



Are IFRS-based and US GAAP-based accounting amounts comparable? ☆

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ABSTRACT

This study examines whether application of IFRS by non-US firms results in accounting amounts comparable to those resulting from application of US GAAP by US firms. IFRS firms have greater accounting system and value relevance comparability with US firms when IFRS firms apply IFRS than when they applied domestic standards. Comparability is greater for firms that adopt IFRS mandatorily, firms in common law and high enforcement countries, and in more recent years. Earnings smoothing, accrual quality, and timeliness are potential sources of the greater comparability. Although application of IFRS has enhanced financial reporting comparability with US firms, significant differences remain.

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1. Introduction

The objective of this study is to determine the extent to which application of International Financial Reporting Standards (IFRS) by non-US firms (hereafter, IFRS firms) results in accounting amounts that are comparable to those resulting from application of US Generally Accepted Accounting Principles (GAAP) by US firms. We make this determination by addressing two questions. The first is whether comparability is greater after firms apply IFRS than when they applied non-US domestic standards. The second is whether comparability differs after firms adopt IFRS depending on whether a firm mandatorily adopts IFRS, depending on the legal origin and extent of enforcement of an IFRS firm's country, and in more recent reporting years. Although there is a growing literature examining whether application of IFRS affects the quality of accounting amounts and has economic implications in capital markets (see Hail et al., 2010a, 2010b), no study directly examines the extent to which application of IFRS by IFRS firms results in accounting amounts that are comparable to those based on application of US GAAP by US firms.

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The study is potentially relevant to current policy debates relating to possible use of IFRS by US firms.¹ Following its 2007 decision to permit non-US firms cross-listing in the US to file financial statements based on IFRS, the US Securities and Exchange Commission (SEC) presently is considering permitting US firms to file financial statements based on IFRS. A reason for this is the possibility that accounting amounts based on IFRS are comparable to those based on US GAAP. Four contributing factors underlying this possibility are the efforts of the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) to converge accounting standards, the increasing use of IFRS throughout the world, development of international auditing standards, and the increasing coordination of international securities market regulators. A goal of these efforts is to develop similar accounting standards and more consistent interpretation, auditing, and enforcement of the standards. The accounting amounts resulting from application of US GAAP or IFRS reflect the combined effect of these features of the financial reporting system. The SEC is concerned with comparability of accounting amounts, not simply comparability of accounting standards.

The basic notion of comparability in the conceptual frameworks for financial reporting underlying IFRS and US GAAP is that accounting amounts are comparable if, when two firms face similar economic outcomes, the firms report similar accounting amounts. We use two approaches to assess comparability of accounting amounts resulting from application of IFRS and US GAAP, both of which use the same relations between stock price, stock return, and cash flow as economic outcomes, and various combinations of net income and equity book value as accounting amounts.² The first approach, which we label accounting system comparability, defines accounting amounts as being comparable if an economic outcome (e.g., stock price) estimated based on the mapping from accounting amounts (e.g., earnings) to that economic outcome of one system is the same as the estimated economic outcome based on the mapping of the other system. The accounting system comparability metrics are based on the difference between fitted values of the economic outcomes resulting from applying US GAAP and IFRS multiples to each firm's accounting amounts. This approach is designed to operationalize the SEC's desire to determine how well IFRS accounting amounts fit within the US financial reporting system (SEC, 2010). The second approach, which we label value relevance comparability, defines accounting amounts as being comparable if they explain the same variation in economic outcomes. This approach also should provide evidence to the SEC because value relevance is frequently used as a summary measure of how well accounting amounts reflect a firm's underlying economics.

We select stock price and stock return as economic outcomes because they are summary measures of equity value and change in equity value that reflect investors' capital allocation decisions and, as a result, each is commonly employed in accounting research to capture a firm's underlying economics. We select cash flow as an economic outcome because forecasting future cash flow plays a key role in economic models of equity value. We select earnings and equity book value as accounting amounts because they are the two primary summary measures from financial statements extensively employed in accounting research linking accounting amounts to equity value.

The first set of tests determines whether comparability is greater when IFRS firms apply IFRS than when they applied non-US domestic standards. The second set of tests uses a variety of post-adoption sample partitions to determine whether there are comparability differences after IFRS firms adopt IFRS that are associated with particular features of the IFRS firms' financial reporting environments. We first test our predictions that comparability is greater for firms domiciled in countries with common law legal origins and with high enforcement. The basis for these predictions is that IFRS are largely derived from financial accounting standards developed in common law countries, including the US, and code law and low enforcement countries likely have weaker enforcement than common law and high enforcement countries (e.g., Ball et al., 2000, 2003). We also test for comparability differences between voluntary and mandatory IFRS adopters but make no prediction relating to differences between these two groups of firms. The incentives of voluntary adopters could result in accounting amounts that exhibit greater comparability than accounting amounts of mandatory adopters. However, because mandatory adoption affects a large number of firms simultaneously, investors' enhanced ability to understand the link between accounting amounts and economic outcomes and more consistent application and enforcement arising from more firms applying IFRS could result in greater comparability for mandatory adopters.³ Which effect on comparability dominates is difficult to predict.

Using a sample of IFRS firms domiciled in 27 countries that adopted IFRS between 1995 and 2006 and a sample of US firms matched on size and industry, we find that IFRS firms have significantly greater accounting system and value relevance comparability with US firms when they apply IFRS than when they applied non-US domestic standards. We also find, based on most metrics, that comparability is significantly greater for firms that adopt IFRS mandatorily, for IFRS firms in countries with common law legal origin and with high enforcement, and in more recent years. These findings suggest that efforts to converge accounting standards, the increasing mandatory use of IFRS throughout the world, the development of international auditing standards, and the increasing coordination of international securities market regulators have increased comparability of accounting amounts.

¹ The International Accounting Standards Board (IASB) issues IFRS. IFRS include not only standards issued by the IASB, but also International Accounting Standards (IAS) issued by the IASB's predecessor body, the International Accounting Standards Committee, some of which have been amended by the IASB. Our sample years include those in which IAS and IFRS were effective. For ease of exposition, throughout we use IFRS to refer to IAS or IFRS.

² Throughout we use the terms "net income" and "earnings" interchangeably.

³ Many of our sample IFRS firms are domiciled in countries that adopted IFRS mandatorily in 2005. As a result, partitioning observations based on voluntary and mandatory adoption is highly correlated with partitioning observations before and after 2005.

Additional findings indicate US firms' accounting amounts generally have higher value relevance than those of IFRS firms. Findings based on the price and return metrics, but not the cash flow metric, indicate IFRS-based accounting amounts are comparable to US GAAP-based accounting amounts for firms from common law legal origin countries. Findings from the other post-adoption sample partitions indicate significant comparability differences remain.

To provide insight into potential sources of differences in comparability, we also investigate whether the increase in comparability after firms adopt IFRS and differences in comparability across post-adoption sample partitions are associated with differences in accounting quality. Based on prior research, we consider three dimensions of accounting quality — earnings smoothing, accrual quality, and earnings timeliness. We find that both before and after IFRS firms adopt IFRS accounting quality is higher for US firms, and that all three dimensions of accounting quality are potential sources of the increase in comparability after IFRS firms adopt IFRS. Similar findings obtain for all post-adoption sample partitions, with the exception of firms in common law countries, which, relative to US firms, exhibit higher accounting quality along some dimensions but lower quality along others.

We conduct several additional analyses. First, we test for differences in regression coefficients used in constructing the comparability metrics to provide insight into whether differences in coefficients on equity book value, net income, or change in net income are sources of the comparability differences we document, and find evidence that they are. Second, to examine whether increased convergence between IFRS and US GAAP and more widespread use of IFRS over time are associated with increases in comparability, we repeat our analyses using observations from 2005 to 2006 and from 2007 through 2009, and find that they are. However, as with the combined post-adoption sample, significant value relevance differences between IFRS and US firms remain in the 2007–2009 period. Third, to provide evidence on the extent to which globalization explains our primary findings, we conduct comparability tests using firms domiciled in two non-US countries, Japan and India, that do not permit firms to apply IFRS instead of our IFRS firms. Findings do not support globalization as an explanation for our primary findings of increased comparability after IFRS firms adopt IFRS. Fourth, to address the possibility that the comparability differences are concentrated in firms in particular industries, we repeat the comparability analyses for firms in the three industries with the largest number of observations, Manufacturing, Services, and Finance, Insurance, and Real Estate. Regarding comparability differences before and after IFRS firms adopt IFRS, the findings generally reveal significant increases in accounting system comparability for firms in Manufacturing and Services, but not Finance, Insurance, and Real Estate. The findings also generally reveal significant increases in value relevance comparability for all three industry groups. Regarding comparability differences for the post-adoption sample partitions, findings generally result in similar inferences for all three industry groups as those relating to the full sample.

The remainder of the paper is organized as follows. The next section discusses institutional background and related research. Sections three and four develop the hypotheses and explain the research design. Sections five and six describe the sample and data and present the results. Section seven offers a summary and concluding remarks.

2. Institutional background and related research

2.1. Institutional background

The SEC and the FASB have been working with their international counterparts on a convergence effort to develop high quality, internationally comparable financial information that investors find useful for decision making in global capital markets (SEC, 2008; Financial Accounting Foundation, 2009). The convergence efforts have focused on coordinating standard setting and reducing differences in accounting standards. To this end, the FASB and IASB are working to achieve the standard-setting milestones specified in their Memorandum of Understanding (FASB and IASB, 2008) with a goal of developing a single set of high quality accounting standards. In their conceptual frameworks for financial reporting, the FASB (FASB, 2010) and IASB (IASB, 2010) identify comparability as the qualitative characteristic of financial information that enables users to identify and understand similarities in, and differences among, items. Some degree of comparability is attained when two entities faithfully represent similar economic phenomena similarly. However, comparability of accounting information is a function not only of accounting standards, but also of interpretation, auditing, and the regulatory, litigation, and enforcement environment. Recognizing this, the International Auditing and Assurance Standards Board has been developing International Standards on Auditing to enhance convergence in application of accounting standards around the world. Similarly, the SEC and the International Organization of Securities Commissions are working to coordinate oversight and regulation to facilitate consistent enforcement across countries.

In 2007, the SEC began permitting non-US firms that apply IFRS as issued by the IASB to file financial statements without reconciliation to US GAAP (SEC, 2007). Contributing to this decision is the belief that IFRS-based financial statement information has become sufficiently comparable to US GAAP-based information so as to render the reconciliation requirement unnecessary. However, the SEC currently requires US firms to file financial statements based on US GAAP. Consistent with the SEC's stated desire for firms to use a single set of high quality accounting standards, in 2008, the SEC proposed a Roadmap that could lead to requiring US firms to apply IFRS (SEC, 2008). The Roadmap states:

Through this Roadmap, the Commission is seeking to realize the objective of providing investors with financial information from US issuers under a set of high-quality globally accepted accounting standards, which would enable

US investors to better compare financial information of US issuers and competing international investment opportunities.

Implicit in the SEC's decision regarding the application of IFRS by US firms is the notion that financial statement information based on IFRS is sufficiently comparable in quality to that based on US GAAP, and that application of IFRS will benefit US firms and investors by increasing comparability of resulting accounting amounts.

The SEC's consideration of whether to require application of IFRS by US firms is ongoing. In 2010, the SEC issued a statement confirming its commitment to the Roadmap (SEC, 2010).⁴ In the statement, the SEC indicates that:

... the Staff will gather information using a variety of methods, including, but not limited to, performing its own research; seeking comment from, holding discussions with, and analyzing information from constituents, including investors, issuers, auditors, attorneys, other regulators, standard setters, and academics; considering academic research; and researching the experiences of other jurisdictions that have incorporated or have committed to incorporate IFRS into their financial reporting systems and foreign private issuers who currently report under IFRS.

As described below, our comparability metrics are designed to provide evidence on the extent to which convergence efforts to date have increased comparability of accounting amounts resulting from the application of US GAAP and IFRS and the contexts in which differences remain.

In its comment letter on the Roadmap, the Financial Accounting Foundation (FAF, 2009), which oversees the FASB, recommends study of the "best path forward for the US financial reporting system toward the ultimate end goal," and that the SEC should consider "other possible approaches [beyond those specifically described in the Roadmap], such as convergence through continuation of the joint standard-setting efforts of the FASB and the IASB over a longer period as advocated by some investors and other parties." The FAF recommends the study include:

Steps that can and should be taken through continued international cooperation to more fully realize the potential benefits afforded by adopting a single set of high-quality global accounting standards, given the important effects of other factors that impact the quality and the comparability of reporting outcomes, such as differing incentives, enforcement, and auditing practices, which continue to change over time.

Our goal is to provide input to this debate by providing evidence on the effectiveness of convergence efforts to date, as well as remaining differences in comparability of accounting amounts. Although our study cannot address the normative question of which approach is best, because we cannot assess the costs and benefits of IFRS adoption versus continued convergence, it provides evidence on the effects of convergence in accounting standards, auditing, and enforcement.

2.2. Related research

Although there is a substantial literature comparing quality of accounting amounts internationally as well as capital market effects of IFRS adoption (Hail et al., 2010a, 2010b), there is less evidence on the comparability of accounting amounts resulting from application of IFRS and US GAAP. Studies in the literature can be characterized as relating to comparisons of accounting amounts resulting from application of IFRS and non-US domestic standards, application of US GAAP and non-US domestic standards, and application of IFRS and US GAAP.

Relating to studies that compare accounting amounts based on, and the economic implications of, non-US firms applying IFRS and domestic standards, Barth et al. (2008) finds that accounting quality of firms applying IFRS in 21 countries, not including the US, generally is higher than that of firms applying domestic standards. Studies relating to German firms include Bartov et al. (2005), Van Tendeloo and Vanstraelen (2005), Daske (2006), and Hung and Subramanyam (2007). With the exception of Bartov et al. (2005), these studies generally fail to find differences in accounting quality or economic implications, e.g., cost of capital. Daske et al. (2008) analyzes economic consequences of mandatory application of IFRS in 26 countries and generally finds capital market benefits. However, capital market benefits exist only in countries with strict enforcement and institutional environments that provide strong reporting incentives.

Several studies compare accounting amounts based on, and the economic implications of, US firms applying US GAAP and non-US firms applying domestic standards. Alford et al. (1993) documents differences in earnings information content and timeliness for 17 countries. The study finds mixed evidence regarding whether US GAAP earnings is more informative or more timely than earnings based on non-US domestic standards. Land and Lang (2002) compares earnings-price ratios for firms in six countries plus the US, and finds they converge between an earlier and a later sample period. Using samples of firms from six countries plus the US and 30 countries plus the US, Ball et al. (2000) and Leuz et al. (2003), respectively, provide evidence that observed differences in the properties of accounting amounts, including quality differences, reflect cross-country differences in incentives, enforcement, and attestation, in addition to differences in accounting standards.

Evidence from studies comparing accounting amounts based on, and the economic implications of, non-US firms applying IFRS and US GAAP is potentially relevant to the comparability question raised by the SEC in its Roadmap. Several

⁴ In 2011, the SEC supplemented its Roadmap by outlining a possible framework for incorporating IFRS into the US financial reporting system that combines elements of convergence and endorsement (SEC, 2011).

studies focus on comparisons using German firms that were permitted to apply either US GAAP or IFRS. Leuz and Verrecchia (2000) and Leuz (2003) compare measures of information asymmetry for German firms and find little evidence of differences in bid/ask spreads, trading volume, and stock price volatility for firms that apply US GAAP relative to those that apply IFRS. Bartov et al. (2005) documents that earnings response coefficients are highest for German firms applying US GAAP, followed by those applying IFRS, and followed by those applying German standards. However, it is not clear to what extent conclusions from these studies generalize to firms in other countries because these studies examine the properties of accounting amounts of firms in a single non-US country with unique institutional features.

Several studies compare properties of accounting amounts based on IFRS with those based on US GAAP-reconciled amounts for firms that cross-list on US markets. Harris and Muller (1999) provides evidence that US GAAP-reconciled amounts for 31 firms applying IFRS are value relevant incremental to IFRS-based accounting amounts. Gordon et al. (2008) and Hughes and Sander (2008) compare earnings attributes for earnings based on IFRS and based on US GAAP-reconciled amounts. The studies generally find IFRS and US GAAP-reconciled earnings are comparable, although there is some evidence that US GAAP-reconciled earnings are of higher quality.

Although these studies provide some evidence regarding comparability of accounting amounts based on US GAAP and IFRS, there are several reasons why these studies' findings do not bear directly on our research question. First, by design, these studies do not include US firms. However, a primary concern of the SEC is comparability of accounting amounts of IFRS firms with those of US firms. Cross-listed firms do not face the same incentives, enforcement, regulation, and litigation environment as faced by US firms (Lang et al., 2006). Second, the properties of accounting amounts resulting from reconciliation of earnings and equity book value to US GAAP are not the same as those resulting from comprehensive application of US GAAP (Bradshaw and Miller, 2008). Third, because of the reconciliation requirement, cross-listed firms applying IFRS likely made US GAAP-consistent choices to minimize reconciling items that likely would not be made absent reconciliation requirements (Lang et al., 2003). Fourth, within-firm comparisons of US GAAP- and IFRS-based accounting amounts implicitly control for factors other than accounting standards. However, the SEC's comparability concerns include the effects of all factors that affect accounting amounts, e.g., managerial incentives, enforcement, and regulatory and litigation environments (SEC, 2010).

3. Predictions

3.1. Comparability before and after IFRS adoption

Our first prediction is that comparability increased after IFRS firms adopt IFRS. We base this prediction on prior research discussed in Section 2.2, particularly research showing that IFRS-based and US GAAP-based accounting amounts have higher quality than those based on non-US domestic standards. Although prior research provides evidence relating to this prediction, prior research does not test this prediction directly, nor can the result of a test of this prediction be inferred by combining results in prior research.⁵

3.2. Comparability differences after IFRS adoption

We next develop predictions for differences in comparability of IFRS-based and US GAAP-based accounting amounts that reflect differences in IFRS firms' financial reporting systems. Accounting amounts reflect the interaction of features of the financial reporting system, which include accounting standards and their interpretation, auditing, enforcement, and litigation, all of which can affect comparability. Because of the inherent flexibility of principle-based standards and potential weakness in other features of financial reporting systems outside the US, accounting amounts based on IFRS and US GAAP may not be comparable.

Relating to standards, the IASB and FASB employ different approaches in developing standards that could result in lack of comparability of accounting amounts. In particular, the IASB's approach relies more on principles, whereas the FASB's approach relies more on rules.⁶ Reliance on principles specifies broad requirements, but requires judgment in application. Reliance on rules specifies more requirements that leave less room for discretion. Ewert and Wagenhofer (2005) develops a rational expectations model that shows accounting standards that limit opportunistic discretion result in accounting earnings that are more reflective of a firm's underlying economics. However, although discretion in accounting can be opportunistic and possibly misleading about the firm's economic performance, it can be used to reveal private information about the firm (Watts and Zimmerman, 1986). Relating to other features of the financial reporting system, Ball (1995, 2006), Lang et al. (2006), and Bradshaw and Miller (2008) observe that accounting standards and the regulatory and

⁵ Although Barth et al. (2008) finds that value relevance increased after firms voluntarily adopted IFRS, there are two important differences between that study and ours. First, whereas our focus is on comparability of IFRS and US GAAP, Barth et al. (2008) does not address comparability. Second, the Barth et al. (2008) evidence is based on voluntary IFRS adopters and a sample period that predates recent developments in accounting standards and related institutions. In contrast, we assess comparability using accounting amounts for IFRS firms from a larger number of countries, including mandatory adopters. Our sample also includes observations from more recent years, and therefore our findings are more likely to be relevant to the SEC's ongoing consideration of the use of IFRS by US firms.

⁶ The distinction here is more relative than absolute. IFRS and US GAAP include both general principles and rules, depending on context (Schipper, 2003). However, the FASB generally has provided more detailed guidance on application of accounting principles than has the IASB.

litigation environment affect reported accounting amounts. For example, Cairns (1999), Ball et al. (2000), Street and Gray (2001), and Ball et al. (2003) suggest lax enforcement can result in limited IFRS compliance.

Regarding potential comparability differences after IFRS firms adopt IFRS, we first predict greater comparability for firms domiciled in countries with common law legal origins than code law legal origins (hereafter, common and code law firms). La Porta et al. (1998) and subsequent studies indicate that legal origin differences affect institutional features of financial markets, including the financial reporting environment, and that key legal origin groups are common law and code law. Relatedly, we also predict greater comparability for firms in countries with high enforcement. There are two reasons underlying these predictions. First, because IFRS are largely derived from financial accounting standards developed in common law countries, including the US, we predict that comparability is greater for common law firms. Second, code law and low enforcement countries likely have weaker enforcement than common law and high enforcement countries, which affects the application of standards (e.g., Ball et al., 2000, 2003; Leuz et al., 2003). Because the US is regarded as having perhaps the highest level of enforcement (Leuz, 2010), we predict that comparability is greater for common law firms and for firms in high enforcement countries.

We make no prediction for comparability differences between voluntary and mandatory IFRS adopters because incentives of voluntary adopters could result in them having accounting amounts that exhibit more or less comparability than those of mandatory adopters. Voluntary adopters may have incentives to commit to enhanced disclosure, resulting in greater comparability relative to mandatory adopters that did not face such incentives. However, because mandatory adoption affected a large number of firms simultaneously, investors' enhanced ability to understand the link between accounting amounts and share prices and more consistent application and enforcement arising from more firms applying IFRS could result in greater comparability for mandatory adopters than voluntary adopters.

3.3. Potential sources of comparability differences

To provide insight into potential sources of differences in comparability, based on prior research we consider three dimensions of accounting quality — earnings smoothing, accrual quality, and earnings timeliness (Dechow and Dichev, 2002; Land and Lang, 2002; Lang et al., 2003, 2006; Leuz et al., 2003; Ball and Shivakumar, 2005, 2006; Myers et al., 2007; Barth et al., 2008). For example, finding (a) an increase in comparability after IFRS firms adopt IFRS, and (b) that the difference in earnings smoothing between IFRS and US firms decreased after the IFRS firms adopt IFRS is consistent with the reduction in the difference in earnings smoothing being a source of the increased comparability. In Section 4.4, we describe the metrics we use to test for differences in accounting quality.

4. Research design

4.1. Assessing comparability

The basic notion of comparability in the FASB's and IASB's conceptual frameworks for financial reporting underlying IFRS and US GAAP (FASB, 2010; IASB, 2010) is that accounting amounts are comparable if, when two firms face similar economic outcomes, the firms report similar accounting amounts. Similarly, if the two firms face different economic outcomes they should report different accounting amounts. We use two approaches to assess comparability of accounting amounts resulting from application of IFRS and US GAAP, both of which use stock price, stock return, and cash flow as economic outcomes, and various combinations of net income and equity book value as accounting amounts.

We select stock price and stock return as economic outcomes because they are summary measures of equity value and change in equity value that reflect investors' capital allocation decisions and, as a result, each is commonly employed in accounting research to capture a firm's underlying economics. We select cash flow as an economic outcome because forecasting future cash flow plays a key role in economic models of equity value. Providing information that is useful to investors in making their capital allocation decisions is the objective of financial reporting as articulated in the conceptual frameworks of the FASB and IASB. Therefore, assessing comparability based on stock price, stock return, and cash flow should provide evidence to the SEC as to whether IFRS-based information provided to investors is comparable to US GAAP-based information. We use all three measures because there are advantages and disadvantages to each. For example, although stock price and stock return reflect any cross-country and cross-industry differences in cost of capital, cash flow does not. Also, although the information environment, which includes accounting standards, affects price formation and hence stock price and stock return, it does not affect cash flow. Although subsequent cash flow is available for a limited number of years, stock price and stock return reflect investors' expectations for all subsequent years.

We select earnings and equity book value as accounting amounts because they are the two primary summary measures from financial statements extensively employed in accounting research linking accounting amounts to equity value (Kothari, 2001). In addition, as in prior research, focusing on these two measures permits us to employ parsimonious models relating accounting amounts to economic outcomes.⁷ The relations we use to construct our comparability metrics associate earnings and equity book value with stock price, earnings and change in earnings with stock return, and earnings with cash flow.

⁷ It is possible that extending the set of accounting amounts could alter our inferences.

The first approach we use to assess comparability, which we label accounting system comparability, defines accounting amounts as being comparable if an economic outcome (e.g., stock price) estimated based on the mapping from accounting amounts (e.g., earnings) to that economic outcome of one system is the same as the estimated economic outcome based on the mapping of the other system (De Franco et al., 2011). See Appendix A for details and Tables 3 and 4 for the related findings. This approach to comparability is designed to operationalize the SEC's desire to determine how well IFRS accounting amounts fit within the US financial reporting system (SEC, 2010).

The second approach we use to assess comparability, which we label value relevance comparability, defines accounting amounts as being comparable if they explain the same variation in economic outcomes. See Tables 5 and 6 for the related findings. This approach also should provide evidence to the SEC on whether IFRS-based and US GAAP-based accounting amounts are comparable because value relevance is frequently used as a summary measure of how well accounting amounts reflect a firm's underlying economics (Barth et al., 2008; Ewert and Wagenhofer, 2009).

To test our predictions in Section 3, we use a matched sample design, whereby for each IFRS firm we select a US firm in the same industry as the IFRS firm whose size as measured by equity market value is closest to the IFRS firm's at the end of the year of its adoption of IFRS (Barth et al., 2008).⁸ Following prior research, we employ a matching procedure to mitigate the effects on our inferences of accounting and economic differences between IFRS and US firms unattributable to the financial reporting system. For example, the IFRS and US GAAP financial reporting systems could, in principle, prescribe the same accounting rules for capitalization or expensing of particular types of assets that differ across industries. However, because the industry composition of IFRS firms differs from that of US firms, failing to match on industry could result in our test results indicating the two systems are not comparable when in fact they are. Matching IFRS and US firms by industry also mitigates the effect on our inferences of industry differences in cost of capital that can affect how accounting amounts relate to economic outcomes, but are not relevant for assessing comparability of IFRS and US GAAP accounting amounts. We also match IFRS and US firms on size to mitigate cost of capital differences and other economic differences between IFRS and US firms unattributable to the financial reporting system.

We require each IFRS firm to have data in the year the firm adopts IFRS and the year before. This ensures that we properly identify the firm's adoption year. Using the same industry classification as Barth et al. (2008), we next identify all US firms in the same industry as each IFRS firm and simultaneously select US firm matches such that we minimize the aggregate size differences between IFRS and matched US firms in the IFRS firm's adoption year.⁹ Next, we eliminate from the sample any matched pair for which the size difference exceeds 50% in absolute value. Our analyses include all firm-years for which the IFRS firm and its matched US firm both have data. For example, if an IFRS firm has data from 1994 through 2000, and its matched US firm has data from 1995 through 2002, then our analysis includes data from 1995 through 2000 for the IFRS firm and its matched US firm.

4.2. Accounting system comparability metrics

The stock price and stock return metrics are based on the difference between fitted stock prices and stock returns resulting from applying US GAAP and IFRS pricing multiples to each firm's earnings and equity book value, and earnings and change in earnings. Similarly, the cash flow metric is based on the difference between fitted subsequent cash flow resulting from applying US GAAP and IFRS cash flow prediction multiples to each firm's earnings. For US (IFRS) firms, the accounting amounts are those reported in their US GAAP (IFRS) financial statements. Because we construct a difference in fitted stock prices (stock returns, cash flow) for US firms and for IFRS firms, we calculate the accounting system comparability metric for stock price (stock return, cash flow) as the average of the two differences. If accounting amounts in the two accounting systems are comparable, then the differences in fitted stock prices, stock returns, and cash flow based on application of multiples from each system will be indistinguishable from zero.

As detailed in Appendix A, we construct our accounting system comparability metrics in six steps. First, we estimate the relations between stock price (stock return, subsequent year's cash flow) and earnings and equity book value (earnings and change in earnings, earnings) separately for US firms and IFRS firms. Second, for each set of firms, i.e., IFRS and US firms, we calculate within-sample fitted stock price (stock return, cash flow). Third, for each set of firms, we calculate fitted stock price (stock return, cash flow) using the multiples from the other set of firms. Fourth, for each set of firms, we calculate the absolute value of the difference between the fitted stock price (stock return, cash flow) obtained in the second and third steps. Fifth, for each IFRS and matched US firm-year pair, we average the differences in fitted stock price (stock return, cash flow) obtained in the fourth step. Sixth, we calculate our price, return, and cash flow comparability metrics as the

⁸ We considered propensity score matching using standard deviation of returns, equity market-to-book ratio, leverage, sales growth, return on assets, and return on equity, in addition to size and industry. When we estimate propensity scores by industry, size is the only variable with significant explanatory power. When we estimate the scores pooling all observations, only size and industry have significant explanatory power. Thus, adding variables beyond size and industry to our matching procedure likely would introduce noise and yield inferior matches.

⁹ The industry groups are based on Worldscope Industry classifications. Firms are combined into aggregate industry groups as follows (Worldscope Industry classifications are in parentheses): Agriculture, Forestry, and Fishing (35 and 38), Mining (50, 51, 54, 56, 97, 119, and 122), Construction (30, 32, 39, and 60), Manufacturing (33, 37, 43, 48, 57, 59, 62–65, 67–69, 74, 78, 81, 82, 92, 93, 95, 98, 99, 101, 114, 117, 120, 126, 129, 130, 132, and 157), Utilities (91, 140, and 142), Gas Distribution (31), Retail Trade (66, 83, 87, and 90), Finance, Insurance, and Real Estate (77, 102, 104, 106, 107, 111–113, 141, and 152), Services (40, 55, 58, 71, 72, 80, 84, 86, 94, 100, 103, 143, 150, and 151), and Public Administration (41, 45, 70, and 134).

mean, median, and standard deviation of the average differences obtained in the fifth step appropriate for each comparability analysis we conduct.

We compute accounting system comparability metrics using several groupings of the sample observations to test our predictions relating to comparability differences. We use a *t*-test (Wilcoxon Rank Sum Test) to test for mean (median) differences in comparability relevant to each particular comparison.¹⁰ We test for significance of differences in standard deviations using the empirical distribution of standard deviation differences obtained from a bootstrapping procedure.¹¹ To test whether accounting system comparability changed after IFRS firms adopt IFRS, we compute accounting system comparability metrics using all firm–year observations before the IFRS firms adopt IFRS, i.e., when they applied non-US domestic standards, and all firm–year observations after they adopt IFRS. To test whether accounting system comparability differs after IFRS firms adopt IFRS depending on whether firms adopt IFRS mandatorily, and depending on whether the legal origin of an IFRS firm's country is common law or code law and whether the IFRS firm's country has a relatively high or low level of enforcement, we partition firm–year observations after IFRS firms adopt IFRS into the relevant groups and calculate separate accounting system comparability metrics for each group. To identify countries as high or low enforcement, we use the public enforcement securities regulation index described in Leuz (2010, Table 1). The public enforcement index captures market supervision by a country's regulator, its investigative powers, and the sanctions available to the regulator.¹²

4.3. Value relevance comparability metrics

We construct our value relevance comparability metrics based on the explanatory power of regressions of stock price on equity book value and net income, stock return on net income and change in net income, and future operating cash flow on net income. We construct each metric as the difference in explanatory power of each full model that includes the fixed effects in addition to the accounting amounts, and the nested model that includes only the fixed effects. The motivation for doing this is to mitigate differences in mean stock prices, stock returns, and future cash flow across countries and industries from affecting our value relevance metrics. Thus, each metric reflects only the explanatory power of the accounting amounts for the dependent variable.

We estimate each full and attendant nested model using those observations relevant to each comparison we make. For example, when we compare value relevance of IFRS and US firms after the IFRS firms adopt IFRS, we estimate the models using the combined sample of IFRS firms and their matched US firms for years after the IFRS firms adopt IFRS. Similarly, when we compare value relevance of IFRS and US firms before the IFRS firms adopt IFRS, we estimate the models using the combined sample of IFRS firms and their matched US firms for years before the IFRS firms adopt IFRS, i.e., when they applied domestic standards.

Our first value relevance metric, Price, is based on the explanatory power from a regression of stock price, P , on net income before extraordinary items per share, NI , and book value of equity per share, BVE . In particular, our first value relevance metric is the difference between the adjusted R^2 from Eq. (1) and the adjusted R^2 from the nested version of Eq. (1) that includes only the C_j and I_k :

$$P_{it} = \beta_0 + \beta_1 BVE_{it} + \beta_2 NI_{it} + \sum_j \beta_{3j} C_j + \sum_k \beta_{4k} I_k + \varepsilon_{it}. \quad (1)$$

Following prior research, to ensure accounting information is in the public domain, P is stock price six months after fiscal year-end (Lang et al., 2003, 2006; Barth et al., 2008). C_j (I_k) is an indicator variable that equals one for firms domiciled in country j (industry k), and zero otherwise. i and t refer to firm and year.¹³

Our second value relevance metric, Return, is based on the adjusted R^2 from a regression of annual stock return, $RETURN$, on net income and change in net income, deflated by beginning of year price, NI_t/P_{t-1} and $\Delta NI_t/P_{t-1}$. In particular, our second value relevance metric is the difference between the adjusted R^2 from Eq. (2) and the adjusted R^2 from the

¹⁰ We also use these tests to test whether the mean and median comparability metrics are significantly different from zero. Throughout, we use the term significant (marginally significant) to denote a five (ten) percent significance level under a one-sided alternative when we have a signed prediction, and under a two-sided alternative otherwise.

¹¹ Specifically, for each test, we first randomly assign observations as either an IFRS or a US observation. For each designated IFRS observation, we randomly assign a designated US observation as its match. We randomly assign the matched pair to the subgroups that are the subject of the particular test. We then calculate the difference in standard deviations for the two randomly assigned groups of observations. We obtain the empirical distribution of this difference by repeating this procedure 1000 times, with replacement. We deem a standard deviation difference as significant if our observed sample difference exceeds 950 of the differences calculated based on the boot-strapping procedure. Inferences are unchanged if we sample without replacement. An advantage of this approach is that it requires no assumptions about the distribution of the standard deviation differences.

¹² The common law countries in our sample are Australia, Canada, Hong Kong, Ireland, Singapore, South Africa, and the United Kingdom; the code law countries are Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Peru, Philippines, Portugal, Spain, Sweden, Switzerland, and Turkey. The high enforcement countries in our sample are Australia, Canada, France, Hong Kong, Israel, Peru, Philippines, Portugal, Singapore, Turkey, and the United Kingdom; the low enforcement countries are Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Netherlands, Norway, South Africa, Spain, Sweden, and Switzerland. The enforcement index is not available for the Czech Republic and Hungary.

¹³ We also estimate Eq. (1) using share-weighted P , BVE , and NI . Share weighting is a control for potential differences across countries in share price arising from differences in typical trading ranges. Untabulated findings result in generally the same inferences as those resulting from estimation of Eq. (1). In addition, in Section 6.4.5, we conduct sensitivity analyses that include additional variables in the full and nested models as controls for potential pricing effects unrelated to accounting amounts.

nested version of Eq. (2) that includes only the C_j and I_k :¹⁴

$$\begin{aligned} RETURN_{it} = & \beta_0 + \beta_1 NI_{it}/P_{it-1} + \beta_2 \Delta NI_{it}/P_{it-1} + \beta_3 LOSS_{it} + \beta_4 LOSS_{it} \times NI_{it}/P_{it-1} \\ & + \beta_5 LOSS_{it} \times \Delta NI_{it}/P_{it-1} + \sum_j \beta_{6j} C_j + \sum_k \beta_{7k} I_k + \varepsilon_{it}. \end{aligned} \quad (2)$$

RETURN is the cumulative percentage change in stock price beginning nine months before fiscal year end and ending three months after fiscal year end, adjusted for dividends and stock splits. We permit the coefficients on NI_{it}/P_{it-1} and $\Delta NI_{it}/P_{it-1}$ to differ for loss firms (Hayn, 1995) using the indicator variable *LOSS*, which equals one if NI_{it}/P_{it-1} is negative, and zero otherwise.

Our cash flow metric, Cash Flow, is based on the R^2 from the regression of cash flow on lagged net income. In particular, our third value relevance metric is the difference between the adjusted R^2 from Eq. (3) and the adjusted R^2 from the nested version of Eq. (3) that includes only the C_j and I_k :

$$CF_{it+1} = \beta_0 + \beta_1 NI_{it}/TA_{it-1} + \sum_j \beta_{2j} C_j + \sum_k \beta_{3k} I_k + \varepsilon_{it+1}, \quad (3)$$

where *CF* is net cash flow from operations scaled by lagged total assets, *TA*. We test for differences in each value relevance metric based on an empirical distribution of the differences obtained from a boot-strapping procedure similar to that employed for tests of significance of accounting system comparability standard deviation differences.¹⁵

We also test whether the value relevance of US and IFRS firms' accounting amounts is comparable by testing whether differences in value relevance for US and IFRS firms are significant. We predict value relevance for US firms is higher than that for IFRS firms.¹⁶ Prior research does not directly address whether accounting amounts of US firms have higher value relevance than those of IFRS firms. Lang et al. (2003) and Leuz et al. (2003) suggest that US financial reporting quality is generally higher than that of other countries, which likely reflects the combined effects of high quality accounting standards and strong enforcement, and therefore accounting amounts of US firms should have higher value relevance. We expect this prediction to hold regardless of why firms adopt IFRS and regardless of the legal origin and level of enforcement of IFRS firms' countries.

4.4. Accounting quality

In this section, we describe the measures we employ to assess which dimensions of accounting quality are potential sources of differences in comparability. We consider five metrics of accounting quality, two that relate to earnings smoothing, one that relates to accrual quality, and two that relate to earnings timeliness.

The first earnings smoothing metric is the ratio of the variance of the change in net income to the variance of the change in cash flow, $\text{Var}(\Delta NI^*)/\text{Var}(\Delta CF^*)$, where ΔNI^* (ΔCF^*) is the residual from a regression of $\Delta NI_{it}/TA_{t-1}$ (ΔCF) on industry and country fixed effects. The second metric is the correlation between accruals and cash flow, $\text{Cor}(ACC^*, CF^*)$, where ACC^* (CF^*) is the residual from a regression of accruals scaled by lagged total assets, ACC_{it}/TA_{t-1} (CF), on industry and country fixed effects.¹⁷ *ACC* is *NI* minus *CF*. As in prior research (Land and Lang, 2002; Lang et al., 2003, 2006; Leuz et al., 2003; Ball and Shivakumar, 2005, 2006; Myers et al., 2007; Barth et al., 2008), we interpret a higher ratio of variances and a less negative correlation as evidence of less earnings smoothing.

Our accrual quality metric, which is based on Dechow and Dichev (2002), is the standard deviation of residuals from the regression of ACC^* on prior year, current year, and subsequent year cash flow, each deflated by its lagged total assets:

$$ACC_{it}^* = \beta_0 + \beta_1 CF_{it-1} + \beta_2 CF_{it} + \beta_3 CF_{it+1} + \varepsilon_{it}. \quad (4)$$

Following Dechow and Dichev (2002), we interpret a lower standard deviation of residuals from Eq. (4) as evidence of higher accrual quality.¹⁸

Following prior research (Ball et al., 2000; Lang et al., 2003, 2006; Barth et al., 2008), our timeliness metrics, Good News and Bad News, are the R^2 s from the regression of net income scaled by beginning-of-year price, NI_{it}/P_{t-1} , on the residual from a regression of stock return on country and industry fixed effects, $RETURN_{it}^*$:

$$NI_{it}/P_{it-1} = \beta_0 + \beta_1 RETURN_{it}^* + \varepsilon_{it}. \quad (5)$$

¹⁴ For ease of exposition, we use the same notation for coefficients and error terms in each equation.

¹⁵ As with the tests of differences in the standard deviation accounting system comparability metric, inferences are unchanged if we sample without replacement.

¹⁶ We do not test the analogous prediction for accounting system comparability because those metrics are based on a comparison of fitted stock prices, stock returns, or cash flow. That is, unlike for value relevance, there are not separate metrics for US and IFRS firms.

¹⁷ We construct our metrics using the residual from these regressions for reasons analogous to those relating to our constructing value relevance comparability metrics as the difference between the explanatory power of the full model and the attendant nested model that includes only country and industry indicator variables.

¹⁸ We also calculated an alternative measure of accrual quality based on the ratio of the standard deviation of residuals from Eq. (4) and the standard deviation of residuals of a version of Eq. (4) that includes only CF_{it} as an explanatory variable (Wyssocki, 2009). Inferences are the same using this alternative measure.

We estimate Eq. (5) separately for positive and negative return subsamples because prior research finds that timeliness differs for firms with positive and negative returns. Good News (Bad News) is the R^2 relating to the positive (negative) subsample. Based on prior research, we interpret a higher R^2 as evidence of greater timeliness.

These accounting quality tests identify possible sources of comparability by identifying when greater comparability and accounting quality occur at the same time. For example, finding (a) an increase in comparability after the IFRS firms adopt IFRS, and (b) a smaller difference between IFRS and US firms in the ratio of the variance of the change in net income to the variance of the change in cash flow is consistent with a reduction in the difference in earnings smoothing being a source of the increased comparability.

As with the comparability tests, we test which dimensions of accounting quality changed after IFRS firms adopt IFRS, and for accounting quality differences between firms that adopt IFRS voluntarily and mandatorily, common and code law firms, and firms in countries with high and low enforcement. As with the value relevance comparability tests, the structure of the accounting quality differences tests permits us to test for differences in accounting quality between US and IFRS firms because we have metrics for each group of firms. Also as with the value relevance tests, we test for differences in each accounting quality metric using an empirical distribution of the differences using a boot-strapping procedure.

5. Sample and data

We base our tests on a sample of firms that adopted IFRS between 1995 and 2006. Pre-adoption sample years potentially range from 1992 through 2005. Post-adoption sample years potentially range from 1996 through 2009. We obtain our sample of IFRS firms from Worldscope, which identifies the set of accounting standards a firm uses to prepare its financial statements and its industry. The Worldscope standards categories that we code as IFRS based on the Worldscope Accounting Standards Applied data field are “international standards” and “IASC” or “IFRS.”¹⁹ There are two sources of potential error in classifying a firm as applying IFRS. The first is that firms do not always indicate clearly the accounting standards that they apply. The second is that Daske et al. (2007) reports that the Worldscope data field contains classification errors. If a substantial portion of firms we classify as IFRS firms is affected by these sources of classification error and if IFRS-based accounting amounts are more comparable to US GAAP-based accounting amounts than are accounting amounts based on other standards, it is likely that our tests are biased against our finding that IFRS- and US GAAP-based accounting amounts are comparable.²⁰ We limit IFRS firms to those that do not cross-list in the US to eliminate effects on the IFRS accounting amounts associated with the reconciliation requirement (Harris and Muller, 1999; Lang et al., 2006).

We obtain data for IFRS and US firms from DataStream. We winsorize at the 5% and 95% levels all variables used to construct our metrics to mitigate the effects of outliers on our inferences. Because large negative stock returns are concentrated in 2007 and 2008, we winsorize variables separately for sample years before and after 2006 to avoid disproportionately winsorizing observations in the later years. The resulting sample of IFRS firms comprises 3400 firms that adopted IFRS between 1995 and 2006 and 17,714 firm–year observations, of which 8214 are post-IFRS adoption and 9500 are pre-adoption.

Table 1, panel A, provides a breakdown of sample firms by country. Sample firms are from 27 countries, with the greatest proportion from the United Kingdom, Australia, France, and Germany. Panel B of Table 1 provides an industry breakdown.²¹ Sample firms are from many industries, with the greatest proportion from Manufacturing, Services, and Finance, Insurance and Real Estate. Panel C of Table 1 provides a breakdown by adoption year. Although firms have adopted IFRS each year since 1995, the number jumps substantially in 2005 when IFRS became mandatory in many countries. In addition, because no sample IFRS firms adopt IFRS after 2006, the number of observations declines after 2006, reflecting attrition arising from an IFRS firm or its US match ceasing to exist in years subsequent to the IFRS firm’s adoption year.

Table 2 reports descriptive statistics for IFRS firms and their matched US firms after the IFRS firms adopt IFRS. Although we do not conduct significance tests for differences in means between IFRS and US firms, Table 2 suggests that differences exist for several of our variables. Because it is likely that such mean differences are at least in part attributable to country and industry differences, as described in Section 4, our value relevance comparability metrics are constructed to exclude the explanatory power of country and industry indicator variables.

¹⁹ Worldscope category 23 was “IASC” prior to 2005 and “IFRS” in 2005 through 2009.

²⁰ Limiting our comparisons to IFRS firms classified by Worldscope as applying IASC or IFRS results in inferences similar to those we obtain from our tabulated findings.

²¹ The sample composition by country differs from prior research largely because of differences in data requirements. For example, whereas our sample includes eight Spanish IFRS firms, Daske et al. (2008) includes 95. This difference is attributable to our requirements that each IFRS firm has data in the year before it adopts IFRS and has data necessary for all of the test variables, of which there are more than in Daske et al. (2008).

Table 1
IFRS firm sample composition by country, industry, and year of adoption.

Panel A: Composition by country				
	Firm-year observations	% of Firm-year observations	Number of firms	% of Firms
Australia	2623	14.81	849	24.97
Austria	186	1.05	31	0.91
Belgium	319	1.80	64	1.88
Canada	14	0.08	4	0.12
Czech Republic	75	0.42	13	0.38
Denmark	701	3.96	97	2.85
Finland	656	3.70	104	3.06
France	2326	13.13	389	11.44
Germany	1952	11.02	329	9.68
Greece	190	1.07	51	1.50
Hong Kong	45	0.25	11	0.32
Hungary	33	0.19	8	0.24
Ireland	249	1.41	36	1.06
Israel	7	0.04	4	0.12
Italy	926	5.23	151	4.44
Netherlands	721	4.07	91	2.68
Norway	595	3.36	109	3.21
Peru	41	0.23	41	1.21
Philippines	61	0.34	30	0.88
Portugal	215	1.21	34	1.00
Singapore	34	0.19	6	0.18
South Africa	264	1.49	41	1.21
Spain	23	0.13	8	0.24
Sweden	1137	6.42	221	6.50
Switzerland	458	2.59	76	2.24
Turkey	39	0.22	29	0.85
United Kingdom	3824	21.59	573	16.85
Totals	17,714	100.00	3400	100.00

Panel B: Composition by industry				
	Firm-year observations	% of Firm-year observations	Number of firms	% of Firms
Agriculture, Forestry and Fishing	108	0.61	18	0.53
Mining	1208	6.82	266	7.82
Construction	1281	7.23	178	5.24
Manufacturing	6862	38.74	1159	34.09
Utilities	582	3.29	102	3.00
Gas Distribution	50	0.28	11	0.32
Retail Trade	624	3.52	122	3.59
Finance, Insurance and Real Estate	2203	12.44	554	16.29
Services	4204	23.73	877	25.79
Public Administration	592	3.34	113	3.32
Totals	17,714	100.00	3400	100.00

	Panel C: Composition by year			
	Year of IFRS adoption		Observation year	
	Number of firms	Percentage of firms	After IFRS adoption	Before IFRS adoption
1992	0	0	0	1
1993	0	0	0	5
1994	0	0	0	22
1995	3	0.09	3	247
1996	6	0.18	8	431
1997	9	0.26	14	578
1998	17	0.50	26	679
1999	35	1.03	59	814
2000	35	1.03	76	884
2001	34	1.00	87	1182
2002	50	1.47	113	1197

Table 1 (continued)

	Panel C: Composition by year			
	Year of IFRS adoption		Observation year	
	Number of firms	Percentage of firms	After IFRS adoption	Before IFRS adoption
2003	41	1.21	124	1505
2004	88	2.59	191	1661
2005	1768	52.00	1865	567
2006	1314	38.65	2729	0
2007	0	0	1743	0
2008	0	0	1103	0
2009	0	0	73	0
Totals	3400	100.00	8214	9500

The sample comprises non-US firms that adopted IFRS between 1995 and 2006 (IFRS firms).

Table 2

Descriptive statistics: IFRS firms and US firms.

Variables	IFRS firms (N=8214)		US firms (N=8214)	
	Mean	Standard deviation	Mean	Standard deviation
<i>P</i>	18.90	16.84	21.00	30.02
<i>BVE</i>	8.94	7.37	15.01	26.74
<i>NI</i>	0.71	1.36	1.65	3.17
<i>RETURN</i>	0.03	0.43	-0.04	0.44
<i>NI/P</i>	0.04	0.13	-0.01	0.10
$\Delta NI/P$	0.01	0.13	-0.01	0.08
<i>LOSS</i>	0.27	0.45	0.33	0.47
<i>CF</i>	0.06	0.11	0.06	0.12
<i>NI/TA</i>	0.01	0.11	0.01	0.13

P is stock price six months after fiscal year-end; *BVE* is book value of equity per share; *NI* is net income before extraordinary items per share; *RETURN* is annual stock return beginning nine months before and ending three months after fiscal year end; *NI/P* is net income per share scaled by beginning of year stock price; *LOSS* is an indicator variable equal to one if *NI/P* is negative, and zero otherwise; *CF* is net cash flow from operations scaled by lagged total assets; *NI/TA* is net income scaled by lagged total assets; and Δ denotes annual change. The sample comprises non-US firms that adopted IFRS between 1995 and 2006 (IFRS firms) and a sample of US firms matched to the IFRS firms on size and industry (US firms). All statistics are for IFRS and US firms after IFRS firms adopt IFRS.

6. Results

6.1. Accounting system comparability

Table 3 presents mean, median, and standard deviation accounting system comparability metrics based on Eqs (A7), (A8), and (A9) in Appendix A and differences in metrics for each of the comparisons described in Section 4.2. In particular, Table 3 presents accounting system comparability metrics to test whether comparability with US firms is greater after IFRS firms adopt IFRS than when they applied non-US domestic standards. Table 4, panels A through C, presents analogous metrics to test whether comparability with US firms differs for firms that adopt IFRS voluntarily and mandatorily, for common and code law firms, and for firms in countries with high and low enforcement.

6.1.1. Comparability with US GAAP before and after IFRS adoption

The findings in Table 3 indicate that each of the price, return, and cash flow comparability metrics before and after IFRS firms adopt IFRS is significantly different from zero. For example, in the period before and after IFRS firms adopt IFRS, mean Price, Return, and Cash Flow are 12.62, 0.12, and 0.014, and 9.36, 0.07, and 0.012. More importantly, the findings in Table 3 indicate that comparability with US GAAP increased significantly after IFRS firms adopt IFRS. The decreases in differences in mean (median, standard deviation) Price, Return, and Cash Flow, i.e., increases in comparability, are -3.26 (-1.83, -4.43), -0.04 (-0.02, -0.08), and -0.002 (-0.001, -0.004).

As an indication of the economic magnitude of the comparability metrics and their changes before and after the IFRS firms adopt IFRS, consider the mean change in Price of -3.26, which reflects a decrease in mean Price from 12.62 to 9.36. As a fraction of mean stock price for US firms, 21.00, change in Price is 0.16 (3.26/21.00), which implies a fitted price that is 16% closer to actual price after IFRS firms adopt IFRS. Nonetheless, as a fraction of mean stock price for US firms, mean Price after IFRS firms adopt IFRS is 0.45 (9.36/21.00), which implies fitted prices, on average, differ substantially from

Table 3

Comparability of IFRS and US GAAP accounting systems, before and after IFRS firms adopt IFRS.

	Price			Return			Cash Flow			
	Pred	Mean	Median	StdDev	Mean	Median	StdDev	Mean	Median	StdDev
Before (N=9500)		12.62	5.76	18.37	0.12	0.06	0.15	0.014	0.007	0.018
After (N=8214)		9.36	3.93	13.94	0.07	0.04	0.07	0.012	0.006	0.014
After – Before	–	–3.26**	–1.83**	–4.43**	–0.04**	–0.02**	–0.08**	–0.002**	–0.001**	–0.004**

*, ** denotes difference between metrics is significant at the 0.10 and 0.05 level, respectively. The means and medians for all metrics are significantly different from zero.

The sample comprises non-US firms that adopted IFRS between 1995 and 2006 (IFRS firms) and a sample of US firms matched to the IFRS firms on size and industry (US firms). The accounting system comparability metrics are the averages of the differences between fitted stock price and stock return for US firms resulting from applying US and IFRS pricing multiples and for IFRS firms resulting from applying US and IFRS pricing multiples. We construct our accounting system comparability metrics in six steps. First, we estimate the relations between stock price (stock return, subsequent year's cash flow) and earnings and equity book value (earnings and change in earnings, earnings) separately for US firms and IFRS firms. Second, for each set of firms, i.e., IFRS and US firms, we calculate within-sample fitted values for stock price (stock return, cash flow). Third, for each set of firms, we calculate fitted values for stock price (stock return, cash flow) using the multiples from the other set of firms. Fourth, for each set of firms, we calculate the absolute value of the difference between the fitted stock price (stock return, cash flow) obtained in the second and third steps. Fifth, for each IFRS and matched US firm–year pair, we average the differences in fitted stock price (stock return, cash flow) obtained in the fourth step. Sixth, we calculate our price, return, and cash flow comparability metrics as the mean, median and standard deviation (StdDev) of the average differences obtained in the fifth step appropriate for each comparability analysis we conduct.

Table 4

Comparability of IFRS and US GAAP accounting systems, for sample partitions after IFRS firms adopt IFRS.

	Price			Return			Cash Flow			
	Pred	Mean	Median	StdDev	Mean	Median	StdDev	Mean	Median	StdDev
Panel A: Voluntary and mandatory adoption										
Voluntary (N=1002)		19.73	8.39	23.12	0.10	0.05	0.11	0.020	0.009	0.028
Mandatory (N=7212)		7.91	4.49	11.27	0.07	0.04	0.08	0.018	0.007	0.013
Mandatory – Voluntary	?	–11.82**	–3.90**	–11.85**	–0.03**	–0.01**	–0.03**	–0.002**	–0.002**	–0.015**
Panel B: Common and code law legal origin										
Code (N=4459)		12.64	4.08	18.02	0.08	0.05	0.09	0.016	0.009	0.020
Common (N=3755)		5.77	4.00	6.30	0.07	0.05	0.09	0.011	0.007	0.012
Common – Code	–	–6.87**	–0.08	–11.72**	–0.01**	0.00	0.00	–0.005**	–0.002**	–0.008**
Panel C: High and low enforcement										
Low (N=3841)		10.59	3.52	15.71	0.08	0.05	0.15	0.015	0.008	0.017
High (N=4373)		5.89	4.34	6.16	0.07	0.04	0.09	0.011	0.007	0.015
High – Low enforcement	–	–4.70**	0.82	–9.55**	–0.01*	–0.02**	–0.06**	–0.004*	–0.001	–0.002

*, ** denotes difference is significant at the 0.10 and 0.05 level, respectively. All metrics are significantly different from zero.

The sample comprises non-US firms that adopted IFRS between 1995 and 2006 (IFRS firms) and US firms matched to the IFRS firms on size and industry (US firms). The accounting system comparability metrics are the average of the differences between fitted stock price and stock return for US firms resulting from applying US and IFRS pricing multiples and for IFRS firms resulting from applying US and IFRS pricing multiples. We construct our accounting system comparability metrics in six steps. First, we estimate the relations between stock price (stock return, subsequent year's cash flow) and earnings and equity book value (earnings and change in earnings, earnings) separately for US firms and IFRS firms. Second, for each set of IFRS and US firms, we calculate within-sample fitted values for stock price (stock return, cash flow). Third, for each set of firms, we calculate fitted values for stock price (stock return, cash flow) using the multiples from the other set of firms. Fourth, for each set of firms, we calculate the absolute value of the difference between the fitted stock price (stock return, cash flow) obtained in the second and third steps. Fifth, for each matched firm–year pair, we average the differences in fitted stock price (stock return, cash flow) obtained in the fourth step. Sixth, the price, return, and cash flow comparability metrics are the mean, median and standard deviation (StdDev) of the average differences obtained in the fifth step appropriate for each comparability analysis we conduct.

Voluntary/Mandatory Adoption denotes whether the firm adopts IFRS voluntarily or mandatorily. Common law firms are from Australia, Canada, Hong Kong, Ireland, Singapore, South Africa, and the United Kingdom. Code law firms are from Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Peru, Philippines, Portugal, Spain, Sweden, Switzerland, and Turkey. High enforcement firms are from Australia, Canada, France, Hong Kong, Israel, Peru, Philippines, Portugal, Singapore, Turkey, and the United Kingdom; low enforcement firms are from Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Netherlands, Norway, South Africa, Spain, Sweden, and Switzerland.

actual prices even after IFRS firms adopt IFRS. Similarly, the mean change in Return is -0.04 , which as a fraction of mean return for US firms, -0.04 , is 1.00 ($-0.04/-0.04$). Mean Return after IFRS firms adopt IFRS is 0.07 , which is 175% of the absolute value of the mean return of US firms. Lastly, the mean change in Cash Flow is -0.002 , which as a fraction of mean cash flow for US firms, 0.06 , is -0.03 ($-0.002/0.06$). Mean Cash Flow after IFRS firms adopt IFRS is 0.012 , which is 20% of the cash flow of US firms.

6.1.2. Comparability with US GAAP after IFRS adoption for sample partitions

Regarding accounting system comparability metrics for subsamples of firms after IFRS adoption, Table 4, panels A through C, reveals that 21 of the 27 comparability differences are significantly smaller (two marginally so) for firms that adopt IFRS mandatorily, for common law firms, and for firms in countries with high enforcement.²²

Panel A reveals that mean (median, standard deviation) differences in Price, Return, and Cash Flow between mandatory and voluntary IFRS adopters are -11.82 (-3.90 , -11.85), -0.03 (-0.01 , -0.03), and -0.002 (-0.002 , -0.015), all of which are significantly different from zero. These findings indicate that comparability with US firms is greater for firms that adopt IFRS mandatorily. This finding is consistent with investors' enhanced ability to understand the link between accounting amounts and share prices and more consistent application and enforcement resulting in greater comparability for mandatory adopters than voluntary adopters.

Panel B reveals that six of the nine differences in comparability metrics between common and code law firms are negative and significant. The exceptions are the median difference in Price and the median and standard deviation differences in Return, which are insignificant. The mean (median, standard deviation) differences in Price, Return, and Cash Flow for common and code law firms are -6.87 (-0.08 , -11.72), -0.01 (0.00 , 0.00), and -0.005 (-0.002 , -0.008). These findings are generally consistent with greater comparability with US firms for common law firms, and support the notion that comparability between IFRS- and US GAAP-based accounting amounts is affected by domestic institutions as well as accounting standards.

Panel C reveals that eight of the differences in comparability metrics between firms in high and low enforcement countries are negative, and four (two) are significantly (marginally significantly) so. The mean (median, standard deviation) differences in Price, Return, and Cash Flow are -4.70 (0.82 , -9.55), -0.01 (-0.02 , -0.06), and -0.004 (-0.001 , -0.002). These findings are consistent with greater comparability with US firms for IFRS firms in high enforcement countries, and, as with the findings in panel B, support the notion that comparability between IFRS- and US GAAP-based accounting amounts is affected by domestic institutions as well as accounting standards.

6.2. Value relevance comparability

Table 5 presents value relevance comparability metrics for US and IFRS firms based on Eqs. (1)–(3) when IFRS firms applied IFRS and when they applied non-US domestic standards. These metrics permit us to test for value relevance comparability and differences in comparability before and after IFRS firms adopt IFRS. Table 6, panels A through C, presents analogous metrics to test whether value relevance comparability with US firms differs for firms that adopt IFRS voluntarily and mandatorily, common and code law firms, and firms in high and low enforcement countries. When testing for differences in comparability over time and across sample partitions, we test for differences in the absolute values of comparability metrics, rather than for differences in signed values. This is because comparability relates to how close the metrics are to each other, not whether one metric is larger than another.²³

6.2.1. Comparability with US GAAP before and after IFRS adoption

The Table 5 findings support the prediction that value relevance comparability increased after firms adopt IFRS in that comparability increased significantly based on all three metrics, although only marginally so for Cash Flow. In particular, Table 5 indicates that the difference in value relevance decreased significantly from when IFRS firms applied non-US domestic standards to when they applied IFRS. For Price, Return, and Cash Flow, the difference in value relevance decreased by 0.07, 0.01, and 0.01.

The findings in Table 5 are consistent with our prediction that value relevance is higher for US firms than for IFRS firms before they adopt IFRS in that each of the three value relevance metrics is significantly higher for US firms (0.47 vs. 0.20 for Price, 0.09 vs. 0.07 for Return, and 0.44 vs. 0.20 for Cash Flow). However, the findings also indicate that after IFRS firms adopt IFRS value relevance is higher for US firms, significantly so for Price (0.53 vs. 0.34) and Cash Flow (0.51 vs. 0.28) but not for Return (0.10 vs. 0.09).

6.2.2. Comparability with US GAAP after IFRS adoption for sample partitions

Turning next to the value relevance comparability metrics for subsamples of firms after IFRS adoption, the findings in Table 6 are consistent with the findings in Table 4 in that comparability is generally significantly greater for firms that adopt IFRS mandatorily, common law firms, and firms in high enforcement countries.

Panel A reveals that all of the differences in differences in value relevance metrics between mandatory and voluntary adopters are negative, and all but that on Return are significantly so. The differences in differences for Price, Return, and Cash Flow are -0.14 , -0.01 , and -0.12 . Panel B reveals that two of the three comparability differences between common and code law firms are significantly negative, with only that for Return being insignificantly different from zero. The differences in differences for Price, Return, and Cash Flow are -0.07 , 0.01 , and -0.12 . Panel C reveals that two of the three comparability

²² Although subsamples based on these partitions are not independent, untabulated statistics reveal the percentage of concordant pairs generally is less than 20% of sample firms.

²³ For example, as Table 5 reveals, the difference in Price between IFRS and US firms before IFRS adoption is 0.27. After IFRS adoption, the difference is smaller, 0.20. Thus, IFRS-based accounting amounts are more comparable to US-based amounts after IFRS adoption. For the purpose of assessing comparability, it is irrelevant that US-based accounting amounts exhibit greater value relevance than IFRS-based amounts, either before or after IFRS adoption.

Table 5
Comparison of IFRS and US firms' value relevance before and after IFRS firms adopt IFRS.

	Prediction	Price	Return	Cash Flow
<i>Before IFRS adoption (N=9500 IFRS and US firms)</i>				
IFRS firms		0.20	0.07	0.20
US firms		0.47	0.09	0.44
IFRS firms – US firms	–	–0.27**	–0.02**	–0.24**
<i>After IFRS adoption (N=8214 IFRS and US firms)</i>				
IFRS firms		0.34	0.09	0.28
US firms		0.53	0.10	0.51
IFRS firms – US firms	–	–0.20**	–0.01	–0.23**
<i>After – Before IFRS adoption</i>				
Change in absolute difference	–	–0.07**	–0.01**	–0.01*

Price is based on the explanatory power from a regression of stock price, P , on net income per share, NI , and book value of equity per share, BVE . In particular, Price is the difference between the adjusted R^2 from Eq. (1) and the adjusted R^2 from the nested version of Eq. (1) that includes only the C_j and I_k :

$$P_{it} = \beta_0 + \beta_1 BVE_{it} + \beta_2 NI_{it} + \sum_j \beta_{3j} C_j + \sum_k \beta_{4k} I_k + \varepsilon_{it}. \quad (1)$$

Return is based on the adjusted R^2 from a regression of annual stock return, $RETURN$, on net income and change in net income, deflated by beginning of year price, NI_t/P_{t-1} and $\Delta NI_t/P_{t-1}$. In particular, Return is the difference between the adjusted R^2 from Eq. (2) and the adjusted R^2 from the nested version of Eq. (2) that includes only the C_j and I_k :

$$RETURN_{it} = \beta_0 + \beta_1 NI_{it}/P_{it-1} + \beta_2 \Delta NI_{it}/P_{it-1} + \beta_3 LOSS_{it} + \beta_4 LOSS_{it} \times NI_{it}/P_{it-1} + \beta_5 LOSS_{it} \times \Delta NI_{it}/P_{it-1} + \sum_j \beta_{6j} C_j + \sum_k \beta_{7k} I_k + \varepsilon_{it}. \quad (2)$$

We measure $RETURN$ as the cumulative percentage change in stock price beginning nine months before fiscal year end and ending three months after fiscal year end, adjusted for dividends and stock splits. NI/P is net income per share scaled by beginning of year stock price; $LOSS$ is an indicator variable that equals one if NI/P is negative, and zero otherwise; and Δ denotes annual change.

Cash Flow is based on the R^2 from the regression of cash flow on lagged net income. In particular, Cash Flow is the difference between the adjusted R^2 from Eq. (3) and the adjusted R^2 from the nested version of Eq. (3) that includes only the C_j and I_k :

$$CF_{it+1} = \beta_0 + \beta_1 NI_{it}/TA_{it-1} + \sum_j \beta_{2j} C_j + \sum_k \beta_{3k} I_k + \varepsilon_{it+1}, \quad (3)$$

where NI is net income, TA is total assets, and CF is net cash flow from operations scaled by lagged total assets.

To test for differences in R^2 , we estimate the equations 1000 times, randomly assigning firms to the relevant partitions and base significance tests on the frequency of observing an R^2 difference greater than or equal to the tabulated difference. The sample comprises non-US firms that adopted IFRS between 1995 and 2006 (IFRS firms) and a sample of US firms matched to the IFRS firms on size and industry (US firms).

differences between firms in high and low enforcement countries are significantly negative, with only that for Return being insignificantly different from zero. The differences in differences for Price, Return, and Cash Flow are -0.09 , -0.01 , and -0.07 .

The findings in Table 6 comparing differences in value relevance between IFRS and US firms indicate that the Table 5 findings for the combined post-adoption sample apply to all post-adoption sample partitions, except for common law firms. In particular, whereas value relevance is significantly higher for the combined sample based on Price and Cash Flow, there is no difference in value relevance based on Price and Return for common law firms. These findings indicate that IFRS-based accounting amounts generally are comparable to US GAAP-based accounting amounts based on value relevance for common law firms.²⁴ However, taken together, the findings in Table 6 indicate that significant differences in value relevance remain.

6.3. Accounting quality

Table 7 presents findings relating to tests of differences in dimensions of accounting quality to provide insight into differences in comparability documented in Tables 3–6. Panel A presents findings relating to accounting quality differences before and after IFRS firms adopt IFRS. Panels B through D present findings relating to accounting quality based on application of IFRS for the sample partitions. As with value relevance comparability, when testing for potential sources of differences in comparability over time and across sample partitions, we test for differences in the absolute values of accounting quality metrics, rather than for differences in signed values.

6.3.1. Accounting quality differences before and after IFRS firms adopt IFRS

The findings in panel A reveal that both before and after IFRS firms adopt IFRS, with one exception, each of the quality metrics is consistent with accounting amounts of US firms exhibiting higher quality than IFRS firms. For example, regarding earnings smoothing, the difference in mean $\text{Var}(\Delta NI^*)/\text{Var}(\Delta CF^*)$ for IFRS and US firms is -0.135 and -0.080 before and after firms adopt IFRS. The exception relates to Accrual Quality after firms adopt IFRS, for which the difference,

²⁴ Untabulated findings for Price based on share weighting also reveal that IFRS-based accounting amounts generally are comparable to US GAAP-based accounting amounts for mandatory adopters.

Table 6
Comparison of IFRS and US firms' value relevance for sample partitions after IFRS firms adopt IFRS.

	Prediction	Price	Return	Cash Flow
Panel A: Voluntary and mandatory adoption				
<i>Voluntary adoption (N=1002 IFRS and US firms)</i>				
IFRS firms		0.24	0.05	0.18
US firms		0.53	0.06	0.51
IFRS firms – US firms	–	–0.29**	–0.02	–0.34**
<i>Mandatory adoption (N=7212 IFRS and US firms)</i>				
IFRS firms		0.39	0.09	0.29
US firms		0.54	0.10	0.51
IFRS firms – US firms	–	–0.15**	–0.01	–0.22**
<i>Mandatory – Voluntary</i>				
Difference in absolute difference	?	–0.14**	–0.01	–0.12**
Panel B: Code and common law legal origin				
<i>Code (N=4459 IFRS and US firms)</i>				
IFRS firms		0.37	0.08	0.23
US firms		0.50	0.08	0.52
IFRS firms – US firms	–	–0.13**	0.00	–0.30**
<i>Common (N=3755 IFRS and US firms)</i>				
IFRS firms		0.50	0.10	0.34
US firms		0.54	0.08	0.51
IFRS firms – US firms	–	–0.05	0.01	–0.17**
<i>Common – Code</i>				
Difference in absolute difference	–	–0.07**	0.01	–0.12**
Panel C: High and low enforcement				
<i>Low enforcement (N=3841 IFRS and US firms)</i>				
IFRS firms		0.37	0.08	0.25
US firms		0.54	0.09	0.53
IFRS firms – US firms	–	–0.17**	–0.01	–0.28**
<i>High enforcement (N=4373 IFRS and US firms)</i>				
IFRS firms		0.40	0.09	0.28
US firms		0.48	0.09	0.49
IFRS firms – US firms	–	–0.08*	0.00	–0.21**
<i>High – Low enforcement</i>				
Difference in absolute difference	–	–0.09**	–0.01	–0.07**

*, ** denotes difference or change in difference is significant at the 0.10 and 0.05 level, respectively.

Price is based on the explanatory power from a regression of stock price, P , on net income per share, NI , and book value of equity per share, BVE . In particular, Price is the difference between the adjusted R^2 from Eq. (1) and the adjusted R^2 from the nested version of Eq. (1) that includes only the C_j and I_k :

$$P_{it} = \beta_0 + \beta_1 BVE_{it} + \beta_2 NI_{it} + \sum_j \beta_{3j} C_j + \sum_k \beta_{4k} I_k + \varepsilon_{it}. \quad (1)$$

Return is based on the adjusted R^2 from a regression of annual stock return, $RETURN$, on net income and change in net income, deflated by beginning of year price, NI_t/P_{t-1} and $\Delta NI_t/P_{t-1}$. In particular, Return is the difference between the adjusted R^2 from Eq. (2) and the adjusted R^2 from the nested version of Eq. (2) that includes only the C_j and I_k :

$$RETURN_{it} = \beta_0 + \beta_1 NI_{it}/P_{it-1} + \beta_2 \Delta NI_{it}/P_{it-1} + \beta_3 LOSS_{it} + \beta_4 \Delta LOSS_{it} \times NI_{it}/P_{it-1} + \beta_5 \Delta LOSS_{it} \times \Delta NI_{it}/P_{it-1} + \sum_j \beta_{6j} C_j + \sum_k \beta_{7k} I_k + \varepsilon_{it}. \quad (2)$$

We measure $RETURN$ as the cumulative percentage change in stock price beginning nine months before fiscal year end and ending three months after fiscal year end, adjusted for dividends and stock splits. NI/P is net income per share scaled by beginning of year stock price; $LOSS$ is an indicator variable that equals one if NI/P is negative, and zero otherwise; and Δ denotes annual change.

Cash Flow is based on the R^2 from the regression of cash flow on lagged net income. In particular, Cash Flow is the difference between the adjusted R^2 from Eq. (3) and the adjusted R^2 from the nested version of Eq. (3) that includes only the C_j and I_k :

$$CF_{it+1} = \beta_0 + \beta_1 NI_{it}/TA_{it-1} + \sum_j \beta_{2j} C_j + \sum_k \beta_{3k} I_k + \varepsilon_{it+1}, \quad (3)$$

where NI is net income, TA is total assets, and CF is net cash flow from operations scaled by lagged total assets.

To test for differences in R^2 , we estimate the equations 1000 times, randomly assigning firms to the relevant partitions and base significance tests on the frequency of observing an R^2 difference greater than or equal to the tabulated difference. The sample comprises non-US firms that adopted IFRS between 1995 and 2006 (IFRS firms) and a sample of US firms matched to the IFRS firms on size and industry (US firms).

Voluntary/Mandatory Adoption denotes whether the firm adopts IFRS voluntarily or mandatorily. Common law firms are from Australia, Canada, Hong Kong, Ireland, Singapore, South Africa, and the United Kingdom. Code law firms are from Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Peru, Philippines, Portugal, Spain, Sweden, Switzerland, and Turkey. High enforcement firms are from Australia, Canada, France, Hong Kong, Israel, Peru, Philippines, Portugal, Singapore, Turkey, and the United Kingdom; low enforcement firms are from Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Netherlands, Norway, South Africa, Spain, Sweden, and Switzerland.

Table 7
Comparison of IFRS and US firms' dimensions of accounting quality.

	Smoothing		Accrual Quality	Timeliness	
	Var(ΔNI^*)/Var(ΔCF^*)	Cor(ACC^* , CF^*)		Good News	Bad News
Panel A: Before and after IFRS firms adopt IFRS					
<i>Before</i> (N=9500 IFRS and US firms)					
IFRS firms	0.761	-0.450	0.059	0.001	0.079
US firms	0.896	-0.341	0.073	0.018	0.131
IFRS firms - US firms	-0.135**	-0.109**	-0.014**	-0.017**	-0.053**
<i>After</i> (N=8214 IFRS and US firms)					
IFRS firms	0.979	-0.522	0.059	0.006	0.045
US firms	1.059	-0.428	0.057	0.015	0.104
IFRS firms - US firms	-0.080**	-0.094**	0.002	-0.010**	-0.059**
<i>After - Before adoption</i> Change in absolute difference	-0.055**	-0.014*	-0.012**	-0.007**	0.006
Panel B: Voluntary and mandatory adoption					
<i>Voluntary</i> (N=1002 IFRS and US firms)					
IFRS firms	0.812	-0.351	0.048	0.001	0.038
US firms	0.973	-0.321	0.056	0.036	0.112
IFRS firms - US firms	-0.156**	-0.030	-0.008**	-0.035**	-0.074**
<i>Mandatory</i> (N=7212 IFRS and US firms)					
IFRS firms	0.100	-0.250	0.061	0.006	0.047
US firms	1.074	-0.251	0.057	0.011	0.098
IFRS firms - US firms	-0.076**	-0.001	0.003**	-0.005**	-0.051**
<i>Mandatory - Voluntary</i> Difference in absolute difference	-0.081**	-0.029	-0.004**	-0.030**	-0.023
Panel C: Common law and code law legal origin					
<i>Code</i> (N=4459 IFRS and US firms)					
IFRS firms	0.858	-0.330	0.054	0.011	0.029
US firms	1.026	-0.288	0.057	0.022	0.091
IFRS firms - US firms	-0.169**	-0.043**	-0.003**	-0.011**	-0.061**
<i>Common</i> (N=3755 IFRS and US firms)					
IFRS firms	1.113	-0.184	0.067	0.000	0.066
US firms	1.026	-0.288	0.058	0.022	0.083
IFRS firms - US firms	0.086**	0.105**	0.010**	-0.022**	-0.017
<i>Common - Code</i> Difference in absolute difference	-0.082**	0.061**	0.007**	0.011**	-0.045**
Panel D: High and low enforcement					
<i>Low</i> (N=3841 IFRS and US firms)					
IFRS firms	0.900	-0.317	0.003	0.008	0.027
US firms	1.015	-0.269	0.003	0.012	0.094
IFRS firms - US firms	-0.115**	-0.048**	0.000	-0.004*	-0.067**
<i>High</i> (N=4373 IFRS and US firms)					
IFRS firms	1.034	-0.221	0.004	0.001	0.057
US firms	1.094	-0.261	0.004	0.024	0.094
IFRS firms - US firms	-0.060**	-0.040*	0.000	-0.023**	-0.037**
<i>High - Low enforcement</i> Change in absolute difference	-0.055**	-0.008*	0.000	0.019**	-0.030**

*, ** denotes difference or change in difference is significant at the 0.10 and 0.05 level, respectively.

Var(ΔNI^*)/Var(ΔCF^*) is the ratio of the variance of the change in net income to the variance of the change in cash flow, where ΔNI^* (ΔCF^*) is the residual from a regression of $\Delta NI_{it}/TA_{t-1}$ (ΔCF_{it}) on industry and country fixed effects. ΔNI is change in net income per share, ΔCF is change in cash from operations deflated by lagged total assets, and TA is total assets.

Cor(ACC^* , CF^*) is the correlation between accruals and cash flow, where ACC^* (CF^*) is the residual from a regression of accruals scaled by lagged total assets, ACC_{it}/TA_{t-1} (CF_{it}), on industry and country fixed effects.

Accrual Quality is the standard deviation of residuals from the regression of ACC^* on prior year, current year, and subsequent year cash flow, each deflated by its lagged total assets,

$$ACC_{it}^* = \beta_0 + \beta_1 CF_{it-1} + \beta_2 CF_{it} + \beta_3 CF_{it+1} + \varepsilon_{it}$$

Good News and Bad News are the R^2 's from the regression of the ratio of net income to lagged stock price, NI_{it}/P_{t-1} , on the residual from a regression of stock return on country and industry fixed effects, $RETURN_{it}^*$, $NI_{it}/P_{t-1} = \beta_0 + \beta_1 RETURN_{it}^* + \varepsilon_{it}$. We estimate the equation separately for positive and negative return subsamples. Good News (Bad News) is the R^2 relating to the positive (negative) subsample.

Voluntary/Mandatory Adoption denotes whether the firm adopts IFRS voluntarily or mandatorily. Common law firms are from Australia, Canada, Hong Kong, Ireland, Singapore, South Africa, and the United Kingdom. Code law firms are from Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Peru, Philippines, Portugal, Spain, Sweden, Switzerland, and Turkey. High enforcement firms are from Australia, Canada, France, Hong Kong, Israel, Peru, Philippines, Portugal, Singapore, Turkey, and the United Kingdom; low enforcement firms are from Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Netherlands, Norway, South Africa, Spain, Sweden, and Switzerland.

0.002, is insignificant. The insignificant difference is attributable to a decrease in accrual quality for US firms; accrual quality for IFRS firms did not change.

More importantly, the findings in panel A are consistent with all three dimensions of accounting quality being sources of the increase in comparability documented in Tables 3 and 5. In particular, changes in differences for four of the five metrics indicate that accounting quality differences significantly diminished, one marginally so, after firms adopt IFRS. The change in differences for $\text{Var}(\Delta NI^*)/\text{Var}(\Delta CF^*)$, $\text{Cor}(ACC^*, CF^*)$, Accrual Quality, and Good News are -0.055 , -0.014 , -0.012 , and -0.007 . Only the change in difference for Bad News, 0.006, is not significant.²⁵

6.3.2. Accounting quality based on application of IFRS for sample partitions

The findings in panels B through D generally reveal that for all post-adoption sample partitions, with the exception of common law firms, accounting amounts of US firms exhibit higher quality than IFRS firms. That is, for voluntary and mandatory adopters, code law firms, and firms in high and low enforcement countries, accounting quality is generally higher for US firms based on each of the five quality metrics, with 20 of the 25 differences being significantly so (two marginally so). Relating to common law firms, panel C reveals that accounting quality is significantly higher for such firms than for US firms based on the two earnings smoothing measures, $\text{Var}(\Delta NI^*)/\text{Var}(\Delta CF^*)$ and $\text{Cor}(ACC^*, CF^*)$, and Accrual Quality; accounting quality is higher for US firms based on the two timeliness measures, Good News and Bad News, significantly so for Good News.

More importantly, the findings in panels B through D are generally consistent with all three dimensions of accounting quality being sources of the increase in comparability documented in Tables 4 and 6. The findings reveal accounting quality differences between US and IFRS firms are smaller for mandatory adopters and firms in high enforcement countries based on each of the five quality metrics, as indicated by 8 of the 10 differences being negative, 6 of which are significant (one marginally so). Only the mean differences in Good News for firms in high and low enforcement countries are significantly positive; the mean difference in Accrual Quality for firms in high and low enforcement countries is zero.

Panel C reveals that whereas differences in accounting quality between US and IFRS firms are significantly smaller for common law firms based on $\text{Var}(\Delta NI^*)/\text{Var}(\Delta CF^*)$ and Bad News, differences are smaller for code law firms based on $\text{Cor}(ACC^*, CF^*)$, Accrual Quality, and Good News. These findings suggest $\text{Var}(\Delta NI^*)/\text{Var}(\Delta CF^*)$ and Bad News dominate $\text{Cor}(ACC^*, CF^*)$, Accrual Quality, and Good News as potential sources of the greater comparability for common law firms documented in panels B of Tables 4 and 6.

6.4. Additional analyses

6.4.1. Regression coefficients

The findings in Tables 3–6 indicate that accounting system and value relevance comparability with US firms increased after IFRS firms adopt IFRS, and comparability generally is greater for firms that adopt IFRS mandatorily, common law firms, and firms in countries with high enforcement. Because both sets of comparability metrics are based on the same regressions of stock price, stock return, and cash flow on various combinations of equity book value and net income, Tables 3–6 findings likely manifest from smaller differences in regression coefficients. In this section, we test for differences in regression coefficients for our sample partitions to provide insight into whether differences in coefficients for equity book value, net income, or change in net income are sources of the differences in comparability we document.²⁶

Table 8, panel A, reveals that four of the five coefficient differences between IFRS and US firms are smaller after firms adopt IFRS, two of which are significant and one marginally significant. However, the net income coefficient difference in the return regression is significantly larger. Relating to the post-adoption partitions, panels B, C, and D reveal that four, three, and two of the five coefficient differences between IFRS and US firms are either significantly or marginally smaller for firms that adopt IFRS mandatorily, common law firms, and firms in countries with high enforcement. Of the three differences that are significantly or marginally significantly positive, all relate to the return regression: two relate to the net income coefficient (voluntary/mandatory and code/common partitions) and one relates to the change in net income coefficient (high/low enforcement). The mixed findings for the return coefficients are consistent with the lack of significance for differences in comparability based on Return in Table 6. However, the net income coefficient difference for the cash flow regression in panel D is not significantly different for the high and low enforcement partitions, which is not consistent with finding a significant difference in comparability based on Cash Flow in Table 6. Thus, with this one exception, Table 8 findings reveal which decreases in coefficient differences for equity book value, net income, and change in net income are sources of the differences in comparability we document in Tables 3–6.

6.4.2. Potential comparability differences between early and later post-adoption years

Convergence between IFRS and US GAAP has increased over time (FASB and IASB, 2008), and the use of IFRS has become more widespread thereby increasing the likelihood of greater investor understanding and more consistent application and

²⁵ Our inferences regarding the links between accounting quality and comparability are based on a parsimonious set of accounting quality metrics used in prior research. Inferences could differ if we used other metrics.

²⁶ For the sake of parsimony, we do not tabulate findings from tests relating to the coefficients on the variables interacted with the indicator variable for negative net income. Untabulated findings reveal no pattern in the difference in differences.

Table 8

Comparability of IFRS and US GAAP accounting system and value relevance coefficients.

Panel A: Before IFRS adoption (N=9500) and after IFRS adoption (N=8214)						
Regression	Variable	Before IFRS adoption		After IFRS adoption		Δ Difference After – Before
		IFRS firms	US firms	IFRS firms	US firms	
Price	NI	1.86	5.34	3.58	6.03	–1.03**
	BVE	0.50	0.93	0.54	0.89	–0.08
Return	NI	0.29	0.37	0.78	0.34	0.36*
	Δ NI	0.50	1.79	0.48	1.55	–0.22**
Cash flow	NI	0.45	0.60	0.58	0.71	–0.02*

Panel B: Voluntary adoption (N=1002) and mandatory adoption (N=7212)						
Regression	Variable	Voluntary		Mandatory		Δ Difference Mandatory – Voluntary
		IFRS firms	US firms	IFRS firms	US firms	
Price	NI	2.97	5.83	3.78	6.04	–0.60**
	BVE	0.48	0.93	0.55	0.87	–0.13*
Return	NI	0.38	0.42	0.90	0.31	0.55**
	Δ NI	0.45	1.68	0.49	1.50	–0.22**
Cash flow	NI	0.48	0.70	0.58	0.72	–0.08*

Panel C: Code law (N=4459) and common law (N=3755)						
Regression	Variable	Code law		Common law		Δ Difference Common – Code
		IFRS firms	US firms	IFRS firms	US firms	
Price	NI	3.39	6.11	4.34	5.80	–1.26**
	BVE	0.50	0.90	0.33	0.90	0.17
Return	NI	0.64	0.19	1.02	0.48	0.09**
	Δ NI	0.58	1.79	0.38	1.14	–0.45**
Cash flow	NI	0.51	0.71	0.60	0.71	–0.09*

Panel D: Low (N=3841) and high (N=4373) enforcement						
Regression	Variable	Low enforcement		High enforcement		Δ Difference High – Low enforcement
		IFRS firms	US firms	IFRS firms	US firms	
Price	NI	1.56	4.99	3.60	6.09	–0.94**
	BVE	0.69	0.99	0.52	0.88	0.06
Return	NI	0.48	0.01	0.78	0.39	–0.09*
	Δ NI	0.80	1.84	0.46	1.63	0.13*
Cash flow	NI	0.50	0.67	0.55	0.72	0.00

*, ** denotes difference or change in difference is significant at the 0.10 and 0.05 level, respectively.

Price coefficients are based on the regression of stock price, P , on net income per share, NI , and book value of equity per share, BVE .

$$P_{it} = \beta_0 + \beta_1 BVE_{it} + \beta_2 NI_{it} + \sum_j \beta_{3j} C_j + \sum_k \beta_{4k} I_k + \varepsilon_{it}. \quad (1)$$

Return coefficients are based on the regression of annual stock return, $RETURN$, on net income and change in net income, deflated by beginning of year price, NI_t/P_{t-1} and $\Delta NI_t/P_{t-1}$.

$$RETURN_{it} = \beta_0 + \beta_1 NI_{it}/P_{it-1} + \beta_2 \Delta NI_{it}/P_{it-1} + \beta_3 LOSS_{it} + \beta_4 LOSS_{it} \times NI_{it}/P_{it-1} + \beta_5 LOSS_{it} \times \Delta NI_{it}/P_{it-1} + \sum_j \beta_{6j} C_j + \sum_k \beta_{7k} I_k + \varepsilon_{it}. \quad (2)$$

We measure $RETURN$ as the cumulative percentage change in stock price beginning nine months before fiscal year end and ending three months after fiscal year end, adjusted for dividends and stock splits. NI/P is net income per share scaled by beginning of year stock price. We also include but do not tabulate an indicator variable, $LOSS$, that equals one if NI/P is negative, and zero otherwise and interact $LOSS$ with NI_t/P_{t-1} and $\Delta NI_t/P_{t-1}$.Cash flow coefficients are based on the regression of cash flow on lagged net income, NI .

$$CF_{it+1} = \beta_0 + \beta_1 NI_{it}/TA_{it-1} + \sum_j \beta_{2j} C_j + \sum_k \beta_{3k} I_k + \varepsilon_{it+1}. \quad (3)$$

Voluntary/Mandatory Adoption denotes whether the firm adopts IFRS voluntarily or mandatorily. Common law firms are from Australia, Canada, Hong Kong, Ireland, Singapore, South Africa, and the United Kingdom. Code law firms are from Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Peru, Philippines, Portugal, Spain, Sweden, Switzerland, and Turkey. High enforcement firms are from Australia, Canada, France, Hong Kong, Israel, Peru, Philippines, Portugal, Singapore, Turkey, and the United Kingdom; low enforcement firms are from Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Netherlands, Norway, South Africa, Spain, Sweden, and Switzerland.

Table 9

Comparability of IFRS and US GAAP observations from 2005 and 2006 and from 2007 to 2009.

Panel A: Accounting system comparability										
	Pred	Price			Return			Cash Flow		
		Mean	Median	StdDev	Mean	Median	StdDev	Mean	Median	StdDev
2005 and 2006 (N=4594)		6.69	4.48	15.71	0.10	0.06	0.15	0.012	0.007	0.017
2007 to 2009 (N=2919)		3.82	2.45	6.16	0.04	0.02	0.09	0.007	0.005	0.015
2007 to 2009 – 2005 and 2006	–	–2.87**	–2.03	–9.55**	–0.06**	–0.04**	–0.06**	–0.005**	–0.002**	–0.002
Panel B: Value relevance comparability										
	Prediction	Price	Return	Cash Flow						
<i>2005 and 2006 (N=4594 IFRS and US firms)</i>										
IFRS firms		0.35	0.09	0.33						
US firms		0.55	0.11	0.54						
IFRS firms – US firms	–	–0.20**	–0.02	–0.21**						
<i>2007 to 2009 (N=2919 IFRS and US Firms)</i>										
IFRS firms		0.36	0.04	0.15						
US firms		0.52	0.08	0.31						
IFRS firms – US firms	–	–0.16**	–0.04*	–0.16**						
<i>2007 to 2009 – 2005 and 2006</i>										
Difference in absolute difference	–	–0.04**	0.02*	–0.15**						
Panel C: Dimensions of accounting quality										
	Smoothing		Accrual Quality	Timeliness						
	Var(ΔNI^*)/Var(ΔCF^*)	Cor(ACC^* , CF^*)		Good News	Bad News					
<i>2005 and 2006 (N=4594 IFRS and US firms)</i>										
IFRS firms	0.888	–0.203	0.004	0.004	0.069					
US firms	0.975	–0.304	0.003	0.019	0.172					
IFRS firms – US firms	–0.087**	–0.101**	0.001	–0.015*	–0.103**					
<i>2007 to 2009 (N=2919 IFRS and US firms)</i>										
IFRS firms	1.151	–0.336	0.003	0.001	0.087					
US firms	1.181	–0.201	0.004	0.000	0.100					
IFRS firms – US firms	–0.030**	–0.135**	–0.001	0.001	–0.013**					
<i>2007 to 2009 – 2005 and 2006</i>										
Difference in absolute difference	–0.057**	0.034*	0.000	–0.014**	–0.090**					

*, ** denotes difference or change in difference is significant at the 0.10 and 0.05 level, respectively. The sample comprises non-US firms that adopted IFRS between 1995 and 2006 (IFRS firms) and a sample of US firms matched to the IFRS firms on size and industry (US firms). The accounting system comparability metrics are the averages of the differences between fitted stock price and stock return for US firms resulting from applying US and IFRS pricing multiples and for IFRS firms resulting from applying US and IFRS pricing multiples. We construct our accounting system comparability metrics in six steps. First, we estimate the relations between stock price (stock return, subsequent year's cash flow) and earnings and equity book value (earnings and change in earnings, earnings) separately for US firms and IFRS firms. Second, for each set of firms, i.e., IFRS and US firms, we calculate within-sample fitted values for stock price (stock return, cash flow). Third, for each set of firms, we calculate fitted values for stock price (stock return, cash flow) using the multiples from the other set of firms. Fourth, for each set of firms, we calculate the absolute value of the difference between the fitted stock price (stock return, cash flow) obtained in the second and third steps. Fifth, for each IFRS and matched US firm–year pair, we average the differences in fitted stock price (stock return, cash flow) obtained in the fourth step. Sixth, we calculate our price, return, and cash flow comparability metrics as the mean, median and standard deviation (StdDev) of the average differences obtained in the fifth step appropriate for each comparability analysis we conduct.

Price is based on the explanatory power from a regression of stock price, P , on net income per share, NI , and book value of equity per share, BVE . In particular, Price is the difference between the adjusted R^2 from Eq. (1) and the adjusted R^2 from the nested version of Eq. (1) that includes only the C_j and I_k :

$$P_{it} = \beta_0 + \beta_1 BVE_{it} + \beta_2 NI_{it} + \sum_j \beta_{3j} C_j + \sum_k \beta_{4k} I_k + \varepsilon_{it}. \quad (1)$$

Return is based on the adjusted R^2 from a regression of annual stock return, $RETURN$, on net income and change in net income, deflated by beginning of year price, NI_t/P_{t-1} and $\Delta NI_t/P_{t-1}$. In particular, Return is the difference between the adjusted R^2 from Eq. (2) and the adjusted R^2 from the nested version of Eq. (2) that includes only the C_j and I_k :

$$RETURN_{it} = \beta_0 + \beta_1 NI_{it}/P_{it-1} + \beta_2 \Delta NI_{it}/P_{it-1} + \beta_3 LOSS_{it} + \beta_4 LOSS_{it} \times NI_{it}/P_{it-1} + \beta_5 LOSS_{it} \times \Delta NI_{it}/P_{it-1} + \sum_j \beta_{6j} C_j + \sum_k \beta_{7k} I_k + \varepsilon_{it}. \quad (2)$$

We measure $RETURN$ as the cumulative percentage change in stock price beginning nine months before fiscal year end and ending three months after fiscal year end, adjusted for dividends and stock splits. NI/P is net income per share scaled by beginning of year stock price; $LOSS$ is an indicator variable that equals one if NI/P is negative, and zero otherwise; and Δ denotes annual change.

Cash Flow is based on the R^2 from the regression of cash flow on lagged net income. In particular, Cash Flow is the difference between the adjusted R^2 from Eq. (3) and the adjusted R^2 from the nested version of Eq. (3) that includes only the C_j and I_k :

$$CF_{it+1} = \beta_0 + \beta_1 NI_{it}/TA_{it-1} + \sum_j \beta_{2j} C_j + \sum_k \beta_{3k} I_k + \varepsilon_{it+1}. \quad (3)$$

where NI is net income, TA is total assets, and CF is net cash flow from operations scaled by lagged total assets.

To test for differences in R^2 , we estimate the equations 1000 times, randomly assigning firms to the relevant partitions and base significance tests on the frequency of observing an R^2 difference greater than or equal to the tabulated difference. The sample comprises non-US firms that adopted IFRS between 1995 and 2006 (IFRS firms) and a sample of US firms matched to the IFRS firms on size and industry (US firms).

$\text{Var}(\Delta NI^*)/\text{Var}(\Delta CF^*)$ is the ratio of the variance of the change in net income to the variance of the change in cash flow, where ΔNI^* (ΔCF^*) is the residual from a regression of $\Delta NI_t/TA_{t-1}$ (ΔCF_t) on industry and country fixed effects. ΔNI is change in net income per share, ΔCF is change in cash from operations deflated by lagged total assets, and TA is total assets.

$\text{Cor}(ACC^*, CF^*)$ is the correlation between accruals and cash flow, where ACC^* (CF^*) is the residual from a regression of accruals scaled by lagged total assets, ACC_t/TA_{t-1} (CF_t), on industry and country fixed effects.

Accrual Quality is the standard deviation of residuals from the regression of ACC^* on prior year, current year, and subsequent year cash flow, each deflated by its lagged total assets,

$$ACC_{it}^* = \beta_0 + \beta_1 CF_{it-1} + \beta_2 CF_{it} + \beta_3 CF_{it+1} + \varepsilon_{it}$$

Good News and Bad News are the R^2 s from the regression of the ratio of net income to lagged stock price, NI_t/P_{t-1} , on the residual from a regression of stock return on country and industry fixed effects, $RETURN_t^*$, $NI_t/P_{t-1} = \beta_0 + \beta_1 RETURN_t^* + \varepsilon_{it}$. We estimate the equation separately for positive and negative return subsamples. Good News (Bad News) is the R^2 relating to the positive (negative) subsample.

enforcement. Although the findings in Tables 3 and 5 indicate that comparability between IFRS and US firms' accounting amounts increased after adoption, this inference is based on combining all post-adoption sample years. To examine whether the increased convergence and more widespread use of IFRS are associated with increases in comparability, we repeat our analyses using observations from 2005 to 2006 and from 2007 through 2009.

The findings in Table 9, panel A, reveal that accounting system comparability is greater for the 2007–2009 sample partition, with all nine differences being smaller for this period and seven significantly so. The findings in panel B reveal that value relevance comparability is greater for the 2007–2009 sample partition based on Price and Cash Flow, with both differences being significantly smaller for this period, but not based on Return, with the difference being marginally significantly larger. The findings also reveal that value relevance differences between IFRS and US firms remain in the 2007–2009 period based on all three metrics. The findings in panel C relating to accounting quality differences reveal that the ratio of the variances of change in net income and change in cash flow, Good News, and Bad News are potential sources for the increase in comparability in the 2007–2009 period.²⁷ These findings are consistent with efforts to converge accounting standards, the increasing mandatory use of IFRS throughout the world, the development of international auditing standards, and efforts to increase coordination of international securities market regulators having increased comparability of accounting amounts.

6.4.3. Potential effects of globalization

Although the findings in Tables 3 and 5 indicate that accounting system and value relevance comparability with US firms increased after IFRS firms adopt IFRS, it is possible that the increase is attributable to effects of increased globalization, such as cross-border investments. To address this possibility, we conduct the same comparability tests for firms in two non-US countries, India and Japan, that are major economies and therefore subject to the effects of globalization, but did not permit firms to apply IFRS during our sample years. We obtain sample observations for Indian and Japanese firms as follows. We assign to each sample US firm an Indian or Japanese firm in the same industry matched on size using the same matching procedure we use to match IFRS firms and US firms, and using the adoption date of the IFRS firm to which the US firm is assigned as the pseudo-adoption date. Table 10, panels A and B, presents the resulting accounting system and value relevance comparability metrics. Panel A reveals that none of the Price, Return, or Cash Flow differences significantly decreases after IFRS firms adopt IFRS, except for the standard deviation for Return, which decreases marginally significantly. Panel B reveals no significant differences in value relevance comparability. Additional findings reveal that none of the value relevance metrics changes significantly for Indian and Japanese firms. Taken together, the Table 10 findings do not support globalization as an explanation for our primary findings of the increase in comparability after IFRS firms adopt IFRS.

6.4.4. Potential industry comparability differences

To address the possibility that comparability differences are concentrated in firms in particular industries, we repeat the comparability analyses for firms in the three industries with the largest number of observations, Manufacturing, Services, and Finance, Insurance, and Real Estate, but do not tabulate the findings. Regarding comparability differences before and after IFRS firms adopt IFRS, the findings generally reveal significant increases in accounting system comparability for firms in Manufacturing and Services, but not Finance, Insurance, and Real Estate. The findings also reveal significant increases in value relevance comparability for all three industry groups, except for a significant decrease for Price for Finance, Insurance, and Real Estate firms and an insignificant change for Return for Manufacturing firms.

Regarding comparability differences for the post-adoption sample partitions, findings generally result in inferences for all three industry groups similar to those for the full sample. Notable exceptions regarding accounting system comparability relate to Finance, Insurance, and Real Estate firms, for which there are generally insignificant differences

²⁷ We also compared comparability metrics for mandatory adopters for 2005–2006 and 2007–2009 to assess the extent to which our inferences from the tests in this section are affected by the influence of voluntary adopters. Untabulated findings reveal that accounting system comparability increased significantly after 2006 for all metrics, and value relevance comparability increased significantly for Cash Flow and marginally significantly for Price, but marginally significantly decreased for Return.

Table 10
Comparison of benchmark and US firms before and after IFRS firms adopt IFRS.

Panel A: Accounting system comparability										
	Pred	Price			Return			Cash Flow		
		Mean	Median	StdDev	Mean	Median	StdDev	Mean	Median	StdDev
Before (N=9500)		4.51	3.60	3.65	0.15	0.06	0.78	0.011	0.006	0.016
After (N=8214)		5.33	4.73	3.91	0.11	0.04	0.38	0.009	0.005	0.011
After – Before	–	0.82	1.13	0.26	–0.04	–0.02	–0.40*	–0.002	–0.001	–0.005

Panel B: Value relevance comparability				
	Pred	Price	Return	Cash Flow
<i>Pre (N=4594 Benchmark and US firms)</i>				
Benchmark firms		0.42	0.02	0.10
US firms		0.44	0.09	0.43
Benchmark firms – US firms	–	–0.02*	–0.07**	–0.33**
<i>Post (N=2919 Benchmark and US firms)</i>				
Benchmark firms		0.51	0.01	0.06
US firms		0.53	0.08	0.48
Benchmark firms – US firms	–	–0.02*	–0.07**	–0.42**
<i>Post – Pre difference in absolute differences</i>				
Change in absolute difference	?	0.00	0.00	–0.09
Change in absolute benchmark	–	0.09	–0.01	–0.04

*, ** denotes difference or change in difference is significant at the 0.10 and 0.05 level, respectively. The benchmark sample comprises firms from India and Japan. We construct the benchmark sample by assigning to each sample US firm an Indian or Japanese firm in the same industry matched on size using the same matching procedure we use to match IFRS firms and US firms, using the adoption date of the IFRS firm to which the US firm is assigned as the pseudo-adoption date. The accounting system comparability metrics are the averages of the differences between fitted stock price and stock return for US firms resulting from applying US and benchmark pricing multiples and for benchmark firms resulting from applying US and benchmark pricing multiples. We construct our accounting system comparability metrics in six steps. First, we estimate the relations between stock price (stock return, subsequent year's cash flow) and earnings and equity book value (earnings and change in earnings, earnings) separately for US firms and benchmark firms. Second, for each set of firms, i.e., benchmark and US firms, we calculate within-sample fitted values for stock price (stock return, cash flow). Third, for each set of firms, we calculate fitted values for stock price (stock return, cash flow) using the multiples from the other set of firms. Fourth, for each set of firms, we calculate the absolute value of the difference between the fitted stock price (stock return, cash flow) obtained in the second and third steps. Fifth, for each benchmark and matched US firm–year pair, we average the differences in fitted stock price (stock return, cash flow) obtained in the fourth step. Sixth, we calculate our price, return, and cash flow comparability metrics as the mean, median and standard deviation (StdDev) of the average differences obtained in the fifth step appropriate for each comparability analysis we conduct. Price is based on the explanatory power from a regression of stock price, P , on net income per share, NI , and book value of equity per share, BVE . In particular, Price is the difference between the adjusted R^2 from Eq. (1) and the adjusted R^2 from the nested version of Eq. (1) that includes only the C_j and I_k :

$$P_{it} = \beta_0 + \beta_1 BVE_{it} + \beta_2 NI_{it} + \sum_j \beta_{3j} C_j + \sum_k \beta_{4k} I_k + \varepsilon_{it}. \tag{1}$$

Return is based on the adjusted R^2 from a regression of annual stock return, $RETURN$, on net income and change in net income, deflated by beginning of year price, NI_t/P_{t-1} and $\Delta NI_t/P_{t-1}$. In particular, Return is the difference between the adjusted R^2 from Eq. (2) and the adjusted R^2 from the nested version of Eq. (2) that includes only the C_j and I_k :

$$RETURN_{it} = \beta_0 + \beta_1 NI_{it}/P_{it-1} + \beta_2 \Delta NI_{it}/P_{it-1} + \beta_3 LOSS_{it} + \beta_4 LOSS_{it} \times NI_{it}/P_{it-1} + \beta_5 LOSS_{it} \times \Delta NI_{it}/P_{it-1} + \sum_j \beta_{6j} C_j + \sum_k \beta_{7k} I_k + \varepsilon_{it}. \tag{2}$$

We measure $RETURN$ as the cumulative percentage change in stock price beginning nine months before fiscal year end and ending three months after fiscal year end, adjusted for dividends and stock splits. NI/P is net income per share scaled by beginning of year stock price; $LOSS$ is an indicator variable that equals one if NI/P is negative, and zero otherwise; and Δ denotes annual change. Cash Flow is based on the R^2 from the regression of cash flow on lagged net income. In particular, Cash Flow is the difference between the adjusted R^2 from Eq. (3) and the adjusted R^2 from the nested version of Eq. (3) that includes only the C_j and I_k :

$$CF_{it+1} = \beta_0 + \beta_1 NI_{it}/TA_{it-1} + \sum_j \beta_{2j} C_j + \sum_k \beta_{3k} I_k + \varepsilon_{it+1}, \tag{3}$$

where NI is net income, TA is total assets, and CF is net cash flow from operations scaled by lagged total assets. To test for differences in R^2 , we estimate the equations 1000 times, randomly assigning firms to the relevant partitions and base significance tests on the frequency of observing an R^2 difference greater than or equal to the tabulated difference.

in Cash Flow between voluntary and mandatory adopters and between code and common law firms, and insignificant differences in Price and Return between firms in high and low enforcement countries. There are two exceptions regarding value relevance comparability based on Price: comparability is greater for Services firms in code law countries and Finance, Insurance, and Real Estate firms in low enforcement countries.

6.4.5. Potential pricing effects of comparability

Value relevance of earnings and equity book value for stock price can increase when a firm adopts IFRS simply because investors can more easily understand the link between these two accounting amounts and stock prices when a large number of firms simultaneously apply IFRS. The SEC likely would interpret any increase in value relevance associated with this increased understandability as evidence of increased comparability. However, accounting standard setters likely view comparability more narrowly in that they likely are more interested in comparability attributable to the accounting amounts only. To provide evidence on the standard setter view of comparability, we include variables in the full and nested models as controls for these potential pricing effects. These variables include the number of exchanges on which the firm is listed (Armstrong et al., 2010), the percentage of firms using international accounting standards in the firm's country, and the number of days during the last quarter of the firm's fiscal year for which its stock return is zero (Daske et al., 2008). We also include stock return for the prior year as a control for pricing effects unassociated with current year accounting amounts, and the yearly covariance between the daily US market return and each country-level market return as controls for effects of global integration of financial markets. Untabulated findings reveal the same inferences as those relating to findings in Tables 5 and 6.

7. Summary and concluding remarks

This study documents the extent to which application of IFRS by non-US firms results in accounting amounts that are comparable to those resulting from application of US GAAP by US firms. We use two approaches to assess comparability, accounting system comparability and value relevance comparability. For both, we find that IFRS firms' accounting amounts have greater comparability with those of US firms when IFRS firms apply IFRS than when they applied non-US domestic standards. We also find that comparability generally is greater for firms that adopt IFRS mandatorily, common law firms, and firms in countries with high enforcement. Additional findings indicate that US firms' accounting amounts generally have higher value relevance than those of IFRS firms. However, accounting amounts for common law firms generally have value relevance comparable to those of US firms, but accounting amounts for firms in the other post-adoption sample partitions generally exhibit lower value relevance than those for US firms.

We find that both before and after IFRS firms adopt IFRS accounting quality is higher for US firms, and that all three dimensions of accounting quality – earnings smoothing, accrual quality, and timeliness – are potential sources of the increase in comparability after IFRS firms adopt IFRS. In addition, similar findings obtain for all post-adoption sample partitions, with the exception of common law firms, which, relative to US firms, exhibit higher accounting quality along some dimensions but lower quality along others.

Findings from additional analyses generally reveal that differences in regression coefficients used in constructing the comparability metrics for IFRS and US firms are smaller after IFRS firms adopt IFRS and for post-adoption sample partitions that exhibit greater comparability, comparability is greater in more recent years, globalization does not explain our finding of an increase in comparability after IFRS firms adopt IFRS, and although there are significant increases in value relevance comparability for firms in each of three major industry groups after they adopt IFRS, there is no change in accounting system comparability for firms in the Finance, Insurance, and Real Estate industry.

Taken together, the findings suggest that efforts to converge accounting standards, the increasing mandatory use of IFRS throughout the world, the development of international auditing standards, and efforts to increase coordination of international securities market regulators have increased comparability of accounting amounts. However, although widespread application of IFRS by non-US firms has enhanced financial reporting comparability with US firms, significant differences remain.

Appendix A

This appendix describes the six steps we use to construct our accounting system comparability metrics. Our construction is adapted from De Franco et al. (2011),²⁸

First, we estimate the relations between stock price (stock return, subsequent year's cash flow) and earnings and equity book value (earnings and change in earnings, earnings) separately for US firms and IFRS firms. To implement this step, we estimate the following pairs of stock price and stock return regressions, pooling observations across firms and over time, where i and t refer to firm and year, respectively.

$$P_{it}^{US} = \beta_0^{US} + \beta_1^{US} BVE_{it}^{US} + \beta_2^{US} NI_{it}^{US} + \epsilon_{it}^{US} \quad (A1a)$$

²⁸ Using stock return as the economic outcome, De Franco et al. (2011) develops accounting system comparability metrics to assess the extent to which a particular firm's earnings is comparable to that of other firms in its industry. The study uses a sample of US firms to estimate time-series relations between earnings and stock returns. There are several differences between our construction of accounting system comparability and that of De Franco et al. (2011). First, our focus is on comparability of the IFRS and US GAAP accounting systems. Second, we consider stock price and cash flow as economic outcomes in addition to stock return. Third, we consider various combinations of net income and equity book value as accounting amounts. As a result, whereas De Franco et al. (2011) estimates a "reverse" regression of earnings on stock return, we estimate direct regressions of each economic outcome on potentially multiple accounting amounts. Finally, whereas De Franco et al. (2011) assesses comparability based on time-series relations, we assess comparability based on cross-sectional relations because we seek to determine whether IFRS and US GAAP accounting systems are comparable at the same point in time.

$$P_{it}^{IFRS} = \beta_0^{IFRS} + \beta_1^{IFRS} BVE_{it}^{IFRS} + \beta_2^{IFRS} NI_{it}^{IFRS} + \varepsilon_{it}^{IFRS} \quad (A1b)$$

$$\begin{aligned} RETURN_{it}^{US} = & \beta_0^{US} + \beta_1^{US} [NI_{it}/P_{it-1}]^{US} + \beta_2^{US} [\Delta NI_{it}/P_{it-1}]^{US} + \beta_3^{US} LOSS_{it}^{US} \\ & + \beta_4^{US} LOSS_{it}^{US} \times [NI_{it}/P_{it-1}]^{US} + \beta_5^{US} LOSS_{it}^{US} \times [\Delta NI_{it}/P_{it-1}]^{US} + \varepsilon_{it}^{US} \end{aligned} \quad (A2a)$$

$$\begin{aligned} RETURN_{it}^{IFRS} = & \beta_0^{IFRS} + \beta_1^{IFRS} [NI_{it}/P_{it-1}]^{IFRS} + \beta_2^{IFRS} [\Delta NI_{it}/P_{it-1}]^{IFRS} + \beta_3^{IFRS} LOSS_{it}^{IFRS} \\ & + \beta_4^{IFRS} LOSS_{it}^{IFRS} \times [NI_{it}/P_{it-1}]^{IFRS} + \beta_5^{IFRS} LOSS_{it}^{IFRS} \times [\Delta NI_{it}/P_{it-1}]^{IFRS} + \varepsilon_{it}^{IFRS} \end{aligned} \quad (A2b)$$

$$CF_{it+1}^{US} = \beta_0^{US} + \beta_1^{US} [NI_{it}/TA_{it-1}]^{US} + \varepsilon_{it}^{US} \quad (A3a)$$

$$CF_{it+1}^{IFRS} = \beta_0^{IFRS} + \beta_1^{IFRS} [NI_{it}/TA_{it-1}]^{IFRS} + \varepsilon_{it}^{IFRS} \quad (A3b)$$

P is stock price, NI is net income before extraordinary items per share, BVE is book value of equity per share, and $RETURN$ is the cumulative percentage change in stock price beginning nine months before fiscal year end and ending three months after fiscal year end, adjusted for dividends and stock splits, CF is operating cash flow scaled by lagged total assets, and TA is total assets. In the return equations, we permit the coefficients on NI_t/P_{t-1} and $\Delta NI_t/P_{t-1}$ to differ for loss firms (Hayn, 1995) using the indicator variable $LOSS$, which equals one if NI_t/P_{t-1} is negative, and zero otherwise. The coefficient superscripts, US and IFRS, denote the pricing multiples relating to the US or IFRS accounting system; the variable superscripts denote that the variable relates to a US or an IFRS firm.²⁹ We estimate Eqs. (A1a), (A2a), and (A3a) including industry fixed effects and Eqs. (A1b), (A2b), and (A3b) including country and industry fixed effects.

Second, for each set of firms, i.e., US and IFRS firms, we calculate within-sample fitted stock price (stock return, cash flow). Third, for each set of firms, we calculate fitted stock price (stock return, cash flow) using the pricing multiples from the other set of firms. To implement these steps, we compute fitted prices, returns, and cash flow for US (IFRS) firms using coefficients estimated based on Eqs. (A1a), (A2a), and (A3a) ((A1b), (A2b), and (A3b)) as follows.

$$\hat{P}_{it}^{US,US} \equiv \hat{\beta}_0^{US} + \hat{\beta}_1^{US} BVE_{it}^{US} + \hat{\beta}_2^{US} NI_{it}^{US} \quad (A4a)$$

$$\hat{P}_{it}^{US,IFRS} \equiv \hat{\beta}_0^{IFRS} + \hat{\beta}_1^{IFRS} BVE_{it}^{US} + \hat{\beta}_2^{IFRS} NI_{it}^{US} \quad (A4b)$$

$$\hat{P}_{it}^{IFRS,IFRS} \equiv \hat{\beta}_0^{IFRS} + \hat{\beta}_1^{IFRS} BVE_{it}^{IFRS} + \hat{\beta}_2^{IFRS} NI_{it}^{IFRS} \quad (A4c)$$

$$\hat{P}_{it}^{IFRS,US} \equiv \hat{\beta}_0^{US} + \hat{\beta}_1^{US} BVE_{it}^{IFRS} + \hat{\beta}_2^{US} NI_{it}^{IFRS} \quad (A4d)$$

$$\begin{aligned} \widehat{RETURN}_{it}^{US,US} \equiv & \hat{\beta}_0^{US} + \hat{\beta}_1^{US} [NI_{it}/P_{it-1}]^{US} + \hat{\beta}_2^{US} [\Delta NI_{it}/P_{it-1}]^{US} + \hat{\beta}_3^{US} LOSS_{it}^{US} \\ & + \hat{\beta}_4^{US} LOSS_{it}^{US} \times [NI_{it}/P_{it-1}]^{US} + \hat{\beta}_5^{US} LOSS_{it}^{US} \times [\Delta NI_{it}/P_{it-1}]^{US} \end{aligned} \quad (A5a)$$

$$\begin{aligned} \widehat{RETURN}_{it}^{US,IFRS} \equiv & \hat{\beta}_0^{IFRS} + \hat{\beta}_1^{IFRS} [NI_{it}/P_{it-1}]^{US} + \hat{\beta}_2^{IFRS} [\Delta NI_{it}/P_{it-1}]^{US} + \hat{\beta}_3^{IFRS} LOSS_{it}^{US} \\ & + \hat{\beta}_4^{IFRS} LOSS_{it}^{US} \times [NI_{it}/P_{it-1}]^{US} + \hat{\beta}_5^{IFRS} LOSS_{it}^{US} \times [\Delta NI_{it}/P_{it-1}]^{US} \end{aligned} \quad (A5b)$$

$$\begin{aligned} \widehat{RETURN}_{it}^{IFRS,IFRS} \equiv & \hat{\beta}_0^{IFRS} + \hat{\beta}_1^{IFRS} [NI_{it}/P_{it-1}]^{IFRS} + \hat{\beta}_2^{IFRS} [\Delta NI_{it}/P_{it-1}]^{IFRS} + \hat{\beta}_3^{IFRS} LOSS_{it}^{IFRS} \\ & + \hat{\beta}_4^{IFRS} LOSS_{it}^{IFRS} \times [NI_{it}/P_{it-1}]^{IFRS} + \hat{\beta}_5^{IFRS} LOSS_{it}^{IFRS} \times [\Delta NI_{it}/P_{it-1}]^{IFRS} \end{aligned} \quad (A5c)$$

$$\begin{aligned} \widehat{RETURN}_{it}^{IFRS,US} \equiv & \hat{\beta}_0^{US} + \hat{\beta}_1^{US} [NI_{it}/P_{it-1}]^{IFRS} + \hat{\beta}_2^{US} [\Delta NI_{it}/P_{it-1}]^{IFRS} + \hat{\beta}_3^{US} LOSS_{it}^{IFRS} \\ & + \hat{\beta}_4^{US} LOSS_{it}^{IFRS} \times [NI_{it}/P_{it-1}]^{IFRS} + \hat{\beta}_5^{US} LOSS_{it}^{IFRS} \times [\Delta NI_{it}/P_{it-1}]^{IFRS} \end{aligned} \quad (A5d)$$

$$\widehat{CF}_{it+1}^{US,US} \equiv \hat{\beta}_0^{US} + \hat{\beta}_1^{US} [NI_{it}/P_{it-1}]^{US} \quad (A6a)$$

$$\widehat{CF}_{it+1}^{US,IFRS} \equiv \hat{\beta}_0^{IFRS} + \hat{\beta}_1^{IFRS} [NI_{it}/P_{it-1}]^{US} \quad (A6b)$$

²⁹ When calculating accounting system comparability metrics before IFRS firms adopt IFRS, i.e., when they applied non-US domestic standards, pricing multiples and accounting amounts relate to domestic standards, not IFRS.

$$\widehat{CF}_{it+1}^{\text{IFRS,IFRS}} \equiv \hat{\beta}_0^{\text{IFRS}} + \hat{\beta}_1^{\text{IFRS}} [NI_{it}/P_{it-1}]^{\text{IFRS}} \quad (\text{A6c})$$

$$\widehat{CF}_{it+1}^{\text{IFRS,US}} \equiv \hat{\beta}_0^{\text{US}} + \hat{\beta}_1^{\text{US}} [NI_{it}/P_{it-1}]^{\text{IFRS}} \quad (\text{A6d})$$

Fourth, for each set of firms, we calculate the absolute value of the difference between the fitted stock prices, stock returns, and cash flow obtained in the second and third steps. To implement this step, we compute the following firm–year differences for each US observation in Eqs. (A7a), (A8a), and (A9a) and for each IFRS observation in Eqs. (A7b), (A8b), and (A9b).

$$\text{PRICE_Diff}_{it}^{\text{US}} \equiv |\hat{P}_{it}^{\text{US,US}} - \hat{P}_{it}^{\text{US,IFRS}}| \quad (\text{A7a})$$

$$\text{PRICE_Diff}_{it}^{\text{IFRS}} \equiv |\hat{P}_{it}^{\text{IFRS,IFRS}} - \hat{P}_{it}^{\text{IFRS,US}}| \quad (\text{A7b})$$

$$\text{RETURN_Diff}_{it}^{\text{US}} \equiv |\widehat{\text{RETURN}}_{it}^{\text{US,US}} - \widehat{\text{RETURN}}_{it}^{\text{US,IFRS}}| \quad (\text{A8a})$$

$$\text{RETURN_Diff}_{it}^{\text{IFRS}} \equiv |\widehat{\text{RETURN}}_{it}^{\text{IFRS,IFRS}} - \widehat{\text{RETURN}}_{it}^{\text{IFRS,US}}| \quad (\text{A8b})$$

$$\text{CF_Diff}_{it}^{\text{US}} \equiv |\widehat{CF}_{it}^{\text{US,US}} - \widehat{CF}_{it}^{\text{US,IFRS}}| \quad (\text{A9a})$$

$$\text{CF_Diff}_{it}^{\text{IFRS}} \equiv |\widehat{CF}_{it}^{\text{IFRS,IFRS}} - \widehat{CF}_{it}^{\text{IFRS,US}}| \quad (\text{A9b})$$

Fifth, for each IFRS and matched US firm–year pair, we average the differences in fitted stock price from Eqs. (A7a) and (A7b), the differences in stock return from Eqs. (A8a) and (A8b), and the differences in cash flow from Eqs. (A9a) and (A9b).

Sixth, we calculate our stock price, stock return, and cash flow comparability metrics as the mean, median, and standard deviation of the average differences obtained in the fifth step appropriate for each comparability analysis we conduct.

References

- Alford, A., Jones, J., Leftwich, R., Zmijewski, M., 1993. The relative information content of accounting disclosures in different countries. *Journal of Accounting Research* 31 (Supplement), 183–223.
- Armstrong, C.S., Barth, M.E., Jagolinzer, A.D., Riedl, E.J., 2010. Market reaction to the adoption of IFRS in Europe. *The Accounting Review* 85, 31–61.
- Ball, R., 1995. Making accounting more international: why, how, and how far will it go? *Journal of Applied Corporate Finance* 8, 19–29.
- Ball, R., 2006. International Financial Reporting Standards (IFRS): Pros and cons for investors. *Accounting Business Research International Accounting Policy Forum* 5–27.
- Ball, R., Kothari, S.P., Robin, A., 2000. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics* 29, 1–51.
- Ball, R., Robin, A., Wu, J.S., 2003. Incentives versus standards: properties of accounting income in four East Asian countries. *Journal of Accounting and Economics* 36, 235–270.
- Ball, R., Shivakumar, L., 2005. Earnings quality in UK private firms: comparative loss recognition timeliness. *Journal of Accounting and Economics* 39, 83–128.
- Ball, R., Shivakumar, L., 2006. The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research* 44, 207–242.
- Barth, M.E., Landsman, W.R., Lang, M., 2008. International accounting standards and accounting quality. *Journal of Accounting Research* 46, 467–498.
- Bartov, E., Goldberg, S., Kim, M., 2005. Comparative value relevance among German, US and international accounting standards: a German stock market perspective. *Journal of Accounting, Auditing and Finance* 20, 95–119.
- Bradshaw, M.T., Miller, G.S., 2008. Will harmonizing accounting standards really harmonize accounting? Evidence from non-US firms adopting US GAAP. *Journal of Accounting, Auditing and Finance* 23, 233–263.
- Cairns, D., 1999. Degrees of compliance. *Accountancy International* September, 68–69.
- Daske, H., 2006. Economic benefits of adopting IFRS or US-GAAP — have the expected costs of equity capital really decreased? *Journal of Business, Finance, and Accounting* 33, 329–373.
- Daske, H., L. Hail, C. Leuz, and R. Verdi. 2007. Adopting a label: heterogeneity in the economic consequences of IFRS adoptions. Working paper, Wharton School.
- Daske, H., Hail, L., Leuz, C., Verdi, R., 2008. Mandatory IFRS reporting around the world: early evidence on the economic consequences. *Journal of Accounting Research* 46, 1085–1142.
- Dechow, P.M., Dichev, I.D., 2002. The quality of accruals and earnings: the role of accrual estimation errors. *The Accounting Review* 77, 35–59.
- De Franco, G., Kothari, S.P., Verdi, R.S., 2011. The benefits of financial statement comparability. *Journal of Accounting Research* 49, 895–931.
- Ewert, R., Wagenhofer, A., 2005. Economic effects of tightening accounting standards to restrict earnings management. *The Accounting Review* 80, 1101–1124.
- Ewert, R., and A. Wagenhofer. 2009. Earnings quality metrics and what they measure. Working paper, University of Graz.
- Financial Accounting Foundation. 2009. Comment letter on the SEC Roadmap, March 11.
- Financial Accounting Standards Board. 2010. Statement of Financial Accounting Concepts No. 8, Conceptual Framework for Financial Reporting, Chapter 1, The Objective of General Purpose Financial Reporting, and Chapter 3, Qualitative Characteristics of Useful Financial Information. Norwalk, CT, September.
- Financial Accounting Standards Board and International Accounting Standards Board. 2008. Completing the February 2006 Memorandum of Understanding: A Progress Report and Timetable for Completion. Norwalk, CT, and London, UK, September.

- Gordon, E.A., B.N. Jorgensen, and C.L. Linthicum. 2008. Could IFRS replace US GAAP? A comparison of earnings attributes and informativeness in the US market. Working paper.
- Hail, L., Leuz, C., Wysocki, P., 2010a. Global accounting convergence and the potential adoption of IFRS by the US (Part I): Conceptual underpinnings and economic analysis. *Accounting Horizons* 24, 355–394.
- Hail, L., Leuz, C., Wysocki, P., 2010b. Global accounting convergence and the potential adoption of IFRS by the US (Part II): Political factors and future scenarios for US accounting standards. *Accounting Horizons* 24, 567–588.
- Hayn, C., 1995. The information content of losses. *Journal of Accounting and Economics* 20, 125–153.
- Harris, M., Muller, K., 1999. The market valuation of IAS versus US GAAP accounting measures using form 20-F reconciliations. *Journal of Accounting and Economics* 26, 285–312.
- Hughes, S.B., and J.F. Sander. 2008. The implications of IFRS adoption: the extent of convergence and consistency between IFRS and US GAAP net income. Working paper.
- Hung, M., Subramanyam, K.R., 2007. Financial statement effects of adopting international accounting standards: the case of Germany. *Review of Accounting Studies* 12, 623–657.
- International Accounting Standards Board, 2010. *The Conceptual Framework for Financial Reporting 2010*. IASB, London.
- Kothari, S.P., 2001. Capital markets research in accounting. *Journal of Accounting and Economics* 31, 105–231.
- Land, J., Lang, M., 2002. Empirical evidence on the evolution of international earnings. *The Accounting Review* 77, 115–134.
- Lang, M., Raedy, J., Yetman, M., 2003. How representative are firms that are cross listed in the United States? An analysis of accounting quality. *Journal of Accounting Research* 41, 363–386.
- Lang, M., Raedy, J., Wilson, W., 2006. Earnings management and cross listing: are reconciled earnings comparable to US earnings? *Journal of Accounting and Economics* 42, 255–283.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 1998. Law and finance. *Journal of Political Economy* 106, 1113–1155.
- Leuz, C., 2003. IAS versus US GAAP: information asymmetry-based evidence from Germany's New Market. *Journal of Accounting Research* 41, 445–472.
- Leuz, C., 2010. Different approaches to corporate reporting regulation: how jurisdictions differ and why. *Accounting and Business Research* 40, 229–256.
- Leuz, C., Nanda, D., Wysocki, P., 2003. Earnings management and investor protection: an international comparison. *Journal of Financial Economics* 69, 505–527.
- Leuz, C., Verrecchia, R., 2000. The economic consequences of increased disclosure. *Journal of Accounting Research* 38, 91–124.
- Myers, J.N., Myers, L.A., Skinner, D.J., 2007. Earnings momentum and earnings management. *Journal of Accounting, Auditing and Finance* 22, 249–284.
- Schipper, K., 2003. Principles-based accounting standards. *Accounting Horizons* (March), 61–72.
- Securities and Exchange Commission. 2007. Final Rule: Acceptance from Foreign Private Issuers of Financial Statements Prepared in Accordance with International Financial Reporting Standards without Reconciliation to U.S. GAAP.
- Securities and Exchange Commission. 2008. Roadmap for the Potential Use of Financial Statements Prepared in Accordance with International Financial Reporting Standards by U.S. Issuers; Proposed Rule.
- Securities and Exchange Commission. 2010. Commission Statement in Support of Convergence and Global Accounting Standards.
- Securities and Exchange Commission. 2011. Work Plan for the Consideration of Incorporating International Financial Reporting Standards into the Financial Reporting System for U.S. Issuers; Exploring a Possible Method of Incorporation.
- Street, D. and S. Gray. 2001. Observance of international accounting standards: factors explaining non-compliance. ACCA Research Report No. 74.
- Van Tendeloo, B., Vanstraelen, A., 2005. Earnings management under German GAAP versus IFRS. *European Accounting Review* 14 (1), 155–180.
- Watts, R., Zimmerman, J., 1986. *Positive Accounting Theory*. Prentice-Hall, Upper Saddle River, New Jersey.
- Wysocki, P.D. 2009. Assessing earnings and accruals quality: US and international evidence. Working paper, MIT.