THE UNIVERSITY OF TEXAS AT SAN ANTONIO, COLLEGE OF BUSINESS

Working Paper SERIES

WP # 0028ACC-6-2010

Date June 2, 2011

Could IFRS Replace US GAAP?

A Comparison of Earnings Attributes and Informativeness in the US Market*

Elizabeth A. Gordon

Bjorn N. Jorgensen

Cheryl L. Linthicum

UTSA COLLEGE OF BUSINESS KNOWLEDGE FOR A NEW WORLD

ONE UTSA CIRCLE
SAN ANTONIO, TEXAS 78249-0631
210 458-4317 | BUSINESS.UTSA.EDU

Could IFRS Replace US GAAP?

A Comparison of Earnings Attributes and Informativeness in the US Market[*]

Elizabeth A. Gordon[**]

Bjorn N. Jorgensen[***]

Cheryl L. Linthicum[****]

[*] We would like to thank Russell Craig, Scott Taub, and seminar participants at the 2007 American Accounting Association Meeting, 2008 International Accounting Section Midyear Conference, University of British Columbia, University of Colorado at Boulder, Columbia Business School, Cornell and University of Florida for helpful comments and suggestions. We gratefully acknowledge HakJoon Song who provided research assistance.

[**] Merves Scholar, Fox School of Business and Management, Temple University, 339 Speakman Hall, 1810 N. 13th Street, Philadelphia , PA 19122. Ph: (215) 204-6422, Fax: (215) 204-5587. E-mail: egordon@temple.edu.

[***] Gary Winnick and Martin Granoff Associate Professor of Business, Graduate School of Business, Columbia University, 3022 Broadway, Uris Hall 621, New York, NY 10027. Ph: (212) 854-9220. Fax: (212) 316-9219. E-mail: bnj2101@columbia.edu.

[****] Clear Channel Faculty Fellow and Associate Professor of Accounting, Department of Accounting, College of Business, University of Texas - San Antonio, San Antonio, TX 78249-0632. Ph: (210) 458-5785. Fax: (210) 458-4322. E-mail: cheryl.Linthicum@utsa.edu.

*Cheryl Linthicum is a 200702008 Securities and Exchange Commission Academic Fellow. The Securities and Exchange Commission, as a matter of policy, disclaims responsibility for any private publication or statement by any of its employees. The views expressed herein are those of the authors' and do not necessarily reflect the views of the Commission or of the authors' colleagues upon the staff of the Commission.

Could IFRS Replace US GAAP?

A Comparison of Earnings Attributes and Informativeness in the US Market

Abstract

We compare various earnings attributes of two accounting standards in one regulatory environment. We consider all firms that file Form 20-F reconciliations from IFRS to USGAAP with the SEC for 2004-2006. We find USGAAP and IFRS share many earnings attributes with two notable exceptions: USGAAP exhibits higher cash persistence and value relevance. Both IFRS and USGAAP accruals are incrementally informative over cash flows. While USGAAP net income has incremental informativeness over IFRS earnings and cash flows, the reverse is not true. USGAAP exhibits higher relative information content. Our results inform US regulators considering whether to permit, or require, IFRS.

Key words: IFRS, US GAAP

JEL Codes: M41, M48

Could IFRS Replace US GAAP?

A Comparison of Earnings Attributes and Informativeness in the US Market

1. Introduction

United States regulators are currently deliberating whether to permit or require US firms to prepare primary financial statements using International Financial Reporting Standards (IFRS) (SEC 2007a).

> "We appreciate that the U.S. public capital market has not experienced the co-existence of two sets of accounting standards for use by U.S. issuers. The Commission is issuing this Concept Release to gather input on the potential significance and effect of any such change to investors, issuers and market participants as well as to the accounting profession in general." (SEC 2007a, p. 7.)

We are interested in the "potential significance of IFRS versus US GAAP reporting to investors, issuers and market participants." Specifically, we examine the quality of IFRS reported earnings using metrics adapted from the academic literature. As explained in the SEC's quote above, US domiciled firms that are listed in the US are currently required to report under US GAAP. We effectively employ the set of non-US. firms that report both IFRS and US GAAP earnings and shareholders' equity in the same year, in the same (US) market to assess the two standards.

We address two related research questions using a sample of foreign firms that use IFRS for their financial statements in their home country and files US GAAP reconciliations with the SEC. First, are IFRS earnings of higher or lower quality than US GAAP Earnings? Second, are IFRS earnings more or less informative than US GAAP earnings?

Our first research question acknowledges that the relevant measure of earnings quality depends on the intended/presumed use of financial accounting information, e.g., for valuation, contracting or other reasons. Rather than limiting our assessment of quality to valuation, we operationalize earnings quality using a host of measures of earnings attributes that have generally been associated with quality of financial reporting. We document that US GAAP and IFRS are not distinguishable using earnings attributes most commonly evaluated in the accounting literature. This finding is consistent with allowing US firms to report under IFRS or US GAAP.

In response to our second research question, we find that neither US GAAP nor IFRS exhibit relative value relevance over the other. For our sample period, however, US GAAP reconciliation remains incrementally informative. Our second research question should be interpreted with caution since it does not consider alternative non-market uses of accounting information that should also be relevant in regulatory deliberations.

Our sample of all foreign firms that list in the US and report under IFRS is clearly self-selected. These firms chose to list in the US, creating a selection problem that might lead to biased inferences, see Ashbaugh (2000) and Lang, Raedy and Yetman (2006). Nevertheless, these firms are more likely to be similar to US firms in terms of product market interactions and investor clientele, see Khanna, Palepu, and Srinivasan (2004) and Bradshaw, Bushee and Miller (2004), suggesting that they might be the most relevant group of firms from which to draw inferences applicable to the general population of publicly traded US firms for which the SEC is currently deliberating whether to permit or require the use of IFRS.

1.1 Contribution

Our paper makes both conceptual and methodological contributions. First, our research design exploits an international setting where one common regulatory body, the SEC,

announced, well in advance of filing deadlines, that it would carefully review the filings of financial accounting information under two accounting standards (Nicolaisen 2005). The fiscal years end 2005 and 2006 provide a one-time setting where U.S.-listed firms provide a matched pair of IFRS and US GAAP numbers for comparing earnings attributes of IFRS and US GAAP in a single regulatory environment. Second, while the U.S. literature on incremental value relevance separate earnings into cash flow and accruals, prior international studies have failed to do this. We control for the presence of cash flows. Third, based on the FASB and IASB Conceptual Frameworks, we supplement the growing list of earnings attributes commonly associated with earnings quality by proposing cash flow predictability and cash flow persistence as additional earnings attributes. Fourth, as we test for incremental value relevance, we employ the effect of accounting standards on both the income statement and the balance sheet. We provide a detailed discussion of these contributions in sequence below.

1.1.1 SEC Review process

Prior international accounting research documents that, in addition to accounting differences, legal institutions, enforcement, capital structure, and market demand affect the use of accounting information.[1] This complicates the evaluation of international comparisons of earnings prepared under different accounting standards. In our setting, this concern that regulatory regimes are correlated with earnings quality is lessened because all sample firms are registered with the SEC and the SEC made it known, well in advance, that 2005 and 2006 fiscal year-end IFRS filings would be subject to review (Nicolaisen 2005). If this SEC review is of as

[1] See Bhattacharya et al. (2000), Holthausen and Watts (2001), Leuz, Nanda, Wysocki (2003) and Ball and Shivakumar (2005), among others

high, or higher, quality than the review that foreign regulators in, say Mexico[2] otherwise would have done, then all firms in our sample are subject to the same level of scrutiny regarding their financial reporting under both US GAAP and IFRS. If instead some foreign regulator, say Switzerland, applies a more stringent regulatory review, then the filings subject to the more stringent review could be viewed as more credible. The effect of either higher or lower level of enforcement from a foreign regulator is further mitigated in our research setting because we use the firm as its own control when we compare earnings prepared under IFRS and earnings prepared under US GAAP. Nonetheless, the foreign regulators are more likely to review IFRS earnings than US GAAP reconciliations which could a priori induce a bias towards detecting higher quality of IFRS earnings than US GAAP earnings, but that runs counter to our findings. In summary, the SEC review should result in less cross-country variation due to differences in the level of enforcement.

Since U.S. regulators base decisions on cost-benefit analyses that consider many diverse financial statement users, our analyses employ a large number of different earnings attributes. For each of our earnings attributes, we calculate these attributes in two separate cross sectional analyses, one for US GAAP and another for IFRS. Each firm appears twice, once in each cross-sectional analysis. Our analysis can therefore be thought of as if it were a comparison of matched pairs where the firm is used as its own control.

1.1.2 Cash flow and value relevance

We consider many different earnings attributes from the prior literature under IFRS and US GAAP, including a measure of predictability and persistence of earnings Francis et al. (2004). Current IASB and FASB conceptual frameworks cite cash flows as central to the

[2] See Bhattacharya, Daouk, Jorgenson, and Kehr (2000)

objectives of financial reporting (FASB 1978, IASB 2001).[3] Corresponding to these objectives, we introduce two related earnings attributes: predictability and persistence of cash flows.

1.1.3 Incremental value relevance tests

Our incremental value relevance tests consider the simultaneous effect on the income statement and on the balance sheet. Under International Financial Reporting Standard no. 1 (IFRS 1), first-time adopters of IFRS must reconcile transition net income and shareholders' equity from the previous basis of accounting to IFRS. For example, a U.K. company that adopted IFRS in 2005 would provide 2004 and 2005 net income reconciled from UK GAAP to IFRS, and reconcile beginning 2004 shareholders' equity from UK GAAP to IFRS. The effect of adoption has a current year effect on the income statement and a cumulative effect on the balance sheet. The effect on the balance sheet is the cumulative year effect from previous years and the cumulative prospective effect of say asset revaluations.

Prior studies on value relevance regress either stock price or stock returns on unexpected accounting variables. Following Kothari and Zimmerman (1995), we use returns as dependent variables. One framework for value relevance studies is the Edwards-Bell-Ohlson argument that, under clean surplus accounting, market prices are based on book value and earnings. It follows immediately that cumulative dividends are based on levels of earnings and changes in earnings relative to the previous year. This holds true for any single accounting standard, either US GAAP or IFRS. However, all firms in our sample disclose two sets of earnings and book value. In this setting, it is reasonable to think of investors employing a two stage heuristic. First,

[3] "Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts from dividends or interest and the proceeds from the sale, redemption, or maturity of securities or loans. Since investors' and creditors' cash flows are related to enterprise cash flows, financial reporting should provide information to help investors, creditors, and

investors estimate market value under both US GAAP and IFRS separately. Second, investors weigh the two value estimates according to their assessment of various metrics regarding earnings attributes. Consequently, our value relevance tests include levels of cash flows and levels of accruals and changes of cash flows and changes of accruals. In our subsequent tests of the incremental value, relevance of US GAAP over IFRS information employs both levels and changes for cash flows, IFRS accruals, and the difference between US GAAP and IFRS.

The results of our study should be of interest to regulators, standard-setters, and US companies. As noted above, the SEC has specifically called for input on the effects of the two standards. As standard-setters like the IASB or FASB move toward convergence, better understanding the similarities and differences in the earnings attributes of IFRS and US GAAP should be of use in decision-making. Finally, this paper has to potential to provide US companies information regarding the quality of US GAAP versus IFRS earnings should those firms be given the choice or someday be required to adopt IFRS

The rest of the paper is organized as follows: Section 2 discusses related literature. Section 3 describes the research design and develops hypotheses. In Section 4, we discuss sample selection and description. In Section 5, we present results, and Section 6 concludes.

2. Related Literature:

Prior to the wide scale adoption of IFRS, researchers have examined relative information content of accounting numbers derived under alternative accounting standards. A body of literature has focused on reconciliations from non-US to US GAAP (SEC Form 20-F, Item 17 or 18). While our study is, in part, designed to provide insight for regulators who may ultimately

---

others assess the amounts, timing, and uncertainty of prospective net cash inflows to the related enterprise." (FASB 1973, p. 25).

permit or mandate the use of either IFRS or US GAAP, the literature provides an historical view of the value relevance of reconciliations. Pownall and Schipper (1999) discuss the body of research using Form 20-F reconciliation data, observing that prior research documents differences between US GAAP and both non-US GAAPs and IAS, and offers some evidence that the differences are value-relevant. For example, Amir, Harris, and Venuti (1993) investigate the value relevance of reconciling items between domestic and US GAAP earnings and shareholders' equity using a sample of 101 cross-listed companies during the period 1981-1991. Their results suggest that the reconciliations are value relevant, both in aggregate and for some specific components (property revaluations and capitalized goodwill). Harris and Muller (1997), examining only reconciliations between US GAAP and IAS for 31 companies from 1992 to 1996, provide inconclusive evidence of the usefulness of the reconciliations. They find US GAAP earnings reconciliation is value relevant and US GAAP is associated more highly with market measures after controlling for IAS amounts in certain models (market value and returns) but not all models (per-share).

Taking a different approach, studies that are more recent investigate the properties of accounting measures for US cross-listed companies. Land and Lang (2002) compare US cross-listed to non-cross-listed companies using a sample from 1990 through 2001, and find that cross-listed companies exhibit less earnings smoothing, more timely loss recognition, and more value-relevance than non-cross-listed companies. Complementing this study, Lang, Raedy and Wilson (2006) compare US cross-listed companies to US companies. They find that US GAAP accounting measures of cross-listed firms differ from those of US firms in terms of the time-series properties of earnings and accruals, and the degree of association between accounting data and share prices. Taken together, these studies suggest that although the properties of US cross-listed companies differ from those of non-cross-listed companies, differences in the reporting of

US cross-listed companies and US companies exist even with the reconciliations. As an example, evidence from these studies suggests that cross-listed firms engage in less earnings management than non-cross-listed firms, even though they manage earnings more than US firms do. While these studies compare earnings across firms, our study focuses on earnings attributes resulting from differences in IFRS and US GAAP accounting standards, rather than across firm types. Next, we consider the results of studies that compare IAS to US GAAP.

Research focusing on the properties of accounting information under IAS generally suggests that IAS reporting produces accounting measures of higher quality when compared to domestic GAAP, but not US GAAP. Using a sample of 319 IAS reporting companies from 1990 to 2003, Barth, Landsman, and Lang (2006) show that companies using IAS exhibit less earnings smoothing, more timely loss recognition, and more value-relevance than those applying domestic (non-US) GAAP. Ashbaugh and Pincus (2001) find that the analysts forecast error of companies using IAS are smaller than those using domestic GAAP. However, comparing IAS to US GAAP companies using a sample 428 IAS reporters from 1990 through 2004, Barth, Landsman, Lang, and Williams (2006) find that IAS firms exhibit more earnings smoothing, more timely loss recognition, and a lower association between accounting amounts and share price. For the sub sample of firms that are cross-listed, they observe similar reporting quality for IAS and US GAAP measures.

In the context of the current policy debate, the evidence these studies offer is somewhat limited. First, most companies in these studies adopted IAS voluntarily, producing a self-selection bias. Prior research shows that profitable, growing companies are more likely to adopt IFRS.[4] Inferences from such a sample are likely to be less applicable to a population of

[4] International Financial Reporting Standards (IFRS) consist of the body of accounting standards issued by the IASB. The term IFRS is used throughout this paper to refer to the body of standards issued by the International

companies that are mandated to follow the standards. Second, several studies investigate the reconciliations from domestic GAAP but these are not being reconsidered by the SEC and domestic (non-IFRS) GAAP is no longer the primary focus in those countries now requiring IFRS. Third, since IAS (now IFRS) were revised substantially in the early 2000's, results from pre-2002 studies may or may not be generalizable to the present. Consequently, the results of past studies cannot sufficiently satisfy the demand for evidence relevant to the current debates of whether or not topermit or require US companies to use IFRS instead of US GAAP..

Additionally, the methodology employed in the international studies often ignores cash flows. This is especially evident when the cross-country literature is compared with US, "domestic" information content literature. Ignoring cash flows may be the result of lack of data. Cash flow data have not been required in all home country jurisdictions, as it is under IFRS. Nevertheless, for the most part, prior studies ask: "Are (US-based) earnings incrementally informative above and beyond (non-US) earnings?" and, for the most part, ignore cash flows.

Finally, at a conceptual level, we consider that *either* IFRS or US GAAP provide higher information content. That is, we do not assume, *a priori*, that US GAAP will provide incremental information relative to IFRS as appears to be the case in prior studies of US GAAP reconciliations. Our research questions are explored in light of the current regulatory questions. Consequently, we structure our tests to allow for either US GAAP or IFRS to emerge as the more value-relevant. Absent conditions where one can empirically test the question "How do investors interpret IFRS reported by US registrants without a US GAAP reconciliation?", we provide indirect evidence regarding the relative information content over a brief window where two sets of earnings are provided for the same firm, in the same year, in the same regulatory

---

Accounting Standards Board, and those in-force International Accounting Standards (IASs) issued by the IASB's predecessor, the International Accounting Standards Committee.

environment.

3. Research Design

In our first set of tests, we examine earnings attributes under IFRS and US GAAP. Our second set of tests further explores the incremental and relative value relevance of the two standards.

3.1 Earnings Attributes

We first discuss the earnings attributes that do not refer to market returns and next discuss those that do.

3.1.1 Accounting-based Earnings Attributes

While there are multiple earnings attributes in the literature, we first follow Francis, LaFond, Olsson and Schipper (2004) and describe our implementation of their measures of the attributes below. We adapt our implementations because we are interested in comparing the earnings attributes of a given set of firms under two accounting standards, denoted by *s* below, whereas Francis et. al. (2004) are interested in constructing firm-specific measures of earnings attributes. In addition, we face different data limitations.[5]

Accrual Quality

Francis et. al. (2004) use the accrual quality measure proposed in Dechow and Dichev (2002). Discretionary current accruals in a period are expected to relate to lagged,

[5] Due to limitations of US GAAP accounting information required in the 20-F and availability, we are not able to obtain the same financial statement information under both IFRS and US GAAP as Francis et. al. (2004) use to calculate some of their attributes. For instance, total current assets are not required to be reported under US GAAP nor is depreciation.

contemporaneous and leading cash receipts and disbursements. The discretionary part of current accruals is estimated as the residual (ε) from the following cross-sectional regression:

$$ACC_{s,j,t} = \varphi_{0,s} + \varphi_{1,s} CFO_{j,t+1,s} + \varphi_{2,s} CFO_{j,t,s} + \varphi_{3,s} CFO_{j,t-1} + \nu_{s,j,t}$$

where $ACC_{s,j,t}$ = firm j's total accrual calculated as net income less cash flows from operations in year t under standard s, where s is IFRS or US GAAP, $CFO_{j,t}$ = cash flows from operations of company j in year t and subscripts *j*, *t*, and *s* denote firm, year, and accounting standard, respectively. All variables are divided by the firm's market value at time t.

Based on the above regressions, we define accrual quality as the standard deviation of the estimated residuals for each accounting standard, IFRS and US GAAP. We differ from Francis et. al. (2004) in two respects. First, we note that the dependent variable employed in Dechow and Dichev (2002) is Working Capital or the firm's total current accruals measured as (*ΔCA – ΔCL – ΔCash + ΔSTDEBT*), where *CA* is current assets, *CL* is current liabilities and *STDEBT* is debt in current liabilities. In contrast, we use total accruals because measures of working capital are not uniformly reported under both IFRS and US GAAP. This difference is driven, in part by the difference in accounting standards, since IFRS defines, but under IAS 1 does not require separate listing of current assets (IASB 2008b). Second, we scale by total market capitalization while Francis et. al. scale by the book value of total assets. Two different asset measures (IFRS and US GAAP) exist for each of our sample firms. Third, we estimate cross-sectional regression for each accounting standard, s=IFRS, US GAAP, whereas Francis et. al. estimate a time-series regression for each firm. Parallel to Dechow and Dichev (2002), the standard deviation of the residuals ($AccrualQuality_s = \sqrt{\sigma^2\left(\hat{v}_{j,t,s}\right)}$) from equation (1) is our measure of accrual quality for accounting standard s= IFRS, USGAAP.

Earnings Persistence and Predictability

Persistence is associated with earnings quality because transitory earnings components are supposed to have been smoothed out, see Penman and Zhang (2002), among others. Our measures of earnings persistence and earnings predictability are based on the relation between current and past earnings as follows:

$$NI_{s,j,t} = \phi_{o,s} + \phi_{1,s} NI_{s,j,t-1} + \nu_{s,j,t}$$

Where $NI_{s,j,t}$ is firm j's net income in year t under standard s, where s is IFRS or US GAAP. Variables are divided by the firm's market value at time t-1.

The estimated coefficient, $\phi_{1,s}$, measures earnings persistence. The larger (smaller) values of persistence relate to more (less) persistent earnings. The standard deviation of the residuals from the equation is interpreted as earnings predictability. Large (small) values of predictability suggest less (more) predictable earnings.

Francis et. al. (2004) estimate (2) as a time-series regression for each firm and find firm-specific measures of earnings persistence that vary across firms in their sample. Our earnings persistence captures only average under any accounting standard. Despite the firm-level variation in earnings persistence documented in FLOS, our cross-sectional measure is comparable because our firms reported under both accounting standards and therefore any difference in average earnings persistence should be due to accounting standards.

Cash Persistence and Predictability

Given that both standards purport to create measures of income that better predict future cash flows, we generate measures of cash flow persistence and predictability similar to earnings

persistence and predictability. Our measures of cash flow persistence and cash flow predictability are also based on the relation between current cash flows, past earnings where past earnings is separated into past cash flows and past accruals as follows:

$$CFO_{j,t,s} = \phi_{0,s} + \phi_{1,s} CFO_{j,t-1,s} + \phi_{2,s} ACC_{j,t-1,s} + \nu_{j,t,s}$$

where $CFO_{s,j,t}$ is firm j's net income in year t under standard s, where s is IFRS or US GAAP. All variables are divided by the firm's market value at time t -1.

The regression assesses the ability of accruals (under the different standards) to aid in the prediction of current cash flows, controlling for past cash flows. Similar to the earnings-based measures, the estimated coefficient, $\phi_{1,s}$, measures cash flow persistence and the standard deviation of the residuals from the equation is interpreted as cash flow predictability.

Earnings smoothness

Several prior papers – including Trueman and Titman (1988) and Tucker and Zarowin (2006) – suggest that smoothness is a desirable earnings attribute. Following Leuz, Nanda, and Wysocki (2003) and Francis et al. (2004), we measure earnings smoothness relative to that of cash flow from operations. Smoothness is defined as the ratio of the standard deviation of income before extraordinary items to the standard deviation of cash flows from operations. We measure smoothness as the cross-sectional measure of earnings smoothness for each accounting standard. The measure of smoothness is computed as the ratio of the standard deviation of all company's net income under either IFRS or US GAAP divided by beginning market values over the standard deviation of all company's cash flows from operations divided by beginning market values. $\text{Smoothness}_s = \sigma(NI_{s,t})/\sigma(CFO_t)$.

3.1.2 Market-based Earnings Attributes

Timeliness and Conservatism

Watts (2003a, 2003b) argues that conservatism in earnings is a desirable property. Kim and Kross (2005) suggest that increasing accounting conservatism plays a role in the greater ability of earnings to predict future cash flows. The FASB/IASB conceptual framework project report lists one of the objectives of financial reporting as meeting capital providers' interest in assessing "the entities ability to generate net cash inflows" (FASB-IASB 2008).

Following Basu (1997), Pope and Walker (1999), Givoly and Hayn (2000) and Francis et. al. (2004), among others, we use the following regression to obtain measures of timeliness and conservatism.

$$NI_{s,j,t} = \alpha_{0,s} + \alpha_{1,s} NEG_{s,j,t} + \beta_{1,s} RET_{j,t} + \beta_{2,s} NEG_{s,j,t} \bullet RET_{j,t} + \omega_{s,j,t}$$

where NEG is an indicator variable equally one is RET is negative and zero otherwise. NI is divided by the firm's market value at time t -1.

Similar to other earnings attributes, the above equation is estimated separately for each standard, *s*. Our measure of timeliness is the negative adjusted R^2 from the above regression. Our measure of Conservatism is the ratio of the coefficient on bad news to the coefficient on good news = $(\beta_{1,s} + \beta_{2,s})/\beta_{1,s}$. Larger values of timeliness (conservatism) imply more timely (conservative) earnings.

Relevance

The final earnings attribute we examine is value Relevance. Following FLOS, we measure value relevance as the negative adjusted R^2 from the following regression:

$$RET_{j,t} = \gamma_{0,s} + \gamma_{1,s} NI_{s,j,t} + \gamma_{2,s} \Delta NI_{s,j,t} + e_{s,jt}.$$

Large (small) values of Relevance suggest less (more) value relevant earnings. We further explore and discuss value Relevance in the next section. NI and ΔNI are divided by the firm's market value at time t -1.

3.2 Incremental Value Relevance

Our next set of tests further explores the Relevance of each standard. Incremental value relevance tests consider the simultaneous effect on the income statement and on the balance sheet. As is well-known, adoption of a new standard has a current year effect on the income statement and, possibly, a cumulative effect on the balance sheet. The effect on the balance sheet is the cumulative year effect from previous years and the cumulative prospective effect of say asset revaluations.

One analytical starting point for value relevance studies is the Edwards-Bell-Ohlson argument that, under clean surplus accounting, market prices are based on book value and earnings. It follows immediately that cumulative dividends are based on levels of earnings and changes in earnings relative to the previous year. This holds true for any single accounting standard, either US GAAP or IFRS. However, all firms in our sample disclose two sets of earnings and book value of equity. In this setting, it is reasonable to think of investors employing a two stage heuristic. First, investors estimating market value under both US GAAP and IFRS separately. Second, investors weigh the two value estimates according to their assessment of various metrics regarding earnings attributes. Prior studies on value relevance report regressions of stock returns on unexpected cash flows and unexpected accruals. Because of the argument in the previous paragraph, our initial value relevance tests include levels of cash flows and levels of accruals and changes of cash flows and changes of accruals. Our subsequent

tests of the incremental value relevance of US GAAP over IFRS information employs both levels and changes for cash flows, IFRS accruals, and the difference between US GAAP and IFRS.

Prior accounting studies, including Rayburn (1986), report that accounting accruals have incremental information content above and beyond cash flows from operations in the US. An accrual model provides insights beyond an (earnings) model, in that each accrual measure is incrementally informative to operating cash flows. While the earnings relevance regression can show that each earnings measure is significantly related to returns, one could not rule out the possibility that operating cash flows could be driving results. To investigate this hypothesis in our sample, we regress stock returns on both cash flows and accruals under each accounting standard:

$$RET_{j,t} = \gamma_{0,s} + \gamma_{1,s} CFO_{j,t} + \gamma_{2,s} \Delta CFO_{j,t} + \gamma_{3,s} ACC_{s,j,t} + \gamma_{4,s} \Delta ACC_{s,j,t} + e_{s,j,t} \quad (1)$$

where $RET_{j,t}$ is firm j's 12-month return ending the month the current year's, t, Form 20-F is filed with the SEC.

Large (small) values of Relevance suggest more (less) value relevant earnings. As is common, earnings under accounting standard s have incremental information content over cash flows from operations when the null hypothesis that $\gamma_{3,s} = \gamma_{4,s} = 0$.

The reconciliation difference between IFRS earnings and US GAAP earnings can also be defined as the differences between IFRS accruals and US GAAP accruals:

$$Diff_{j,t} = NI_{US\,GAAP,j,t} - NI_{IFRS,j,t} = ACC_{US\,GAAP,j,t} - ACC_{IFRS,j,t} \quad (2)$$

because cash flows from operations are assumed independent of the accounting standard.

Estimating the following regression allows a test the null hypothesis that $\gamma_{5,s} = \gamma_{6,s} = 0$ which would imply that earnings prepared under accounting standard *s* have no incremental information content above and beyond earnings prepared under the other standard. These tests

provide evidence of whether differences between IFRS and US GAAP are informative.

$$RET_{j,t} = \gamma_{0,s} + \gamma_{1,s}CFO_{j,t} + \gamma_{2,s}\Delta CFO_{j,t} + \gamma_{3,s}ACC_{s,j,t} + \gamma_{4,s}\Delta ACC_{s,j,t} + \gamma_{5,s}Diff_{s,j,t} + \gamma_{6,s}\Delta Diff_{s,j,t} + e_{s,j,t} \quad (3)$$

3.3 Relative Value Relevance

In our final tests, we examine the relative informativeness of difference in accruals between US GAAP and IFRS earnings. We compare the explanatory power of estimating regression (1) twice-once under IFRS and once under US GAAP. We follow Dechow (1994) and compare the explanatory power of the goodness of fits associated with these two regressions, R^2_{IFRS} and $R^2_{US\,GAAP}$, using a Vuong test.

4. Sample Selection and Descriptive Statistics

Our sample includes firms who filed with the U.S. Securities and Exchange Commission using IFRS, with 20-F reporting dates from 1/1/06 to 8/1/07. Since 20-F filers have until six months after their fiscal year end to file with the SEC, and some file for an extension to file, 12/31/05 year end filers are expected to file no later than 7/30/06. In determining whether or not a firm is an IFRS filer, we examined the audit report and accounting policy footnote for each 20-F filed with the SEC during this time.

We verified for all countries that IFRS adoption was mandated for 2005. We collect fiscal year 2005 IFRS earnings, US GAAP earnings and operating cash flows from fiscal year 2005 20-F filings. Operating cash flows and IFRS earnings for 2004 are also collected from fiscal 2005 20-F filings. Market data for the US stock market are collected from Compustat.

Table 1 provides descriptive statistics firms in this study. Panel A of Table 1 describes the sample for which we have on market values and stock returns of 156 firms from 23 countries.

For comparison, we converted the data into a common currency, U.S. Dollars. Firms in the 13 countries represented in the European Union and in Australia and Norway were required to adopt IFRS no later than fiscal years starting January 1, 2005.

Panel B of Table 1 reports the means, standard deviations, and medians for our accounting variables under IFRS and US GAAP scaled by the beginning of year market values (the scalar is the same under both accounting standards for each firm-year pair of observations). The average (median) net income is 0.171 (0.080) under IFRS and 0.146 (0.073) under US GAAP. As expected, cash flows from operations exhibit statistically significantly higher variance than net income calculated under either IFRS or US GAAP with p-values of 0.00 (untabulated). This arises because cash flows from operations and accruals accounting standards are highly negatively correlated as reported in Table 2 below, which is consistent with accruals inducing smoothing of earnings prepared on an accrual basis relative to the benchmark of cash basis of accounting.

The mean (median) net income under IFRS exceeds US GAAP by 0.025 (0.006). This difference represents the reconciliation difference reported in 20-F.[6] We can reject the null hypothesis that the difference between IFRS and US GAAP net income is significantly different from zero with a p-value of 0.02 (untabulated). IFRS is less conservative for our sample of firms. The difference in IFRS and US GAAP earnings represents the difference in reported accruals defined as the difference between IFRS earnings and (IFRS) cash flows. To the extent that cash flows are independent of the accounting standard for a given reporting entity, the reconciliation difference between earnings reported under US GAAP and IFRS mainly represents the difference between current accruals under these two accounting standards.

Nevertheless, the difference in accruals that would have been reported under IFRS and US GAAP may also represent differences between the accounting standards' definition of the reporting entity and consolidation rules. Specifically, IFRS allows proportional consolidation, while US GAAP does not. To avoid capturing differences in the accounting for minority-interests, we carefully analyzed minority interests for each company and took care to measure earnings as net income excluding minority interests. While not reported, we also tabulated income under Home GAAP used prior to IFRS adoption and compared their means. Consistent with the much discussed convergence of accounting standards as a consequence of IFRS adoption, we observe a statistically significantly larger difference between home GAAP and US GAAP net income relative to the difference between IFRS and US GAAP income.

Table 2 reports correlations between our variables. As expected, we observe high correlations between net incomes reported under US GAAP and IFRS. However, there is low correlation between operating cash flows and annual market returns and the remaining variables. Barth, Landsman, and Lang (2006), among others, interpret the correlation between cash flows from operations and accruals (both scaled) as an alternative indicator of smoothness. In our sample, the correlation between cash flows from operations and accruals are -0.895 and -0.919 under IFRS and US GAAP, respectively.

5. Empirical Analysis and Results

Table 3 compares six accounting-based earnings attributes under IFRS and US GAAP. The three earnings attributes of Accrual Quality, Earnings Predictability, and Smoothness are more favorable for US GAAP, while the results on Earnings Persistence, Cash Persistence, and

[6] The Appendix describes accounting differences by category between IFRS and US GAAP net income reported by companies in our sample. We identify 19 main categories of differences, showing that most of these can be positive

Cash Predictability imply that IFRS is more favorable. Of these six accounting-based attributes, we are able to perform statistical tests of the equality of three earnings attributes: Accrual Quality, Earnings Predictability, and Cash Predictability. Our statistical tests show that none of these differs significantly between IFRS and US GAAP. We conduct a sensitivity check for the smoothing measure reported in Table 3. Smoothness is reported in Table 3 based on the aggregate US and IFRS samples. In addition to this test, we calculated smoothness using a firm-specific measure. For companies in our sample for three years, we divide the standard deviation of net income over the three years by the standard deviation of cash flows from operations over the three years to obtain a smoothness measure by company. Tests indicate that the firm-specific smoothing measure under US GAAP is significantly lower (p-value = 0.03) than that under IFRS.

Table 4 compares three market-based earnings attributes under IFRS and US GAAP. Timeliness and conservatism appear greater under US GAAP, although we do not have any formal statistical tests. The relevance of earnings is significantly greater under US GAAP (p-value = 0.030).

Table 5 reports the results of our incremental value relevance tests. As a benchmark, we initially report the results of a returns regression on the levels and changes in cash flows from operations denoted by CFO and ΔCFO, respectively. This regression specification follows from Easton and Harris (1991) under the cash basis of accounting. As expected, we find that cash flows from operations are significantly related to returns. The adjusted R^2 of the cash basis regression is 5.1%. Given this benchmark, we next address the incremental value relevance from

(increasing IFRS net income relative to US GAAP) or negative.

investors observing – in addition to cash flows – earnings under each accounting standard.[7] First, IFRS accruals levels and changes significantly contribute to the explanatory power with an increase in the adjusted R^2 to 10.6%. Similarly, US GAAP accruals levels and changes add the explanatory power of the regression beyond cash flows with an increase in the adjusted R^2 to 16.3%. Thus, the accrual basis of accounting is incrementally informative relative to the benchmark cash basis of accounting under both IFRS and US GAAP. To ensure that our comparisons are not driven by differences in cross-sectional variation in the dependent variables, we follow a suggestion by Lo and Lys (2000) and reran all analyses reported in Table 5 for a fixed common sample.[8]

Table 5 also reports two results regarding the incremental value relevance of reconciliation between US GAAP earnings and IFRS earnings. First, we take the US perspective and questions whether reconciliation from IFRS to US GAAP is incrementally informative to IFRS earnings and cash flows. Following Easton and Harris (1991), we again include all accounting variables in both levels and changes. We find that reconciliations from IFRS to US GAAP – the differences between IFRS Accruals and US GAAP Accruals – are incrementally informative to IFRS. Second, we take the non-US perspective that questions whether reconciliation from US GAAP to IFRS is incrementally informative to US GAAP earnings and cash flow from operations. This perspective is relevant for whether non-US regulators should allow home firms that are cross-listed in the US to continue to exclusively report under US GAAP, which has been the practice on the German exchange, Neue Markt (Leuz 2003). In addition, this perspective might be relevant for the European Union considering whether to

[7] The number of observations in each regression varies slightly due to the deletion of regression outliers, identified as those observations with the absolute value of the residual exceeding three.
[8] Rayburn (1986) conducts similar analysis, excluding changes in earnings and changes in cash flows from operations. We conduct similar analysis and find similar (untabulated) results.

require that US firms listed in the EU be required to reconcile from US GAAP to IFRS. We find no evidence that reconciliations from US GAAP to IFRS – the differences between IFRS Accruals and US GAAP Accruals – are incrementally informative to IFRS. From a capital market perspective alone, this result provides no basis for concern for foreign regulators regarding US GAAP reporting companies relative to IFRS reporting companies.

The above results from Table 5 concerned *incremental* information content of IFRS and US GAAP and tested whether additional information is "better" for investors. We finally report the results on the *relative* information content of IFRS and US GAAP which are designed to address the question as to which of two mutually exclusive accounting standards is preferable. Following Dechow (1994), we test relative information content by comparing the adjusted R^2s of the two non-nested regressions in Table 5. The adjusted R^2s of these regressions are not significantly different. Inability to reject the null hypothesis of no difference in the explanatory power of these regressions has two possible interpretations for a US regulator contemplating to allow US firms to report under IFRS. Either the null hypothesis is true in which case IFRS and US GAAP possess equal relative information content. Combining this first interpretation with our inability to find many differences in accounting-based and market-based earnings attributes, a US regulator might feel more comfortable allowing US firms to report under IFRS.

Alternatively, our inability to reject the null hypothesis of relative information content is driven by a lack of power in our tests. Such lack of power is often driven by limited data availability. Since we include in our sample all firms that reported under both US GAAP and IFRS, this leaves US regulators with the option to collect more data. One manner in which this might be done is by conducting a pilot study requesting that some US firms report under IFRS. A previous SEC pilot study, "Regulation SHO Pilot", randomly assigned firms to be exempt

from rules on short selling price limits.[9] For accounting standards, one immediate concern is, of course, that the costs of conducting such a study would be quite high and those costs would be initially borne disproportionately by registrants.

We also applied a battery of sensitivity analyses to the pooled regression analysis reported in Table 5. First, sensitivity tests provide information about the possibility of clustering in our data when we use the same firm in more than one year. The presence of clustering may result in overstated t-statistics that, in turn, would more likely provide evidence to reject the null hypotheses. We conducted our analyses using each firm only once and found qualitatively similar results.

Second, our sample only includes firms for the fiscal years 2004 through 2006. Based on the findings of Daske et al. (2007, 2008) we recognize that early IFRS (pre-2005) adopters might be different from last minute adopters (2005). We conduct two additional (untabulated) analyses. First, we exclude the pre-2005 adopters, second we exclude the first time adoption year from our sample. The second specification provides evidence as to whether our results are influenced by adoption-year effects. For example, one-time adjustments under IFRS 1 may result in accounting adjustments to income statements and to a lesser extent, balance sheets in the first year. Furthermore, the preparers might not have much experience with IFRS in the adoption year as in future years. In addition, US regulators might spend more, or less, resources on monitoring the accounting numbers in the adoption year. Finally, financial statement users might gain experience with IFRS over time leading to lesser value relevance in the adoption year. Our results are robust to these sensitivity tests.

[9] "The Regulation SHO Pilot demonstrates the Commission's commitment to base our regulatory decisions on sound empirical research," said SEC Chairman Christopher Cox. "The pilot is a unique opportunity to better understand the effect of short selling price limits in US financial markets." (http://www.sec.gov/news/press/2006/2006-94.htm)

6. Conclusion

This paper is set at the backdrop of three related recent regulatory developments. First, many countries have recently adopted a new accounting standard, IFRS. Second, the SEC no longer requires foreign firms that report under IFRS to submit reconciliation to US GAAP. Third, the SEC is considering whether to permit or perhaps someday require some or all US-registered firms to prepare filings using IFRS. Leading up to this proposal, the SEC announced that it would review, and eventually reviewed IFRS-based 20-F filings for fiscal years ended 2005 and 2006. Accordingly, US-listed, IFRS reporting firms were subject to US regulatory scrutiny. The literature documents that enforcement, regulatory oversight and legal institutions affect the role of accounting, see Ball, Kothari, and Robin (2000), Leuz, Nanda, and Wysocki (2003). To the extent that our sample firms provide both IFRS and US GAAP information for a single firm, and each of those firms is US listed, we control for differences in the enforcement and regulatory reporting environments.

Overall, our evidence suggests that US GAAP and IFRS are of comparable earnings quality. Nonetheless, US GAAP-reconciled income is incrementally informative in this period, suggesting that discontinuing reconciliation of IFRS to US GAAP result in less useful financial statements for valuation purposes.

Some caveats are in order when interpreting our results. First, our sample consists of firms voluntarily subjected to U.S regulation and securities markets. Bradshaw, Bushee and Miller (2004) show that these firms tend to choose accounting methods when reporting under their home GAAP that are closer to US GAAP. This would bias us against finding evidence of incremental informativeness of US GAAP reconciliations.

Second, to the extent that a subset of our tests utilizes value-relevance measure, we ignore the notion that financial statements users rely on accounting for other purposes, including contracting and performance evaluation. For example, Bharath, Sunder, and Sunder (2008) document how earnings attributes vary with firms' choice of public or private debt. Further, Wu and Zhang (2008) find that firms CEO turnover and employee layoffs become more sensitive to earnings after firms voluntarily adopt IFRS. Finally, Dye and Sunder (2001) argue allowing two accounting standards to coexist facilitates competition among standard setters leading to higher standards in the long run. Such non-market trade-offs should also be considered as regulators contemplate allowing US firms to report under IFRS.

References

Amir, E., Harris, T., Venuti, E., 1993. A comparison of the value-relevance of U.S. vs. non-U.S. GAAP accounting measures using Form 20-F reconciliations. Journal of Accounting Research 31 (Supplement), 230-264.

Ashbaugh, H., 2001. Non-U.S. firms' accounting standard choices. Journal of Accounting and Public Policy 20 (Summer), 129-153.

Ashbaugh, H., Pincus, M., 2001. Domestic accounting standards, International accounting standards, and the predictability of earnings. Journal of Accounting Research 39 (December), 417-434.

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., Shivakumar, L., 2005. Earnings quality in U.K. private firms. Journal of Accounting and Economics 39 (1), 83-128.

Barth, M., Landsman, W., Lang, M., 2006. International accounting standards and accounting quality. Journal of Accounting Research (forthcoming).

Barth, M., Landsman, W., Lang, M., Williams, C., 2006. Accounting quality: International Accounting Standards and U.S. GAAP. Working paper, University of North Carolina and Stanford University.

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

Bharath, S. T., Sunder, J., Sunder. S. V., 2008. Accounting quality and debt contracting. *The Accounting Review* 83 (January), 1-28.

Bhattacharya, U., Daouk, H., Jorgenson, B., Kehr, H., 2000. When an event is not an event: The curious case of an emerging market. Journal of Financial Economics 55 (1), 69-101.

Bradshaw, M., Bushee, B., Miller, G., 2004. Accounting choice, home bias, and U.S. investment in non-U.S. firms. Journal of Accounting Research 42 (5), 795-841.

Daske, H., Hail, L., Leuz, C., Verdi, R., 2007. Adopting a label: Heterogeneity in the economic consequences of IFRS adoptions. Working paper, University of Chicago.

Daske, H., Hail, L., Leuz, C., Verdi, R., 2008. Mandatory IFRS reporting around the world: Early evidence on the economic consequences Working paper, University of Chicago.

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

Dechow, P. M., Dichev, I. D., 2002. The quality of accruals and earnings: The role of accrual estimation errors. The Accounting Review 77 (Supplement), 35-59.

Dye, R., Sunder, S., 2001. Why not allow FASB and IASB standards to compete in the U.S.? Accounting Horizons 15 (September), 257-271.

Easton, P., Harris, T., 1991. Earnings as an explanatory variable for returns. Journal of Accounting Research 29 (1), 19-36.

Europa, 2006. The use of non-EU accounting standards on EU stock markets is extended for two more years. December: Brussels.

Financial Accounting Standards Board (FASB), 1978. Statement of financial accounting concepts no. 1. FASB. Norwalk, CT.

FASB – IASB., 2006. A roadmap for convergence between IFRS and U.S. GAAP – 2006-2008 Memorandum of Understanding between the FASB and the IASB", February 27: (the 2006 Memorandum of Understanding) available at http://72.3.243.42/intl/mou_02-27-06.pdf.

Financial Accounting Standards Board – International Accounting Standards Board (FASB-IASB), 2008. Project update conceptual framework—Phase A: Objective and qualitative characteristics. (4 February). London, UK. Available at: http://www.fasb.org/project/cf_phase-a.shtml.

Francis, J., LaFond, R., Olsson, P. M., Schipper, K., 2004. The costs of equity and earnings attributes. The Accounting Review 79 (October), 967-1010.

Frost, C., Pownall, G., 1994. A comparison of the stock-price response to earnings disclosure in the United States and the United Kingdom. Contemporary Accounting Research 11(1), 59-83.

Givoly, D., Hayn, C., 2000. The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? Journal of Accounting and Economics 29 (June), 287-320.

Harris, M., Muller, K., 1999. The market valuation of IAS versus U.S. GAAP accounting measures using form 20-F reconciliations. Journal of Accounting and Economics 26 (January), 285-312.

Hewitt, C., 2007. Remarks before the 2007 foundation of accounting education SEC/FASB conference. http://www.sec.gov/news/speech/2007/spch012207cwh.htm. January: Washington, DC.

Holthausen, R., Watts, R., 2001. The relevance of the value-relevance literature for financial accounting standard setting. Journal of Accounting and Economics 31 (1-3, September), 3-75.

International Accounting Standards Board (IASB), 2001. Framework for the Preparation and Presentation of Financial Statements. IASB. London: UK.

International Accounting Standards Board (IASB), 2008a. www.iasb.org

International Financial Reporting Standards (IFRS), 2008b. International Accounting Standards Board. London: UK.

Khanna, T., Palepu, G., Srinivasan, S., 2004. Disclosure practices of foreign companies interacting with U.S. markets. Journal of Accounting Research 42 (May), 475-508.

Kim, M., and Kross, W., 2005. The ability of earnings to predict future cash flows has been increasing- not decreasing. Journal of Accounting Research 43 (December), 753-780.

Kothari, S. P., Zimmerman, J. L., 1995. Price and return models. Journal of Accounting and Economics 20 (September), 155-192.

Land, J., Lang, L., 2002. Empirical evidence on the evolution of international earnings. The Accounting Review 77 (Supplement), 115-133.

Lang, M., Raedy, J., Wilson, W., 2006. Earnings management and cross listing: Are reconciled earnings comparable to U.S. earnings? Journal of Accounting and Economics 42 (October), 244-283.

Lang, M., Raedy, J., Yetman, M., 2006. How representative are firms that are cross-listed in the United States? An Analysis of Accounting Quality. Journal of Accounting Research 41 (2), 363–386.

Leuz, C., 2003. IAS versus U.S. GAAP: Information asymmetry-based evidence from Germany's new market. Journal of Accounting Research 41 (3), 445-463.

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

Lo, K., Lys, T., 2000. The Ohlson model: Contribution to valuation theory, limitations, and empirical applications. Journal of Accounting, Auditing and Finance 15, 337-367.

Nicolaisen, D., 2005. A securities regulator looks at convergence. Northwestern Journal of International Law and Business 25 (3), 661-686.

Penman, S. and Zhang, X-J., 2002. Accounting conservatism, the quality of earnings and stock returns. The Accounting Review 77, 237-264.

Pope, P. F., Walker, M.. 1999. International differences in the timeliness, conservatism, and classification of earnings. Journal of Accounting Research 37 (Supplement), 53-87.

Pownall, G., Schipper, K., 1999. Implications of accounting research for the SEC's consideration of International Accounting Standards for U.S. securities offerings. Accounting Horizons 13 (September), 259-280.

Rayburn, J., 1986. The association of operating cash flows and accruals with security returns. Journal of Accounting Research, Studies on Alternative Measures of Accounting Income 24, 112-133.

Trueman, B., Titman., S., 1988. An explanation for accounting income smoothing. Journal of Accounting Research 26 (Supplement), 127-139.

Tucker, J., Zarowin, P., 2006. Does income smoothing improve earnings informativeness? The Accounting Review 81 (January), 251-270.

U.S. Securities and Exchange Commission (SEC), 2007a. Concept release on allowing U.S. issuers to prepare financial statements in accordance with International Financial Reporting Standards (Corrected) Other Release Nos.: 33-8831; http://www.sec.gov/rules/concept/2007/33-8831.pdf

U.S. Securities and Exchange Commission (SEC), 2007b. Acceptance from foreign private issuers of financial statements prepared in accordance with international financial reporting standards without reconciliation to U.S. GAAP. Other Release Nos.: 33-8879; International Series Release No. 1306. http://www.sec.gov/rules/final/2007/33-8879.pdf.

Watts, R., 2003a. Conservatism in accounting part I: Theory and implications. Accounting Horizons 17 (September), 207-221.

Watts, R., 2003b. Conservatism in accounting part II: Evidence and research opportunities. Accounting Horizons 17 (December), 287-301.

Wu, J., Zhang, I., 2008. The adoption of International Accounting Standards and firm internal performance evaluation. Working paper, Rochester University.

Table 1: Descriptive Statistics

Panel A: Market Capitalization and Annual Returns

	Number of:		*Market Capitalization* (USD mil)		*RET*	
Country	**Companies**	**Obs.**	**Mean**	**Median**	**Mean**	**Median**
Australia	7	12	2,634	2,390	0.237	0.187
Belgium	1	3	4,747	4,747	0.273	0.189
Bermuda	1	3	1,053	1,053	0.754	0.601
China	9	27	8,029	3,102	0.406	0.240
Denmark	3	8	6,600	7,690	0.435	0.371
Finland	4	10	6,948	9,199	0.299	0.187
France	18	48	24,176	14,816	0.310	0.307
Germany	9	23	24,313	15,604	0.346	0.412
Ireland	4	10	7,028	6,013	0.395	0.390
Italy	7	21	22,024	12,514	0.222	0.187
Jersey	1	2	455	455	0.544	0.544
Luxembourg	3	7	2,975	3,092	0.636	0.438
Mexico	1	3	243,292	243,292	0.418	0.357
Netherlands	15	36	19,296	11,826	0.354	0.302
Norway	1	2	11,617	11,617	0.376	0.376
Papua New Guinea	1	3	1,859	1,859	-0.022	-0.022
Portugal	2	5	10,270	10,270	0.168	0.194
Russia	1	1	51	51	0.699	0.699
South Africa	3	5	11,273	11,273	0.325	-0.042
Spain	6	17	43,783	44,673	0.268	0.237
Sweden	6	15	15,930	15,562	0.455	0.147
Switzerland	5	13	50,526	21,846	0.179	0.157
United Kingdom	46	121	23,105	8,936	0.161	0.178
All	156	396	21,559	34,080	0.227	0.224

Market Capitalization is the beginning year market value and presented in U.S. dollars for comparability. *RET* is the 12-month return ending the month of the 20-F filing. The number of companies and observations (156 and 396, respectively) is number for which we have accounting data. The number of observations for which we have market data is lower.

Table 1: Descriptive Statistics (continued)

Panel B: Descriptive Statistics for Variables Used in Regression Models

Variables by Standard		**n[a]**	**IFRS**	**n**	**USGAAP**	**Tests of Equality of Means and Medians (p-values)**
NI	mean	396	0.171	394	0.146	0.792
	std		1.370		1.228	
	med		0.080		0.073	0.065
ΔNI	mean	250	0.044	248	0.030	0.571
	std		0.309		0.224	
	med		0.012		0.011	0.858
ACC	mean	395	0.024	393	0.000	0.900
	std		2.635		2.616	
	med		-0.056		-0.064	0.142
ΔACC	mean	232	0.412	230	0.401	0.983
	std		5.631		5.505	
	med		-0.003		0.000	0.710
Other Variables		**n**				
Diff	mean	394	0.025			
	std		0.198			
	med		0.006			
ΔDiff	mean	248	0.014			
	std		0.181			
	med		0.000			
CFO	mean	396	0.184			
	std		3.150			
	med		0.136			
ΔCFO	mean	233	-0.382			
	std		5.501			
	med		0.010			

NI is the annual net income of the company, *CFO* is the annual cash flows from operations of the company, *ACC* is the difference between *NI* and *CFO*, *Diff* is the difference between *ACC IFRS* and *ACC US GAAP*, the symbol, Δ, represents the annual change in the variable, *RET* is the 12-

month return ending the month of the 20-F filing. All financial statement variables are scaled by beginning year market price.

[a] The number of observations varies due to the data required to estimate each variable. For instance, the change variables require two years of data, so there are fewer observations.

Table 2: Correlations between Operating Cash Flows, Net Income and Accruals under IFRS, US GAAP, and Annual Returns

(Pearson correlations above the diagonal and Spearman correlations below)[a]

	CFO	ΔCFO	NI IFRS	ΔNI IFRS	NI US GAAP	ΔNI US GAAP	ACC IFRS	ΔACC IFRS	ACC US GAAP	ΔACC US GAAP	Diff	ΔDiff	R
CFO		-0.658	0.515	-0.191	0.543	-0.429	-0.895	0.642	-0.919	0.652	0.205	0.202	
		0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	
		233	395	250	393	248	395	232	393	230	393	248	
ΔCFO	0.335		-0.986	-0.365	-0.984	0.130	0.163	-0.998	0.240	-0.999	-0.758	-0.786	
	0.000		0.000	0.000	0.00	0.049	0.013	0.000	0.000	0.000	0.000	0.000	
	233		233	232	232	230	233	232	232	230	232	230	
NI IFRS	0.464	0.128		0.451	0.995	-0.038	-0.078	0.990	-0.138	0.989	0.771	0.819	
	0.000	0.051		0.000	0.000	0.555	0.120	0.000	0.006	0.000	0.000	0.000	
	395	233		250	394	248	395	232	393	230	394	248	
ΔNI IFRS	0.148	0.154	0.573		0.432	0.818	0.558	0.414	0.516	0.402	0.539	0.703	
	0.019	0.019	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	250	232	250		249	248	250	232	249	230	249	248	
NI US GAAP	0.442	0.065	0.852	0.471		-0.041	-0.114	0.988	-0.168	0.988	0.702	0.792	
	0.000	0.325	0.000	0.000		0.516	0.024	0.000	0.001	0.000	0.000	0.000	
	393	232	394	249		248	393	231	393	230	394	248	
ΔNI US GAAP	0.091	0.214	0.460	0.762	0.503		0.517	-0.080	0.523	-0.088	-0.006	0.166	
	0.155	0.001	0.000	0.000	0.000		0.000	0.224	0.000	0.182	0.920	0.009	
	248	230	248	248	248		248	230	248	230	248	248	

[a] Correlations are in the first row, p-values in the second and number of observations in the third

Table 2: Correlations between Operating Cash Flows, Net Income and Accruals under IFRS, US GAAP, and Annual Returns (continued)

(Pearson correlations above the diagonal and Spearman correlations below)[a]

	CFO	ΔCFO	NI IFRS	ΔNI IFRS	NI US GAAP	ΔNI US GAAP	ACC IFRS	ΔACC IFRS	ACC US GAAP	ΔACC US GAAP	Diff	ΔDiff
ACC	-0.787	-0.272	0.015	0.162	-0.014	0.152		-0.121	0.997	-0.135	0.163	0.317
IFRS	0.000	0.000	0.769	0.010	0.783	0.016		0.066	0.000	0.041	0.001	0.000
	395	233	395	250	393	248		232	393	230	393	248
ΔACC	-0.236	-0.607	0.232	0.514	0.163	0.338	0.386		-0.202	1.000	0.908	0.809
IFRS	0.000	0.000	0.000	0.000	0.013	0.000	0.000		0.002	0.000	0.000	0.000
	232	232	232	232	231	230	232		231	230	231	230
ACC	-0.790	-0.279	-0.068	0.072	0.031	0.157	0.940	0.313		-0.215	0.089	0.238
US GAAP	0.000	0.000	0.179	0.257	0.542	0.013	0.000	0.000		0.001	0.079	0.000
	393	232	393	249	393	248	393	231		230	393	248
ΔACC	-0.213	-0.665	0.149	0.366	0.207	0.405	0.320	0.844	0.348		0.901	0.797
US GAAP	0.001	0.000	0.024	0.000	0.002	0.000	0.000	0.000	0.000		0.000	0.000
	230	230	230	230	230	230	230	230	230		230	230
Diff	0.026	0.001	0.205	0.135	-0.164	-0.126	0.048	0.123	-0.178	-0.068		0.932
	0.604	0.992	0.000	0.033	0.001	0.047	0.343	0.062	0.000	0.302		0.000
	393	232	394	249	394	248	393	231	393	230		248
ΔDiff	0.052	-0.007	0.159	0.280	-0.038	-0.207	-0.016	0.295	-0.139	-0.074	0.455	
	0.416	0.919	0.012	0.000	0.549	0.001	0.796	0.000	0.028	0.266	0.000	
	248	230	248	248	248	248	248	230	248	230	248	
RET	0.196	0.178	0.310	0.276	0.297	0.362	-0.062	-0.024	-0.073	-0.014	-0.015	-0.100
	0.000	0.013	0.000	0.000	0.000	0.000	0.264	0.741	0.189	0.846	0.786	0.153
	326	195	325	206	324	205	325	194	324	193	324	205

[a] Correlations are in the first row, p-values in the second and number of observations in the third

Table 3: Accounting-based Earnings Attributes under IFRS and US GAAP

Accounting-based Attributes	n[a]	Standard	
		IFRS	US GAAP
Accrual Quality	102	0.215	0.199 [b]
Earnings Persistence	245	1.061	0.985
Earnings Predictability	245	0.115	0.112 [c]
Cash Persistence	236	1.129	1.088
Cash Predictability	236	0.164	0.174 [d]
Smoothness	396	0.201	0.160

Accrual Quality is the standard deviation of the residual from the regression of accruals on future year, current year, and previous year's cash flows from operations. *Earnings Persistence* is the estimated coefficient on previous year's net income from a regression of current net income on previous year's net income. *Earnings Predictability* is the standard deviation of the residual from the *Earnings Persistence* regression. *Cash Persistence* is the estimated coefficient on previous year's operating cash flows from a regression of current operating cash flows on previous year's cash flows from operations and accruals. *Cash Predictability* is the standard deviation of the residual from the *Cash Persistence* regression. *Smoothness* if the standard deviation of net income divided by the standard deviation of operating cash flows by standard.

[a] The number of observations varies due to the data required to estimate each attribute. For instance, *Accrual Quality* requires three years of data for the same company, *Earnings Persistence* requires two years, and *Smoothness* requires only one year. Therefore, we have fewer observations for the *Accrual Quality* attribute compared to the *Smoothness* attribute.

[b] Test of equality p-value = 0.519.
[c] Test of equality p-value = 0.709.
[d] Test of equality p-value -= 0.337.

Table 4: Market-based Earnings Attributes under IFRS and US GAAP

		Standard	
Market-based Attributes	**n[a]**	**IFRS**	**US GAAP**
Timeliness	323	0.030	0.035
Conservatism	323	2.853	5.241
Relevance	200	0.246	0.280[b]

Timeliness is the adjusted R^2 from a regression of net income on an indicator variable equaling one if the company's annual return is negative and zero otherwise, the company's annual return, and the interaction of the annual return and the indicator variable. *Conservatism* is the ratio of the sum of the estimated coefficients on the annual return and the interaction variable divided by the estimated coefficient on the annual return from the *Timeliness* regression. *Relevance* is the adjusted R^2 from a regression of annual returns on net income and changes in net income.

[a] The number of observations varies due to the data required to estimate each attribute. For instance, *Relevance* requires two year of data for the same company and *Timeliness* and *Conservatism* only one year. Therefore, we have fewer observations for the *Relevance* attribute compared to the *Timeliness* and *Conservatism* attributes.

[b] Vuong test p-value 0.030.

Table 5: OLS Regressions of Operating Cash Flows and Accruals under IFRS and US GAAP and Changes in Operating Cash Flows and Accruals under IFRS and US GAAP on Annual Returns

The dependent variable is *RET*, the 12-month return ending the month of the 20-F filing.

Panel A: Regression Models

	(1)	**(2)**	**(3)**	**(4)**	**(5)**
INT	0.269 (0.000)	0.273 (0.000)	0.263 (0.000)	0.249 (0.000)	0.249 (0.000)
CFO	0.195 (0.001)	0.089 (0.486)	0.036 (0.741)	0.067 (0.545)	0.067 (0.544)
ΔCFO	0.080 (0.001)	0.949 (0.000)	1.049 (0.000)	1.048 (0.000)	1.048 (0.000)
ACC IFRS		0.047 (0.781)		0.062 (0.676)	
ΔACC IFRS		0.917 (0.000)		0.948 (0.000)	
ACC US GAAP			0.022 (0.877)		0.062 (0.676)
ΔACC US GAAP			0.956 (0.000)		0.989 (0.000)
Diff				0.232 (0.641)	0.294 (0.581)
ΔDiff				-0.778 (0.053)	0.170 (0.696)
Adj. R^2	5.1%	10.6%	16.3%	16.4%	16.6%
Number of obs.	188	186	183	181	181

Table 5: OLS Regressions of Operating Cash Flows and Accruals under IFRS and US GAAP and Changes in Operating Cash Flows and Accruals under IFRS and US GAAP on Annual Returns (continued)

Panel B: Tests of Incremental Explanatory Power

Explanatory power of:		Incremental to:	p-value
ACC IFRS and ACC ΔIFRS	>	CFO and ΔCFO	0.000
ACC US GAAP and ΔACC US GAAP	>	CFO and ΔCFO	0.000
Diff and ΔDiff	>	CFO and ΔCFO and ACC IFRS and ΔACC IFRS	0.082
Diff and ΔDiff		CFO and ΔCFO and ACC US GAAP and ΔACC US GAAP	0.511

NI is the annual net income of the company, *CFO* is the annual cash flows from operations of the company, *ACC* is the difference between *NI* and *CFO*, *Diff* is the difference between *IFRS Accruals* and *US GAAP Accruals*, the symbol, Δ, represents the annual change in the variable, *ANNUAL RETURN* is the 12-month return ending the month of the 20-F filing. All financial statement variables are divided by beginning year market price. The number of observations in each regression varies slightly due to the deletion of regression outliers, identified as those observations with the absolute value of the residual exceeding three.

Appendix

Reported Differences between IFRS and US GAAP Net Income

This appendix provides descriptive statistics for topical accounting differences by category between IFRS and US GAAP net income. Differences in taxes, compensation (pensions, share-based payments), business combinations, property, plant and equipment and investments were the most often noted as presented in Table 1A, panel a. Positive (negative) mean and median differences correspond to US GAAP net incomes that are higher (lower) than net incomes reported under IFRS, reported in Table 1A, panels b and c.

Tax differences are the most commonly reported IFRS/US difference. This is not surprising since taxes are driven, in part, by the other IFRS/US differences in income and shareholders' equity. Nevertheless, the standards for accounting for income taxes under IFRS (IAS 12) and US GAAP (FAS 109) are similar. Both standards require firms to account for current and expected future tax consequences of book to tax differences. Nevertheless, differences between IFRS and US GAAP are evident. For example, IFRS does not require recognition of deferred tax effects on the initial recognition of asset or liability whereas US GAAP does. As a result of differences between IFRS and US GAAP, 133 (41%) of sample companies reported differences due to deferred taxes separately. Sample companies such as Ducati (2005) reported differences in deferred tax.

Compensation differences are reconciled in 111 (33%) of the sample firm years. Under IFRS, under US GAAP (Appendix A, Panel a). Of those 111 firm-years for which differences were reported, 42 were associated with a higher US GAAP net income, whereas 69 were associated with a lower US GAAP net income as compared with IFRS.

Compensation differences between IFRS/US GAAP income are noted mostly where IFRS and US GAAP yields different current period expenses for pensions and share-based compensation. IAS 19, *Employee Benefits*, is the principal source of guidance for non- share based employee benefits and compensation under IFRS, whereas IFRS 2 provides guidance for share-based payments. Multiple standards apply under US GAAP, including FAS 87, FAS 132, and FAS 112 for employee benefits, and FAS 123R for share-based payments. With respect to share-based payment, in 2005, IFRS 2 required measurement of compensation under fair value, while US GAAP maintained provisions for calculating awards using the intrinsic value method. As a result, in 2005, companies (e.g., Thomson (2006)) reported differences in their share-based compensation expense. Others, such as Royal & Sun Alliance Insurance Group plc (2005) recorded pension compensation differences under US GAAP and IFRS.

Forty-one percent of the sample firm-years' included an IFRS to US GAAP reconciling item for business combinations. While revised standards IFRS 3 and SFAS 141R converge business combination standards, the new standards are required for fiscal years beginning on or after January 1, 2009. During the time of our study, the standards for business combinations remained diverged under IFRS and US GAAP. Differences between IFRS and US GAAP pre-convergence include (i) difference in partial consolidation (allowed under IFRS, but not under US GAAP), (ii) the recognition of negative goodwill as an increase to current period income in the year of acquisition (allowed under IFRS, not under US GAAP, e.g., Air-France KLM (2006)), as well as (iii) accounting differences related to the date of an acquisition, and accounting for business combinations achieved in stages.

Panels b and c of Table 1A provides a summary of reconciling items by positive and negative differences. Of the reconciling items reported by sample firms, compensation differences were associated with the highest mean increase from IFRS to US GAAP.

Differences in the accounting for business combinations were associated negative difference between IFRS and US GAAP, driving US income lower than income reported under IFRS.

Table 1A
Summary of Differences by Category in Net Income under IFRS and Net Income under US GAAP

Panel a: Overall summary

					All [a,b]		
Category	n[a]	% Reporting	Rank of %	Rank Absolute Value of Mean	Mean	Std Dev	Median
Tax	133	41%	1	3	-0.106	1.113	0.000
Compensation (including share based)	111	34%	2	2	0.173	1.078	-0.001
Business combinations	88	27%	3	1	-1.806	16.670	-0.002
Other[c]	83	25%	4	15	0.002	0.031	0.000
Property, plant and equipment	75	23%	5	11	-0.005	0.026	0.000
Investments	68	21%	6	14	-0.002	0.018	0.000
Intangibles	66	20%	7	4	-0.088	0.619	-0.002
Derivative	54	16%	8	18	-0.001	0.027	-0.001
Debt	36	11%	9	5	0.023	0.115	0.001
Discontinued operations	35	11%	10	9	-0.007	0.009	-0.003
Leases	33	10%	11	17	0.001	0.023	0.000
Revenue recognition	26	8%	12	12	0.004	0.014	0.000
Foreign currency	25	8%	13	19	-0.001	0.007	0.000
Provisions	24	7%	14	10	-0.005	0.016	0.000
Inventory	18	5%	15	16	-0.002	0.004	0.000
Restructuring	17	5%	16	7	0.011	0.141	0.000
Deferred charges	11	3%	17	6	-0.011	0.019	-0.003
Cumulative effect of accounting change	10	3%	18	8	-0.010	0.020	-0.001
Loans (primarily financial institutions)	10	3%	19	13	-0.002	0.003	-0.001
Total Number of Observations	328						

Table 1A
Summary of Differences by Category in Net Income under IFRS and Net Income under US GAAP (continued)

Panel b: Summary by positive items

	n[a]	% Reporting	Rank of %	Rank Mean	Positive Items [a, d] Mean	Std Dev	Median
Tax	73	22.3%	1	10	0.007	0.012	0.003
Compensation (including share based)	42	12.8%	2	1	0.473	1.722	0.002
Business combinations	30	9.1%	5	8	0.008	0.011	0.002
Other[c]	33	10.1%	4	7	0.011	0.046	0.002
Property, plant and equipment	39	11.9%	3	12 (tie)	0.003	0.006	0.001
Investments	28	8.5%	6	11	0.006	0.014	0.001
Intangibles	17	5.2%	10	2	0.065	0.252	0.001
Derivative	18	5.5%	8	5	0.016	0.03	0.004
Debt	24	7.3%	7	4	0.037	0.139	0.001
Discontinued operations	4	1.2%	16	15 (tie)	0.001	0.001	0.001
Leases	17	5.2%	9	9	0.008	0.026	0.001
Revenue recognition	14	4.3%	11	6	0.012	0.013	0.005
Foreign currency	12	3.7%	13	12 (tie)	0.003	0.005	0
Provisions	12	3.7%	12	14	0.002	0.002	0.001
Inventory	8	2.4%	15	15 (tie)	0.001	0.001	0.001
Restructuring	11	3.4%	14	3	0.054	0.116	0.004
Deferred charges	3	0.9%	19	18 (tie)	0	0.001	0
Cumulative effect of accounting change	3	0.9%	18	15 (tie)	0.001	0.002	0
Loans (primarily financial institutions)	3	0.9%	17	18 (tie)	0	0	0

Table 1A
Summary of Differences by Category in Net Income under IFRS and Net Income under US GAAP (continued)

Panel c: Summary by negative items

					Negative Items [a, d]		
	n[a]	% Reporting	Rank of %	Rank Mean	Mean	Std Dev	Median
Tax	60	18.3%	2	2	-0.244	1.654	-0.004
Compensation (including share based)	69	21.0%	1	9	-0.011	0.022	-0.003
Business combinations	58	17.7%	3	1	-2.744	20.531	-0.006
Other[c]	50	15.2%	4	16 (tie)	-0.004	0.011	-0.001
Property, plant and equipment	36	11.0%	7 (tie)	7	-0.014	0.035	-0.002
Investments	40	12.2%	6	12 (tie)	-0.007	0.019	-0.002
Intangibles	49	14.9%	5	3	-0.142	0.698	-0.003
Derivative	36	11.0%	7 (tie)	10	-0.009	0.022	-0.002
Debt	12	3.7%	12 (tie)	15	-0.005	0.012	-0.001
Discontinued operations	31	9.5%	9	11	-0.008	0.01	-0.004
Leases	16	4.9%	10	13	-0.007	0.016	-0.003
Revenue recognition	12	3.7%	12 (tie)	14	-0.006	0.007	-0.003
Foreign currency	13	4.0%	11	16 (tie)	-0.004	0.007	-0.001
Provisions	12	3.7%	12 (tie)	8	-0.013	0.021	-0.001
Inventory	10	3.0%	15	16 (tie)	-0.004	0.005	-0.002
Restructuring	6	1.8%	19	4	-0.067	0.16	-0.001
Deferred charges	8	2.4%	16	5	-0.016	0.021	-0.003
Cumulative effect of accounting change	7	2.1%	17 (tie)	6	-0.015	0.023	-0.003
Loans (primarily financial institutions)	7	2.1%	17 (tie)	19	-0.003	0.003	-0.002

Notes:

[a] Mean and median amounts are divided by beginning market value.

[b] Reconciling data items are combined for years 2004, 2005, and 2006

[c] The category “Other” includes reconciling items that company's identified as "other" plus other categories of reconciling items collected and combined due to few number of companies reporting (2% or less) or small magnitude.

[d] Companies reconcile from IFRS net income to US GAAP net income. So, positive (negative) reconciling items increase (decrease) IFRS net income.