europe: A Preliminary Investigation of Oversight Systems*, April 2001
- FEE (Federation des Experts Comptables European), 2002a, *Discussion Paper on Enforcement of IFRS within Europe*, April 2002.
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- GAAP 2000: *A Survey of National Accounting Rules in 53 Countries*, Arthur Andersen, BDO, Deloitte Touche Tohmatsu, Ernst ad Young International, Grant Thornton, KPMG, and PricewaterhouseCoopers; editor: Nobes, C.W.
- GAAP 2001: *A Survey of National Accounting Rules Benchmarkd against International Accounting Standards*, Arthur Andersen, BDO, Deloitte Touche Tohmatsu, Ernst ad Young International, Grant Thornton, KPMG, and PricewaterhouseCoopers; editor: Nobes, C.W.
- ICAEW (The Institute of Chartered Accountants in England and Wales), 2002, Submission to the Treasury Committee's Inquiry into the Financial Regulation of Public Limited Companies.
- ICANZ (Institute of Chartered Accountants of New Zealand), 2002, *Corporate Transparency: Making Markets Work Better*.

KPMG, 2001, Transnational Accounting, editor: Dieter Ordelheide, second edition, Vol. 1, 2, and 3, Palgrave Publishers Ltd.

PricewaterhouseCoopers, 2002, Primary Market Comparative Regulation Study: Key Themes, publication by PricewaterhouseCoopers for the UK Financial Services Authority.

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World Federation of Exchange (FIBV), 2000, *Annual Report* 2000.

World Federation of Exchange (FIBV), 2001, *Annual Report* 2001.

APPENDIX 2

Indexes of Acceptability and Enforceability of Accounting Standards per 2000/2001.

I. ACCEPTABILITY

- 1 An independent accounting standards setting body (from government)
- 2 An independent accounting standards setting body (from professional accounting body)
- 3 Independently funded organization (from professional accounting body)
- 4 Openness in standard setting process
- 5 Interpretation guidelines produced by standards setter or supervisory body

II. ENFORCEABILITY

A. PREVENTIVE

1) Accounting & Auditing Standards Setter

- 1 Authority of standards setter or professional accounting body to enforce the standards
- 2 Legal backing of accounting & auditing standards
- 3 External quality review performed at regular period.

2) Internal of Company (Management)

- 1 Responsibility of company directors for the financial statements as stated in the law
- 2 Requirement for an audit committee

3) Auditor

- 1 Requirement of audited financial statements by law
- 2 Practical training requirement for obtaining a license as auditor
- 3 Continuing professional education requirements
- 4 Mandatory rotation of auditors
- 5 Restrictions on non-audit service
- 6 Disclosure of audit fee
- 7 Disclosure of non-audit fee
- 8 An independent auditing standards setting body (from professional accounting body)

4) Supervisory Body

- 1 Existence of institutional oversight mechanism for financial statements
- 2 Authority of supervisory body to enforce accounting & auditing standards
- 3 Authority of supervisory body to issue regulation regarding financial reporting
- 4 Mechanism in supervisory body for imposing sanctions on violators
- 5 Proactive approach to enforcement of standards
- 6 Require publication of financial statements in newspapers
- 7 Require submission of annual and quarterly financial reports
- 8 Requirement for continuous disclosure obligation

B. PUNITIVE

Enforcement actions against Officers, Directors, or Company

- 1 Prosecution of company officers, directors, or company
- 2 Suspension or delisting of company from the stock exchange
- 3 Publication of company's name by supervisory body

Enforcement actions against Auditors

- 1 Prosecution of auditors by professional accounting body
- 2 Prosecution of auditors by supervisory body
- 3 Publication of auditor's name by professional accounting body
- 4 Publication of auditor's name by supervisory body

APPENDIX 3

Reliability Analysis of Indexes of Acceptability and Enforcement Arrangement

Variable	Alpha (Cronbach)
TOTAL INDEX	0.5484
I) ACCEPTABILITY	0.3056
II) ENFORCEABILITY	0.5058
A) PRE_ENF	0.1043
Components of Preventive Enforcement:	
Standard-setters	0.1085
Management	0.0000
Auditor	0.3718
Supervisory body	0.5587
B) PUN-ENF	0.7021
Components of Punitive Enforcement:	
Enforcement against Officers, Directors or Company	0.4506
Enforcement against Auditors	0.6413

APPENDIX 4 Diagnostic Tests

1) Tests for Linearity

a) Using Regression of VAL-NI on AIE to get standardized residual and predicted value

2) Test for constancy of error variance : Breusch-Pagan Test

a) Regression to obtain unstandardized predicted value and unstandardized residuals

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Significance
1	Regression	0.251856181	2	0.125928	10.84464	0.000254
	Residual	0.371584219	32	0.011612		
	Total	0.6234404	34			

a Predictors: (constant) D_DEV, AIE

b Dependent Variable: VR_NI

b) Regression of Squared unstandardized residuals on independent variables

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Significance
1	Regression	6.6537E-05	2	3.33E-05	0.104141	0.901402
	Residual	0.010222577	32	0.000319		
	Total	0.010289114	34			

a Predictors: (constant) D_DEV, AIE

b Dependent Variable: Square of Unstd- Res-AIE

$$\begin{aligned}
 X^2 \text{ BP} &= (\text{SSR}/2) / (\text{SSE}/n)^2 = \\
 &= (0.000066536968902315 / 2) / (0.37158422/35)^2 \\
 &= (0.00003327) / (0.0106)^2 \\
 &= 0.295
 \end{aligned}$$

To control the alpha risk at 0.01, require chi-square (0.99;1) = 6.63

Since $X^2 \text{ BP}$ (0.295) is less than 6.63, we conclude H_0 that the error variance is constant.

3) Normality Tests

a) P-P Plot of Regression Standardized Residual

b) One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual- AIE
N		35
Normal Parameters(a,b)	Mean	-5.2339E-17
	Std.	
	Deviation	0.10454161
Most Extreme Differences	Absolute	0.1077795
	Positive	0.07341608
	Negative	-0.1077795
	Kolmogorov-Smirnov Z	0.63763212
Asymptotic Significance (2-tailed)		0.81089325
a	Test Distribution is Normal	
b	Calculated from data	

APPENDIX 5

OLS Regression of Relationship between Value Relevance of Earnings
and Acceptability and Enforceability of Accounting Standards (Un-weighted STD–QUAL)

Independent Variables	Prediction	Model 1	Model 2	Model 3a	Model 3b	Model 4	Model 5a	Model 5b
STD_QUAL	+	0.496	0.393	0.405	0.314			
<i>t-stat</i>		3.338	2.709	2.771	2.212			
<i>p-value</i>		0.002	0.011	0.009	0.035			
ACCEPT	+		0.346	0.347	0.253			
<i>t-stat</i>			2.380	2.378	1.780			
<i>p-value</i>			0.024	0.024	0.085			
PRE_ENF	+			-0.126	-0.197			
<i>t-stat</i>				-0.907	-1.479			
<i>p-value</i>				0.371	0.150			
PUN-ENF	+				0.365			
<i>t-stat</i>					2.352			
<i>p-value</i>					0.026			
AIE	+					0.598	0.529	
<i>t-stat</i>						4.455	3.163	
<i>p-value</i>						0.000	0.003	
LEGALSYS	+						0.117	0.426
<i>t-stat</i>							0.705	2.797
<i>p-value</i>							0.486	0.009
D_DEV	+	0.385	0.295	0.317	0.454	0.373	0.351	0.247
<i>t-stat</i>		2.593	3.049	2.167	3.061	2.778	2.535	1.621
<i>p-value</i>		0.014	0.049	0.038	0.005	0.009	0.016	0.115
Intercept		0.226	0.244	0.240	0.213	0.229	0.222	0.213
<i>t-stat</i>		6.445	7.255	7.033	6.298	7.185	6.591	5.601
<i>p-value</i>		0.000	0.000	0.000	0.000	0.000	0.000	0.000
Adj R Sq		0.278	0.370	0.366	0.450	0.399	0.390	0.218
F-stat		7.550	7.655	5.915	6.552	12.300	8.237	5.738
p-value		0.002	0.001	0.001	0.000	0.000	0.000	0.007
N		35	35	35	35	35	35	35

Dependent variable: Value relevance of earnings (VAL_NI)

VAL_NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the AdjRet portfolio.

STD-QUAL (NW): Quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. To compute the average difference we measured the difference of a country's GAAP from the IAS GAAP (un-weighted) for each of the two years, 2000 and 2001. Then we averaged the two years' differences. We ranked the countries by these average differences. For the final regression, the ranks were mean centered.

ACCEPT_{it}: indicates the level of acceptability of accounting standards in a country during 2000-2001. The countries in the sample were ranked and then mean centered

PRE-ENF_{it}: indicates the level of preventive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

PUN-ENF_{it}: indicates the level of punitive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

AIE_{it}: a composite variable to represent an accounting institutional environment of a country; as a result factorization of STD_QUAL_{it}, ACCEPT_{it}, PRE-ENF_{it} and PUN-ENF_{it}.

D_DEV_{it}: The classification of a country as a developed or emerging country based on GNP per capita in year 2000; it takes 1 for developed country, 0 for others.

APPENDIX 6

OLS Regression of Relationship between Value Relevance of Earnings
and Un-ranked Measure of Acceptability and Enforceability of Accounting Standards

Independent Variables	Prediction	Model 1	Model 2	Model 3a	Model 3b	Model 4	Model 5a	Model 5b
STD_QUAL		0.457	0.322	0.335	0.276			
ACCEPT			0.397 2.664 0.012	0.388 2.560 0.016	0.275 1.730 0.094			
PRE_ENF				-0.075 -0.528 0.602	-0.137 -0.974 0.338			
PUN-ENF	+				0.304 1.809 0.081			
AIE						0.594 4.453 0.000	0.524 3.165 0.003	
LEGALES							0.119 0.718 0.478	0.426 2.797 0.009
D_DEV		0.330	0.231 1.631	0.246	0.377	0.335 2.511	0.318	0.247 1.621
Intercept		0.237 6.681 0.000	0.075 1.091 0.284	0.134 1.018 0.317	0.044 0.322 0.750	0.236 7.455 0.000	0.228 6.737 0.000	0.213 5.601 0.000
Adj R Sq		0.247	0.368	0.353	0.398	0.399	0.390	0.218
F-stat		6.584	7.591	5.630	5.500	12.290	8.241	5.738
p-value		0.004	0.001	0.002	0.001	0.000	0.000	0.007
N		35	35	35	35	35	35	35

Dependent variable: value relevance of earnings (VAL - NI)

VAL - NI: Value relevance of earnings is the market-adjusted return for the NI portfolio scaled by the market-adjusted return for the AdjRet portfolio.

STD_QUAL: Quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. To compute the average difference, we measured the difference of a country's GAAP from the IAS GAAP for each of the two years, 2000 and 2001. Then we averaged the two years' differences. We ranked the countries by these averaged differences. For the final regression, the ranks were mean-centered.

ACCEPT: indicates the level of acceptability of accounting standards in a country during 2000-2001. The countries in the sample were ranked and then mean-centered.

PRE_ENF: indicates the level of preventive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean-centered.

PUN-ENF: indicates the level of punitive enforcement in a country based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean-centered.

AIE: a composite variable to represent an accounting institutional environment of a country; as a result factorization of STD_QUAL, PRE_ENF and PUN-ENF.

D_DEV: it takes 1 for developed country, 0 for others.

APPENDIX 7

OLS Regression Results for the Relation between Value Relevance of Earnings and Components of Preventive Enforcements of Accounting Standards

Independent Variables	Prediction	Coeff	t-stat	p-value
STD_QUAL	+	0.397	2.596	0.015
ACCEPT	+	0.374	2.470	0.020
AUDITING	+	-0.145	-0.880	0.386
SUPERVISION	+	0.010	0.067	0.947
D_DEV	+	0.307	1.904	0.067
Intercept		0.242	6.543	0.000
Adj R Sq				0.325
p-value				0.325
F-stat				4.274
N				35

Dependent variable: Value relevance of earnings (VAL-NI)

VAL-NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio.

STD_QUAL: Quality of accounting standards in a country is the rank of average differences between national accounting standards and IAS in year 2000 and 2001. To compute the average difference we measured the difference of a country's GAAP from the IAS GAAP for each of the two years, 2000 and 2001. Then we averaged the two years' differences. We ranked the countries by these average differences. For the final regression, the ranks were mean centered.

ACCEPT: indicates the level of acceptability of accounting standards in a country during 2000-2001. The countries in the sample were ranked and then mean centered.

AUDITING: indicates the level of preventive enforcement in a country, specifically related to auditing activities, based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

SUPERVISION: indicates the level of preventive enforcement in a country, specifically related to supervisory body activities, based on the index of enforceability of accounting standards. The countries in the sample were ranked and then mean centered.

D_DEV: The classification of a country as a developed or emerging country based on GNP per capita in year 2000; it takes 1 for developed country, 0 for others.

APPENDIX 8

Use of different control variables

Independent Variables	Prediction	Model 1			Model 2		
		Coeff	t-stat	p-value	Coeff	t-stat	p-value
AIE	+	0.439	2.978	0.005	0.495	3.337	0.002
FACTOR A	+	0.313	2.122	0.042			
LISTED	+				0.201	1.355	0.185
Intercept		0.302	16.274	0.000	0.278	10.415	0.000
Adj R Sq				0.341			0.289
p-value				0.000			0.002
F-stat				9.796			7.911
N				35			35

Dependent variable: Value relevance of earnings (VAL_NI)

VAL_NI: Value relevance of earnings is the market-adjusted return for the A NI portfolio scaled by the market-adjusted return for the *AdjRet* portfolio.

AIEc: a composite variable to represent an accounting institutional environment of a country: as a result factorization of STD_QUAL, ACCEPT, PRE_ENF and PUN-ENF.

FACTOR A: a composite variable as a result of factorization of D_DEV, LISTED, and LEGALSYS to control different aspect of country variables that affect value relevance of earnings.

LISTED,: It is the average of 2000 and 2001 ratios of the number of domestic listed companies in a country to the population of that country. It reflects the level of capital market development in a country.

APPENDIX 9

Diminishing value relevance of earnings based on prior studies and this study

No.	Country	$\Delta 1$	$\Delta 2$	$\Delta 3$	Average Δ
1	Argentina				
2	Australia	-0.146	-0.105	0.164	-0.029
3	Austria				
4	Belgium	-0.007	-0.286	0.180	-0.038
5	Canada	-0.003	-0.15	-0.005	-0.053
6	China				
7	Denmark	0.157	-0.287	0.124	-0.002
8	Finland			0.093	0.093
9	France	-0.108	-0.076	0.082	-0.034
10	Germany	-0.096	-0.009	-0.071	-0.059
11	Greece				
12	Hong Kong	0.164	-0.302	0.102	-0.012
13	Indonesia				
14	Ireland	-0.038	-0.065	0.226	0.041
15	Israel				
16	Italy		-0.128	0.009	-0.060
17	Japan	-0.144	0	0.075	-0.023
18	Korea				
19	Malaysia				
20	Mexico				
21	Netherlands	0.037	-0.373	0.055	-0.094
22	New Zealand			0.043	0.043
23	Norway	-0.047	-0.4	0.262	-0.062
24	Philippine				
25	Poland				
26	Portugal				
27	Singapore	0.175	-0.203	0.056	0.009
28	South Africa		-0.216	-0.086	-0.028
29	Spain			0.115	0.115
30	Sweden	-0.083	-0.048	-0.143	-0.091
31	Switzerland	0.011	-0.005	-0.141	-0.045
32	Thailand				
33	Turkey				
34	UK	-0.05	-0.169	0.017	-0.067
35	US			-0.053	-0.053
				Average	-0.021

NB: See Table 6.2 for comparison of value relevance studies.

$\Delta 1$ = Change in the value relevance of earnings based on Alford et al (1993) for period of 1982-1990 and Ali and Hwang (2000) for period of 1986-1995.

$\Delta 2$ = Change in the value relevance of earnings based on Ali and Hwang (2000) for period of 1986-1995 and Hung (2001) for period of 1991-1997.

$\Delta 3$ = Change in the value relevance of earnings based on Hung (2001) for period of 1991-1997 and this study for period of 1996-2001.

Average Δ = average change in the value relevance of earnings for period 1982-2001.

APPENDIX 10

Diminishing value relevance of earnings across countries and years

No.	Country	Δ_{97}	Δ_{98}	Δ_{99}	Δ_{00}	Δ_{01}	AVG Δ
1	Argentina	0.000	-1.597	0.043	1.169	-0.814	-0.240
2	Australia	-0.525	0.490	-0.012	-0.103	-0.119	-0.054
3	Austria	0.294	-0.342	0.115	-0.627	1.132	0.114
4	Belgium	-0.473	0.690	-0.242	-0.100	0.218	0.019
5	Canada	-0.261	0.180	-0.387	0.300	-0.004	-0.034
6	China		0.000	1.628	-0.472	0.182	0.335
7	Denmark	-0.618	0.330	-0.477	0.321	0.065	-0.076
8	Finland	0.234	0.206	-0.474	0.115	0.130	0.042
9	France	-0.311	-0.071	0.167	-0.106	0.190	-0.026
10	Germany	0.011	-0.256	0.256	-0.307	-0.008	-0.061
11	Greece	0.285	-1.013	0.149	0.152	-0.048	-0.095
12	Hong Kong	-0.086	0.211	-0.256	0.318	-0.485	-0.059
13	Indonesia	-0.150	-0.231	0.172	-0.149	-0.431	-0.158
14	Ireland	0.125	-1.166	1.171	-0.680	0.156	-0.079
15	Israel	-0.753	0.165	-0.127	-0.339	0.801	-0.050
16	Italy	-0.840	0.337	0.331	0.055	0.091	-0.005
17	Japan	0.140	0.042	-0.153	-0.122	0.133	0.008
18	Korea	-0.030	-0.087	-0.049	-0.016	0.347	0.033
19	Malaysia	-0.525	0.230	0.253	-0.368	0.334	-0.015
20	Mexico	-0.040	-0.397	0.221	-0.157	-0.435	-0.162
21	Netherlands	-0.243	-0.213	0.214	0.053	-0.045	-0.047
22	New Zealand	0.000	0.000	-0.727	0.094	0.005	-0.126
23	Norway	-0.688	0.266	0.128	-0.530	0.411	-0.083
24	Philippine	2.000	-0.384	-0.304	-0.685	0.163	0.158
25	Poland			0.598	0.339	-0.953	-0.005
26	Portugal	-1.622	1.561	0.149	-0.101	-0.750	-0.153
27	Singapore	-0.276	0.126	-0.160	-0.075	0.215	-0.034
28	South Africa	0.997	-0.842	0.366	0.346	-1.350	-0.097
29	Spain	-0.202	0.300	-0.228	-0.136	0.247	-0.004
30	Sweden	0.491	0.072	-0.913	0.242	0.369	0.052
31	Switzerland	0.421	-0.279	-0.064	0.042	0.188	0.062
32	Thailand	0.138	-0.433	-0.163	0.300	0.055	-0.021
33	Turkey	0.000	-0.422	-0.522	0.126	0.142	-0.135
34	UK	-0.021	0.187	-0.073	-0.305	0.293	0.016
35	USA	0.037	-0.127	-0.060	-0.011	0.024	-0.028
						Average	-0.029

NB: The calculation of value relevance of earnings is based on Table 5.6 Panel C.

Δ_{97} = change in the value relevance of earnings for period 1996 – 1997.

Δ_{98} = change in the value relevance of earnings for period 1997 – 1998.

Δ_{99} = change in the value relevance of earnings for period 1998 – 1999.

Δ_{00} = change in the value relevance of earnings for period 1999 – 2000.

Δ_{01} = change in the value relevance of earnings for period 2000 – 2001.

AVG Δ = average change in the value relevance of earnings for period 1996-2001.

APPENDIX 11

Diminishing value relevance of earnings across countries and years after sorting small size data

No.	Country	A-97	A 98	A-99	A-00	A 01	AVG A
1	Argentina				1.169	-0.814	0.178
2	Australia	-0.525	0.490	-0.012	-0.103	-0.119	-0.054
3	Austria	0.294	-0.342	0.115	-0.627	1.132	0.114
4	Belgium	-0.473	0.690	-0.242	-0.100	0.218	0.019
5	Canada	-0.261	0.180	-0.387	0.300	-0.004	-0.034
6	China				-0.472	0.182	-0.145
7	Denmark	-0.618	0.330	-0.477	0.321	0.065	-0.076
8	Finland	0.234	0.206	-0.474	0.115	0.130	0.042
9	France	-0.311	-0.071	0.167	-0.106	0.190	-0.026
10	Germany	0.011	-0.256	0.256	-0.307	-0.008	-0.061
11	Greece			0.149	0.152	-0.048	0.084
12	Hong Kong	-0.086	0.211	-0.256	0.318	-0.485	-0.059
13	Indonesia	-0.150	-0.231	0.172	-0.149	-0.431	-0.158
14	Ireland				-0.680	0.156	-0.262
15	Israel		0.165	-0.127	-0.339	0.801	0.125
16	Italy	-0.840	0.337	0.331	0.055	0.091	-0.005
17	Japan	0.140	0.042	-0.153	-0.122	0.133	0.008
18	Korea	-0.030	-0.087	-0.049	-0.016	0.347	0.033
19	Malaysia	-0.525	0.230	0.253	-0.368	0.334	-0.015
20	Mexico	-0.040	-0.397	0.221	-0.157	-0.435	-0.162
21	Netherlands	-0.243	-0.213	0.214	0.053	-0.045	-0.047
22	New Zealand					0.005	0.005
23	Norway	-0.688	0.266	0.128	-0.530	0.411	-0.083
24	Philippine				-0.685	0.163	-0.261
25	Poland				0.339	-0.953	-0.307
26	Portugal			0.149	-0.101	-0.750	-0.234
27	Singapore	-0.276	0.126	-0.160	-0.075	0.215	-0.034
28	South Africa			0.366	0.346	-1.350	-0.213
29	Spain	-0.202	0.300	-0.228	-0.136	0.247	-0.004
30	Sweden	0.491	0.072	-0.913	0.242	0.369	0.052
31	Switzerland	0.421	-0.279	-0.064	0.042	0.188	0.062
32	Thailand	0.138	-0.433	-0.163	0.300	0.055	-0.021
33	Turkey			-0.522	0.126	0.142	-0.085
34	UK	-0.021	0.187	-0.073	-0.305	0.293	0.016
35	USA	0.037	-0.127	-0.060	-0.011	0.024	-0.028
Average							-0.047

NB: The calculation of value relevance of earnings is based on Table 5.6 Panel C.

$\Delta-97$ = change in the value relevance of earnings for period 1996 – 1997.

$\Delta-98$ = change in the value relevance of earnings for period 1997 – 1998.

$\Delta-99$ = change in the value relevance of earnings for period 1998 – 1999.

$\Delta-00$ = change in the value relevance of earnings for period 1999 – 2000.

$\Delta-01$ = change in the value relevance of earnings for period 2000 – 2001.

A V G _ Δ = average change in the value relevance of earnings for period 1996-2001

APPENDIX 12

Summary of Annual Reporting Requirements from Fiscal Year End across Countries

No.	Country	Reporting Requirements	Regulation	Reference
1.	Argentina	Financial report of publicly listed companies must be filed to CNV within 70 calendar days as from the fiscal year end.	General Regulation (GR) 290 of the CNV	GR 290 of CNV (from www.cnv.gov.ar)
2.	Australia	Companies are required to lodge accounts with the ASIC within 90 days of the end of the financial year.	The Corporation Law; Stock Exchange requirements	Transnational Accounting 1 (p 184; 233)
3.	Austria	Public companies have to submit its financial statements to the Vienesse stock Exchange after 6 months.	- Securities Act	-PwC - Austria
4.	Belgium	The annual accounts have to be published within 30 days after they have been approved by the general meeting, which has to be held within a period of 6 months from the end of the financial period.	The Accounting Law.	Transnational Accounting 1 (p 463)
5.	Canada	Public companies are required to file with the commission its comparative financial statements within 140 days from the end of its fiscal year.	Ontario Securities Act, sections 77 and 78.	Transnational Accounting 1 (p 601)
6.	China	Annual reports of public companies must be filed within 4 months following the end of each fiscal year.	Securities Law art. 61(1998)	Accounting and Finance in China (2000)
7.	France	Annual F/S submitted for approval at the Annual General Meeting (AGM) within 4 months after the FYE and at least 15 days before AGM. Final accounts must be published at least 45 days after approval at the AGM (15 June).		- Transnational Accounting 2 (2009). - Development in French Accounting & Auditing 2000 (p 56).
8.	Denmark	The financial statements of the public companies must be filed within six working days after approval, though no later than 5 months after the end of the financial year.	ARL section 62(1)	Transnational Accounting 1 (p 715)
9.	Finland	Limited companies have to send a copy of their financial reports to the National Patent and Register Board for registration within 6 months of the end of the financial year.		Transnational Accounting 1 (p 988)
10.	Germany	Publication in the federal gazette and filing with the Commercial Register should be done within 9 months after the balance sheet date.		Transnational Accounting 2 (p 1339).
11.	Greece	Listed companies are obliged to file and publish annual accounting statements within 2 months from the end of the accounting year to which they refer.	Athens Stock Exchange requirements.	The Securities Market of the Athens Stock Exchange (2001)
12.	Hong Kong	Issuers are required to publish their annual results announcements and dispatch their annual reports within 4 months after their FYE.	Stock Exchange requirements.	Consultation paper on proposed amendments to the listing rules relating to corporate governance issues (HKEX, Jan 2002). Guide for Company Directors

				(KPMG)
13.	Indonesia	Annual F/S of public companies must be submitted to the Bapepam (Securities Exchange Commission) no later than 4 months after the FYE.	Bapepam regulation no. X.K.2.	-Bapepam regulations.
14.	Ireland	Listed companies must publish their annual accounts as soon as possible and, in any event, within 6 months of the end of the period to which they relate.	Stock Exchange requirements.	PwC – Ireland.
15.	Israel	The corporation shall submit to the authority and the registrar a periodic report every year, within 3 months of the end of its reporting year.	Securities (Periodic and Immediate Reports) Regulations, 5730-1970.	Israel Securities Authority website: http://www.isa.gov.il/english/
16.	Italy	Company has to file financial statements with the local registry of enterprises within 1 month from the approval of shareholders. The shareholders must approve the F/S within 4 months of the balance sheet date. In exceptional circumstances, the approval can be postponed to a max of 6 months.	The Civil Code	Transnational Accounting 2 (p 1612).
17.	Japan	AGM must be held within 3 months after the FYE. Annual audited F/S must be completed at the latest 2 weeks before the AGM for publication.	Commercial Code	Transnational Accounting 2 (p 1794)
18.	Korea	Annual F/S must be submitted within 3 months after the FYE; but for consolidated financial statements within 4 months.	Securities and Exchange Law	Newsletter of FSS (2003)
19.	Malaysia	The annual audited account must be given by a listed issuer to the Stock Exchange for public release within a period not exceeding 4 months from the close of the financial year unless the annual report is issued within a period of 4 months from the close of the financial year of the listed issuer..	Stock Exchange requirements	Listing requirements of KLSE as at January 2001.
20.	Mexico	Public companies must submit annual audited F/S to the National Banking and Securities Commission (CNBV) at least within 3 days after the date on which the annual shareholders' meeting (ASM) is held. The ASM needs to take place within the first 4 months of each calendar year.	- Circular 11-11 of the CNBV. -The General Law of Corporations (LGSM)	-Corporate Governance Assessment – Mexico (2000) -PwC - Mexico
21.	Netherlands	The F/S must be adopted and approved in accordance with the statutory requirements within 7 months of the end of the financial year. The F/S should be published within 8 days of the date of their adoption of approval by the annual general meeting of shareholders. The final deadline for the publication of the F/S is 13 months.	The Economic Offences Act	Transnational Accounting 2 (p 2010)
22.	New Zealand	Each issuer shall submit annual audited financial statements to the Registrar within five months of the balance sheet date.	Financial Reporting Act 1993 section 10.	-Corporate Transparency (ICANZ, 2002) -EY - NZ
23.	Norway	Publicly listed companies have to approve and send the annual to the Oslo Stock Exchange within 3 months after year end.	-Stock Exchange regulation.	-PwC - Norway -Transnational Accounting 2 (p 2078)
24.	Philippine	Every issuer shall file with the Securities and Exchange Commission an annual report for the fiscal year in which the registration statement approved by the Commission became effective.	SRC Rule 17.	See: http://www.sec.gov.ph/

		and for each fiscal year thereafter, within 105 days after the end of the fiscal year.		
25.	Poland	F/S must be prepared within 3 months of the date on the balance sheet, and should be presented for approval at the Annual General Shareholders' Meeting within 6 months (8 months for consolidated F/S). The report should be filed with the registration court and published in the official gazette within 15 days of approval.	Accounting Act	ROSC - Poland
26.	Portugal	Consolidated financial reporting documents shall be made public by depositing them with the Commercial Registry before the end of the sixth month after the balance sheet date.	CSC art 508-E and CRC arts 3n and 42, No. 1	Transnational Accounting 3 (p 2081)
27.	Singapore	An issuer shall immediately provide the financial statements to the Exchange for public release immediately after the figures are available, but in any event not later than 3 months after the relevant financial period.	SGX listing requirements.	SGX-ST Listing Manual (2001)
28.	South Africa	Every listed company shall, within 6 months after the end of each financial year and at least 21 clear days before the date of AGM, distribute to shareholders; submit to the Listing Division; and make available to the South African Press Association; the annual financial statements for the relevant financial year which financial statements will have been reported upon by the company's auditors.	Listing requirements of JSE.	The Final report of the Commission of inquiry into the affairs of the masterbond group and investor protection in South Africa: Corporate Law and Securities Regulation in South Africa – April 2001.
29.	Spain	The annual accounts should be submitted within 6 months after the FYE to get approval from the ordinary shareholders' meeting. Then the annual accounts should be deposited with the Commercial Register within a month.	The Commercial Code.	Transnational Accounting 3 (p 2339)
30.	Sweden	Annual F/S have to be filed in the register (the Patent and Registration Office) no later than 1 month after the annual general meeting or 7 months after the balance sheet day.	The Annual Accounts Act	Transnational Accounting 3 (p 2368 and 2414)
31.	Switzerland	Public companies have to publish their audited accounts 20 days before the AGM to get approval, and the AGM must take place less than 6 months after the balance sheet date.	OR Art 697h.	Transnational Accounting 3 (p 2511)
32.	Thailand	Audited annual F/S must be submitted to the Exchange 3 months after the accounting period ends.	The Stock Exchange of Thailand requirements.	Disclosure Manual May 2001.
33.	Turkey	Independently audited year-end financial statements and reports prepared in accordance with the Capital Markets Board's accounting standards shall be submitted to the Exchange within a period of 10 weeks following the end of the accounting period.	Istanbul Stock Exchange rules and regulations.	-PwC Turkey - http://www.ise.org/about/rules.htm
34.	UK	A consolidated annual report must be issued by a listed company within 6 months after the FYE. Group account of a public company must be filed with the Registrar of Companies within 7 months	London Stock Exchange requirements. The Companies	Transnational Accounting 3 (p 2843). PSA: Review of

		after the FYE.	Act 1985.	the Listing Regime (2002)
35.	US	Public companies are required to file their annual report to the SEC on form 10-K no later than 90 days after the end of the company's fiscal year.	SEC requirements.	Transnational Accounting 3 (p 2980).

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