ACCOUNTING QUALITY AND

INTERNATIONAL ACCOUNTING CONVERGENCE

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CHAPTER I

INTRODUCTION

Due to the widespread advance of technology, an increasing number of multinational corporations, cross-border competition for capital, and the development of interconnected accounting regulations worldwide, comparable and transparent financial information is becoming an increasingly important issue. Recently there have been considerable efforts to achieve international convergence of accounting standards by reducing cross-country differences in accounting practice. Among the efforts of harmonizing international accounting standards, the International Accounting Standards Board (IASB) has played a leading role.[1] The International Accounting Standards Committee actively pursued the goal of international accounting harmonization for two decades, and International Financial Reporting Standards (IFRS) published by the IASB are recognized as global standards.[2]

[1] "Harmonization is a process of increasing the compatibility of accounting practices by setting limits on how much they can vary" (Choi and Meek, 2005, p.275.) Harmonized standards are not necessarily one-fits-all standards but improve the comparability of financial information from different countries. Convergence is a process of gradually eliminating differences in accounting standards through the cooperative efforts of the IASB, standard setters, and other regulators. The notions behind harmonization and convergence are closely aligned. However, harmonization is generally taken to mean the elimination of differences in existing accounting standards while convergence might also involve coming up with a new accounting treatment not in any current standard.

[2] Accounting standards issued by the International Accounting Standards Committee (IASC) are called International Accounting Standards (IAS), while those issued by the International Accounting Standards Board (IASB) are called International Financial Reporting Standards (IFRS). In 2001, the IASB succeeded the IASC, and IFRS included all previously issued IAS. The use of IAS or IFRS in this dissertation is consistent with the particular article cited.

All European Union (EU) listed companies follow IFRS in their consolidated financial statements starting in 2005. Also, Canada and many Asia-Pacific countries are taking various approaches toward convergence of their domestic generally accepted accounting principles (GAAP) with IFRS. Australia and New Zealand adopted IFRS as their own GAAP in 2005. The United States is not an exception in converging its accounting standards with IFRS. The IASB and US Financial Accounting Standards Board (FASB) have launched a joint program to converge US and international accounting standards to the maximum extent possible. Choi and Meek (2005, p.279) state that increasing numbers of countries now allow companies to base their financial statements on IFRS and some require it.

These countries seek several benefits from global accounting standards. Investors in these countries go to international markets in order to take advantage of capital investment opportunities. International investors require comparable financial statements because financial statements prepared with different accounting principles impede good international investment decision-making. Therefore, harmonized global accounting principles should enable international investors to make better investment decisions, and good investment decisions lead to the efficient allocation of capital. Portfolios are more diverse and financial risk is reduced. Improved allocation of capital makes countries better off (Choi and Meek 2005; Entwistle et al. 2005.) Because of these benefits, cross-country differences in accounting practices are being reduced. Land and Lang (2002) document that cross-country accounting differences have been significantly reduced in the seven countries they examine.

However, differences still remain, and these differences create problems of misunderstanding, inefficiencies, and uncertainties to participants in the world's capital markets (Chamisa 2000.) Also, there are some criticisms of harmonized international standards. Some observers state that a single set of converged accounting standards cannot satisfy the information needs of internal and external users of companies and be consistently complied with in a diverse global environment (Ball 1995; Carlson 1997; Bradshaw and Miller 2002.) Barth et al. (1999) show that harmonizing domestic GAAP with foreign GAAP can have negative effects on security market performance, specifically price informativeness and trading volume. In the end, accounting convergence and the impact of convergence are empirical questions.

The main research question in this study is whether or not convergence of accounting standards improves financial reporting quality[3]. This study focuses on (1) whether cross-country differences in accounting are reduced and, if so, (2) how accounting convergence affects accounting quality. These questions are motivated by the assertion that comparable financial statements lead to the efficient allocation of resources. If accounting standards are converged, investors have more comparable financial statements. Comparable financial statements allow investors to make better decisions in allocating their resources. If investors can efficiently allocate resources based on financial statements, then the financial statements can be viewed as having high quality.

[3] Financial reporting quality does not have a precise definition. In the literature, financial reporting quality is generally defined as the extent to which reported earnings in financial statements faithfully represent underlying economic constructs and as the degree to which reported earnings reflect basic accounting concepts.

The primary purpose of this study is to empirically examine the functional relationship between convergence and financial reporting quality. This study measures cross-country accounting differences by the extent to which each year / country earnings multiples are narrowing down to the mean adjusted earnings multiples over the sample periods and countries,[4] and measures earnings quality of the sample countries for each year in terms of (1) accrual quality, (2) persistence, (3) predictability, (4) smoothness, (5) reliability, (6) relevance, (7) timeliness, and (8) conservatism.

This research differs from prior research in the following ways. First, previous international convergence studies focus on comparing a limited number of domestic GAAPs and IAS, but this study compares accounting differences in as many countries as data are allowed using mean-adjusted earnings multiples. Second, the indexation approach proposed by van der Tas (1988) is commonly used to measure international accounting harmonization, but this approach allows comparing accounting differences in only several particular selected financial statement items. However, this study examines whether or not cross-country differences in all accounting practices are reduced by using earnings multiples as a key summary measure of accounting practices. Therefore it explores a general trend toward accounting convergence rather than focusing on specific financial statement items. Third, many studies consider the date of IFRS adoption as evidence of accounting convergence. However, if the adoption of IFRS is used as a significant change event that demarcates before and after convergence, it is difficult to observe accounting quality changes after convergence. Because many countries have just

[4] This study follows Land and Lang (2002) and primarily focuses on earnings multiples to measure accounting convergence because earnings is a key summary performance measurement in all countries and earnings should be strongly affected by changes in accounting practice.

recently adopted IFRS (and others have not adopted them yet), there is limited data availability for the post-adoption periods. Therefore, this study examines the gradual changes in convergence and changes in accounting quality over a seven year period and tests the association between these two. Finally, no previous studies examine accounting quality improvement as a benefit of accounting convergence. This research examines quality improvement as evidence of a potential benefit of accounting convergence.

This study contributes to the extant accounting literature in two ways. First, it contributes to the literature on international accounting convergence (e.g., Murphy 1999; El-Gazzar et al. 1999; Ashbaugh 2001.) Prior research has not investigated whether earnings quality is a function of accounting convergence. To my knowledge, this paper is the first attempt to explore the functional relationship between earnings quality and convergence and thereby provide evidence on this potential benefit of accounting standards convergence. In addition, this study extends the international harmonization literature (e.g., Joos and Lang 1994; Herrmann and Thomas 1995; Street et al. 2000; Land and Lang 2002) by providing evidence of accounting convergence covering more countries with more recent data. Finally, the results from this study have implications for investors and standard setters in enhancing their understanding of accounting convergence and its impact on the quality of accounting.

The remainder of this dissertation is organized as follows. Chapter II reviews the related literature and states alternative hypothesis. Chapter III describes the sample selection and research methodology and Chapter IV presents the empirical results. Finally, Chapter V offers concluding remarks, limitations, and suggestions for future research.

CHAPTER II

PRIOR RESEARCH

1. Research on international accounting convergence

A study by the Financial Accounting Standards Board (FASB) emphasized the importance of internationally comparable accounting standards by saying the following:

> Global competition has led many firms to look increasingly to new investor markets to finance the expansion and modernization needed to keep pace and advance in world markets. Likewise, investors look increasingly to other countries to broaden their investment opportunities and diversify risks. As a result, the need for internationally comparable financial statements and, therefore, internationally comparable accounting standards, has never been greater. (FASB, 1996, p.3)

Much of the prior research focuses on whether adopting internationally converged accounting standards results in bringing firms a net benefit or cost. Murphy (1999) documents the benefits from increased comparability of financial statements. He shows that Swiss firms adopting IAS have a statistically significant increase in foreign activity, foreign exchange listings, and foreign sales compared to non-IAS adopting Swiss firms. El-Gazzar et al. (1999) examine what kinds of firms are voluntarily complying with IAS. They find that firms with a higher percentage of total revenue derived from foreign sales, firms with listings on multiple foreign stock exchanges, and firms with lower debt ratios are more motivated to adhere to IAS in their financial statements. This, in turn, would be

evidence that firms complying with IAS benefit from more sales from foreign transactions and lower debt ratios, and the market places significant value on the adoption of a universally accepted set of accounting standards. Ashbaugh and Pincus (2001) show that analysts' earnings forecast accuracy increased in the post-IAS adoption period. Ashbaugh (2001) also finds that non-US firms are more likely to report IAS financial information when their shares trade in more equity markets. This result suggests that non-US firms reporting IAS financial information receive some benefits from providing IAS financial information.

In contrast, there are other studies suggesting that the harmonization of international accounting standards is not good. Barth et al. (1999) show analytically that the cost of capital increases as harmonization increases, therefore harmonization can harm firm's securities market performance. Stolowy et al. (2001) document that the accounting treatment of intangible assets is different from country to country, and they illustrate how adopting a single set of accounting standards is harmful and international standards harmonization is difficult. Kirby (2001) uses a stochastic oligopoly model of two firms in two countries, and analytically examines the consequences of international accounting harmonization at the disclosure level. He observes that "countries are not unambiguously better off" if their companies are moving toward full disclosure, and the effects of harmonization on full disclosure levels depends on the country's degree of development. In particular, developing countries harmonizing on full disclosure are at greatest risk of experiencing detrimental side effects. Ball (1995) also states "accounting is an integral part of each country's own economic and political institutions," therefore accounting standards are different across countries and it does not make sense to adopt a

single set of accounting practices when the ways to use accounting information vary from country to country. Moreover, whether harmonization of accounting standards results in comparable application of the standards is still in debate. Street et al. (1999) investigate accounting compliance of companies claiming to comply with IAS and empirically find significant noncompliance with IAS. More than half of sample companies comply with IAS with some limited exceptions and do not comply with all of the requirements of IAS. This finding suggests that accounting standard harmonization does not necessarily enhance comparability of accounting information.

As mentioned above, there are advantages and disadvantages of accounting convergence. This study examines whether accounting quality improvement is a benefit of accounting convergence.

This study first examines whether or not accounting practices have converged over time. Several studies explain how domestic GAAP differs from IAS and why they are different. Harris (1995) determines the significance of differences between 1994 IASC standards and US GAAP. Street et al. (2000) show the differences between US GAAP and IASC GAAP for several accounting items. Cairns and Nobes (2000) compare the accounting requirements for UK GAAP with the requirements of IASs. Several international accounting firms conducted the study "GAAP 2001" (Nobes 2001), comparing cross-country differences in accounting and financial reporting issues in 62 countries. Ding et al. (2005) develop a divergence index (national GAAP and IAS prescribe different accounting methods) and absence index (national GAAP do not cover IAS accounting issue) for each of 52 countries, and show national GAAPs are, indeed, different from IAS. These approaches are good at comparing cross-country accounting

differences in depth, but they only show how accounting practices are different. It is hard to summarize these differences into one convergence measure and to assess whether or not the differences are reduced over time.

Some prior research has examined international accounting convergence using analytical approaches. Archer et al. (1996) develop 6 statistical models, compute the expected distribution of accounting policy choice for each model, and compare the estimated distribution to the observed distribution of accounting policy choice in each country. They apply these models to two areas of accounting policy choice, deferred tax and consolidated goodwill, to determine international harmonization. They find that comparability increases when the choices made by companies converge towards a generally accepted method or when the number of accounting methods in use is reduced. Garrido et al. (2002) also adopt an analytical model to measure harmonization progress. They compare three harmonization periods – referred to as A, B, and C – and define vectors of each period and alternative combinations of accounting treatments by counting the number of accounting methods for each alternative. They find that harmonization progress is significantly advanced from Stages A to B and Stages B to C.[5] Several researchers test international accounting harmonization with empirical data. Murphy

[5] Three harmonization stages are A: flexible standards (1973-1988), B: higher degree of comparability (1989-1995), and C: ideal harmonization periods (1996-onwards). Each stage has 4 alternative accounting treatments (required, benchmark, allowed, and forbidden.) The vectors of each stage and alternative combinations are composed for each of 20 accounting concepts (12 Balance Sheet concepts and 8 Income Statement concepts) by counting the number of accounting methods for each alternative. For more information, see Garrido et al. (2002)

(2000) adopts van der Tas's (1988) *I* index[6] and examines accounting harmonization after the adoption of IASs, in terms of 4 accounting practices: depreciation, inventory, financial statement cost basis, and consolidation practices. He finds that harmonization has occurred over pre- and post-IASs periods but there is little evidence that these changes are the result of using IASs. Herrmann and Thomas (1995) also use this technique to determine the harmonization in 9 accounting practices in the European Community and find that 6 of them are not harmonized. Street et al. (2000) document the differences between US GAAP and IAS, and also develop the comparability index between these two standards. They show that the impact of accounting differences between IASs and US GAAP has been narrowing over 1995-1997 periods.

Both the analytical approaches and empirical studies mentioned above are useful ways to measure the decreases in accounting differences over time. However, they also have the disadvantage that the number of countries or number of accounting methods being compared is limited. Therefore, this dissertation follows Land and Lang (2002) and measures accounting convergence using earnings multiples. Earnings are strongly affected by changes in accounting practice, thus it is a useful summary measure of convergence reflecting all changes in accounting practices. Many countries can also be compared at once.

Joos and Lang (1994) first use this technique to measure accounting diversity and uniformity. They find that the significant differences in financial ratios and stock market

[6] The *I* index measures the level of comparability for accounting practices used by companies from across countries. Two-country model *I* index is $\sum_{i=1}^{n}(f_{i1}f_{i2})$. For example, if 80 percent of the companies in country 1 use method A and 20 percent use method B and if 70 percent of the companies in country 2 use method A and 30 percent use method B, the *I* index will equal 0.6200 [(0.80×0.70)+(0.20×0.30)=0.6200].

valuation of accounting data (including return on equity, earnings per price ratio, and book to market ratio) still exist in EU countries over 1982-1990 periods despite EU harmonization efforts. Land and Lang (2002) also show that the deviation in earnings multiples for sample firms from Australia, Canada, France, Germany, Japan, the United Kingdom, and the United States is getting smaller over the two periods of 1987-1992 and 1994-1999.

In summary, international accounting harmonization and comparability of accounting information is an important issue to be addressed. Previous studies document advantages and disadvantages of accounting convergence, and these literatures motivate me to examine how (or if) international accounting convergence is related to an improvement in accounting information quality. The first question to be examined is whether international accounting has converged over time, and to answer to this, the study adopts Land and Lang's (2002) E/P ratios approach because this approach allows a comparison of differences across many countries and many accounting practices at a given point in time.

2. Research on accounting quality

"Earnings quality", more generally, financial reporting quality does not have a precise definition. Financial reporting quality is defined as the extent to which reported earnings faithfully represent underlying economic constructs and as the degree to which reported earnings reflect basic accounting concepts. Prior research has evaluated earnings quality in many different ways. Recent studies measuring earnings quality

summarize eight attributes of earnings, which are accrual quality, persistence, predictability, smoothness, reliability, relevance, timeliness, and conservatism (Francis et al. 2004; Biddle and Hilary 2006; Wang 2006.) They view these attributes as the criteria for assessing accounting quality.

(1) Accrual quality

Richardson (2003) believes that a key measure of earnings quality is the deviation of net income from operating cash flows and measures earnings quality using accruals. Dechow (1994) states that understanding the role of accruals in producing earnings as one of the key outputs of the accounting process is important because earnings will become a less reliable measure of firm performance (and thereby of low quality) if management uses its discretion and opportunistically manipulates accruals. Myers et al. (2003) use abnormal accruals and absolute current accruals as proxies for earnings quality. Aboody et al. (2005) also measure earnings quality using abnormal accruals and working capital accruals, and find evidence that the stock market prices these earnings quality factors. Ball and Shivakumar (2006) view accruals and earnings quality as related and they state that transitory changes in operating cash flow occur because managerial manipulation causes working capital items to vary in time, and thereby lead to lower earnings quality.

(2) Persistence and Predictability

Penman and Zhang (2002), and Beneish and Vargus (2002) state that current earnings should be a good indicator of future earnings, and define earnings quality as the likelihood that a firm can have current earnings persist in the future. Bricker et al. (1995) and Mikhail et al. (2003) define a good earnings quality as high predictive ability of future earnings. Revsine et al. (1999) and Bodie et al. (2002) consider more persistent earnings to be of higher quality, and show the interrelationship between persistence, accruals, and quality by stating that low levels of accruals result in higher persistence of earnings, thereby resulting in higher quality.

(3) Smoothness

Lang et al. (2003) and Biddle and Hilary (2006) measure earnings smoothing as the cross-sectional correlation between the change in accruals and the change in cash flows, and state that a greater degree of earnings smoothing represents lower quality accounting. Leuz et al. (2003) also use the same smoothing measure as a proxy for earnings management and find that earnings management is negatively associated with the quality of shareholder rights, legal enforcement, and quality financial reporting.

(4) Reliability and Relevance

The Conceptual Framework focuses on decision usefulness and defines reliability as a criterion for measuring quality. High quality earnings supports the objective of the Conceptual Framework in providing useful information such as a firm's performance to financial accounting users. The International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) have a joint project to converge their conceptual frameworks, and they specifically state that this project "involves consideration of the objectives of financial reporting and the qualitative characteristics of financial reporting information," and that "general purpose financial reporting should provide information about the entity to the external users who lack the power to prescribe the information they require and therefore must rely on the information provided by an entity's management."[7] Their discussion paper states that faithful representation (formerly reliability) of real-world economic phenomena is an essential qualitative characteristic. According to the paper, representations are faithful when "there is correspondence or agreement between the accounting measures or descriptions in the financial reports and the economic phenomena they purport to represent."[8]

Maines and Wahlen (2006) suggest that earnings management (the relation of reported earnings with true earnings) can provide indirect evidence on reliable (faithful representation) financial reporting in terms of measurement error, freedom from bias, and incentives to managers and statement preparers for manipulating accounting income

[7] For more information, see FASB website at http://www.fasb.org/project/conceptual_framework.shtml.

[8] International Accounting Standards Board. July 2006. Discussion paper, Preliminary Views on an improved Conceptual Framework for Financial Reporting: The Objective of Financial Reporting and Qualitative Characteristics of Decision-useful Financial Reporting Information. p.14.

(neutrality). The association of stock prices and returns with accounting earnings can be also examined as a representational faithfulness measure (Maines and Wahlen 2006; Lang et al. 2003). The extent to which the accounting represents the underlying economic event can be examined by testing the relation between stock returns (a proxy for economic gains and losses) and accounting earnings (a proxy for accounting gains and losses).

(5) Timeliness and Conservatism

Levitt, the former chairman of the US Securities and Exchange Commission emphasizes accounting standards focusing on transparency by stating that "for international standards to gain acceptance they must be of high quality – they must result in comparability and transparency. International accounting standards must provide for full and fair disclosure." (Levitt 1998) He views transparency as an essential attribute of quality earnings. Hunton et al. (2006) indicate that greater transparency in reporting requirements facilitates the detection of earnings management, and results in reduction in earnings management and high quality earnings.

Ball et al. (2000) believe that timeliness and conservatism together capture transparency. However, there is a controversy regarding reported earnings quality under conservative accounting practices. Sen (2005) believes that the continued practice of conservatism may reduce the predictability and thus the quality of reported earnings because it creates a hidden reserve that can inflate future earnings when investment growth slows down. Ball et al. (2000) believe that conservative accounting practice

makes optimistic non-accounting information released by managers less credible to uninformed users and facilitates monitoring of managers and of debt and other contracts, thus is an important feature of corporate governance. However, since asymmetric and timely loss recognition is an empirically significant property of accounting earnings and has long-standing influence on practice (Ball and Shivakumar 2005), this study will view timely loss recognition and conservatism as desirable quality attributes.

In summary, there is neither an agreed-upon meaning nor a generally accepted approach to measure earnings quality. The attributes of earnings quality mentioned above may be mutually inconsistent or overlapping and they are not separately measured. These attributes are all intertwined. Revsine et al. (1999) and Bodie et al. (2002) state that low levels of accruals result in the higher persistence and predictability of earnings. Studies such as Leuz et al. (2003), Lang et al. (2003), and Dechow (1994) measure earnings management using accruals and smoothness. Hodge (2003) explores that more managed earnings do not faithfully represent true economic earnings and thus result in less value relevance of financial information. Hunton et al. (2006) indicate that greater transparency reduces earnings management, and Ball et al. (2000) believe that transparency can be captured by timeliness and conservatism. Therefore, this study uses multiple measures of accounting quality.

3. A linkage between accounting convergence and accounting quality

Land and Lang (2002) document several reasons to expect cross-country harmonization of accounting. Worldwide organizations, such as the International

Accounting Standards Board, have made significant efforts to reduce accounting differences and develop consistent regulation, and many countries have already adopted these standards or have plans to adopt them soon. Moreover, cross-listing for capital markets creates incentives to converge accounting standards. Therefore, I expect that accounting differences, as reflected in differences in earnings multiples, have decreased over time.

If cross-country accounting differences are reduced and accounting standards are converged, there should be an effect on the quality of earnings. Accounting method choices affect the quality of accounting (Teets 2002) and there are studies showing that accounting standards choices are associated with accounting quality (Lang et al. 2003 and Barth et al. 2006). Since the quality of earnings is closely related to management's choice of accounting methods (Teets 2002), accounting standards convergence must have some impact on financial reporting quality.

On the one hand, Stolowy et al. (2001) illustrate how adopting a single set of accounting standards is harmful and international standards harmonization is difficult. Kirby (2001) examines the consequences of international accounting harmonization at the disclosure level and observes that "countries are not unambiguously better off" if companies are moving toward full disclosure. Street et al. (1999) state that accounting harmonization does not necessarily enhance comparability of accounting information.

On the other hand, Choi and Meek (2005) and Entwistle et al. (2005) argue that accounting harmonization will lead to good investment decisions and increase allocational efficiency of capital. Financial statements allowing efficient resource

allocation can be viewed as having high quality, and convergence is expected to enhance accounting quality. Land and Lang (2002) also view that more internationally consistent accounting practice can result in high quality accounting. Therefore, the hypothesis of this study is developed related to the linkage between accounting convergence and accounting quality, and the alternative form of the hypothesis is that continuation of moving toward international norms and accounting convergence result in higher-quality accounting earnings.

CHAPTER III

SAMPLE AND METHODOLOGY

1. Sample and Data

This study selects all firm-year observations in all countries that have the required financial data to estimate each empirical model in this study. All data are from the Compustat Global Industrial/Commercial file and the Compustat Global Issues file containing stock market related items for the fiscal years from 1997 to 2006. This study restricts the sample periods to 1999 – 2005[9], and the samples to industrial and commercial firms and excludes financial companies. A total of 63 countries are available in Global Compustat. 22 countries are eliminated because they have fewer than 100 firm-year observations, leaving a final sample of 41 countries. Table 1 presents the firm-year observations by sample countries.

2. Accounting quality measures

Similar to Francis et al. (2004), Biddle and Hilary (2006), and Wang (2006), this study uses eight summary measures of accounting quality: (1) accrual quality, (2)

[9] To examine accrual quality, for example changes in cash flow from operation, data two years before and one year after sample period data are required.

earnings persistence, (3) predictability, (4) smoothness, (5) reliability, (6) relevance, (7) timeliness, and (8) conservatism.[10]

(1) Accrual quality

This study employs Dechow and Dichev (2002)'s accrual quality measurement. The underlying rationale behind this measurement is that non-discretionary current accruals in the current period tend to be related to cash flows in the current period, the period preceding it, and in the period immediately following it. Therefore, the discretionary part of current accruals can be estimated as the residual ($\varepsilon_{j,t}$) from the following regression:

$$\frac{TCA_{j,t}}{Assets_{j,t}} = \alpha_0 + \alpha_1 \frac{CFO_{j,t-1}}{Assets_{j,t}} + \alpha_2 \frac{CFO_{j,t}}{Assets_{j,t}} + \alpha_3 \frac{CFO_{j,t+1}}{Assets_{j,t}} + \varepsilon_{j,t} \qquad (1)$$

Where:

$TCA_{j,t}$ = Firm *j*'s total current accruals in year *t*. It is calculated as: (Δtotal current assets - Δcash) – (Δtotal current liabilities - Δshort-term debt - Δtaxes payable) – depreciation expense.

$Assets_{j,t}$ = Firm *j*'s total assets at the end of the year *t*.

$CFO_{j,t}$ = Firm *j*'s cash flow from operations in year *t* from the statement of cash flows. If a firm does not disclose this amount in the statement of cash flows, it is calculated as: operating income – accruals.

[10] These measurements are also similar to the measures that Lang et al. (2003) and Barth et al. (2006) used in their papers to test accounting quality in an international setting.

The standard deviation of residuals ($\varepsilon_{j,t}$) from Equation (1) can be used as a measure of accrual quality for each country and each year, and small values of the residual correspond to higher accruals quality and higher accounting quality.

(2) Earnings persistence

Following Kormendi and Lipe (1987) and Francis et al. (2004), this study measures earnings persistence using the slope coefficient (ϕ_1) from the following autoregressive model of order one (AR1):

$$X_{j,t} = \phi_0 + \phi_1 X_{j,t-1} + \upsilon_{j,t} \quad (2)$$

Where:

$X_{j,t}$ = Firm *j*'s earnings before extraordinary items in year *t*.

Values of ϕ_1 close to 1 indicate highly persistent earnings, while values of ϕ_1 close to 0 imply highly transitory earnings. To have this variable conform to the ordering of attributes, this study uses the negative of the parameter, $PERSISTENCE_{j,t} = -\phi_1$, so that smaller values of $PERSISTENCE_{j,t}$ correspond to more persistent earnings, thereby higher quality.

(3) Predictability

Lipe (1990) and Francis et al. (2004) define earnings predictability as the ability to predict earnings based on its past value. Therefore, this study measures earnings predictability as the standard deviation of residuals ($\upsilon_{j,t}$) from Equation (2). Small values of the residuals ($\upsilon_{j,t}$) imply more predictable and higher quality earnings.

(4) Smoothness

As in Leuz et al. (2003) and Biddle and Hilary (2006), earnings smoothness is measured as the correlation between the change in accruals and the change in cash flows.

$$SMOOTH_{j,t} = \rho(\Delta Acc_{j,t}, \Delta CFO_{j,t}) \quad (3)$$

Where:

$SMOOTH_{j,t}$ = Firm *j*'s Spearman correlation between the change in accruals and the change in cash flow from operation (both scaled by lagged total assets) in year *t*.

A smaller level of earnings smoothing indicates higher accounting quality.

(5) Reliability and Relevance

Reliability and relevance are both captured by examining the association of stock prices and returns with accounting data. Considerable research has focused on the association between capital markets and financial statement information. Ball and Brown

(1968) examine the relationship between earnings per share changes and security price changes, show that these two move in the same direction, and conclude that accounting earnings contains useful information for capital markets and that earnings does represent real economic events. Easton and Zmijewski (1989) test the correlations between earnings response coefficients and revision coefficients[11] and the correlations between earnings response coefficients and systematic risk, and find that there is a positive relationship between earnings response coefficients and the revision coefficients, and a negative relationship between earnings response coefficients and systematic risk. This implies that accounting earnings reflects stock market changes. They also document that earnings response coefficients vary cross-sectionally in a predictable manner, thereby providing evidence that earnings contain useful and reliable information.

Other papers show how market returns respond to accounting earnings. Studies, such as Collins and Kothari (1989), Bernard and Thomas (1989 and 1990), Ball and Bartov (1996), find that even after the earnings announcement, estimated cumulative abnormal returns continue to drift up for good news firms and drift down for bad news firms, and therefore conclude that stock market does not fully reflect the information of accounting earnings.

Lang et al. (2003) measure the relationship between stock prices and accounting data using the explanatory power (R^2) of the price regression:

$$P_{j,t} = \alpha_0 + \alpha_1 BVPS_{j,t} + \alpha_2 NIPS_{j,t} + \varepsilon_{j,t} \quad (4)$$

[11] Earnings response coefficients measure the response of stock prices to accounting earnings announcements. Revision coefficients are coefficients relating earnings changes to returns.

Where:

$P_{j,t}$ = Firm *j*'s stock price as of six months after the fiscal year-end in year *t*.

$BVPS_{j,t}$ = Firm *j*'s book value of shareholders' equity per share in year *t*.

$NIPS_{j,t}$ = Firm *j*'s net income per share in year *t*.

Francis et al. (2004) also measure the value relevance of earnings using the explanatory power (R^2) of the following regression:

$$R_{j,t} = \alpha_0 + \alpha_1 NI_{j,t} + \alpha_2 \Delta NI_{j,t} + \varepsilon_{j,t} \quad (5)$$

Where:

$R_{j,t}$ = Firm *j*'s stock return in year *t*.

$NI_{j,t}$ = Firm *j*'s net income in year *t*.

$\Delta NI_{j,t}$ = Firm *j*'s change in net income in year *t*. It is calculated as: $NI_{j,t} - NI_{j,t-1}$.

Following Lang et al. (2003) and Francis et al. (2004), this study measures reliability and relevance as R^2s of both Equation (4) and (5). Quality accounting data are more strongly associated with capital market data, therefore higher R^2s in Equation (4) and (5) indicate higher quality of accounting.

(6) Timeliness

Ball et al. (2000) define timeliness as the degree to which accounting income incorporates economic income. To measure timeliness of earnings, Basu (1997) compares the explanatory power (R^2) from the regression equation of accounting earnings on stock returns for good news and bad news. Adopting Basu (1997), this study measures timeliness by regressing the following equation:

$$X_{j,t} / P_{j,t-1} = \alpha_0 + \alpha_1 DR_{j,t} + \beta_0 R_{j,t} + \beta_1 R_{j,t} DR_{j,t} + \varepsilon_{j,t} \quad (6)$$

Where:

$X_{j,t}$ = Firm *j*'s earnings per share in year *t*.

$P_{j,t-1}$ = Firm *j*'s stock price per share in year *t*-1.

$DR_{j,t}$ = Dummy variable; it is set to be 1 if $R_{i,t}$ <0, and 0 otherwise.

$R_{j,t}$ = Firm *j*'s stock return in year *t*, when stock return is calculated as: ending stock price + dividends – beginning stock price.

Quality accounting data are more strongly associated with share price, therefore a higher R^2 indicates higher quality of accounting.

(7) Conservatism

Ball et al. (2000) also define conservatism as asymmetric timely loss recognition – whether accounting income reflects bad economic news more quickly than good news.

Following Basu (1997), this study measures earnings conservatism based on the coefficients in Equation (6). β_0 is the coefficient measurement of good news and β_1 is the coefficient measurement for bad news. $[(\beta_0 + \beta_1)/\beta_0]$ measures the extent to which earnings are sensitive to negative returns relative to positive returns. A higher measurement implies more timely loss recognition, implying higher accounting quality. This measurement is also consistent with the one found in Ball et al. (2000) and Lang et al. (2003).

In summary, eight earnings quality variables are used in this study, and they are: (1) accrual quality, (2) earnings persistence, (3) predictability, (4) smoothness, (5) reliability, (6) relevance, (7) timeliness, and (8) conservatism. Table 2 provides descriptive statistics of the sample countries for the eight accounting quality measures. Compared to prior accounting quality studies, several quality measures in this study are different from those reported in other previous studies. For example, timeliness proxies in the Table 2 – which are measured by R^2 of the regression equation of accounting earnings on stock returns for good news and bad news – for Canada, the U.S., U.K., and France are much lower than these values in Ball et al. (2000). The R^2 for the U.S. in Basu (1997) is also lower than that in Ball et al. (2000), but the U.S. timeliness values in Table 2 are even lower than in Basu (1997). However, the timeliness proxies for Germany, Japan, and Australia in Ball et al. (2000) are similar to the ones presented in the Table 2. Also, the accrual quality and persistence proxies for the U.S. in this study are higher than reported in Francis et al. (2004). These may be due to the different sample structures –

sample firms, size, and periods are different –, or possibly because of a problem with quality measurement.[12]

3. Convergence measurement

Motivated by Land and Lang (2002), this study regresses mean-adjusted E/P ratios on indicator variables for each country and year (1999-2005) as follows:

$$E / P_{i,t} = \sum_{i=1}^{n}\sum_{t=1}^{m} \alpha_{i,t} C_{i,t} \quad (7)$$

Where:

$E / P_{i,t}$ = Country *i*'s mean-adjusted earnings/price ratio in year *t*, where it is calculated as: earnings/price ratio for each country and each year – average earning/price ratio (over firms and countries) for each year.

$\alpha_{i,t}$ = Coefficient estimate of country *i* in year *t*.

$C_{i,t}$ = Country indicator variable of country *i* in year *t*.

Coefficient estimates of $\alpha_{i,t}$ in the regression represent deviations for a given country and year from the mean. Therefore coefficients that are getting significantly smaller and closer to 0 over time are evidence of international accounting convergence over time.

Table 3 provides descriptive statistics for earnings price ratios over 1999-2005 by country. The values are similar to Land and Lang (2002) although the sample periods are

[12] The U.S. samples for this study are collected from the Compustat Global Industrial/Commercial file and the Compustat Global Issues file. These samples are different from those used in Ball et al. (2000) and Basu (1997). Or, the differences might be due to the problem of the use of R^2 as an accounting quality measure. For more explanation, refer to p.41.

different. For example, the median E/P ratio over 1994-1999 is 0.063 for Australia and 0.053 for United States in Land and Lang (2002). These are 0.066 and 0.051 in my study. The median E/P ratios in my sample over 1999-2005 for Germany (0.063) and Japan (0.052) are a little higher compared to those values over 1994-1999 shown in Lang and Lang (2002), which are 0.045 for Germany and 0.031 for Japan.

Following the conventions in Compustat Global Issue, earnings per price is defined as earnings before extraordinary items divided by market value at year-end. This study begins with a potential sample of 89,748 firm years and uses the same deletion rules as Land and Lang (2002). Because earnings price ratios are difficult to interpret for loss firms, this studies deletes observations with negative earnings (32 percent of potential observations over seven sample years) and, to mitigate the effects of extreme observations, this study deletes the top 1 percent of earnings per price ratios, leaving 59,402 observations.

Table 4 contains the convergence measurement results. The values in the table are absolute values of coefficient estimates ($\alpha_{i,t}$) of the regression in Equation (7). The signs of the coefficients do not have significant meanings. Only the magnitudes show the degree of the dispersions from the world mean, thereby are meaningful. Therefore, the absolute values of the coefficients are used as convergence proxies for each country and year. If these values get smaller and closer to 0 over time there is evidence of international accounting convergence over time. In general, the results suggest convergence in the sense that dispersion is reduced. The last row of the Table 4 represents the mean coefficient across countries for each year, and shows that the

coefficient is significantly reduced in 2001 and continuously reduces afterward. In addition, convergence is apparent for most of the sample countries, with the coefficients moving toward the mean especially over last five sample years. For example, the mean earnings per price ratio for Australia, which was 0.1191 greater than the mean in 2000, is 0.00548 greater than the mean in 2004. Earnings per price multiples not only in Canada, France, United Kingdom, and United States but also in Belgium, China, Korea, and South Africa move from above the mean toward the mean, and the results show a narrowing of differences in earnings multiples over the sample period for most of the countries. Figure 1 graphically shows the changes in accounting convergence proxies by country based on the Table 4.

CHAPTER IV

RESULTS AND SENSITIVITY TESTS

The purpose of this study is to empirically examine the functional relationship between accounting convergence and financial reporting quality. This study uses the following panel regression:

$$\Delta EQ_{i,t,k} = \beta_0 + \beta_1 \Delta CON_{i,t} + \beta_2 GDP_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 LEGSYS(E)_i + \beta_5 LEGSYS(F)_i + \beta_6 LEGSYS(G)_i + \varepsilon_{i,t} \quad (8)$$

Where:

$\Delta EQ_{i,t,k}$ = Changes in country *i*'s earnings quality variable of *k* (*k* = 1,2,3,4,5,6,7,8). *k* represents eight earnings quality variables. Changes in earnings quality are calculated with quality measures of each consecutive year.

$\Delta CON_{i,t}$ = Changes in country *i*'s accounting convergence variable. They are computed with the absolute value of the coefficient estimates ($\alpha_{i,t}$) of equation (7) for each consecutive year.

$GDP_{i,t}$ = Country *i*'s per capita GDP in year *t*.

$GROWTH_{i,t}$ = Country *i*'s average annual percent growth of per capita GDP in year *t*.

$LEGSYS_i$ = Country *i*'s legal system and enforcement indicator variable. It is set to be 1 for each legal system indicator variable, 0 otherwise. $LEGSYS(E)_i$, $LEGSYS(F)_i$, and $LEGSYS(G)_i$

represent English origin common law countries, French origin, and German origin code law countries, respectively.

Change in earnings quality is measured as the difference in earnings quality between consecutive years. There are eight earnings quality variables used in this study, and they are: accrual quality, persistence, predictability, smoothness, reliability and relevance, timeliness, and conservatism. Equation (8) is estimated for each of these eight variables. Change in accounting convergence is measured as the difference in coefficient estimate ($\alpha_{i,t}$) of Equation (7) between consecutive years.

As control variables, per capita GDP, and growth rate of GDP, and a country's legal system and enforcement are added in the model. Since economically large and fast growing countries could have higher quality accounting, *GDP* controls the size of country and *GROWTH* controls the economic growth of the country. Also, since common law countries generally have higher earnings quality and German civil law countries have better quality compared to the other code law countries, *LEGSYS* is added in the model. *LEGSYS* controls country's legal and enforcement system. Following La Porta et al. (1997, 2000), code law countries are separated into 3 categories, which are German origin, French origin, and Scandinavian origin countries. Dummy variables represent common law countries, German origin, and French origin code law countries, with Scandinavian origin code law countries being the group left out. Table 5 shows per capita GDP, annual percent changes in per capita GDP, and the legal origin for each sample country.

Since the data in this study are panel data – data sets that consist of time-series observations on each of several cross-sections, this study runs panel regressions instead of pooled ordinary least square (OLS) regressions. There are two kinds of information in panel data: the cross-sectional information reflected in the differences between subjects, and the time-series or within-subject information reflected in the changes within subjects over time. The panel regression is useful to capture these different types of information. Moreover, if there are country factors affecting a country's accounting quality that do not change over time and the unobserved country effect is correlated with accounting convergence, then using pooled regressions on the seven years of data results in biased and inconsistent estimates. In addition, Figure 1 shows that earnings multiples were far above the mean in the year 2000, and after that dispersion was significantly reduced, which may imply something happened in 2000 and a need to control for a year effect. If there are year factors affecting each year's accounting quality proxy that is constant cross-sectionally and the unobserved year effect is correlated with accounting convergence measurement, then results from pooled regression are biased, because pooled regression recognizes data as each independent observation. Therefore, to control possible omitted variables that are constant over time but vary cross-sectionally and that are constant cross-sectionally but vary over time, this study runs random effects panel regression model. The Hausman test results also suggest that it is safe to use the random effect model.

The remainder of this Chapter presents the correlation matrix for the variables used in the model, and the results of the relation between accounting quality and

convergence with overall sample, followed by empirical examination of this relation for converged countries only.

1. Correlations and multicollinearity

Table 6 contains the correlation coefficients for the variables used in the panel regression model. These coefficients are examined to determine whether multicollinearity exists in the model. The highest correlation coefficient obtained is *LEGSYS(E)* and *LEGSYS(F)*. They are correlated at –0.576. The correlation is less than 0.80, thus it does not indicate a considerable collinearity. There are no other correlation coefficients greater than 0.50, with the remaining coefficients having values far less than 0.50.

Among the eight accounting quality measures, the first four measures – accrual quality, persistence, predictability, and smoothness – are expected to have positive signs, and the last four measures – reliability, relevance, timeliness, and conservatism – are expected to have negative signs. Correlation coefficients show that only predictability and relevance have the expected signs, thus change in accounting convergence may not be correlated with change in accounting quality attributes in the expected way.

2. Empirical results with overall sample

The empirical examination begins with an analysis of the relationships between accounting quality and accounting convergence with the overall sample. The prediction is that the slope coefficients on changes in the accounting convergence variable (β_1) have significantly positive values for (1) accrual quality, (2) persistence, (3) predictability, and (4) smoothness, and significantly negative values for (5) reliability, (6) relevance, (7) timeliness, and (8) conservatism, so improvement in earnings quality is associated with international convergence. However, the results based on panel regressions of accounting quality on convergence do not show evidence of an association between earnings quality and international convergence. Table 7 shows that persistence and smoothness are significantly negatively related to accounting convergence. Predictability and relevance have the right signs, and accrual quality, reliability, timeliness, and conservatism have the wrong signs, but they are not statistically significant. Therefore, the panel regression results with overall sample countries reveal little evidence of a significantly positive association between accounting convergence and accounting quality improvements.

As sensitivity analyses, this study also runs logit and pooled regressions with year dummy variables. To account for the annual variation of change in earnings quality from each country, annual dummy variables are added to the original model. As a part of logit and pooled regressions, this study also measures the changes in quality and convergence as the difference between (1) beginning and ending years of sample periods (1999 – 2005), (2) average of first two years and average of last two years (1999, 2000 – 2004,

2005), and (3) average of first three years and average of last three years (1999, 2000, 2001 – 2003, 2004, 2005), instead of measuring the changes as the difference between consecutive years, and examines the relation between quality and convergence. Since annual variations of the change in some of the accounting quality attributes and convergence are small, it might be difficult to obtain empirically significant changing effects. However, the sensitivity tests also find no overall positive association between accounting convergence and accounting quality. The results are still mixed and not significant. Therefore, the sensitivity tests results are not presented here.

3. Results of converged countries

The next step in the study is to partition the sample countries into converged countries and non-converged countries and examine the association of accounting convergence and quality with data of converged countries only. Because it is possible that the tests with all sample countries aggregate many important factors, it might wash out the net impact of accounting convergence on accounting quality. However, there is no clearly superior way to define converged countries, thus this study defines converged countries based on (1) analysis of variance test (ANOVA) and (2) t-test. The ANOVA tests the mean differences of sample companies' mean-adjusted E/P ratios between seven year periods within each sample country, and defines converged countries if mean numbers are significantly reduced at 5% confidence level. In addition, three different t-tests are run to determine converged countries. The mean numbers of company-level mean-adjusted E/P ratios within each sample country are compared between (1)

beginning and ending years of sample periods (1999 – 2005), (2) average of first two years and average of last two years (1999, 2000 – 2004, 2005), and (3) average of first three years and average of last three years (1999, 2000, 2001 – 2003, 2004, 2005). Countries whose mean numbers are significantly reduced between these two periods are categorized as converged countries. Table 8 provides the lists of converged countries defined based on each different approach.

Once samples are partitioned, this study re-runs Equation (8) for the converged countries, and examines the relation between convergence and quality. Table 9 presents the regression results of converged countries defined based on t-test between 1999-2000 and 2004-2005. As presented in Table 9, predictability is significantly and positively related to accounting convergence and persistence and smoothness are significantly and negatively related to accounting convergence. Accrual quality, reliability, and relevance have the right signs, while timeliness and conservatism have the wrong signs, but are not statistically significant. The results based on the other approaches to define converged countries (defined by ANOVA test, t-test between 1999 and 2005, t-test between 1999, 2000, 2001 and 2003, 2004, 2005) are qualitatively similar. Therefore, this study concludes that results are still mixed even with data of converged countries only and there is little evidence of a significant positive association between accounting convergence and accounting quality. The results suggest that accounting convergence alone does not necessarily improve accounting quality.

Other ways to partition the sample countries are based on (1) institutional clusters suggested by Leuz et al. (2003), (2) country's legal system and enforcement (common

law vs. code law)[13], and (3) country's level of economic development. Table 10 provides descriptive statistics for these country classifications. Comparing Table 8 and Table 10, converged countries do not necessarily have strong investor protection, have a common law legal system, or are economically developed. The list of converged countries is a mixture of strong and weak investor protection countries, common and code law legal system countries, and developed and developing countries. The study does not find any specific patterns between converged countries and institutional clusters, legal systems, and country's level of development. Therefore, the relationship between accounting convergence and improvement in accounting quality is not a matter of a country's investor protection and legal system, or the level of economic development.

[13] For common law and code law classification, see Table 5, Panel C: Legal Origin.

CHAPTER V

SUMMARY, LIMITATION, AND FUTURE RESEARCH

Much attention has recently been focused on international accounting convergence and the possible consequences of adopting IFRS. All European Union (EU) countries, Canada, many Asia-Pacific countries, Australia, and New Zealand have required or allowed the adoption of IFRS. An increasing number of countries have been considering adopting or converging with IFRS. Prior studies have provided advantages and disadvantages of accounting convergence. Some researchers believe that accounting convergence enhances comparability of financial statements, and some opponents state that a single set of accounting standards cannot satisfy the information needs of a diverse global environment. Therefore, accounting convergence and the impact of convergence are empirical issues.

The purpose of this study is to explore the functional relationship between earnings quality and convergence. This study investigates: (1) whether cross-country accounting differences, reflected in differences in earnings multiples, are reduced over time; and (2) whether quality of accounting is positively related with accounting convergence. The findings of this study show that cross-country accounting differences are reduced over time in most of the sample countries and accounting convergence is a prevalent accounting trend in the world. However, this study does not find significant evidence of a positive relation between accounting convergence and improvement in

accounting quality. The panel regression results show that persistence and smoothness are significantly and negatively related to accounting convergence. Predictability and relevance have the right signs, and accrual quality, reliability, timeliness, and conservatism have the wrong signs, but they are not statistically significant. Thus, the study concludes that the association between accounting standards convergence and earnings attributes is mixed and not significant. The results are unchanged in sensitivity tests.

Regression analyses with data of converged countries also show that there is little evidence of a significant positive association between accounting convergence and accounting quality. Predictability is significantly and positively related to accounting convergence, and persistence and smoothness are significantly and negatively related to accounting convergence. Accrual quality, reliability, and relevance have the right signs, while timeliness and conservatism have the wrong signs, but they are not statistically significant. Therefore, accounting convergence alone does not necessarily improve accounting quality. In addition, no evidence is found that a country's investor protection and legal system and the level of economic development have an impact on the relation between accounting convergence and improvement in accounting quality.

There are several possible reasons to explain the results. First, it is possible that the earnings multiple approach used in this study for measuring accounting convergence is wrong or not appropriate to measure the degree of accounting convergence. Furthermore, mean-adjusted earnings multiple is a measurement of financial reporting convergence, not a measurement of accounting standards convergence. The hypothesis

developed in this study is based on the assertion that accounting standards convergence enhances comparability of financial statements, therefore leads to high quality accounting. Financial reporting convergence may not be related to accounting standards convergence.

In addition, the annual variations of change in accounting convergence are small and fluctuate year by year, thus it is difficult to define significantly converged countries. Converged countries determined by different approaches used in this dissertation are mixed, therefore test results driven with the mixture of converged and non-converged countries are likely to aggregate and wash out the net impact of convergence on quality improvement.

Second, it is also possible that some of the accounting quality measures used in this study are not the right measures to capture earnings quality when applied to an international setting. For example, using a sample of US and international firms, Wysocki (2005) documents that the widely-used Dechow and Dichev (2002) accrual quality model fails to capture firm's earnings quality. The Wysocki (2005) results show that the classic Dechow and Dichev (2002) model is dominated by the negative contemporaneous correlation between accruals and cash flows, and that a strong negative accruals and cash flow correlation is associated with low accounting quality in US and international firms. Also, accounting quality measures used in this study are developed based on US data and may be good at capturing accounting quality for US firms, but not appropriate to generally use for each different country, because there are many different country factors affecting a country's accounting quality and quality measurements used in the study fail to control for these factors in each different country. Development of accounting quality measurements to consider and better control for each country's

environment is one of the limitations of the study and also should be done in further research.

Third, this study uses 8 multiple measures of accounting quality since there is no agreed-upon approach to capture it, but some of the measurements have inconsistent implications. For example, smoothness and predictability perhaps capture earnings quality oppositely in an international environment. An argument can be made that smoother earnings are more predictable, and vice versa. Countries such as Japan or Greece, whose earnings are more smoothed may have more predictable earnings than countries such as United States or United Kingdom, whose earnings are less smoothed. In addition, Givoly et al. (2006) report that Basu's (1997) traditional method to measure timeliness and conservatism is not a reliable measure to assess the overall conservatism and can lead to incorrect inferences. Therefore, the conclusions about accounting quality depend on how it is defined.

Another limitation is the use of regression explanatory power (R^2) as an accounting quality measure. Three accounting quality attributes – specifically, reliability, relevance, and timeliness – are measured by R^2s in this study. However, R^2 requires making the strong assumption of a linear relation between the dependent variable and independent variable(s) and is very sensitive to sample size and number of variables. Different sample structure can explain why a timeliness measurement in my study is not similar to prior U.S. studies.

Also, some of the earnings quality measures do not appear to be stable from year to year. This may be a problem with outliers, so I may need to better control for outliers using a standard deletion rule of top and bottom 1% of the sample.

This study concludes that accounting convergence alone does not improve accounting quality, and that the positive association between convergence and quality is not related to country's investor protection, legal enforcement, and level of economic development. However, this study fails to document other factors that possibly may affect the positive relation between these two. Thus it may be interesting to determine potential specific factors affecting accounting convergence on improvement in accounting quality for future research. In addition, as with most accounting convergence studies, there remains the potential to develop stronger proxies for accounting convergence.

For this study, the relationship between accounting convergence and accounting quality is examined at country level. Further study may try to test this relation using firm level data, because using country level data may aggregate important firm level information. This study measures accounting quality for each country over firms for each year, but future study may try to measure accounting quality for each firm over sample periods and examine the association of accounting convergence with firm level accounting quality measures.

Because of the scarce amount of empirical research examining the impact of accounting standards convergence on accounting quality, more theoretical work on this

association between accounting convergence and quality, and development of stronger models to examine this relation could be another avenue for future research.

REFERENCES

Aboody, D., J. Hughes, and J. Liu. 2005. Earnings Quality, Insider Trading, and Cost of Capital. *Journal of Accounting Research* 43 (5): 651-673.

Archer, A., P. Delvaille, and S. Mcleay. 1996. A Statistical Model of International Accounting Harmonization. *Abacus* 32 (1): 1-29.

Ashbaugh, H. 2001. Non-US Firms' Accounting Standard Choices. *Journal of Accounting and Public Policy* 20: 129-153.

Ashbaugh, H. and M. Pincus. 2001. Domestic Accounting Standards, International Accounting Standards, and the Predictability of Earnings. *Journal of Accounting Research* 39 (3): 417-434.

Ball, Ray. 1995. Making Accounting More International: Why, How, and How Far Will It Go? *Journal of Applied Corporate Finance* 8 (3): 19-30.

Ball, R. and E. Bartov. 1996. How naïve is the stock market's use of earnings information? *Journal of Accounting and Economics* 21: 319-337

Ball, R. and P. Brown. 1968. An empirical evaluation of accounting income numbers. *Journal of Accounting Research* 6 (2): 159-178.

Ball, R., S.P. Kothari, and A. Robin. 2000. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics* 29: 1-51.

Ball, R., and L. Shivakumar. 2006. The Role of accruals in Asymmetrically Timely Gain and Loss Recognition. *Journal of Accounting Research* 44 (2): 207-242.

Barth, M.E., C. Greg, and S. Toshi. 1999. International accounting harmonization and global equity markets. *Journal of Accounting and Economics* 26: 201-235.

Barth, M.E., W.R. Landsman, M. Lang, and C. Williams. 2006. Accounting Quality: International Accounting Standards and US GAAP. Working paper, University of North Carolina and Stanford University.

Basu, S. 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics* 24: 3-37.

Beneish, M.D. and M.E. Vargus. 2002. Insider Trading, Earnings Quality, and Accrual Mispricing. *The Accounting Review* 77 (4): 755-791.

Bernard,V. and J. Thomas. 1989. Post-earnings announcement drift: Delayed price response or risk premium? *Journal of Accounting Research* 27 (Supplement): 1-36.

Bernard,V. and J. Thomas. 1990. Evidence that stock prices do not fully reflect the implications of current earnings for future earnings. *Journal of Accounting and Economics* 13: 305-340.

Biddle, G. C. and Hilary G. 2006 Accounting Quality and Firm-Level Capital Investment. *The Accounting Review* 81 (5): 963-982.

Bodie, Z., A. Kane, and A.J. Marcus. 2002. *Investments*. 6th edition. New York, NY: McGraw-Hill.

Bradshaw, M.T. and G.S. Miller. 2002. Are Detailed Accounting Standards Sufficient to Ensure Compliance? Evidence from Non-U.S. Firms Adopting US GAAP. Working paper, Harvard Business School.

Bricker, R., G. Previts, T. Robinson, and S. Young. 1995. Financial Analyst Assessment of Company Earnings Quality. *Journal of Accounting, Auditing & Finance* 10 (3): 541-554.

Cairns D. and C. Nobes. 2000. *The convergence handbook: a comparison between international accounting standards and UK financial reporting requirements*. The Institute of Chartered Accountants of England and Wales, London.

Carlson P. 1997. Advancing The harmonisation of International Accounting Standards: Exploring an Alternative Path. *The International Journal of Accounting* 32 (3): 357-378.

Chamisa, E. 2000. The Relevance and Observance of the IASC Standards in Developing Countries and the Particular Case of Zimbabwe. *The International Journal of Accounting* 35 (2): 267-286.

Choi, F. and G. Meek. 2005. *International Accounting*. Upper Saddle River, NJ: Prentice Hall.

Collins, D. and S. Kothari. 1989. An analysis of inter-temporal and cross-sectional determinants of earnings response coefficients. *Journal of Accounting and Economics* 11: 143-181.

Dechow, P.M. 1994. Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics* 18: 3-42.

Dechow, P.M. and Deichev, I.D. 2002. The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. *The Accounting Review* 77 (Supplement): 35-59.

Ding, Y., T. Jeanjean, and H. Stolowy. 2005. Why do national GAAP differ from IAS? The role of culture. *The International Journal of Accounting* 40: 325-350.

Easton P.D. and M.E. Zmijewski. 1989. Cross-sectional variation in the stock market response to accounting earnings announcements. *Journal of Accounting and Economics* 11: 117-141.

El-Gazzar, S.M., P.M. Finn, and R. Jacob. 1999. An Empirical Investigation of Multinational Firms' Compliance with International Accounting Standards. *The International Journal of Accounting* 34 (2): 239-248.

Entwistle, G.M., G.D. Feltham, and C. Mbagwu. 2005. The Voluntary Disclosure of Pro Forma Earnings: A U.S. – Canada Comparison. *Journal of International Accounting Research* 4 (2): 1-23.

Financial Accounting Standards Board. 1996. *The IASC-US Comparison Project: A report on the Similarities Between and Differences Between IASC standards and US GAAP*. Norwalk, CT: FASB.

Financial Accounting Standards Board Website. 2006. *Conceptual Framework – Joint Project of the IASB and FASB.* http://www.fasb.org/project/conceptual_framework.shtml.

Francis, J., R. LaFond, P. M. Olsson, and K. Schipper. 2004. Costs of Equity and Earnings Attributes. *The Accounting Review* 79 (4): 967-1010.

Garrido, P., Á León, and A. Zorio. 2002. Measurement of formal harmonization progress: The IASC experience. *The International Journal of Accounting* 37: 1-26.

Givoly, D., C. Hayn, and A. Natarajan. 2006. Measuring Reporting Conservatism. Working paper, Pennsylvania State University, University of California, and California State University.

Harris, T.S. 1995. *International Accounting Standards versus US GAAP Reporting: Empirical Evidence Based on Case Studies*. Cincinnati, OH: South-Western Publishing Co.

Herrmann, D. and W. Thomas. 1995. Harmonisation of Accounting Measurement Practices in the European community. *Accounting and Business Research* 25 (100): 253-265.

Hodge, F.D. 2003. Investors' Perceptions of Earnings Quality, Auditor Independence, and the Usefulness of Audited Financial Information. *Accounting Horizons* 17 (Supplement): 37-48.

Hunton, J.E, R. Libby, and C.L. Mazza. 2006. Financial Reporting Transparency and Earnings Management. *The Accounting Review* 81 (1): 135-157.

International Accounting Standards Board. 2006. Preliminary Views on an improved Conceptual Framework for Financial Reporting: The Objective of Financial Reporting and Qualitative Characteristics of Decision-useful Financial Reporting Information. IASB Discussion paper.

Joos, P. and M. Lang. 1994. The Effects of Accounting Diversity: Evidence from the European Union. *Journal of Accounting Research* 32 (Supplement): 141-168.

Kormendi, R. and R. Lipe. 1987. Earnings Innovations, Earnings Persistence, and Stock Returns. *Journal of Business* 60 (3): 323-345.

Kirby, A.J. 2001. International competitive effects of harmonization. *The International Journal of Accounting* 36: 1-32.

La Porta, R., F. Lopez-De-Silanes, A. Shleifer, R. W. Vishny. 1997. Legal Determinants of External Finance. *The Journal of Finance* 52 (3): 1131-1150.

La Porta, R., F. Lopez-De-Silanes, A. Shleifer, R. W. Vishny. 2000. Investor protection and corporate governance. *Journal of Financial Economics* 58: 3-27.

Land, J., and M. Lang. 2002. Empirical evidence on the evolution of international earnings. *The Accounting Review* (Supplement): 115-133.

Lang, M., J.S. Raedy, and M.H. Yetman. 2003. How Representative Are Firms That Are Cross-Listed in the United States? An Analysis of Accounting Quality. *Journal of Accounting Research* 41 (2):363-386.

Leuz, C., D. Nanda, and P.D. Wysocki. 2003. Earnings management and investor protection: an international comparison. *Journal of Financial Economics* 69: 505-527.

Levitt, A. 1998. The Importance of High Quality Accounting Standards. *Accounting Horizons* 12 (1): 79-82.

Lipe, R. 1990. The Relation between Stock Returns and Accounting Earnings Given Alternative Information. *The Accounting Review* 65 (1): 49-71.

Maines, L.A. and J.M. Wahlen. 2006. The Nature of Accounting Information Reliability: Inferences from Archival and Experimental Research. *Accounting Horizons* (Forthcoming, December).

Mikhail, M.B., B.R. Walther, and R.H. Willis. 2003. Reactions to Dividend Changes Conditional on Earnings Quality. *Journal of Accounting, Auditing & Finance* 18 (1): 121-151.

Murphy, A. 1999. Firm Characteristics of Swiss Companies that Utilize International Accounting Standards. *The International Journal of Accounting* 34 (1): 121-131.

Murphy, A. 2000. The Impact of Adopting International Accounting Standards on the Harmonization of Accounting Practices. *The International Journal of Accounting* 35 (4): 471-493.

Myers, J.N., L.A. Myers, and T.C. Omer. 2003. Exploring the Term of the Auditor-Client Relationship and the Quality of Earnings: A Case for Mandatory Auditor Rotation? *The Accounting Review* 73 (3): 779-799.

Nobes, C.W. (Ed.). 2001. GAAP 2001 – A survey of National Accounting Rules Benchmarked against International Accounting Standards. IFAD.

Penman, S.H. and X. Zhang. 2002. Accounting Conservatism, the Quality of Earnings, and Stock returns. *The Accounting Review* 77 (2): 237-264.

Revsine, L., D.W. Collins, and W.B. Johnson. 1999. *Financial Reporting and Analysis*. Upper Saddle River, NJ: Prentice Hall.

Richardson, S. 2003. Earnings quality and short sellers. *Accounting Horizons* 17 (Supplement): 49-61.

Sen, P.K. 2005. Reported Earnings Quality Under Conservative Accounting and Auditing. *Journal of Accounting, Auditing & Finance* 20 (3): 229-256.

Stolowy, H., A. Haller, and V. Klockhaus. 2001. Accounting for brands in France and Germany compared with IAS 38: An illustration of the difficulty of international harmonization. *The International Journal of Accounting* 36: 147-167.

Street, D.L., J.G. Sidney, and S.M. Bryant. 1999. Acceptance and Observance of International Accounting Standrads: An Empirical Study of Companies claiming to Comply with IASs. *The International Journal of Accounting* 34 (1): 11-48.

Street, D.L., N.B. Nichols, and S.J. Gray. 2000. Assessing the Acceptability of International Accounting Standards in the US: An empirical Study of the Materiality of US GAAP Reconciliations by Non-US Companies Complying with IASC Standards. *The International Journal of Accounting* 35 (1): 27-63.

Teets, W. R. 2002. Quality of Earnings: An Introduction to the Issues in Accounting Education Special Issue. *Issues in Accounting Education* 17 (4): 355-360.

van der Tas, Leo G. 1988. Measuring Harmonization of Financial Reporting Practice. *Accounting and Business Research* 18(70): 157-169.

Wang, D. 2006. Founding Family Ownership and Earnings Quality. *Journal of Accounting Research* 44 (3): 619-656.

Wysocki, P.D. 2005. Assessing Earnings and Accruals Quality: U.S. and International Evidence. Working Paper, MIT Sloan School of Management.

APPENDIX

FIGURE 1
International Accounting Convergence by Country

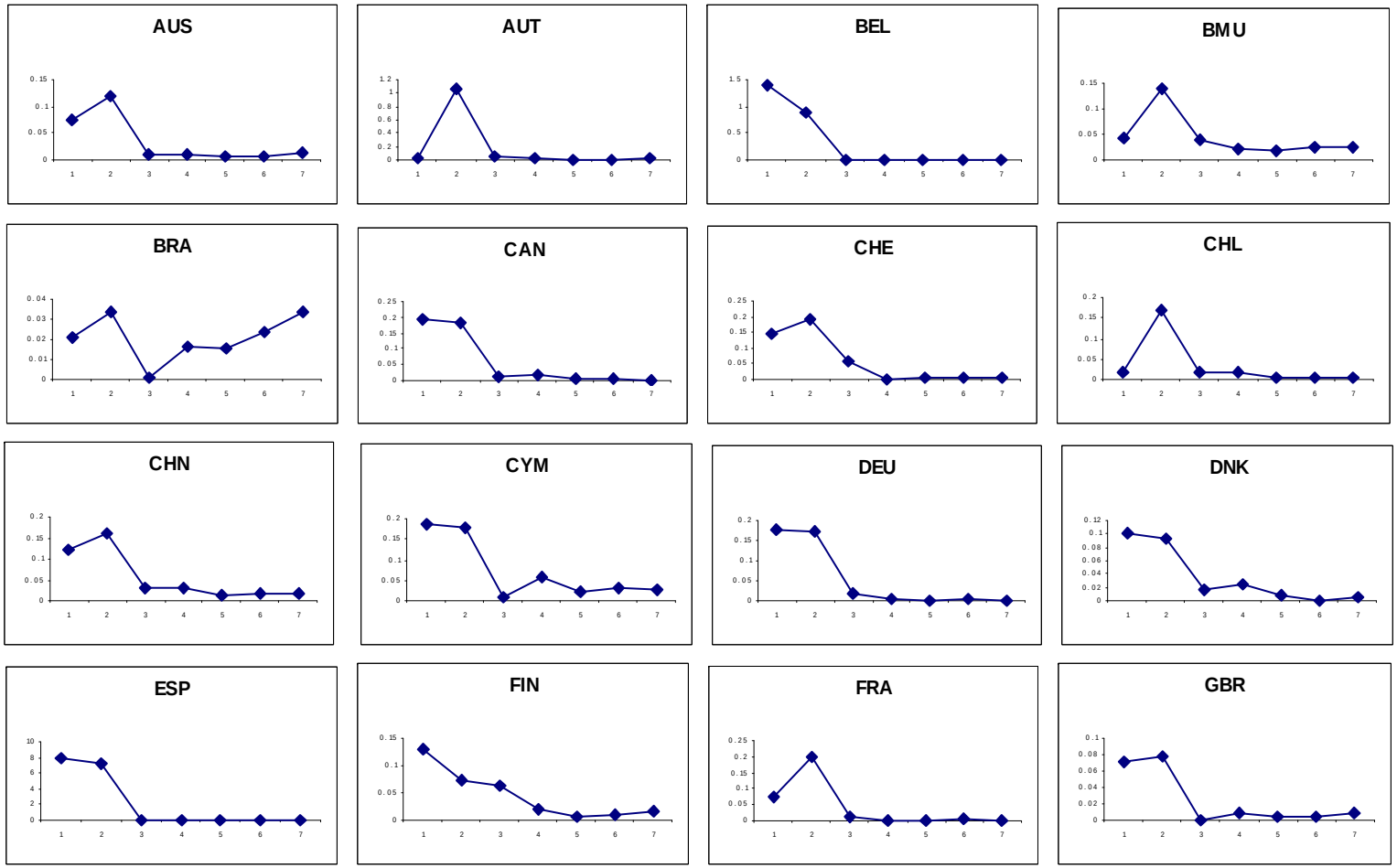

FIGURE 1 (Continued)
International Accounting Convergence by Country

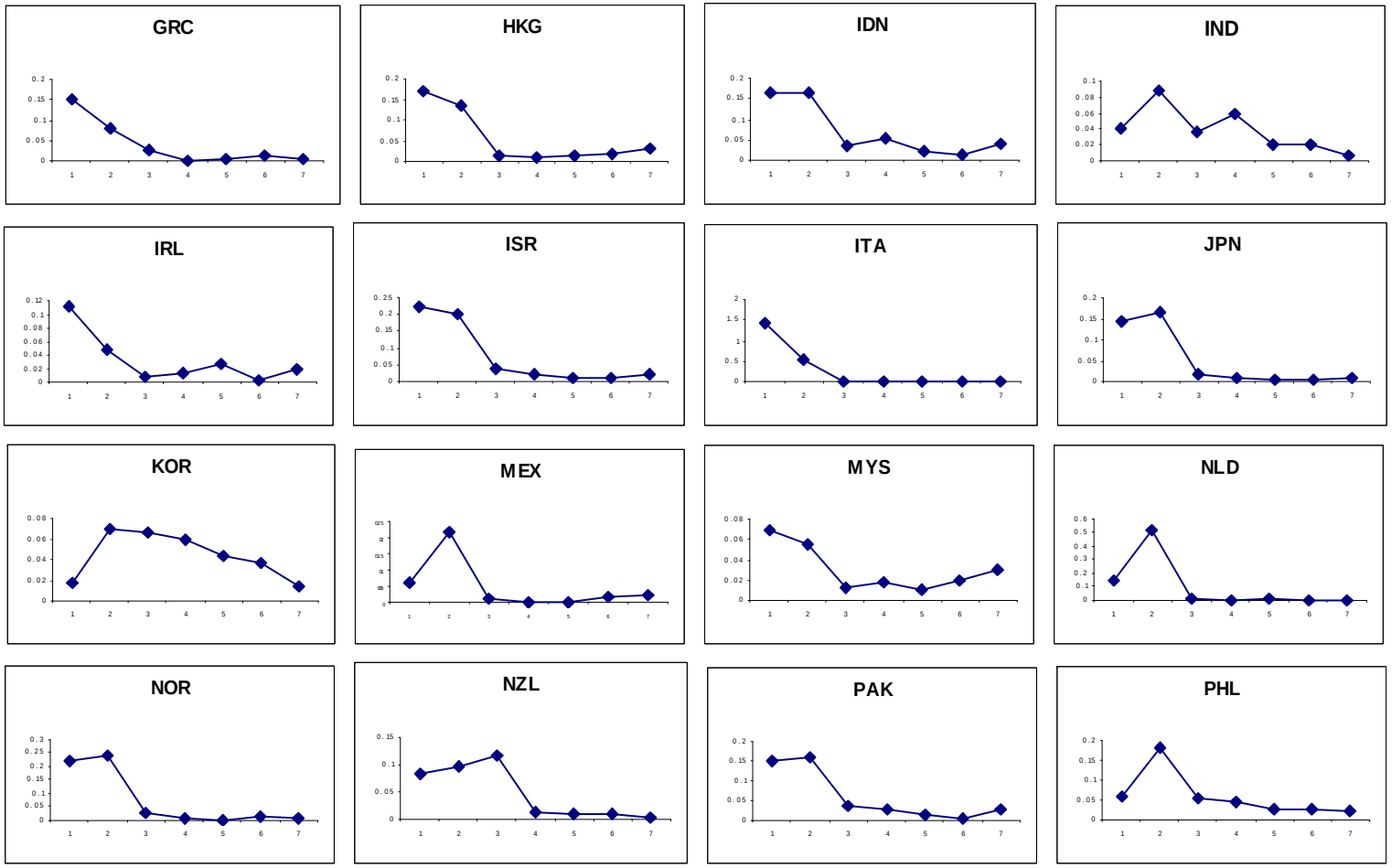

FIGURE 1 (Continued)
International Accounting Convergence by Country

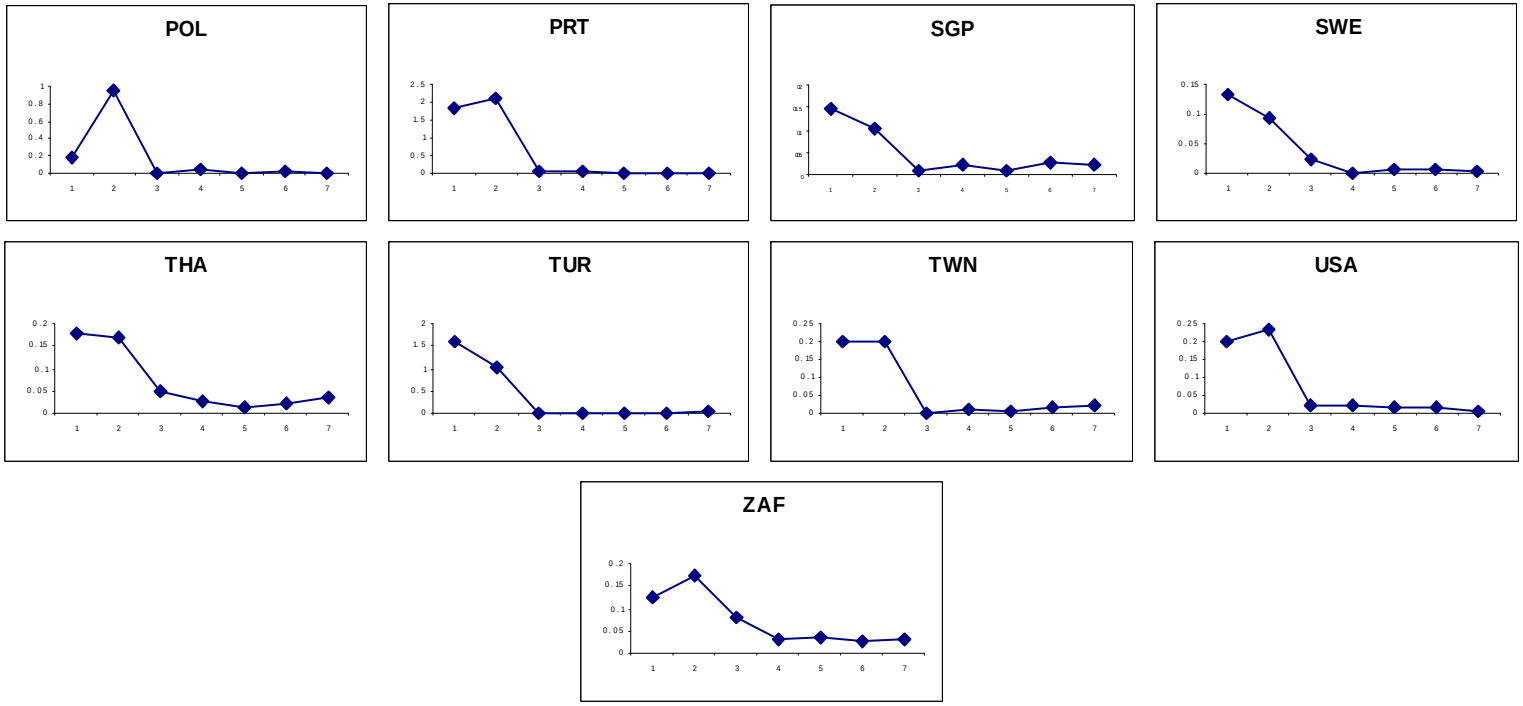

TABLE 1
Sample: Firm-Year Observations

Country	Country Code	1999	2000	2001	2002	2003	2004	2005	N	%
Australia	AUS	196	195	186	175	176	189	139	1256	2.11%
Austria	AUT	47	48	41	41	42	38	16	273	0.46%
Belgium	BEL	67	58	52	46	51	54	26	354	0.60%
Bermuda	BMU	156	150	154	181	204	209	118	1172	1.97%
Brazil	BRA	65	65	64	66	74	74	55	463	0.78%
Canada	CAN	313	305	235	254	267	266	213	1853	3.12%
Switzerland	CHE	106	111	97	90	98	104	57	663	1.12%
Chile	CHL	52	56	54	48	51	53	47	361	0.61%
China	CHN	95	101	189	261	322	717	948	2633	4.43%
Cayman Islands	CYM	29	29	33	65	88	112	72	428	0.72%
Germany	DEU	376	397	351	311	304	311	174	2224	3.74%
Denmark	DNK	69	69	61	70	61	62	42	434	0.73%
Spain	ESP	86	81	70	78	72	80	39	506	0.85%
Finland	FIN	61	61	62	65	64	65	39	417	0.70%
France	FRA	324	378	345	318	313	323	145	2146	3.61%
United Kingdom	GBR	782	714	607	569	573	569	347	4161	7.00%
Greece	GRC	47	42	25	31	28	31	23	227	0.38%
Hong Kong	HKG	70	72	69	68	73	79	38	469	0.79%
Indonesia	IDN	111	91	93	123	132	124	73	747	1.26%
India	IND	188	187	161	161	167	170	72	1106	1.86%
Ireland	IRL	32	29	22	24	21	21	11	160	0.27%
Israel	ISR	30	28	19	22	22	25	10	156	0.26%
Italy	ITA	49	71	106	89	103	110	75	603	1.02%
Japan	JPN	1940	1951	1793	1959	2203	2259	1961	14066	23.68%
Korea	KOR	100	114	108	123	160	168	100	873	1.47%
Mexico	MEX	34	31	35	33	34	34	21	222	0.37%
Malaysia	MYS	326	296	291	333	392	400	251	2289	3.85%
Netherlands	NLD	122	110	100	96	101	108	72	709	1.19%

TABLE 1 (Continued)
Sample: Firm-Year Observations

Country	Country Code	1999	2000	2001	2002	2003	2004	2005	N	%
Norway	NOR	60	55	56	57	58	66	42	394	0.66%
New Zealand	NZL	48	43	35	33	29	35	26	249	0.42%
Pakistan	PAK	30	27	24	25	26	23	18	173	0.29%
Philippines	PHL	59	52	50	52	63	64	33	373	0.63%
Poland	POL	25	21	17	17	17	17	9	123	0.21%
Portugal	PRT	37	31	31	33	31	29	23	215	0.36%
Singapore	SGP	172	166	188	185	203	218	143	1275	2.15%
Sweden	SWE	104	126	123	121	122	137	85	818	1.38%
Thailand	THA	165	155	162	156	188	190	134	1150	1.94%
Turkey	TUR	29	30	24	23	25	21	10	162	0.27%
Taiwan	TWN	113	117	130	129	179	182	109	959	1.61%
United States	USA	2172	1958	1583	1594	1618	1703	1474	12102	20.37%
South Africa	ZAF	77	74	62	67	59	62	37	438	0.74%
Total		8964	8695	7908	8192	8814	9502	7327	59402	100.00%

TABLE 2
Measures for Accounting Quality
Panel A: Accruals Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Australia	0.38493	0.22129	0.33038	0.25895	1.45665	0.16948	0.28538
Austria	0.06642	0.04984	0.08060	0.05946	0.06572	0.02592	0.05888
Belgium	0.08649	0.08889	0.10138	0.14675	0.06735	0.06066	0.09192
Bermuda	0.22342	0.23778	0.37088	0.73786	0.79831	0.08476	0.14243
Brazil	0.06504	0.06931	0.07525	0.08892	0.12296	0.09241	0.08565
Canada	0.14812	0.13009	0.22267	0.53083	0.38958	0.16200	0.20272
Switzerland	0.06744	0.06460	0.09918	0.11481	0.05967	0.05349	0.05761
Chile	0.07181	0.05336	0.05703	0.06019	0.05701	0.05609	0.05925
China	0.07092	0.06841	0.14714	0.11742	0.10352	0.13392	0.10689
Cayman Islands	0.09937	0.08694	0.27436	0.21113	0.69366	0.13972	0.25086
Germany	0.08528	0.23577	0.24400	0.22330	0.14618	0.28684	0.13211
Denmark	0.10048	0.09575	0.09311	0.09929	0.08824	0.04195	0.08647
Spain	0.05519	0.07924	0.07803	0.06071	0.05420	0.03625	0.03701
Finland	0.07469	0.08450	0.13256	0.10094	0.10994	0.06480	0.04690
France	0.08670	0.14826	0.13432	0.36169	0.13797	0.04356	0.06218
United Kingdom	0.20386	0.15799	0.16235	0.20829	0.16222	0.08445	0.09806
Greece	0.06754	0.05902	0.05961	0.06274	0.05360	0.09540	0.06632
Hong Kong	0.25653	0.10142	0.15424	0.09075	0.13631	0.09179	0.12130
Indonesia	0.15177	0.13901	0.16701	0.30937	0.10302	0.09566	0.13430
India	0.07059	0.07481	0.08467	0.08274	0.07436	0.04530	0.07739
Ireland	0.09316	0.05011	0.14231	0.20808	0.04671	0.03050	0.07095
Israel	0.07100	0.07336	0.08756	0.09845	0.09676	0.35236	0.08786
Italy	0.06139	0.05252	0.09634	0.18697	0.06692	0.07950	0.07595
Japan	0.05717	0.06397	0.06507	0.06777	0.07162	0.05758	0.05959
Korea	0.05793	0.05673	0.08265	0.10216	0.08824	0.07251	0.06088
Mexico	0.04445	0.05952	0.05443	0.06870	0.06574	0.01156	0.05073
Malaysia	0.09613	0.09367	0.13370	0.13187	0.10304	0.09757	0.09286
Netherlands	0.08552	0.12356	0.13424	0.19390	0.14820	0.06715	0.08822

TABLE 2 (Continued)
Measures for Accounting Quality
Panel A: Accruals Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Norway	0.13015	0.13896	0.09967	0.12630	0.18558	0.10116	0.11301
New Zealand	0.08179	0.05960	0.10141	0.06361	0.07243	0.03701	0.06931
Pakistan	0.06465	0.08885	0.06245	0.04747	0.06701	0.03825	0.07241
Philippines	0.06816	0.14089	0.20905	0.14162	0.16391	0.19974	0.11106
Poland	0.06331	0.06977	0.04303	0.01730	0.05094	0.09985	0.05737
Portugal	0.06073	0.04399	0.04420	0.04048	0.03882	1.16309	0.01241
Singapore	0.08832	0.10234	0.11577	0.15018	0.15202	0.11893	0.12126
Sweden	0.19322	0.13785	0.16984	0.39381	0.16006	0.14908	0.11836
Thailand	0.13615	0.22916	0.17437	0.14639	0.07860	0.07588	0.10154
Turkey	0.12344	0.09429	0.14989	0.06826	0.03779	19.91544	0.05102
Taiwan	0.04792	0.05439	0.06680	0.06329	0.06616	0.07457	0.06219
United States	0.26199	0.16111	0.28444	0.29315	0.63256	0.54840	0.36361
South Africa	0.08727	0.07681	0.08225	0.07478	0.07797	0.01315	0.06871

Note: The values of this panel represent the standard deviations of the sample firms' residuals of Equation (1) for the countries. Small values of the standards deviations correspond to higher accruals quality and higher accounting quality.

TABLE 2 (Continued)
Measures for Accounting Quality
Panel B: Persistence Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Australia	-0.012	-0.047	-0.0228	-0.0209	0.0768	-0.005211	0.0283
Austria	-0.0288	0.00857	-0.148	-0.1079	-0.0593	-0.0361	0.9251
Belgium	-0.0631	0.2342	-0.1033	0.1026	-0.1362	-0.0895	-0.018
Bermuda	-0.008931	-0.000757	-0.001417	-0.0183	-0.0233	-0.0121	-0.0378
Brazil	0.2839	-0.009032	-0.0869	-0.0413	0.0545	0.145	-0.1074
Canada	0.1221	0.0462	-0.067	0.1093	0.2426	-0.0796	-0.1709
Switzerland	0.045	-0.0408	-0.1922	0.2869	0.001792	0.0371	0.0476
Chile	-0.0612	0.003308	0.004399	0.003207	0.0514	0.0161	0.1388
China	0.0194	0.0283	-0.0758	0.046	0.0825	0.0534	-0.0648
Cayman Islands	-0.0741	0.0106	0.0259	0.0287	0.2405	-0.0127	-0.0116
Germany	0.0832	-0.076	0.2406	0.4038	0.1554	-0.0474	-0.746
Denmark	-0.1181	-0.1255	0.0984	-0.0344	-0.1937	-0.0214	0.2706
Spain	-0.0706	0.002449	-0.0683	0.5877	-0.003131	-0.0385	0.0708
Finland	-0.0588	-0.0329	0.0364	-0.0357	-0.1064	-0.003472	0.0316
France	-0.0488	0.0823	0.2709	-0.1157	0.0548	-0.1028	0.0506
United Kingdom	-0.0351	-0.1106	-0.0245	0.0527	-0.0919	-0.000184	-0.1799
Greece	-0.1833	-0.0105	0.0173	0.0482	-0.0824	0.2537	0.1482
Hong Kong	0.002071	0.0611	0.2583	0.2851	-0.3703	0.0134	-0.1858
Indonesia	-0.0632	0.001203	0.0365	-0.0231	-0.0972	-0.0965	0.269
India	-0.1469	0.001433	0.0322	-0.1252	-0.0115	0.0433	-0.01015
Ireland	0.0216	0.1492	0.0364	0.9653	-0.9139	-0.4599	0.4793
Israel	-0.2504	-0.1722	0.2265	0.579	0.0468	-0.5966	-0.043
Italy	-0.112	0.0105	-0.0351	0.0931	0.1511	0.2387	-0.0268
Japan	0.051	0.0296	0.0352	0.0401	0.0747	0.004789	0.0452
Korea	0.0724	-0.1139	-0.008286	0.0645	0.0416	0.1507	0.0141
Mexico	-0.0121	0.008397	-0.0716	-0.00271	0.6643	-0.0364	0.2085
Malaysia	0.006407	0.0852	0.002073	0.0398	-0.0796	0.04	-0.003397
Netherlands	0.3026	-0.038	-0.082	0.1104	-0.0432	0.0322	-0.0607

TABLE 2 (Continued)
Measures for Accounting Quality
Panel B: Persistence Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Norway	0.142	-0.007218	-0.186	-0.006624	-0.0129	-0.016	0.7619
New Zealand	0.1906	-0.003523	0.9457	0.4505	-0.101	-0.1878	-0.1203
Pakistan	-0.0779	-0.0134	-0.1669	0.3275	0.2001	-0.3773	-0.2132
Philippines	0.0193	0.0957	-0.0839	-0.1148	0.0258	0.0631	-0.0217
Poland	0.0138	-0.0602	-0.0528	0.0145	0.1352	-0.9667	-0.0367
Portugal	-0.1733	-0.0473	0.8769	-0.457	-0.1801	-0.1399	0.3592
Singapore	0.4366	-0.0234	0.0124	-0.1126	-0.0967	0.0221	0.0424
Sweden	0.0997	0.1701	0.1585	-0.002628	-0.003798	-0.0823	0.177
Thailand	-0.0899	0.00066	0.0261	0.000126	0.0169	0.005971	0.0206
Turkey	0.005454	-0.198	-0.0886	0.0398	-0.1177	-0.0134	-0.11001
Taiwan	0.0162	-0.0867	0.0379	0.003251	0.0124	-0.0115	-0.0698
United States	0.0121	-0.0132	0.003899	0.0106	-0.0499	-0.000652	-0.0223
South Africa	-0.1072	-0.0367	0.1271	0.1253	0.0918	0.0223	0.1152

Note: The values of this panel represent negative values of the slope coefficients of the autoregressive Equation (2) for the sample countries. Smaller values correspond to more persistent earnings, thereby higher quality.

TABLE 2 (Continued)
Measures for Accounting Quality
Panel C: Predictability Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Australia	197.3748	140.2717	279.1531	316.6653	203.0806	163.3176	388.0345
Austria	887.1610	422.6354	57.5187	42.6231	44.0274	14.4669	61.7946
Belgium	830.8401	463.2451	163.8661	66.9151	44.6216	47.6088	166.1652
Bermuda	228.3141	223.7290	490.6684	156.3900	102.5559	143.1494	174.8024
Brazil	330.2647	474.2926	210.9941	418.2262	896.5992	1015.7100	542.9430
Canada	97.0658	257.7739	169.1947	200.8157	181.3212	149.7761	180.4077
Switzerland	162.0298	157.2040	239.3360	199.8259	164.3294	78.6642	152.7838
Chile	3965.1300	6921.6200	3691.7100	3941.3800	3134.4900	4816.7000	1976.8200
China	116.0622	275.5291	147.9738	844.7859	427.6602	430.9576	295.3729
Cayman Islands	158.8210	138.7774	105.9705	73.7598	61.8284	76.4619	212.1620
Germany	322.7781	369.8291	374.2133	329.4177	349.8746	240.1773	589.8864
Denmark	187.2617	308.2837	159.4594	379.9784	273.4643	320.7079	128.6968
Spain	2454.3500	4791.8600	3227.9400	632.7563	139.9196	72.1544	128.1886
Finland	157.8003	237.0859	100.1245	75.6879	69.7463	105.6308	83.4192
France	609.7179	575.8677	318.8313	288.7967	474.0952	258.6647	531.5927
United Kingdom	395.2251	517.5069	187.6484	160.6618	228.6232	124.1682	675.7995
Greece	2931.3300	6368.5300	2604.4000	198.0508	28.5112	72.3136	103.3956
Hong Kong	448.7685	721.3140	757.1256	681.2666	855.1819	986.5477	1589.7400
Indonesia	12185.0700	8595.4200	5943.2500	7251.5900	5358.8100	6591.3100	8422.3100
India	1215.3200	2097.0900	1642.4800	2012.4800	3056.6600	4324.2900	2861.1300
Ireland	30.0361	82.7133	166.5945	169.5966	118.2577	12.5221	30.2488
Israel	239.6632	86.0459	273.9895	206.3512	102.4783	239.9850	349.6937
Italy	3255.1100	5649.1500	1776.7200	737.1657	134.2431	147.2853	326.7990
Japan	2645.9700	3285.4000	3073.6000	2619.1000	3297.5800	3648.7800	4143.4100
Korea	9372.1200	7531.5400	6630.5800	9285.2300	7768.3300	8259.8800	5818.1900
Mexico	4023.2200	1754.2500	1727.7100	1333.6200	5643.6500	3611.3000	2893.4100
Malaysia	105.8867	93.5087	97.2805	107.8627	109.0582	121.6535	239.5934
Netherlands	467.0605	527.6524	446.5427	232.6726	297.4451	676.1304	237.9656

TABLE 2 (Continued)
Measures for Accounting Quality
Panel C: Predictability Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Norway	408.7399	1130.4700	1470.6800	1800.2900	781.4592	3104.8100	9299.3300
New Zealand	51.6548	127.1112	162.9934	84.6165	128.5535	32.5453	36.4344
Pakistan	733.4208	1682.5700	2160.6000	813.0162	629.9959	1055.7900	881.4761
Philippines	1392.1700	867.9950	1063.2100	854.0779	898.8838	2115.5700	1175.8400
Poland	222.2438	176.2826	558.1045	350.3981	271.6625	292.0146	506.4472
Portugal	4771.9300	4143.6400	205.0917	20.6522	46.0893	40.7046	52.0631
Singapore	61.2367	42.9142	90.1142	51.9153	68.1641	68.5630	62.7380
Sweden	451.8233	759.4023	740.1949	484.9361	1156.3500	361.6404	319.5801
Thailand	879.4964	1485.2300	1356.5600	2667.6400	624.7616	2963.9700	1388.9300
Turkey	8233.7100	7155.8600	16138.4100	10362.5000	5255.5800	3529.3700	354.3825
Taiwan	1618.2400	2229.6000	1954.1200	2339.2600	1883.5500	3421.8200	5845.7400
United States	272.1854	402.2792	572.2874	571.3734	433.5380	706.1462	505.1108
South Africa	425.9584	633.3493	1032.1500	894.1576	772.1782	1573.6700	984.6341

Note: The values of this panel represent the standard deviations of the sample firms' residuals from Equation (2) for the countries. Small values of the standard deviations of the residuals imply more predictable and higher quality earnings.

TABLE 2 (Continued)
Measures for Accounting Quality
Panel D: Smoothness Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Australia	-0.6894	-0.74127	-0.6302	-0.56125	-0.69944	-0.65421	-0.76053
Austria	-0.91128	-0.94958	-0.90718	-0.97182	-0.87916	-0.89711	-0.96429
Belgium	-0.91804	-0.87465	-0.91287	-0.89852	-0.90687	-0.76973	-0.91667
Bermuda	-0.74147	-0.85799	-0.85145	-0.81988	-0.82981	-0.82607	-0.86997
Brazil	-0.70505	-0.736	-0.86333	-0.9256	-0.81016	-0.67605	-0.83481
Canada	-0.74921	-0.71711	-0.74998	-0.81582	-0.81446	-0.65379	-0.76004
Switzerland	-0.86965	-0.9222	-0.81642	-0.77018	-0.82939	-0.86702	-0.89699
Chile	-0.88056	-0.90841	-0.9154	-0.8694	-0.88205	-0.88826	-0.73235
China	-0.94239	-0.95855	-0.93509	-0.94524	-0.92318	-0.89136	-0.82831
Cayman Islands	-0.8262	-0.78536	-0.79896	-0.81744	-0.73233	-0.76851	-0.71079
Germany	-0.81282	-0.8741	-0.85458	-0.85174	-0.85794	-0.80605	-0.7294
Denmark	-0.71987	-0.75413	-0.91485	-0.86284	-0.86258	-0.81757	-0.64231
Spain	-0.81289	-0.79148	-0.80146	-0.95601	-0.97407	-0.87172	-0.69091
Finland	-0.88126	-0.95639	-0.89071	-0.86074	-0.73922	-0.54335	-0.60522
France	-0.89561	-0.89882	-0.90418	-0.97224	-0.90597	-0.882	-0.65972
United Kingdom	-0.76874	-0.79673	-0.79926	-0.76949	-0.84407	-0.89642	-0.67828
Greece	-0.98376	-0.9723	-0.9573	-0.95531	-0.99537	-0.92338	-0.77043
Hong Kong	-0.94014	-0.92268	-0.87046	-0.77642	-0.88113	-0.82038	-0.92146
Indonesia	-0.84359	-0.9098	-0.94129	-0.84454	-0.83957	-0.77566	-0.74715
India	-0.84736	-0.84471	-0.79538	-0.83787	-0.86935	-0.88268	-0.98333
Ireland	-0.75124	-0.75887	-0.75134	-0.79669	-0.83937	-0.97117	-0.90909
Israel	-0.86453	-0.93789	-0.83346	-0.98701	-0.77647	-0.71324	-0.6
Italy	-0.89544	-0.90111	-0.92235	-0.9858	-0.93693	-0.92833	-0.735
Japan	-0.94181	-0.93648	-0.90603	-0.92598	-0.9144	-0.90618	-0.90156
Korea	-0.85142	-0.94214	-0.87805	-0.77266	-0.90057	-0.81093	-0.86784
Mexico	-0.94404	-0.75011	-0.83449	-0.86916	-0.81725	-0.7075	-0.7697
Malaysia	-0.834	-0.7757	-0.82672	-0.83397	-0.84475	-0.8801	-0.73156
Netherlands	-0.65826	-0.84464	-0.78308	-0.83191	-0.87847	-0.87433	-0.72304

TABLE 2 (Continued)
Measures for Accounting Quality
Panel D: Smoothness Proxy for Country and Year
1

Country	1999	2000	2001	2002	2003	2004	2005
Norway	-0.8155	-0.63507	-0.63532	-0.66839	-0.90822	-0.81197	-0.64706
New Zealand	-0.87176	-0.6564	-0.7309	-0.61029	-0.92496	-0.88136	-0.37143
Pakistan	-0.73714	-0.71607	-0.74207	-0.90632	-0.92095	-0.76716	-0.83636
Philippines	-0.77876	-0.94499	-0.91983	-0.90457	-0.8779	-0.78815	-0.70059
Poland	-0.76551	-0.88515	-0.57769	-0.88947	-0.99301	-0.58681	-0.7646
Portugal	-0.95476	-0.9288	-0.8042	-0.99908	-0.9923	-0.90286	-0.982
Singapore	-0.9058	-0.92205	-0.8824	-0.8752	-0.81963	-0.84909	-0.68874
Sweden	-0.88141	-0.59822	-0.64198	-0.74764	-0.85762	-0.81789	-0.78632
Thailand	-0.92061	-0.91155	-0.92565	-0.92252	-0.90836	-0.8562	-0.89696
Turkey	-0.86185	-0.88484	-0.52571	-0.78865	-0.81385	-0.89323	-0.93617
Taiwan	-0.89673	-0.90659	-0.80078	-0.90342	-0.88246	-0.94548	-0.70045
United States	-0.76761	-0.75548	-0.75734	-0.78565	-0.79816	-0.7978	-0.68386
South Africa	-0.81709	-0.82512	-0.76492	-0.90272	-0.75377	-0.45835	-0.83333

Note: The values of this panel represent the Spearman correlation values between the change in accruals and the change in cash flow from operation. A smaller value indicates higher accounting quality.

TABLE 2 (Continued)
Measures for Accounting Quality
Panel E: Reliability Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Australia	0.5745	0.426	0.2738	0.3761	0.2552	0.3284	0.4
Austria	0.2889	0.3656	0.0695	0.3886	0.4888	0.4084	0.5511
Belgium	0.131	0.1342	0.2825	0.8535	0.9573	0.9805	0.9863
Bermuda	0.0527	0.0945	0.1292	0.032	0.1057	0.2943	0.5921
Brazil	0.0002	0.0009	0.0001	0.0015	0.0014	0.004	0.0067
Canada	0.0717	0.1667	0.3644	0.3701	0.443	0.5544	0.5936
Switzerland	0.2444	0.2521	0.2439	0.2799	0.4483	0.5348	0.8441
Chile	0.059	0.5913	0.0671	0.2349	0.3666	0.4139	0.0626
China	0.1111	0.1151	0.0535	0.0585	0.0753	0.0894	0.0366
Cayman Islands	0.6497	0.5391	0.684	0.4307	0.4836	0.4203	0.6569
Germany	0.096	0.4153	0.081	0.1355	0.2089	0.0795	0.8452
Denmark	0.2425	0.2091	0.0294	0.8839	0.771	0.8779	0.8599
Spain	0.2276	0.2891	0.2272	0.2828	0.2235	0.3075	0.6642
Finland	0.2566	0.0973	0.3652	0.4564	0.4625	0.5605	0.5261
France	0.2127	0.7861	0.8452	0.8319	0.7021	0.3805	0.4873
United Kingdom	0.1043	0.0359	0.0879	0.0046	0.0076	0.0364	0.0544
Greece	0.1686	0.0642	0.0523	0.6827	0.7024	0.5323	0.5426
Hong Kong	0.4611	0.4249	0.8115	0.7547	0.6941	0.7457	0.6687
Indonesia	0.0219	0.0307	0.0989	0.0162	0.0015	0.0026	0.0043
India	0.2455	0.5571	0.6436	0.5576	0.8647	0.8556	0.8444
Ireland	0.2185	0.2122	0.7692	0.7029	0.9367	0.6304	0.7681
Israel	0.7775	0.7807	0.7475	0.7287	0.8462	0.9561	0.9974
Italy	0.002	0.1841	0.0484	0.4577	0.4046	0.3297	0.0016
Japan	0.3237	0.1173	0.2836	0.3264	0.329	0.39	0.4102
Korea	0.0008	0.0025	0.0035	0.0094	0.0131	0.0039	0.0033
Mexico	0.172	0.0643	0.3788	0.5054	0.2002	0.2199	0.5036
Malaysia	0.697	0.6272	0.6986	0.7907	0.7931	0.8506	0.5198
Netherlands	0.8479	0.9056	0.9032	0.534	0.6167	0.5862	0.7325

TABLE 2 (Continued)
Measures for Accounting Quality
Panel E: Reliability Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Norway	0.0425	0.2661	0.3772	0.4206	0.4942	0.6499	0.8159
New Zealand	0.5363	0.5949	0.6544	0.6673	0.6392	0.8703	0.1909
Pakistan	0.4873	0.8744	0.8374	0.9896	0.9481	0.9388	0.9157
Philippines	0.6893	0.8579	0.8846	0.9503	0.8768	0.9353	0.7799
Poland	0.5687	0.5298	0.3152	0.3065	0.644	0.4812	0.8259
Portugal	0.1777	0.0821	0.718	0.467	0.2767	0.1723	0.5101
Singapore	0.7289	0.3064	0.775	0.734	0.6954	0.831	0.8688
Sweden	0.0381	0.0701	0.092	0.0915	0.2085	0.0999	0.244
Thailand	0.4576	0.4823	0.3902	0.7351	0.7133	0.7441	0.722
Turkey	0.8225	0.9818	0.9969	0.0658	0.1432	0.6473	0.7992
Taiwan	0.4492	0.4996	0.5492	0.7612	0.7237	0.5347	0.676
United States	0.0342	0.0265	0.0704	0.0509	0.0111	0.0692	0.3364
South Africa	0.0079	0.3887	0.1109	0.9518	0.9573	0.9698	0.9868

Note: The values of this panel represent explanatory powers (R^2) of equation (4), and higher R^2 s in Equation (4) indicate higher quality of accounting.

TABLE 2 (Continued)
Measures for Accounting Quality
Panel F: Relevance Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Australia	0.9331	0.7237	0.9058	0.2719	0.0554	0.5724	0.0777
Austria	0.0063	0.3014	0.0246	0.5001	0.4055	0.437	0.3579
Belgium	0.4279	0.0659	0.0019	0.004	0.0572	0.0399	0.2013
Bermuda	0.2658	0.4693	0.3507	0.5879	0.4386	0.6208	0.7167
Brazil	0.0444	0.1185	0.0035	0.0176	0.0006	0.0027	0.0179
Canada	0.5977	0.5036	0.3993	0.453	0.3771	0.3937	0.2983
Switzerland	0.0086	0.0928	0.0034	0.2958	0.3059	0.0598	0.6498
Chile	0.0033	0.0056	0.0038	0.0063	0.0053	0.0204	0.0186
China	0.3092	0.7064	0.7075	0.8989	0.9001	0.9092	0.8401
Cayman Islands	0.1474	0.1913	0.3099	0.1801	0.374	0.1979	0.355
Germany	0.0102	0.5147	0.164	0.403	0.6108	0.5607	0.7432
Denmark	0.0078	0.0235	0.109	0.1579	0.0579	0.2227	0.7734
Spain	0.0606	0.2726	0.3339	0.1261	0.696	0.8271	0.7261
Finland	0.0025	0.0044	0.0117	0.8874	0.7548	0.888	0.9062
France	0.0069	0.0725	0.0006	0.0031	0.0069	0.0001	0.3198
United Kingdom	0.654	0.8125	0.8174	0.5016	0.4818	0.7954	0.8425
Greece	0.0462	0.3173	0.0748	0.2411	0.6607	0.7794	0.5663
Hong Kong	0.8597	0.8505	0.8298	0.6799	0.9319	0.7859	0.9031
Indonesia	0.0214	0.1135	0.4806	0.4524	0.0868	0.0879	0.0388
India	0.4204	0.2537	0.6933	0.4838	0.347	0.3217	0.847
Ireland	0.2187	0.5137	0.7399	0.7583	0.7788	0.7514	0.9105
Israel	0.4108	0.0171	0.1678	0.1265	0.2112	0.6409	0.6975
Italy	0.0259	0.7618	0.024	0.4749	0.6344	0.7536	0.7546
Japan	0	0.0001	0	0.0002	0.0001	0.0005	0.0003
Korea	0.0011	0.0013	0.0001	0.004	0.0088	0.0075	0.0092
Mexico	0.2221	0.0869	0.0025	0.0695	0.0358	0.2326	0.3734
Malaysia	0.3395	0.4271	0.1801	0.3639	0.6318	0.8522	0.5208
Netherlands	0.4986	0.5216	0.7766	0.7376	0.7572	0.8943	0.8882

TABLE 2 (Continued)
Measures for Accounting Quality
Panel F: Relevance Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Norway	0.5097	0.7984	0.8682	0.6008	0.7068	0.7333	0.9964
New Zealand	0.845	0.7408	0.641	0.0976	0.0323	0.008	0.0091
Pakistan	0.1189	0.074	0.0916	0.8277	0.4916	0.0459	0.3887
Philippines	0.5706	0.0264	0.0567	0.0561	0.3031	0.5114	0.4755
Poland	0.4137	0.0632	0.0073	0.0726	0.0106	0.5066	0.2721
Portugal	0.4551	0.0072	0.1213	0.6141	0.6913	0.7179	0.0121
Singapore	0.8207	0.1952	0.6868	0.7032	0.8748	0.9478	0.2964
Sweden	0.0001	0.3231	0.5959	0.5428	0.8108	0.9067	0.8949
Thailand	0.0694	0.0069	0.0403	0.0645	0.0674	0.1576	0.1477
Turkey	0.0301	0.0343	0.1216	0.1199	0.0621	0.0048	0.4459
Taiwan	0.1757	0.1825	0.0065	0.0418	0.0343	0.0471	0.0171
United States	0.6093	0.6452	0.6173	0.3223	0.5271	0.6366	0.278
South Africa	0.8994	0.4872	0.4771	0.4961	0.7724	0.1244	0.1653

Note: The values of this panel represent explanatory powers (R^2) of Equation (5), and higher R^2 s in Equation (5) indicate higher quality of accounting.

TABLE 2 (Continued)
Measures for Accounting Quality
Panel G: Timeliness Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Australia	0.0489	0.0867	0.0956	0.0022	0.0276	0.0041	0.0711
Austria	0.0102	0.1601	0.0902	0.2156	0.2157	0.2703	0.9123
Belgium	0.5304	0.0466	0.0376	0.2384	0.2705	0.1279	0.0959
Bermuda	0.0025	0.0019	0.0036	0.0042	0.0249	0.0005	0.0061
Brazil	0.0501	0.0138	0.0296	0.0069	0.0044	0.0026	0.0178
Canada	0.0161	0.002	0.031	0.0025	0.0447	0.0631	0.0567
Switzerland	0.0479	0.0364	0.0235	0.0176	0.0445	0.156	0.0123
Chile	0.0198	0.1549	0.1834	0.0099	0.0531	0.0158	0.0483
China	0.0039	0.0317	0.029	0.0573	0.065	0.0286	0.3565
Cayman Islands	0.063	0.2072	0.0372	0.2361	0.1799	0.008	0.0143
Germany	0.0044	0.051	0.0528	0.033	0.0023	0.0192	0.1131
Denmark	0.2094	0.222	0.0443	0.0308	0.1028	0.1793	0.7664
Spain	0.0095	0.0974	0.0596	0.1784	0.0091	0.0051	0.0171
Finland	0.0299	0.1577	0.2838	0.3853	0.2303	0.1805	0.3254
France	0.0093	0.0144	0.0026	0.0521	0.0834	0.0314	0.01
United Kingdom	0.0001	0.0373	0.0465	0.0035	0.0009	0.0023	0.001
Greece	0.2326	0.0461	0.167	0.223	0.2114	0.3308	0.0882
Hong Kong	0.0023	0.0668	0.0657	0.1972	0.0031	0.0504	0.1447
Indonesia	0.0102	0.0143	0.0154	0.0045	0.0003	0.0084	0.0194
India	0.0883	0.0403	0.1081	0.0297	0.0049	0.0029	0.0699
Ireland	0.0219	0.3458	0.2873	0.0453	0.0253	0.4576	0.5507
Israel	0.1256	0.0385	0.0554	0.3712	0.0627	0.2578	0.1947
Italy	0.4872	0.0368	0.0173	0.0381	0.1946	0.2252	0.0772
Japan	0.0365	0.0281	0.0367	0.0278	0.0057	0.0014	0.0032
Korea	0.0292	0.0075	0.0058	0.0571	0.0045	0.1933	0.0264
Mexico	0.0533	0.0275	0.131	0.1095	0.5084	0.0216	0.0307
Malaysia	0.009	0.0641	0.0747	0.0202	0.0611	0.0003	0.0425
Netherlands	0.0646	0.1141	0.1687	0.0111	0.0111	0.0009	0.0966

TABLE 2 (Continued)
Measures for Accounting Quality
Panel G: Timeliness Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Norway	0.1545	0.0081	0.0514	0.1722	0.0049	0.0056	0.0334
New Zealand	0.0526	0.1446	0.1214	0.1579	0.0025	0.0163	0.4344
Pakistan	0.1771	0.0416	0.1541	0.018	0.0111	0.0751	0.3776
Philippines	0.0043	0.0289	0.0253	0.0304	0.0107	0.022	0.0092
Poland	0.0138	0.1152	0.0351	0.0675	0.0183	0.25	0.9783
Portugal	0.0262	0.1867	0.1054	0.0967	0.017	0.0475	0.3739
Singapore	0.0014	0.1108	0.15	0.0851	0.0042	0.1072	0.0013
Sweden	0.128	0.2332	0.059	0.008	0.0172	0.134	0.0252
Thailand	0.0407	0.0475	0.034	0.0007	0.0057	0.0354	0.0287
Turkey	0.0769	0.2447	0.084	0.0386	0.1548	0.1284	0.4033
Taiwan	0.0535	0.0259	0.0157	0.0037	0.0158	0.003	0.0229
United States	0.0004	0.0005	0.0002	0.001	0.0025	0.0002	0.0027
South Africa	0.2621	0.0158	0.148	0.2103	0.1168	0.1377	0.511

Note: The values of this panel represent the explanatory powers (R^2) of Equation (6). Higher R^2 indicates higher quality of accounting.

TABLE 2 (Continued)
Measures for Accounting Quality
Panel H: Conservatism Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Australia	-4363.5116	-1183.8677	-22953.4413	-4.2013	-128.8773	-2170.7448	131.6360
Austria	-0.8613	-10.3139	-1.2360	6.0633	-10.3556	12243.6008	-4772.3237
Belgium	-1.0518	9.1079	-0.9737	-0.8327	-19.0237	-99.7105	-4.3322
Bermuda	-2951.5849	-373.6083	-13.8521	78.6427	679963.2490	-51.9803	-126.1108
Brazil	43.1416	-0.9721	-0.8549	-1.3866	-1.5254	-1.1540	-0.9744
Canada	-14.2855	-5.4290	-72.6564	-9.3748	-95.7872	-44.0634	-12.4308
Switzerland	-0.8558	-1.2019	0.7917	22.3512	-2.8256	-704.4655	1.4915
Chile	-1.0000	-0.4182	1325.6549	-0.9998	-1.1100	-0.9725	-0.9137
China	-1.9178	-60.5931	-31.8028	-596.4308	-265.6960	-221.8137	-4.5063
Cayman Islands	15.4429	277.8530	-31.4021	217.0113	259.3179	-443.5932	1505.9294
Germany	1.2273	0.2581	4.9588	-18.9197	-4.9448	-35.6383	-199.9043
Denmark	-1.1914	-1.3384	-1.2346	-1.5982	-5.2889	-10.0009	-3.8303
Spain	-4.0672	1025.8716	-114.7553	-1005.4113	-165.3272	12.3713	0.0000
Finland	43.3160	773.8095	6025.3780	-36.7392	-151.6778	-29.1062	-26.6612
France	0.4249	-1.5537	-1.0718	-5.5545	-1.4471	-1.0261	29.1652
United Kingdom	-3.0387	-463.1849	-274.0384	-219.8708	-1407.4128	-241.2661	393.8532
Greece	23.8333	20.1867	-0.9045	-4.6031	-1796.5226	1611.2289	-536.1474
Hong Kong	72.3206	6973.4513	-408.5514	-8010.8445	-9184.9177	1772.9997	5254.7170
Indonesia	-2.6425	-1.5057	-3.4050	68.7331	-1.6894	-1.2545	-2.2205
India	-34.7330	-15.8105	-13.4698	-26.3389	-14.5258	-0.8148	0.0000
Ireland	3.0268	16.3630	3.4729	-1.5700	0.1627	5.7492	-0.0077
Israel	6.0493	4.7001	-0.9345	-1.0475	0.0021	-1.6659	-339.6118
Italy	-1.0461	-4.8164	-7.6337	-411.7647	-518.7005	63.1971	-12.4598
Japan	-1698.8987	-1.3238	-0.7696	-1.1575	-8.6600	0.4758	5.8150
Korea	12.9402	-1.0056	-2.3357	-24.5353	-1.0512	-11.9306	-15.6294
Mexico	-0.0624	-1.0595	-1.0467	-126.9391	-0.0888	-1327.8801	-63.8259
Malaysia	-19.9141	-532.4977	-68.3888	-553.8252	-212.8113	178.2300	-181.5009
Netherlands	-2.1835	0.1468	368.5322	-9.8954	-103.7929	-62.5826	-327.6477

TABLE 2 (Continued)
Measures for Accounting Quality
Panel H: Conservatism Proxy for Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Norway	422.9692	-1.7917	-3.6666	446.6292	12.6943	-4.4367	43.1925
New Zealand	-116.8204	-3.1475	-89.4946	2.6061	-9.8346	-71.9197	7.6136
Pakistan	-49.4738	-9.4434	27.7101	0.0000	0.0000	106.9519	-32.3746
Philippines	-4.8334	-1.3738	-121.3787	-79.9014	241.6684	-308.5960	34.1086
Poland	-1.9786	-1.4838	-0.2478	1609.3647	0.0034	-28.0598	-11.5855
Portugal	0.0000	10.8370	33.4413	-2739.2739	-31.3052	-91.1702	195.3571
Singapore	3615.2011	3.2714	-385.4888	-649.0272	-309.0385	-269.6467	-31.9826
Sweden	-311.0876	7.3183	-52.9931	-1.7879	-64.7481	-30.3307	-153.1756
Thailand	-7.8644	17.5349	-9.4184	-7.8179	-22.3582	1.2195	1.7976
Turkey	-0.6820	-1.0546	-1.4879	-0.9926	6.0557	-0.9216	0.0000
Taiwan	-2.3497	-15.9696	-6.8340	-26.0386	-48.0153	-2.0165	-221.6470
United States	-7.0703	-172.3076	-14.2957	-3277.6369	-601.0871	0.3739	-1786.4551
South Africa	-61.2464	3.8974	-143.8416	-976.1108	-191.2965	-1578.8924	300.0636

Note: The values of this panel represent conservatism proxies for each year and country. The conservatism proxies are computed based on the coefficients $[(\beta_0 + \beta_1) / \beta_0]$ in Equation (6). A higher proxy implies higher accounting quality.

TABLE 3
Descriptive Statistics for E/P Ratios over 1999-2005

Country	Code	N	Median	Mean	1st Quartile	3rd Quartile
Australia	AUS	1256	0.0667	0.1235	0.0438	0.1043
Austria	AUT	273	0.0776	0.3948	0.0466	0.1585
Belgium	BEL	354	0.0699	0.5672	0.0403	0.1349
Bermuda	BMU	1172	0.0808	0.1665	0.0475	0.1425
Brazil	BRA	463	0.0769	0.1508	0.0346	0.1256
Canada	CAN	1853	0.0603	0.0835	0.0351	0.0893
Switzerland	CHE	663	0.0662	0.1052	0.0412	0.1069
Chile	CHL	361	0.0638	0.1154	0.0298	0.0928
China	CHN	2633	0.0385	0.0592	0.0187	0.0666
Cayman Islands	CYM	428	0.0811	0.1059	0.0479	0.1307
Germany	DEU	2224	0.0633	0.2207	0.0346	0.1077
Denmark	DNK	434	0.0719	0.1259	0.0414	0.1248
Spain	ESP	506	0.0869	0.1683	0.0529	0.2023
Finland	FIN	417	0.0677	0.1286	0.0427	0.1111
France	FRA	2146	0.0716	0.1984	0.0406	0.1244
United Kingdom	GBR	4161	0.0682	0.1347	0.0407	0.1087
Greece	GRC	227	0.0583	0.1527	0.0311	0.0862
Hong Kong	HKG	469	0.0788	0.1097	0.0480	0.1221
Indonesia	IDN	747	0.0813	0.1163	0.0453	0.1337
India	IND	1106	0.0860	0.1527	0.0509	0.1477
Ireland	IRL	160	0.0780	0.1383	0.0520	0.1244
Israel	ISR	156	0.0489	0.0749	0.0168	0.0825
Italy	ITA	603	0.0534	0.2912	0.0316	0.0913
Japan	JPN	14066	0.0528	0.0887	0.0301	0.0842
Korea	KOR	873	0.0870	0.1533	0.0449	0.1658
Mexico	MEX	222	0.0722	0.1291	0.0356	0.1152
Malaysia	MYS	2289	0.0763	0.1335	0.0443	0.1193
Netherlands	NLD	709	0.0727	0.2574	0.0407	0.1122
Norway	NOR	394	0.0584	0.0689	0.0283	0.0871

TABLE 3 (Continued)
Descriptive Statistics for E/P Ratios over 1999-2005

Country	Code	N	Median	Mean	1st Quartile	3rd Quartile
New Zealand	NZL	249	0.0722	0.1772	0.0436	0.1094
Pakistan	PAK	173	0.0811	0.1146	0.0473	0.1398
Philippines	PHL	373	0.0773	0.1336	0.0375	0.1358
Poland	POL	123	0.0660	0.2903	0.0369	0.1068
Portugal	PRT	215	0.0735	0.7895	0.0392	0.1275
Singapore	SGP	1275	0.0702	0.1157	0.0434	0.1176
Sweden	SWE	818	0.0586	0.1381	0.0335	0.0898
Thailand	THA	1150	0.0815	0.1552	0.0496	0.1355
Turkey	TUR	162	0.0610	0.6489	0.0377	0.1210
Taiwan	TWN	959	0.0700	0.0900	0.0429	0.1044
United States	USA	12102	0.0510	0.0691	0.0320	0.0746
South Africa	ZAF	438	0.0900	0.1310	0.0561	0.1297

TABLE 4
Convergence Proxy for Each Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Australia	0.07343	0.11912	0.01166	0.01134	0.00548	0.00548	0.01229
Austria	0.019434	1.05929	0.0645	0.03464	0.0065	0.01278	0.01652
Belgium	1.38116	0.8773	0.00008833	0.01251	0.00632	0.01082	0.01636
Bermuda	0.04162	0.13966	0.03953	0.01965	0.01938	0.02522	0.02569
Brazil	0.02129	0.03382	0.00085957	0.01642	0.01539	0.02397	0.03329
Canada	0.19543	0.18098	0.01305	0.01656	0.00798	0.00407	0.0007706
Switzerland	0.14758	0.19426	0.05565	0.00198	0.00341	0.00777	0.00608
Chile	0.01796	0.16796	0.01997	0.01643	0.00259	0.00398	0.00517
China	0.12249	0.16004	0.03128	0.03105	0.01503	0.01882	0.01596
Cayman Islands	0.18748	0.17634	0.01076	0.05793	0.02304	0.03318	0.02831
Germany	0.17902	0.17433	0.01747	0.00559	0.00123	0.00636	0.00072572
Denmark	0.1009	0.09249	0.01588	0.0241	0.00682	0.00133	0.00553
Spain	7.84528	7.29047	0.00759	0.00046263	0.00254	0.00344	0.02393
Finland	0.12856	0.07197	0.06222	0.02011	0.00536	0.00908	0.01736
France	0.0726	0.19646	0.01128	0.00188	0.0009244	0.00466	0.00262
United Kingdom	0.07125	0.07861	0.00102	0.00839	0.00549	0.00547	0.00798
Greece	0.15016	0.08208	0.02643	0.00165	0.00518	0.01334	0.0023
Hong Kong	0.17048	0.13579	0.01111	0.00977	0.01231	0.01808	0.02938
Indonesia	0.16568	0.16289	0.03532	0.05544	0.02099	0.01323	0.04103
India	0.04143	0.08785	0.03664	0.05838	0.02052	0.02026	0.00626
Ireland	0.11175	0.04817	0.009	0.01302	0.02702	0.00227	0.01781
Israel	0.22369	0.20351	0.03844	0.02049	0.00999	0.01163	0.02377
Italy	1.43849	0.51374	0.01962	0.01521	0.00634	0.00474	0.00552
Japan	0.14511	0.16678	0.01947	0.00932	0.00391	0.00609	0.00892
Korea	0.01743	0.06986	0.06627	0.0598	0.04275	0.03589	0.01362
Mexico	0.05905	0.21917	0.01334	0.00275	0.00048397	0.01824	0.02178
Malaysia	0.06851	0.05467	0.01244	0.01817	0.0108	0.01991	0.03036
Netherlands	0.14683	0.51513	0.00693	0.00361	0.0087	0.00325	0.00359

TABLE 4 (Continued)
Convergence Proxy for Each Country and Year

Country	1999	2000	2001	2002	2003	2004	2005
Norway	0.21837	0.24222	0.02985	0.00509	0.00326	0.01067	0.00635
New Zealand	0.08411	0.09516	0.11803	0.0144	0.00978	0.01056	0.00293
Pakistan	0.15008	0.1609	0.03599	0.02747	0.01213	0.0066	0.02817
Philippines	0.05781	0.18125	0.05428	0.04574	0.02563	0.0267	0.02096
Poland	0.19236	0.94429	0.00587	0.05255	0.00215	0.01756	0.01012
Portugal	1.84	2.1341	0.07631	0.03431	0.00153	0.0013	0.00642
Singapore	0.14559	0.10434	0.00722	0.02097	0.00981	0.02571	0.02111
Sweden	0.13408	0.09485	0.02263	0.0002231	0.00818	0.0063	0.00453
Thailand	0.17649	0.1671	0.04887	0.02547	0.01233	0.02032	0.03357
Turkey	1.6162	1.02876	0.02044	0.01912	0.02107	0.01136	0.02337
Taiwan	0.19759	0.19949	0.00035628	0.00936	0.0035	0.01724	0.0205
United States	0.20099	0.23172	0.02091	0.02209	0.0168	0.01532	0.00586
South Africa	0.123	0.1738	0.07832	0.02936	0.03572	0.02531	0.03265
Mean coefficient	0.450750341	0.464163902	0.028704736	0.02080014	0.011179716	0.013129512	0.01559674

Note: The values in this table represent the absolute values of the coefficients of the regression of earnings to price ratios on each country and year indicator variables. The last row of the table shows mean coefficient across countries for each year.

TABLE 5
Measures for Control Variables
Panel A: Per Capita GDP

Country	Code	1999	2000	2001	2002	2003	2004	2005
Australia	AUS	21,193.84	20,326.93	18,936.85	20,988.91	26,502.13	31,740.98	34,932.40
Austria	AUT	26,699.40	24,265.76	24,038.81	25,800.53	31,516.37	35,865.84	37,085.75
Belgium	BEL	24,796.29	22,696.47	22,495.44	24,399.76	29,868.60	34,382.01	35,460.58
Bermuda	BMU	33,258.44	33,923.60	34,602.08	35,294.12	36,000.00	36,720.00	37,454.40
Brazil	BRA	3,477.98	3,761.58	3,189.53	2,867.00	3,085.39	3,654.20	4,788.92
Canada	CAN	21,776.56	23,658.83	23,103.94	23,457.94	27,455.06	31,111.04	35,105.45
Switzerland	CHE	37,020.25	34,263.23	34,748.24	38,326.79	44,581.98	49,600.61	50,386.83
Chile	CHL	4,860.59	4,944.37	4,451.93	4,314.91	4,698.25	6,012.36	7,351.32
China	CHN	861.211	945.601	1,038.03	1,131.81	1,269.83	1,486.02	1,715.94
Cayman Island	CYM	5,756.93	5,900.85	6,048.37	7,379.87	8,949.17	10,601.46	12,151.98
Germany	DEU	26,123.92	23,168.07	22,957.16	24,523.16	29,616.31	33,262.94	33,864.69
Denmark	DNK	32,776.11	30,118.82	30,021.17	32,492.60	39,558.04	45,174.15	47,905.52
Spain	ESP	15,389.56	14,379.75	14,966.15	16,693.12	21,067.67	24,467.12	25,997.05
Finland	FIN	25,350.70	23,612.30	24,145.89	26,145.42	31,657.45	36,228.95	37,320.20
France	FRA	24,144.88	21,955.96	21,946.80	23,791.52	29,144.45	33,048.13	33,924.82
United Kingdom	GBR	24,998.78	24,542.20	24,286.12	26,541.08	30,470.47	36,019.02	37,042.22
Greece	GRC	14,484.93	13,352.98	13,659.32	15,472.93	20,074.59	23,831.85	25,560.19
Hong Kong	HKG	24,600.42	25,144.02	24,744.99	24,340.51	23,428.22	24,393.92	26,000.11
Indonesia	IDN	745.792	806.898	772.661	928.142	1,099.67	1,187.74	1,309.08
India	IND	448.382	454.511	460.512	473.086	542.888	618.482	712.394
Ireland	IRL	25,835.66	25,493.90	27,180.76	31,329.61	39,487.93	45,371.52	48,604.21
Israel	ISR	18,194.77	19,887.55	19,088.01	17,235.16	17,802.26	18,559.62	19,308.45
Italy	ITA	21,129.55	19,293.40	19,541.11	21,317.51	26,308.26	30,097.54	30,524.59
Japan	JPN	34,634.41	36,810.99	32,233.80	30,809.29	33,180.06	36,075.92	35,671.58
Korea	KOR	9,557.88	10,890.91	10,177.48	11,504.22	12,710.94	14,180.59	16,443.76
Mexico	MEX	4,975.88	5,928.50	6,257.56	6,433.63	6,244.40	6,697.57	7,446.86
Malaysia	MYS	3,484.89	3,844.24	3,664.73	3,884.22	4,160.94	4,651.49	5,041.58
Netherlands	NLD	26,141.54	24,250.65	24,990.27	27,206.57	33,240.83	37,418.65	38,617.88

TABLE 5 (Continued)
Measures for Control Variables
Panel A: Per Capita GDP

Country	Code	1999	2000	2001	2002	2003	2004	2005
Norway	NOR	35,619.37	37,520.08	37,840.31	42,525.73	49,316.72	56,344.18	65,509.21
New Zealand	NZL	14,852.36	13,578.30	13,231.96	15,195.22	19,788.38	24,036.34	26,438.81
Pakistan	PAK	527.275	538.648	509.1	501.877	562.804	655.489	727.53
Philippines	PHL	1,018.88	994.291	913.9	966.176	982.148	1,037.62	1,153.78
Poland	POL	4,344.03	4,455.20	4,976.28	5,179.89	5,668.03	6,617.42	7,943.34
Portugal	PRT	12,185.19	11,051.37	11,250.24	12,339.42	15,003.39	17,069.70	17,597.56
Singapore	SGP	20,909.36	23,077.09	20,692.44	21,112.96	22,065.82	25,329.69	26,879.15
Sweden	SWE	28,632.62	27,338.76	24,916.48	27,346.76	33,997.49	38,826.79	39,658.00
Thailand	THA	1,984.94	1,966.75	1,835.78	1,999.30	2,228.54	2,479.15	2,706.51
Turkey	TUR	2,875.93	2,995.16	2,126.45	2,675.46	3,462.93	4,288.53	5,061.99
Taiwan	TWN	13,526.16	14,426.46	13,027.53	13,093.49	13,254.22	14,204.98	15,223.76
United States	USA	33,196.97	34,770.98	35,491.27	36,311.11	37,640.71	39,841.40	41,959.68
South Africa	ZAF	3,029.06	2,986.45	2,632.83	2,440.23	3,622.15	4,665.70	5,159.79

Note: Gross domestic product per capita in U.S. dollars. GDP is expressed in current U.S. dollars per person. Data are derived by first converting GDP in national currency to U.S. dollars and then dividing it by total population.
Data source: International Monetary Fund, World Economic Outlook Database, April 2007.

TABLE 5 (Continued)
Measures for Control Variables
Panel B: GDP growth

Country	country	1999	2000	2001	2002	2003	2004	2005
Australia	AUS	4.4	3.4	2.1	4.1	3.1	3.7	2.8
Austria	AUT	3.3	3.4	0.8	0.9	1.1	2.4	2
Belgium	BEL	3.3	3.9	0.7	1.4	1	2.7	1.5
Bermuda	BMU	2	2	2	2	2	2	2
Brazil	BRA	0.3	4.3	1.3	2.7	1.1	5.7	2.9
Canada	CAN	5.5	5.2	1.8	2.9	1.8	3.3	2.9
Switzerland	CHE	1.3	3.6	1	0.3	-0.2	2.3	1.9
Chile	CHL	-0.4	4.5	3.5	2.2	4	6	5.7
China	CHN	7.6	8.4	8.3	9.1	10	10.1	10.4
Cayman Island	CYM	2.5	2.5	2.5	1.9	3.6	4.2	6.1
Germany	DEU	1.9	3.1	1.2	0	-0.2	1.2	0.9
Denmark	DNK	2.6	3.5	0.7	0.5	0.4	2.1	3.1
Spain	ESP	4.7	5	3.6	2.7	3	3.2	3.5
Finland	FIN	3.9	5	2.6	1.6	1.8	3.7	2.9
France	FRA	3	4	1.8	1.1	1.1	2	1.2
United Kingdom	GBR	3	3.8	2.4	2.1	2.7	3.3	1.9
Greece	GRC	3.4	4.5	4.5	3.9	4.9	4.7	3.7
Hong Kong	HKG	4	10	0.6	1.8	3.2	8.6	7.5
Indonesia	IDN	0.8	5.4	3.6	4.5	4.8	5	5.7
India	IND	6.7	5.3	4.1	4.3	7.3	7.8	9.2
Ireland	IRL	10.7	9.4	5.8	6	4.3	4.3	5.5
Israel	ISR	2.9	8.7	-0.6	-0.9	1.5	4.8	5.2
Italy	ITA	1.9	3.6	1.8	0.3	0	1.2	0.1
Japan	JPN	-0.1	2.9	0.2	0.3	1.4	2.7	1.9
Korea	KOR	9.5	8.5	3.8	7	3.1	4.7	4.2
Mexico	MEX	3.8	6.6	0	0.8	1.4	4.2	2.8
Malaysia	MYS	6.1	8.9	0.3	4.4	5.5	7.2	5.2
Netherlands	NLD	4.7	3.9	1.9	0.1	0.3	2	1.5

TABLE 5 (Continued)
Measures for Control Variables
Panel B: GDP growth

Country	country	1999	2000	2001	2002	2003	2004	2005
Norway	NOR	2	3.3	2	1.5	1	3.9	2.7
New Zealand	NZL	4.3	3.6	2.6	4.6	3.2	4.4	2.1
Pakistan	PAK	3.7	4.3	2	3.2	4.9	7.4	8
Philippines	PHL	3.4	6	1.8	4.4	4.9	6.2	5
Poland	POL	4.5	4.2	1.1	1.4	3.8	5.3	3.5
Portugal	PRT	3.9	3.9	2	0.8	-0.7	1.3	0.5
Singapore	SGP	7.2	10.1	-2.4	4.2	3.1	8.8	6.6
Sweden	SWE	4.5	4.3	1.1	2	1.7	4.1	2.9
Thailand	THA	4.4	4.8	2.2	5.3	7.1	6.3	4.5
Turkey	TUR	-4.7	7.4	-7.5	7.9	5.8	8.9	7.4
Taiwan	TWN	5.7	5.8	-2.2	4.2	3.4	6.1	4
United States	USA	4.4	3.7	0.8	1.6	2.5	3.9	3.2
South Africa	ZAF	2.4	4.2	2.7	3.7	3.1	4.8	5.1

Note: Gross domestic product, constant prices (annual percent change) in national currency.
Data source: International Monetary Fund, World Economic Outlook Database, April 2007.

TABLE 5 (Continued)
Measures for Control Variables
Panel C: Legal Origin

Country	Common Law English Origin	French Origin	Code Law German Origin	Scandinavian
Australia	Australia			
Austria			Austria	
Belgium		Belgium		
Bermuda	Bermuda[1]			
Brazil		Brazil		
Canada	Canada			
Switzerland			Switzerland	
Chile		Chile		
China			China[1]	
Cayman Island	Cayman Island[1]			
Germany			Germany	
Denmark				Denmark
Spain		Spain		
Finland				Finland
France		France		
United Kingdom	United Kingdom			
Greece		Greece		
Hong Kong	Hong Kong			
Indonesia		Indonesia		
India	India			
Ireland	Ireland			
Israel	Israel			
Italy		Italy		
Japan			Japan	
Korea			Korea	
Mexico		Mexico		

TABLE 5 (Continued)
Measures for Control Variables
Panel C: Legal Origin

Country	Common Law English Origin	French Origin	Code Law German Origin	Scandinavian
Malaysia	Malaysia			
Netherlands		Netherlands		
Norway				Norway
New Zealand	New Zealand			
Pakistan	Pakistan			
Philippines		Philippines		
Poland			Poland[1]	
Portugal		Portugal		
Singapore	Singapore			
Sweden				Sweden
Thailand	Thailand			
Turkey		Turkey		
Taiwan			Taiwan	
United States	United States			
South Africa	South Africa			
N=41	N=16	N=13	N=8	N=4

Note: This classification is adopted from La Porta et al. (1997).
[1] These countries are not available for classification in La Porta et al. (1997). This study judgmentally classifies them into the categories.

TABLE 6
Correlation Matrix

	ΔEQ_k	ΔCON	*GDP*	*GROWTH*	*LEGSYS(E)*	*LEGSYS(F)*	*LEGSYS(G)*	*LEGSYS(S)*
ΔEQ_1	1.00000	-0.00536	0.00592	-0.00928	0.00978	-0.01704	0.00540	0.00362
ΔEQ_2	1.00000	-0.19122	-0.05873	-0.08080	-0.00939	0.01029	0.00272	-0.00446
ΔEQ_3	1.00000	0.05582	0.12986	-0.17323	0.06268	-0.15354	0.03220	0.10151
ΔEQ_4	1.00000	-0.02571	-0.03698	-0.05019	0.04017	-0.06244	0.03771	-0.01408
ΔEQ_5	1.00000	0.00291	0.05783	-0.07920	-0.00397	-0.03227	0.00275	0.05460
ΔEQ_6	1.00000	-0.01630	0.08283	-0.05755	-0.11524	0.00003	0.04285	0.13506
ΔEQ_7	1.00000	0.10185	0.02460	0.08577	-0.00173	-0.04539	0.04233	0.02170
ΔEQ_8	1.00000	0.00098	-0.00222	0.00489	0.00099	-0.00032	-0.00075	-0.00016
ΔCON		1.00000	0.04156	0.08549	0.08471	-0.14561	0.04853	0.03191
GDP			1.00000	-0.37719	-0.04785	-0.29752	0.11721	0.40551
GROWTH				1.00000	0.19106	-0.10605	-0.00780	-0.13473
LEGSYS(E)					1.00000	-0.57607	-0.36299	-0.26304
LEGSYS(F)						1.00000	-0.32673	-0.23676
LEGSYS(G)							1.00000	-0.14919
LEGSYS(S)								1.00000

Note: ΔEQ_k = Change in accounting quality variable of k (k=1,2,3,4,5,6,7,8). k=1, k=2, k=3, k=4, k=5, k=6, k=7, and k=8 represent accrual quality, persistence quality, predictability, smoothness, reliability, relevance, timeliness, and conservatism, respectively.
ΔCON = Change in accounting convergence proxy.
GDP = Country's per capita GDP.
GROWTH = Country's average annual percent growth of per capita GDP.
LEGSYS(E), *LEGSYS(F)*, *LEGSYS(G)*, and *LEGSYS(S)* are country's legal system and enforcement indicator variables representing English origin, French origin, German origin, and Scandinavian origin, respectively.

TABLE 7
Panel Regression: All Sample Countries
Accounting Quality and Accounting Convergence

Panel Regression Model:

$$\Delta EQ_{i,t,k} = \beta_0 + \beta_1 \Delta CON_{i,t} + \beta_2 GDP_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 LEGSYS(E)_i + \beta_5 LEGSYS(F)_i + \beta_6 LEGSYS(G)_i + \varepsilon_{i,t}$$

Panel A: Accrual Quality and Convergence

Hausman Test[1]	P>0.8926		
R-Square	0.0006		
Variable	Estimate	Standard Error	t-statistics
Intercept	-0.06796	0.5701	-0.12
CON	-0.01755	0.2309	-0.08
GDP	4.432E-7	9.946E-6	0.04
GROWTH	0.018751	0.0512	0.37
LEGSYS(E)	-0.01852	0.4496	-0.04
LEGSYS(F)	-0.00085	0.4787	-0.00
LEGSYS(G)	-0.0038	0.4797	-0.01

Panel B: Persistence and Convergence

Hausman Test[1]	P>0.6465		
R-Square	0.0038		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.030879	0.1001	0.31
CON	-0.10067	0.0421	*-1.27
GDP	5.249E-7	1.71E-6	0.31
GROWTH	-0.00061	0.00925	-0.07
LEGSYS(E)	-0.04149	0.0738	-0.56
LEGSYS(F)	-0.02463	0.0792	-0.31
LEGSYS(G)	-0.04328	0.0788	-0.55

TABLE 7 (Continued)
Panel Regression: All Sample Countries
Accounting Quality and Accounting Convergence

Panel C: Predictability and Convergence

Hausman Test[1]	P>0.0644		
R-Square	0.1065		
Variable	Estimate	Standard Error	t-statistics
Intercept	1126.268	466.0	**2.42
CON	1.457723	167.4	0.01
GDP	-0.00886	0.00744	-1.19
GROWTH	-180.814	41.3250	***-4.38
LEGSYS(E)	-172.115	312.9	-0.55
LEGSYS(F)	-807.739	337.0	**-2.40
LEGSYS(G)	-282.695	333.9	-0.85

Panel D: Smoothness and Convergence

Hausman Test[1]	P>0.3771		
R-Square	0.0433		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.017626	0.0409	0.43
CON	-0.03407	0.0134	**-2.54
GDP	7.048E-8	7.053E-7	0.10
GROWTH	0.005352	0.00310	*1.73
LEGSYS(E)	-0.04304	0.0342	-1.26
LEGSYS(F)	-0.0303	0.0362	-0.84
LEGSYS(G)	-0.01398	0.0366	-0.38

TABLE 7 (Continued)
Panel Regression: All Sample Countries
Accounting Quality and Accounting Convergence

Panel E: Reliability and Convergence

Hausman Test[1]	P>0.7725		
R-Square	0.0093		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.088697	0.0663	1.34
CON	0.001346	0.0269	0.05
GDP	1.17E-7	1.157E-6	0.10
GROWTH	-0.00626	0.00595	-1.05
LEGSYS(E)	-0.02355	0.0523	-0.45
LEGSYS(F)	-0.0381	0.0557	-0.68
LEGSYS(G)	-0.02588	0.0558	-0.46

Panel F: Relevance and Convergence

Hausman Test[1]	P>0.5168		
R-Square	0.0268		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.110525	0.0760	1.45
CON	-0.00646	0.0308	-0.21
GDP	5.44E-7	1.326E-6	0.41
GROWTH	-0.0015	0.00682	-0.22
LEGSYS(E)	-0.12251	0.0599	**-2.04
LEGSYS(F)	-0.08372	0.0638	-1.31
LEGSYS(G)	-0.076	0.0639	-1.19

TABLE 7 (Continued)
Panel Regression: All Sample Countries
Accounting Quality and Accounting Convergence

Panel G: Timeliness and Convergence

Hausman Test[1]	P>0.8503		
R-Square	0.0276		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.013995	0.0455	0.31
CON	0.021974	0.0179	1.23
GDP	6.14E-8	7.83E-7	0.08
GROWTH	0.004287	0.00419	1.12
LEGSYS(E)	-0.0156	0.0341	-0.46
LEGSYS(F)	-0.02767	0.0365	-0.76
LEGSYS(G)	0.016926	0.0364	0.47

Panel H: Conservatism and Convergence

Hausman Test[1]	P>0.7441		
R-Square	0.0001		
Variable	Estimate	Standard Error	t-statistics
Intercept	-1388.18	19687.1	-0.07
CON	33.81697	7914.4	0.01
GDP	0.01822	0.3426	0.05
GROWTH	289.4936	1786.7	0.16
LEGSYS(E)	-36.2683	15303.2	-0.01
LEGSYS(F)	232.5367	16322.8	0.01
LEGSYS(G)	-50.6773	16327.2	-0.01

Note: [1] Hausman tests are run to determine whether random effect model is appropriate for this research. The Hausman test tests the null hypothesis that the coefficients estimated by random effect model are the same as the ones estimated by the fixed effect model. If they are insignificant p-value (larger than 0.05), then it is safe to use random effect model.

***, **, * denote 1% significance, 5% significance, and 10% significance, respectively.

Variable Definitions:

- $\Delta EQ_{i,t,k}$ is changes in country *i*'s accounting quality variables of *k* (*k* = 1,2,3,4,5,6,7,8). *k* represents eight accounting quality variables of (1) accrual quality, (2) persistence, (3) predictability, (4) smoothness, (5) reliability, (6) relevance, (7) timeliness, and (8) conservatism, respectively. Changes in accounting quality are calculated with quality measures of each consecutive year for these eight accounting quality variables.
- $\Delta CON_{i,t}$ is changes in country *i*'s accounting convergence variable. They are computed with coefficient estimates ($\alpha_{i,t}$) of equation (7) for each consecutive year.
- $GDP_{i,t}$ is country *i*'s per capita GDP in year *t*.
- $GROWTH_{i,t}$ is country *i*'s average annual percent growth of per capita GDP in year *t*.
- $LEGSYS_i$ is country *i*'s legal system and enforcement indicator variable. The dummy variables of $LEGSYS(E)_i$, $LEGSYS(F)_i$, and $LEGSYS(G)_i$ represent English origin, French origin, and German origin, respectively.

TABLE 8
A List of Converged Countries

All Sample Countries	Converged Countries			
	ANOVA[1]	99 vs 05[2]	99-00 vs 04-05[3]	99-01 vs 03-05[4]
Australia			Australia	
Austria				
Belgium	Belgium	Belgium	Belgium	Belgium
Bermuda				
Brazil				
Canada	Canada	Canada	Canada	Canada
Switzerland	Switzerland	Switzerland	Switzerland	Switzerland
Chile				
China	China	China	China	China
Cayman Island	Cayman Island	Cayman Island	Cayman Island	Cayman Island
Germany			Germany	Germany
Denmark		Denmark	Denmark	Denmark
Spain	Spain	Spain	Spain	Spain
Finland		Finland		
France	France		France	France
United Kingdom		United Kingdom	United Kingdom	United Kingdom
Greece		Greece		
Hong Kong	Hong Kong	Hong Kong	Hong Kong	Hong Kong
Indonesia	Indonesia	Indonesia	Indonesia	Indonesia
India				
Ireland				
Israel	Israel	Israel	Israel	Israel
Italy	Italy		Italy	Italy
Japan	Japan	Japan	Japan	Japan
Korea				
Mexico				
Malaysia				

TABLE 8 (Continued)
A List of Converged Countries

All Sample Countries	Converged Countries			
	ANOVA[1]	99 vs 05[2]	99-00 vs 04-05[3]	99-01 vs 03-05[4]
Netherlands				
Norway	Norway	Norway	Norway	Norway
New Zealand				
Pakistan	Pakistan	Pakistan	Pakistan	Pakistan
Philippines	Philippines		Philippines	Philippines
Poland		Poland		
Portugal	Portugal	Portugal	Portugal	Portugal
Singapore	Singapore	Singapore	Singapore	Singapore
Sweden				
Thailand		Thailand		
Turkey				
Taiwan	Taiwan	Taiwan	Taiwan	Taiwan
United States	United States	United States	United States	United States
South Africa	South Africa	South Africa	South Africa	South Africa
N=41	N=20	N=23	N=24	N=23

Note: [1] Converged countries are defined based on ANOVA test at 5% level.
[2, 3, 4] Converged countries are defined if convergence coefficients are significantly reduced at 5% level based on t-test between 1999 and 2005, between 99-00 and 04-05, and between 99-01 and 03-05, respectively.

TABLE 9
Panel Regression: Converged Countries
Accounting Quality and Accounting Convergence

Panel Regression Model:

$$\Delta EQ_{i,t,k} = \beta_0 + \beta_1 \Delta CON_{i,t} + \beta_2 GDP_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 LEGSYS(E)_i + \beta_5 LEGSYS(F)_i + \beta_6 LEGSYS(G)_i + \varepsilon_{i,t}$$

Panel A: Accrual Quality and Convergence

Hausman Test[1]	P>0.7969		
R-Square	0.0045		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.060877	0.1062	0.53
CON	0.002539	0.0305	0.08
GDP	-1.25E-06	1.721E-06	-0.73
GROWTH	0.00486	0.00854	0.57
LEGSYS(E)	-0.01776	0.0807	-0.22
LEGSYS(F)	-0.02871	0.0868	-0.33
LEGSYS(G)	-0.01164	0.0837	-0.14

Panel B: Persistence and Convergence

Hausman Test[1]	P>0.3769		
R-Square	0.042		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.095519	0.1277	0.76
CON	-0.10582	0.0725	**-2.12
GDP	-2.23E-7	2.067E-6	-0.11
GROWTH	0.00112	0.0105	-0.11
LEGSYS(E)	-0.09817	0.0942	-1.04
LEGSYS(F)	-0.06484	0.1018	-0.64
LEGSYS(G)	-0.12018	0.0975	-1.23

TABLE 9 (Continued)
Panel Regression: Converged Countries
Accounting Quality and Accounting Convergence

Panel C: Predictability and Convergence

Hausman Test[1]	P>0.0745		
R-Square	0.1406		
Variable	Estimate	Standard Error	t-statistics
Intercept	-8.7779	451.5	-0.02
CON	242.8594	128.9	*1.88
GDP	1.45E-02	0.00732	**1.98
GROWTH	62.9955	36.809	*1.71
LEGSYS(E)	-463.553	338.1	-1.37
LEGSYS(F)	-680.646	364.6	*-1.87
LEGSYS(G)	-339.681	350.3	-0.97

Panel D: Smoothness and Convergence

Hausman Test[1]	P>0.7222		
R-Square	0.0661		
Variable	Estimate	Standard Error	t-statistics
Intercept	-0.02464	0.0460	-0.54
CON	-0.03782	0.0132	**-2.86
GDP	5.224E-7	7.459E-7	0.70
GROWTH	0.003536	0.00370	0.96
LEGSYS(E)	-0.00055	0.0350	-0.02
LEGSYS(F)	0.009853	0.0376	0.26
LEGSYS(G)	0.007201	0.0363	0.20

TABLE 9 (Continued)
Panel Regression: Converged Countries
Accounting Quality and Accounting Convergence

Panel E: Reliability and Convergence

Hausman Test[1]	P>0.9217		
R-Square	0.0265		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.163738	0.0962	0.091
CON	-0.00889	0.0273	-0.7453
GDP	-5.64E-07	1.56E-06	-0.7177
GROWTH	-0.0116	0.00791	-0.1447
LEGSYS(E)	-0.06636	0.0713	-0.3537
LEGSYS(F)	-0.07826	0.077	-0.3114
LEGSYS(G)	-0.05811	0.0739	-0.4328

Panel F: Relevance and Convergence

Hausman Test[1]	P>0.4953		
R-Square	0.0399		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.148724	0.1253	1.19
CON	-0.01347	0.036	-0.37
GDP	-4.19E-07	2.03E-06	-0.21
GROWTH	-0.01299	0.0101	-1.29
LEGSYS(E)	-0.1213	0.0952	-1.27
LEGSYS(F)	-0.08728	0.1024	-0.85
LEGSYS(G)	-0.03662	0.0987	-0.37

TABLE 9 (Continued)
Panel Regression: Converged Countries
Accounting Quality and Accounting Convergence

Panel G: Timeliness and Convergence

Hausman Test[1]	P>0.9218		
R-Square	0.0296		
Variable	Estimate	Standard Error	t-statistics
Intercept	0.063999	0.0608	1.05
CON	0.016796	0.0169	0.99
GDP	-7.42E-07	9.79E-07	-0.76
GROWTH	0.002209	0.0051	0.43
LEGSYS(E)	-0.04576	0.0435	-1.05
LEGSYS(F)	-0.06404	0.0472	-1.36
LEGSYS(G)	-0.04137	0.045	-0.92

Panel H: Conservatism and Convergence

Hausman Test[1]	P>0.6391		
R-Square	0.0348		
Variable	Estimate	Standard Error	t-statistics
Intercept	-1659.09	1448.6	-1.15
CON	189.1162	416.5	0.45
GDP	0.026041	0.0235	1.11
GROWTH	250.6551	116.5	**2.15
LEGSYS(E)	310.8993	1101.4	0.28
LEGSYS(F)	602.4837	1184.7	0.51
LEGSYS(G)	232.9348	1141.8	0.2

Note: This table shows the panel regression results with converged countries only. Converged countries are defined by testing the mean difference between the average of 1999–2000 mean-adjusted E/P ratios and the average of 2004–2005 mean-adjusted E/P ratios for each country. If the mean is significantly reduced between these periods at 5% level, they are categorized as converged countries.

[1] Hausman tests are run to determine whether random effect model is appropriate for this research. The Hausman test tests the null hypothesis that the coefficients estimated by random effect model are the same as the ones estimated by the fixed effect model. If they are insignificant p-value (larger than 0.05), then it is safe to use random effect model.

***, **, * denote 1% significance, 5% significance, and 10% significance, respectively.

Variable Definitions:

- $\Delta EQ_{i,t,k}$ is changes in country *i*'s accounting quality variables of *k* (*k* = 1,2,3,4,5,6,7,8). *k* represents eight accounting quality variables of (1) accrual quality, (2) persistence, (3) predictability, (4) smoothness, (5) reliability, (6) relevance, (7) timeliness, and (8) conservatism, respectively. Changes in accounting quality are calculated with quality measures of each consecutive year for these eight accounting quality variables.
- $\Delta CON_{i,t}$ is changes in country *i*'s accounting convergence variable. They are computed with coefficient estimates ($\alpha_{i,t}$) of equation (7) for each consecutive year.
- $GDP_{i,t}$ is country *i*'s per capita GDP in year *t*.
- $GROWTH_{i,t}$ is country *i*'s average annual percent growth of per capita GDP in year *t*.
- $LEGSYS_i$ is country *i*'s legal system and enforcement indicator variable. The dummy variables of $LEGSYS(E)_i$, $LEGSYS(F)_i$, and $LEGSYS(G)_i$ represent English origin, French origin, and German origin, respectively.

TABLE 10
Country Classification

Panel A: Cluster membership of countries based on Leuz et al. (2003)

Country	Cluster 1	Cluster 2	Cluster 3
Australia	Australia		
Austria		Austria	
Belgium		Belgium	
Bermuda			Bermuda[1]
Brazil			Brazil[1]
Canada	Canada		
Switzerland		Switzerland	
Chile			Chile[1]
China			China[1]
Cayman Island			Cayman Island[1]
Germany		Germany	
Denmark		Denmark	
Spain			Spain
Finland		Finland	
France		France	
United Kingdom	United Kingdom		
Greece			Greece
Hong Kong	Hong Kong		
Indonesia			Indonesia
India			India
Ireland		Ireland	
Israel	Israel[1]		
Italy			Italy
Japan		Japan	
Korea			Korea
Mexico			Mexico[1]
Malaysia	Malaysia		

TABLE 10 (Continued)
Country Classification

Panel A: Cluster membership of countries based on Leuz et al. (2003)

Country	Cluster 1	Cluster 2	Cluster 3
Netherlands		Netherlands	
Norway	Norway		
New Zealand	New Zealand[1]		
Pakistan			Pakistan
Philippines			Philippines
Poland		Poland[1]	
Portugal			Portugal
Singapore	Singapore		
Sweden		Sweden	
Thailand			Thailand
Turkey			Turkey[1]
Taiwan		Taiwan	
United States	United States		
South Africa		South Africa	
N=41	N=10	N=14	N=17

Note: Sample countries are classified by three clusters according to Leuz et al. (2003). Cluster 1 countries are identified outsider economies with large stock markets, dispersed ownership, strong investor rights, and strong legal enforcement. Cluster 2 countries are identified insider economies with less-developed stock markets, concentrated ownership, weak investor rights, but strong legal enforcement. Cluster 3 is identified insider economies with weak legal enforcement.
[1] These countries are not available for cluster classification in Leuz et al. (2003). This study judgmentally fit them into each cluster category.

TABLE 10 (Continued)
Country Classification

Panel B: Country partition based on country's level of economic development

Country	Developed Countries	Developing Countries
Australia	Australia	
Austria	Austria	
Belgium	Belgium	Bermuda
Bermuda		Brazil
Brazil		
Canada	Canada	
Switzerland	Switzerland	
Chile		Chile
China		China
Cayman Island		Cayman Island
Germany	Germany	
Denmark	Denmark	
Spain	Spain	
Finland	Finland	
France	France	
United Kingdom	United Kingdom	
Greece	Greece	
Hong Kong	Hong Kong	
Indonesia		Indonesia
India		India
Ireland	Ireland	
Israel	Israel	
Italy	Italy	
Japan	Japan	
Korea	Korea	
Mexico		Mexico
Malaysia		Malaysia

TABLE 10 (Continued)
Country Classification

Panel B: Country partition based on country's level of economic development

Country	Developed Countries	Developing Countries
Netherlands	Netherlands	
Norway	Norway	
New Zealand	New Zealand	
Pakistan		Pakistan
Philippines		Philippines
Poland		Poland
Portugal	Portugal	
Singapore	Singapore	
Sweden	Sweden	
Thailand		Thailand
Turkey		Turkey
Taiwan	Taiwan	
United States	United States	
South Africa		South Africa
N=41	N=26	N=15

Note: Sample countries are partitioned based on International Monetary Fund, advanced economy list.

VITA

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Scope and Method of Study: This study empirically examined the functional relationship between financial reporting quality and accounting convergence. The first phase of the examination involved identifying and measuring accounting quality attributes and accounting convergence. Random effect panel regression analyses of all sample countries and sub-sample countries were used to examine whether there is a positive association of accounting convergence with improvement in accounting quality. Notably, all data were collected from publicly available sources.

Findings and Conclusions: This study found little evidence of a positive association between accounting convergence and accounting quality improvements. The results with overall sample countries based on a random effect panel regression of the relationship between accounting quality and accounting convergence were mixed.

Since the test results with the mixture of converged and non-converged countries were likely to aggregate and wash out the net impact of convergence on quality improvement, sample countries were partitioned into converged countries and non-converged countries. Converged countries were defined differently based on ANOVA and t-tests. Random effect panel regression results with data of converged countries only were qualitatively similar, stronger but still mixed. The results suggested that accounting convergence alone does not necessarily improve accounting quality.

This study also found that the relationship between accounting convergence and improvement in accounting quality is not a matter of a country's investor protection, legal system and enforcement, or the level of country's economic development.

ADVISER'S APPROVAL: Dr. Gary K. Meek