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Structured Abstract

Purpose: We seek to determine whether financial statement users suffered a significant loss of information when, in November, 2007, the SEC dropped the requirement for foreign private issuers using IFRS ("IFRS firms") to reconcile their financial statements to U.S. GAAP.

Design/methodology/approach: We investigate whether analyst forecast errors and forecast dispersion increased for IFRS firms to a greater extent than for U.S. GAAP firms after the SEC dropped the reconciliation requirement. Using a treatment group comprised of IFRS firms and a matched sample of U.S. GAAP firms, we employ regression analyses to compare forecast errors and dispersion for the last fiscal year the reconciliation was available and the first fiscal year during which the reconciliation was unavailable to analysts.

Findings: We find evidence that forecast errors for IFRS firms exhibited no systematic change after the reconciliation was no longer available for analysts covering those firms. Thus, it does not appear that dropping the reconciliation requirement was associated with a change in forecast accuracy. However, we do find evidence of increased dispersion in the IFRS firms' forecasts relative to their U.S. GAAP counterparts after the reconciliation requirement was dropped.

Practical implications: These findings have implications for evaluating the SEC's 2007 decision to eliminate the reconciliation for IFRS firms. Specifically, the SEC's decision does not appear to have significantly altered analysts' information environments.

Originality/value of paper: Our paper contributes to the understanding of how a group of sophisticated financial statement users adapt to different sets of accounting standards.

Keywords: IFRS, GAAP, 20-F Reconciliation, Analyst Forecasts
Article Classification: Research paper

I. INTRODUCTION

As global stock markets have become increasingly integrated, policy makers in many countries have mandated the use of a common set of accounting standards, International Financial Reporting Standards (IFRS). According to the AICPA (2016), 120 countries require or permit companies to use IFRS in reporting their financial results to investors. Meanwhile United States companies still apply U.S. Generally Accepted Accounting Principles (GAAP). Historically, the United States Securities and Exchange Commission (SEC) required foreign private issuers whose securities were traded on United States markets to provide investors with information about what their financial statements would look like if they had used GAAP in preparing those statements. The purpose of the reconciliation was to provide U.S. investors with financial information on foreign issuers that was comparable to information the investors could obtain for companies in the United States. Debate over the usefulness of the Form 20-F reconciliation, relative to its cost, has been ongoing for some time. For example, in the early 1990s, the chairman of the New York Stock Exchange argued that the 20-F reconciliation impeded the competitiveness of U.S. Exchanges (Siconolfi and Salwen, 1992). Beginning in November 2007, the SEC withdrew the reconciliation requirement for foreign issuers whose financial statements are prepared using IFRS (SEC 2007).

The withdrawal of the reconciliation requirement raises interesting policy and research questions. From a research perspective, withdrawal offers the opportunity to analyze and evaluate the question whether the costs of reconciliation for affected firms were offset by benefits to investors. Specifically, if the investment community was unable to reconcile GAAP and IRFS reporting on its own—or if the differences between the two sets of standards are substantial—then we would expect analyst forecast errors to increase, and confidence in those

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forecasts to decline, after the reconciliation requirement was withdrawn. If, on the other hand, the reconciliation provided relatively little important information to the market, perhaps because convergence efforts over the first part of this century reduced the differences between the two sets of standards, then we would not expect to see a meaningful change in either forecast accuracy or uncertainty in the period after the reconciliation requirement was withdrawn.

Ours is not the first effort to address this question. In the years *prior* to withdrawal of the reconciliation requirement, a number of studies found a correlation between stock market returns and information in the reconciliation statement, suggesting that the reconciliation did indeed provide investor-relevant information to the marketplace (Rees, 1995; Fulkerson and Meek, 1998; Harris and Muller, 1999; Henry et al., 2009). Analyses of other indicators, such as trading volume as an indicator of investor uncertainty or disagreement, yielded generally similar conclusions. The results of these studies indicated a positive relation between trading volume and both the release of the reconciliation and the magnitude of the difference between GAAP and IFRS numbers in the financial statements (Hora et al., 2004; Chen and Sami, 2008), suggesting both that the reconciliation provided information to the capital markets and that this information may have created increased uncertainty (or disagreement) among investors. Thus, research into the information value of the GAAP-IFRS reconciliation in the period prior to the SEC withdrawing this requirement suggested that the reconciliation provided important information to the capital markets, implying that withdrawal might be expected to increase costs for foreign companies listed on U.S. exchanges and casting doubt on the argument that the value of the information provided by the reconciliation did not justify the costs to affected firms of providing it.

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Interestingly, research in the post-withdrawal period is less sanguine about the information content of the reconciliation. In contrast to the results reported in earlier studies, in the years since withdrawal of the reconciliation requirement, research regarding the market impact on affected firms has been mixed. Analyses of the market reaction to withdrawal of the reconciliation requirement find no significant impact on market liquidity or cost of equity capital (Kim et al. 2012) and mixed results with respect to abnormal returns around announcement dates (Chen and Khurana 2015) for affected firms. With regard to investor uncertainty, the post-withdrawal research has also been mixed—some studies find evidence of increased uncertainty surrounding analysts' forecasts for *some* IFRS firms (Kang et al. 2014) following withdrawal of the reconciliation requirement, while others report no observable differences in uncertainty between affected and unaffected firms (Kim et al., 2012).

In sum, the results of the research to this point are largely inconclusive regarding whether the loss of information as a result of the elimination of the 20-F reconciliation reduced investors' collective ability to effectively compare the results and financial position of domestic and foreign issuers. In this study we address this question by evaluating the characteristics of analysts' earnings forecasts for IFRS and domestic firms in the periods before and following the elimination of the reconciliation report in firms' 20-F filings. Specifically, we analyze analyst forecast errors and forecast dispersion for a matched sample of U.S. and foreign companies whose stocks trade on U.S. stock markets. Our findings indicate no difference in forecast accuracy as a result of eliminating the reconciliation. However, we do find that the post-reconciliation increase in forecast *dispersion* was greater for IFRS firms than for their matched counterparts reporting under GAAP. Thus, our results suggest that the reconciliation information formerly required by the SEC does appear to have some usefulness for capital markets. However,

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the withdrawal of this information does not appear to significantly impact analysts' collective ability to forecast earnings for IFRS firms.

The remainder of this paper is organized as follows. The next section provides a detailed review of the relevant prior literature, and summarizes our research questions. We then describe our research design, and follow that with a discussion of our results. The final section summarizes our conclusions.

II. PRIOR LITERATURE AND RESEARCH QUESTIONS

All foreign private issuers were required, as part of their annual Form 20-F filings, to reconcile their financial statements to U.S. GAAP for fiscal years ending prior to November 15, 2007. These filings included, at a minimum, reconciliations of net income and stockholders' equity. For fiscal years ending after November 15, 2007, the SEC dropped the reconciliation requirement for firms using IFRS to prepare their financial statements. The SEC's move to drop the reconciliation requirement for IFRS firms implies that the costs of preparing the reconciliation outweighed its benefits. As Plumlee and Plumlee (2008) state, "regardless of the relative quality of U.S. GAAP versus IFRS, eliminating the formerly required reconciliation necessarily reduces information previously publicly available." (pg. 16) We examine whether the reconciliations between IFRS and GAAP provided information useful to analysts and, by extension, to investors. Previous studies of the informational content of the 20-F reconciliation provide mixed evidence as to the usefulness of the reconciliation.

Several studies (Rees, 1995; Fulkerson and Meek, 1998; Harris and Muller, 1999; Henry et al., 2009) find associations between returns to investors and information in Form 20-F reconciliations, indicating that the reconciliations contain decision-useful information. Rees (1995) utilized an event study to evaluate stock price reactions to the release of the 20-F. Using

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a sample of 150 firms and 558 firms-years from 1982 to 1991, Rees documented an association

between returns and unexpected changes in reconciliation amounts. This finding indicates that

the release of the 20-F provided new information to the market. Fulkerson and Meek (1998) find

a positive association between amounts in net income reconciliations and abnormal returns for

foreign issuers in countries with accounting systems that differ substantially from U.S. GAAP.

Using a sample dated from 1992 to 1996, Harris and Muller (1999) find positive associations

between earnings reconciliation amounts and both market value and returns, even after

controlling for IAS earnings. Henry et al. (2009) find that the earnings and book value

differences between IFRS and U.S. GAAP declined from 2004 to 2006. However, based on data

from a sample of 75 European Union firms, Henry et al. (2009) also find that, even with the

apparent move toward convergence, earnings and book value reconciliation amounts remained

value-relevant with coefficients on both variables significant and positively-signed in regressions

of market values.

Other studies using returns or price-based data as evidence find no significant changes

associated with the removal of the reconciliation or find mixed evidence. Jiang et al. (2010) find

that bid-ask spreads and abnormal returns did not change systematically after the removal of the

reconciliation requirement in 2007 for firms using IFRS. Chen et al. (2015) use bid-ask spreads

as a measure of information asymmetry. They find that, among foreign private issuers, bid-ask

spreads were lower for IFRS firms in the period after the reconciliation requirement was

dropped. This finding indicates a reduction of information asymmetry. Chen et al. (2015) also

find reductions in information asymmetry to be greatest for firms with strong disclosure

incentives. This finding is consistent with Hansen et al. (2012), who find that, to the extent the

reconciliation provided useful information, such information has been replaced through firm-

level accounting choices, especially for firms with strong reporting incentives. Hansen et al. (2012) measure reporting incentives based on the length of a firm's Form 20-F reconciliation.

Finally, Chen and Khurana (2015) use price-based evidence and reach a mixed conclusion. They study abnormal returns around key dates in the process leading to the SEC's decision to drop the IFRS – GAAP reconciliation requirement. Chen and Khurana (2015) conclude that abnormal returns, on and around the key policymaking dates, were positively associated with a firm's savings (measured by unexpected audit fees) from not having to prepare and pay audit fees associated with the reconciliation. Meanwhile, abnormal returns were negatively related to the information content of a firm's prior IFRS reconciliation (measured by the size of the earnings reconciliation, scaled by total assets). Thus, for firms with large reconciliation differences, Chen and Khurana's (2015) findings indicate the information in the reconciliation was valuable to investors.

Trading volume has also been used to study the information content of the 20-F reconciliation. Hora et al. (2004) and Chen and Sami (2008) examine the information content of the Form 20-F reconciliation and use trading volume as an indicator of investor disagreement or uncertainty. Both studies find evidence that the reconciliation contains decision-useful information. Hora, et al. (2004) examine a sample of Form 20-F filers and find increased trading volume around 20-F filing dates compared to the rest of the fiscal year, and a positive association between abnormal trading volume and the size of the net income reconciliation. Chen and Sami (2008) evaluate the information content of the earnings reconciliation from IAS to U.S. GAAP for a sample covering the period 1995 to 2004. Specifically, they evaluate changes in short-term trading volume around the release of the Form 20-F reconciliation. Chen and Sami (2008) detect a positive association between the size of the earnings reconciliation difference and abnormal

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trading volume, indicating that the reconciliations for this period contained decision-relevant information.

While both Hora et al. (2004) and Chen and Sami (2008) find evidence that the Form 20-F reconciliation contains information that investors might well find to be decision-relevant, other research (Jiang et al., 2010; Kim et al., 2012; Kang et al., 2014; and Chen et al., 2015) calls into question the benefits provided by the 20-F reconciliation. As reporting requirements converge, the importance of the reconciliation may be declining. Jiang et al. (2010) update the research of Chen and Sami (2008) by evaluating the impact of the reconciliation on abnormal trading volume for an updated sample of filers. Using data from 2006-2008, their results indicated no significant changes in trading volume after elimination of the reconciliation.

Kim et al. (2012) find that eliminating the 20-F reconciliation requirement did not affect the market liquidity, cost of equity, or characteristics of analyst forecasts for affected firms. Kim et al. (2012) compare foreign private issuers using IFRS to other non-U.S. firms with ADRs listed on U.S. exchanges and measure forecast error and forecast dispersion using the last mean one-year ahead forecast for year *t*, issued within a 90-day period starting one trading day before the deadline for the year *t-1* 20-F filing. Kang et al. (2014) also examine analyst forecast uncertainty before and after the Form 20-F reconciliation requirement. Kang et al. (2014) measure forecast uncertainty as of a date four months prior to the fiscal year-end. Comparing a sample of firms using IFRS to a sample of ADR firms using U.S. GAAP, they find an increase in analyst forecast uncertainty for firms from countries with relatively weak investor protections after the reconciliation requirement was dropped.

We contribute in two primary ways to the literature studying the characteristics of analyst forecasts before and after the 20-F reconciliation was dropped. First, we use a different forecast

measurement date than Kim et al. (2012) or Kang et al. (2014) to measure mean and median analyst forecast error, as well as the standard deviation of analyst forecasts. Our analyst forecast variables are based on the last measurement of the mean, median, or standard deviation, prior to earnings announcement dates. In addition, we compare companies in our sample that use IFRS to similar U.S.-based firms. Kim et al. (2012) and Kang et al. (2014) compare IFRS firms to other cross-listed (non-U.S.) firms. To our knowledge, no prior research performs a post-reconciliation comparison of analyst forecast error and dispersion for US-based and IFRS firms. This latter difference motivates our study in that it allows us to directly address the debate about whether U.S. firms should be able to report using IFRS and closes a gap in the literature. Thus, our study complements the work of Kim et al. (2012) and Kang (2014) by using a different analyst forecast measurement date and a different set of comparison firms.

If the IFRS-GAAP reconciliation provided important information to analysts in the preparation of forward-looking earnings forecasts for IFRS firms traded on U.S. stock exchanges, the absence of this information should result in less accurate forecasts and more uncertainty surrounding those forecasts in the post-reconciliation period. In such a scenario we would expect forecast accuracy for analysts' forecasts of IFRS firms' earnings in the post-reconciliation period to suffer to a greater degree than forecasts of U.S. GAAP firms' earnings in that period. We would also expect the dispersion of analysts' earnings forecasts to increase more for IFRS firms than for U.S. GAAP firms from the pre-reconciliation period to the post-reconciliation period. If affected firms provided information contained in the 20-F reconciliation in an alternative way, for example through increased disclosures, or if differences between IFRS and GAAP are not substantial following a period of growing convergence between the two sets of standards, changes in forecast accuracy and dispersion from the pre- to the post-reconciliation

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environment should not differ appreciably for IFRS and GAAP firms. Thus, we address the following two research questions:

RQ1: Was the removal of the IFRS-to-U.S. GAAP reconciliation requirement associated with a greater decline in analyst forecast accuracy for firms using IFRS, compared to U.S. GAAP firms?

RQ2: Was the removal of the IFRS-to-U.S. GAAP reconciliation requirement associated with increased dispersion of analysts' earnings forecasts for firms using IFRS, compared to U.S. GAAP firms?

These questions are important as the SEC, FASB, and IASB continue to consider whether to pursue increased convergence in standards. If investors no longer need a reconciliation of earnings reported under the two sets of accounting standards environments, it is possible that differences in standards have no meaningful economic import, and additional convergence may be unnecessary. Our results can also contribute to the dialogue about whether U.S. firms should be allowed to use IFRS standards in preparing their financial reports on both European and U.S. stock exchanges. Alternatively, allowing firms to choose between accounting standards may affect the quality of reporting as individual firms elect to present information using the standard that represents their economic condition in the best light.

III. RESEARCH DESIGN

If analysts found the post-reconciliation period financial statements less useful than financial statements containing reconciliations from IFRS to U.S. GAAP, we expect forecast accuracy to decline and forecast dispersion to increase for IFRS firms beginning in the second fiscal year of the post-reconciliation period. When forecasting an IFRS firm's earnings for the

first post-reconciliation fiscal year, analysts were able to refer to the IFRS-to-U.S. GAAP

reconciliation in the prior year's financial statements. However, when forecasting the second

post-reconciliation year's earnings for those firms, analysts had no access to such prior year

reconciliations. The first post-reconciliation fiscal year ended in 2008 for most firms, while the

second post-reconciliation year usually ended in 2009. Therefore, we refer to the first post-

reconciliation year (the final year for which analysts had access to IFRS firms' prior year

reconciliations in compiling their forecasts) as 2008 (year t) and the following year as 2009 (year

$t+1$). If analysts found IFRS firms' post-reconciliation period financial statements less useful

than their pre-reconciliation financial statements, we would expect to see changes in the

characteristics of their forecasts of IFRS firms' earnings from year t (2008) to year $t+1$ (2009).

Following Kim et al. (2012) and Kang et al. (2014), our research design essentially uses a

treatment and a control group.[1] The elimination of the reconciliation requirement for IFRS firms

is the treatment in our research design. Firm-year observations for IFRS firms that filed Form

20-F with the SEC in both the pre- and post-reconciliation periods comprise the treatment group.

We match IFRS firms with a control group of U.S. firms that employed U.S. GAAP in preparing

their financial statements. We use two proxies for the quality of the information environment:

analysts' forecast errors and analysts' forecast dispersion (see Byard et al. (2006) for a

discussion of analysts' forecasts errors and dispersion as proxies for the information

environment). Figure 1 summarizes our research questions and the comparisons necessary to

evaluate them.

[Insert Figure 1 about here]

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[1] As we note in our review of the literature, unlike Kim et al. (2012) and Kang et al. (2014), we compare IFRS firms to firms based in the U.S.

Measurement of Analyst Forecast Error and Dispersion

We scale absolute analyst forecast error (AFE) by actual earnings per share for each firm-year observation. We obtain analyst forecast data from the IBES summary statistics data base and use the measures of analyst forecast error (AFE) represented in equations (1) and (2).

$$AFE_{i,j,mean} = |(F_{i,j,mean} - EPS_{i,j})/EPS_{i,j}| \qquad (1)$$

$$AFE_{i,j,median} = |(F_{i,j,median} - EPS_{i,j})/EPS_{i,j}| \qquad (2)$$

The IBES mean and median forecasts are revised periodically. For each firm-year observation, $F_{i,j,mean}$ ($F_{i,j,median}$) is the final consensus mean (median) forecast issued before the firm's earnings announcement. $EPS_{i,j}$ represents actual earnings per share, adjusted for items ignored by analysts, for each firm-year observation. We obtain $EPS_{i,j}$ from the IBES summary statistics data base.

In order to evaluate Research Question 2, we measure forecast dispersion (σ *Analyst Forecast*) as the standard deviation of analysts' earnings forecasts for each firm-year observation, scaled by the mean forecast for that firm-year. Again, we use the standard deviation and mean of the last forecast issued before the date of the firm's earnings announcement. Firms followed by only one analyst are excluded from the standard deviation sample.

Sample

We identify a group of foreign registrants filing Form 20-F and using IFRS to prepare their financial statements in the first post-reconciliation fiscal year (i.e. the firm's first fiscal year ending after November 15, 2007). An initial review of Audit Analytics and Compustat revealed 95 firms ("IFRS firms") that filed Form 20-F (Audit Analytics Form F Key = "20-F") with the SEC in the year after the reconciliation requirement was dropped and used IFRS (Compustat ACCTSTD = "DI") in preparing their financial statements that year.

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As discussed above, we investigate whether analyst forecast characteristics changed after analysts could no longer refer to the prior year's reconciliation in compiling their forecasts. Since the SEC dropped the reconciliation requirement for fiscal years ending on or after November 15, 2007, we require the IFRS firms in our sample to employ IFRS in preparing their financial statements included in their Form 20-F filings for the first and second fiscal years ending after November 15, 2007. We also require them to use IFRS in preparing their financial statements for the last fiscal year ended before November 15, 2007.[2] After applying these criteria, 69 of the original 95 IFRS firms remained in our sample.

The IFRS firms in our sample represent our treatment group. In order to choose a control group, we match each IFRS firm to a U.S. GAAP firm based on four-digit SIC codes and total revenue for the first year in the post-reconciliation period. The 138 firms in our sample provide a potential sample size of 276 firm-year observations, one per firm in both the first and second post-reconciliation fiscal years. However, analyst forecast information is not available for all firm years in our sample. For 2008, the final year for which analysts were still able to refer to prior year IFRS-to-U.S. GAAP reconciliations in compiling their forecasts, we obtain forecast data for 59 U.S. GAAP firms and for 58 IFRS firms from our sample. For 2009, the first year in which analysts did not have access to prior year reconciliations, analyst forecast data is available for 62 U.S. GAAP firms and for 54 IFRS firms. Thus our total sample consists of 233 AFE observations, with 117 of those observations from 2008 and 116 from 2009. To summarize, the four groups in our study are as follows:

- U.S. GAAP firm-year observations for 2008 (first post-reconciliation year)

- U.S. GAAP firm-year observations for 2009 (second post-reconciliation year)

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[2] The requirement that firms employed IFRS before the reconciliation requirement was dropped ensures that analysts had at least some pre-reconciliation experience in using the firm's IFRS-based financial statements.

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- IFRS firm-year observations for 2008 (first post-reconciliation year)

- IFRS firm-year observations for year 2009 (second post-reconciliation year)

Some firms in our sample were followed by only one analyst. Measurement of forecast

dispersion requires more than one analyst's forecast; therefore, our sample size for Question 2 is

smaller than the sample size used to evaluate Question 1. Panels A and B of Table 1 list the U.S.

GAAP and IFRS firms included in our sample of analysts' forecast error observations.

[Insert Table 1 about here]

Data and Methods

Table 2 summarizes descriptive statistics for our sample as a whole as well as for our

U.S. and IFRS samples. On average, the IFRS firms are larger than the U.S. GAAP firms.

However, fewer analysts (*NumEst*) follow the IFRS firms. While an average (median) of 11.26

(12.00) analysts issue forecasts for our U.S. GAAP firms, the average (median) number of

analysts issuing forecasts for IFRS firms is just 3.60 (2.00).

The wider analyst following for U.S. GAAP firms is also evident in our ability to obtain the

standard deviation of analysts' earnings per share forecasts for our firm-year observations. The

standard deviation of forecasts for a firm-year observation is only available when a firm is

followed by more than one analyst. We are able to obtain the standard deviation of analyst

forecasts for 120 of our 121 U.S. GAAP firm-year observations. In other words, all but one of

our U.S. GAAP firm-year analyst forecasts is based on the estimates of multiple analysts.

However, we are only able to obtain this measure for 76 of our 112 IFRS firm-year observations.

Consensus forecasts tend to be more accurate for U.S. GAAP firms than for IFRS firms in

our sample. Interestingly, the mean of our dispersion measure (*Forecastsdev*) is greater for U.S.

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GAAP firms (21.89) than for IFRS firms (16.14). However, the median dispersion for U.S.

GAAP firms (3.36) is actually lower than the median dispersion for IFRS firms (6.36).

As noted by Doran (2000), data involving analyst forecasts often does not conform to a

normal distribution. To address this issue, we measure our dependent variable (mean or median

forecast error) as the natural log of the actual analyst forecast error, using the model in equation

(3) to address the question of whether systematic differences in levels of analyst forecast error

for IFRS and U.S. GAAP firms resulted from dropping the Form 20-F reconciliation requirement

(RQ1). Natural log transformation is often used to transform skewed data to approximately

conform to normality (e.g., Deakin, 1976). Our model is as follows:

$$lnAFE_{i,j} = \beta_0 + \beta_1 lnAssets_{i,j} + \beta_2 Numest_{i,j} + \beta_3 lnAbsEPSchg_{i,j}$$

$$+\beta_4 Loss_{i,j} + \beta_5 IFRS_{i,j} + \beta_6 Postrecon_{i,j} + \beta_7(IFRS_{i,j} * Postrecon_{i,j}) \qquad (3)$$

in which:

$lnAFE_{i,j}$ is the natural logarithm of either of two measures of analyst forecast error, *AFEmean* or
AFEmedian for firm *i* in fiscal year *j*;

AFEmean = |($F_{i,j,mean}$ − $EPS_{i,j}$)/ $EPS_{i,j}$| * 100, where $F_{i,j,mean}$ is equal to the mean of all analyst
forecasts of earnings per share for firm *i* and year *j*. $EPS_{i,j}$ is equal to firm *i*'s actual earnings per
share for year *j*;

lnAFEmean = the natural log of (*AFE_{mean}* + 1);

AFEmedian = |($F_{i,j,median}$ − $EPS_{i,j}$)/ $EPS_{i,j}$| * 100, where $F_{i,j,median}$ is equal to the median of all
analyst forecasts of earnings per share for firm *i* and year *j*. $EPS_{i,j}$ is equal to firm *i*'s actual
earnings per share for year *j*;

lnAFEmedian = the natural log of (*AFE_{median}* + 1);

Assets = firm *i*'s total assets (in millions of dollars) at the end of year *j*;

lnAssets = the natural log of *Assets;*

NumEst = The number of analyst estimates used in computing the mean and median forecasts for
each firm-year observation;

AbsEPSchg = |(EPS_{ij} − EPS_{ij-1})/$EPS_{i,j-1}$| * 100, where EPS_{ij} is equal to earnings per share for firm
i and year *j*;

AbsEPSchg = the natural log of (*AbsEPSchg* +1);

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Postrecon is a dichotomous variable set to equal 0 for fiscal years ending prior to November 15, 2008 and 1 for fiscal years ending after that date; and

IFRS is a dichotomous variable set to equal 0 for U.S. GAAP firms and 1 for IFRS firms.

Our control variables have been drawn from a variety of prior studies of analyst forecast error. Size (*lnAssets*) and the number of analysts providing estimates of a firm's earnings (*Numest*) are both commonly included in models of analyst forecast error and dispersion. Payne (2008) and Hope (2003) both include such control variables as well as measures of the year-over-year change in earnings in modeling analyst forecast errors and, in Hope's (2003) case, also dispersion. Earnings variability can increase the difficulty of analysts' forecasting task. We include *lnAbsEPSchg* as a control variable to control for this source of difficulty. We include *Loss* as a control variable. Payne (2008) and Hope (2003) note that reported losses can make it more difficult for analysts to forecast earnings. Additionally, Abarbanell and Lehavy (2003) note a larger than expected number of large negative forecast errors. One potential reason they offer for such errors is the recording of large unexpected negative accruals, or "big bath" behavior, by firms. It is possible that this behavior is one factor that makes it difficult for analysts to forecast losses.

For the full sample of IFRS and U.S. GAAP firms, our predictor variable of interest in the above model is the interaction between the accounting standard and the time period (*IFRS*Postrecon*). A positive and statistically significant coefficient on this variable would provide evidence of systematically larger analyst forecast errors for IFRS firms in the post-reconciliation period. In other words, such a result would be consistent with a conclusion that dropping the reconciliation requirement resulted in an important loss of information for analysts.

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We use the model in equation (4) to address the question of whether systematic differences in analyst forecast uncertainty (or dispersion) for IFRS and U.S. GAAP firms resulted from dropping the Form 20-F reconciliation requirement (RQ2).

$$lnForecastsdev_{i,j} = \beta_0 + \beta_1 lnAssets_{i,j} + \beta_2 Numest_{i,j} + \beta_3 lnAbsEPSchg_{i,j}$$

$$+\beta_4 Loss_{i,j} + \beta_5 IFRS_{i,j} + \beta_6 Postrecon_{i,j} + \beta_7 (IFRS_{i,j} * Postrecon_{i,j}) \qquad (4)$$

in which:

$Forecastsdev_{i,j}$ = the standard deviation of analysts' forecasts of earnings per share for firm i and year j;

$lnForecastsdev_{i,j}$ = the natural log of ($Forecastsdev_{i,j}$ + 1); and

All other variables are as defined in equation (3).

Our sample size for equation (4) is smaller than the sample size for equation (3). In order for the standard deviation of forecasts to be available on the IBES database, more than one analyst's earnings estimate must be included in the consensus forecast. We lose one U.S. GAAP firm and 36 IFRS firms due to this fact. Thus, our sample sizes for equation (4) are 196, 120, and 76 for the full sample, the U.S. GAAP sample, and the IFRS sample, respectively.

IV. RESULTS

Analyst Forecast Errors

We present the results of equation (3) in Table 3. Panel A includes the results using *lnAFEmean* as the dependent variable. The results obtained using *lnAFEmedian* as the dependent variable appear in Panel B. In addition to estimating the full model on the full sample (column 1 of Panel A and column 1 of Panel B), we also estimate a reduced model separately on the U.S. GAAP and IFRS subsamples in the second and third columns of Panel A and Panel B.

[Insert Table 3 about here]

We note first that our results are not sensitive to use of the median rather than the mean to measure average analyst forecast error. All variables that are statistically distinguishable from

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zero using the mean forecast error as the dependent variable in our model remain so when we use the median error instead. Furthermore, there are no differences in the levels of significance between the two sets of analyses.

Next we turn to a discussion of the coefficients on the control variables in model (3). Our control variables mainly produce the results we expect. Based on the results presented in Table 3, forecast errors appear to grow smaller as the number of analysts covering a firm (*Numest*) grows, a result that appears to be driven by our subsample of IFRS firms. There is some evidence, albeit only at a 0.10 level of significance, that analysts have more difficulty forecasting the earnings of larger firms (*lnAssets*) in our full sample. This result is somewhat surprising. However, the association between forecast errors and firm size disappears as we estimate equation (3) on our subsamples. Taking the results of our subsample models together with the weak evidence of significance in the full sample, we are not ready to conclude that analyst forecast errors are systematically increasing in firm size. Our proxy for earnings volatility (*lnAbsEPSchg*) is, not surprisingly, positively associated with errors in consensus forecast estimates. Finally, analysts seem to produce less accurate forecasts in loss years (*Loss*), a result which appears to be driven by U.S. GAAP firms. This final control variable result is consistent with research finding that firms manage earnings downward in loss years.

The coefficient on *IFRS*Postrecon* provides an indicator of whether analyst forecast accuracy was systematically different for IFRS firms in the post-reconciliation period. Our models detect no evidence of any such systematic difference, as the coefficients on *IFRS*Postrecon* are not close to significance in either full model. In addition, in the separate models using only U.S. GAAP firm years (column 2 of both Panel A and Panel B) and only IFRS firm years (column 3 of both Panel A and Panel B), the only evidence we find of a

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systematic difference in consensus forecast accuracy indicates that forecast errors grew for U.S. GAAP firms in the post-reconciliation period, but not for IFRS firms. This difference could be due to the global financial crisis. Regardless of the reason, the results suggest that withdrawal of the reconciliation requirement did not result in larger forecast errors for IFRS firms in the post-reconciliation period. In summary, the results in Table 3 provide no evidence that analysts, as a group, had any more difficulty forecasting earnings of IFRS firms compared to U.S. GAAP firms after they no longer had access to the prior year IFRS to U.S. GAAP reconciliation.

Dispersion of Analyst Forecasts

We present the results of the full version of equation (4) in the second column of Table 4. We present the results of a reduced version of equation (4) in columns 3 and 4 of Table 4. The control variables included in equation (4) are identical to those included in equation (3). We note, however, that the coefficients for these variables differ somewhat from those estimated in equation (3). In our sample, neither firm size (*lnAssets*) or the number of analysts providing EPS estimates (*Numest*) is systematically associated with variation in forecast dispersion. Year-to-year changes in earnings per share (*lnAbsEPSchg*) are positively associated with analyst uncertainty in the full sample, as well as the two subsamples. The coefficient on *lnAbsEPSchg* is only significant at the 0.10 level in the IFRS subsample. Finally, loss years (*Loss*) are associated with increased uncertainty in the both the full sample and U.S. GAAP subsample. Again, this might be due to increased and unpredictable levels of earnings management in loss years.

[Insert Table 4 about here]

Our variable of interest in equation (4) is again *IFRS*Postrecon*. The positive coefficient on this variable indicates that forecast dispersion was higher for analysts' forecasts for IFRS

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firms in the post-reconciliation period, suggesting that analyst uncertainty was higher for these firms in year *t+1*. We acknowledge that this coefficient was statistically distinguishable from zero only at the .10 level of confidence, suggesting that some caution might be appropriate in relying on this result. However, the estimated coefficient for the *Postrecon* variable is statistically distinguishable from zero only for our IFRS sample, providing further support for the interpretation that uncertainty around analysts' forecasts was higher for IFRS firms in the post-reconciliation period. For the IFRS subsample, the coefficient on *Postrecon* in the IFRS subsample is significant at the 0.01 level suggesting that the statistically significant coefficient on the interaction term in our full sample analysis is not spurious. We therefore conclude that analysts were less certain, but just as accurate, in predicting IFRS firms' earnings in the post-reconciliation period.

Robustness Checks

We conduct two robustness checks, neither of which change our overall conclusions. The results of our robustness checks, which we discuss below, are untabulated but the results can be obtained from the authors should any readers request them. In our first robustness check, we modify our model of analyst forecast error to include the natural logarithm of forecast dispersion (*lnForestsdev*) as a predictor variable. Dispersion was positively associated (p-value < 0.01) with analyst forecast error in both our full and reduced models of *lnAFEmean* and *lnAFEmedian*. Additionally, inclusion of *lnForecastsdev* as a predictor variable increased the adjusted R^2 of our models.[3] However, the coefficients on our predictor variables of interest (*IFRS*Postrecon* in the full model and *Postrecon* in the reduced model) were not statistically distinguishable from zero,

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[3] For example, inclusion of *lnForecastsdev* increased the adjusted R^2 of our full model of *lnAFEmean* from 0.287 to 0.350.

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at the 0.05 level of significance.[4] Thus, while including *lnForecastsdev* improves the predictive

value of our models of analyst forecast error, we still conclude that dropping the reconciliation

requirement had no detectable effect on analyst forecast *errors*.

In our second robustness check, we repeat our analyses using the Kruskal-Wallis

nonparametric method to test for an association between forecast errors or forecast dispersion

and removal of the reconciliation requirement for IFRS firms. Our first set of Kruskal-Wallis

results indicated that for *AFEmean*, *AFEmedian*, and *Forecastsdev* there were differences among

the four conditions in our study (pre- and post-reconciliation for both IFRS and U.S. GAAP

firms). However, our overall results using the Kruskal-Wallis test produced results consistent

with our regression models. The nonparametric method indicated no systematic change in

forecast errors for IFRS firms from the pre- to the post-reconciliation period. As was the case in

our regressions, U.S. GAAP firms' forecast errors did grow from the pre- to the post-

reconciliation periods. Finally, the Kruskall-Wallis tests indicated that there was some growth in

forecast dispersion for IFRS firms after removal of the reconciliation requirement. Thus, the

nonparametric results reinforce the conclusions we reach based on OLS regressions.

A study by Jeanjean and Stolowy (2008) regarding IFRS adopters' earnings management

suggests that homogeneous accounting standards alone cannot ensure consistent reporting

because of differences in culture, interpretation of standards, and enforcement. Byard et al.

(2011) reach a similar conclusion after evaluating analysts' information environments

surrounding mandatory adoption of IFRS in EU countries. This might explain why analysts'

accuracy was unchanged by the elimination of the reconciliation but dispersion increased. As

the two sets of standards became more consistent and analysts' awareness perhaps improved,

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[4] The coefficient on *Postrecon* was positive and significant at the 0.10 level of significance in our model of
lnAFEmean for the U.S. GAAP subsample. The same variable was significant at the 0.05 level in our main results
presented in Table 3. Our conclusion with respect to this variable, therefore, remains the same.

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forecasts accuracy improved. However, because similar standards are not always consistently applied, analysts' forecasts dispersion increased because of differences in interpretation and the adjustments applied. Jeanjean and Stolowy (2008) suggest that accounting standards themselves cannot ensure common reporting but that regulators should "devote their efforts to creating common goals rather than harmonizing accounting standards" (pg. 493).

V. CONCLUSION

Our study indicates that analyst forecast accuracy for IFRS firms did not suffer as a result of the SEC's removal of the requirement that those firms reconcile their financial statements to GAAP. Based on this finding, it does not appear that the IFRS-to-GAAP reconciliation contained information that analysts could not at least replace with other information sources. This result might be attributable to GAAP and IFRS standards converging over time (see discussion by Tsakumis et al., 2009; and Henry et al., 2009). Clearly, the SEC believes investors are well enough informed about the remaining differences between IFRS and U.S. GAAP to eliminate information previously available in the 20-F reconciliation.

Our analysis of forecast dispersion suggests a slightly different conclusion. In our sample, analysts' forecast dispersion for IFRS firms increased more than forecast dispersion for GAAP firms. Thus, dropping the IFRS-to-GAAP reconciliation might have resulted in a loss of information that was associated with increased uncertainty (i.e. decreased agreement among analysts) about IFRS firms' earnings prospects.

However, moving back to our forecast accuracy results, it would seem that the impact of this information loss was minimal in that analysts, as a group, were still able to produce forecasts that were no less accurate for IFRS firms. Overall, it would seem that some information loss

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might have occurred as a result of the removal of the reconciliation, but that the loss was less substantial than might have been expected. Taken as a whole, our results support previous studies that find the removal of the IFRS-GAAP reconciliation was not terribly consequential. Our results imply that the SEC's decision to eliminate the reconciliation requirement for IFRS firms likely allowed those firms to save costs related to preparing the reconciliation as well as associated audit fees without substantial information loss. These results further suggest that convergence of IFRS and GAAP, which now seems very unlikely, is less important than previously thought, as markets are able to use information produced under both regimes to forecast future results.

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Figure 1	
Summary of Comparisons used to answer Research Questions	
Question	**Necessary Comparison(s)[a]**
Was the removal of the IFRS-to-U.S. GAAP reconciliation requirement associated with a greater decline in analyst forecast accuracy for firms using IFRS, compared to U.S. GAAP firms?	• AFEs for IFRS firms for year t and year $t+1$ • AFEs for U.S. GAAP firms for year t and year $t+1$
Was the removal of the IFRS-to-U.S. GAAP reconciliation requirement associated with increased dispersion of analysts' earnings forecasts for firms using IFRS, compared to U.S. GAAP firms?	• Analyst forecast dispersion for IFRS firms for year t and year $t+1$ • Analyst forecast dispersion for U.S. GAAP firms for year t and year $t+1$

AFE = Analyst forecast error

[a] Year t is the first fiscal year ending after November 15, 2007. In forecasting earnings for year t, analysts would be able to refer to the prior fiscal year's reconciliation. Year $t+1$ is the second fiscal year ending after November 15, 2007. Analysts would not be able to refer a prior-year reconciliation in forecasting earnings for year $t+1$.

Table 1 Firms Included in AFE Sample	
Panel A: U.S. GAAP Firms	
A K STEEL HOLDING CORP	MCGRAW HILL COS INC
ABBOTT LABORATORIES	MERIDIAN BIOSCIENCE INC
ALASKA AIRGROUP INC	METLIFE INC
ALLSTATE CORP	MOSAIC COMPANY
ALPHA NATURAL RESOURCE INC	MURPHY OIL CORP
AMERIAN CAPITAL LTD	NEWMONT MINING CORP
AVERY DENNISON CORP	NORTHWEST PIPE CO
BROWN FORMAN CRP	OMNICOM GROUP INC
CAPSTONE TURBINE CORP	OVERSEAS SHIPHOLDING GROUP INC
CENTURYTEL INC	PFIZER INC
CHEVRON CORP NEW	PRINCIPAL FINANCIAL GROUP INC
CINCINNATI BELL INC NEW	PRUDENTIAL FINANCIAL INC
COMPASS DIVERSIFIED HOLDINGS	QWEST COMMUNICATIONS INTL INC
CONOCOPHILLIPS	ROCKWOOD HOLDINGS INC
EXXON MOBIL CORP	SAFEWAY INC
FREEPORT MCMORAN COPPER & GOLD	SCHOLASTIC CORP
FRONTIER COMMUNICATIONS CORP	SKYWEST INC
GENERAL COMMUNICATION INC	SOUTHERN COPPER CORP
GENWORTH FINANCIAL INC	SPRINT NEXTEL CORP
GEOKINETICS INC	SUNOCO INC
HARRIS CORP	T W TELECOM INC
HECLA MINING CO	TARGACEPT INC
HERSHEY CO	TELEPHONE & DATA SYSTEMS INC
HESS CORP	TELLABS INC
INTERSTATE HOTELS & RESORTS INC	TEXAS INDU.S.TRIES INC
KANSAS CITY SOUTHERN	UNITED STATES CELLULAR CORP
KULICKE & SOFFA INDS INC	VALERO ENERGY CORP NEW
L 3 COMMUNICATIONS HLDGS INC	VERIZON COMMUNICATIONS INC
LEVEL 3 COMMUNICATIONS INC	WINDSTREAM CORP
LIBERTY GLOBAL INC	WYETH
MARATHON OIL CORP	ZIMMER HOLDINGS INC

Table 1 Firms Included in AFE Sample	
Panel B: IFRS Firms	
A X A UAP	PETROCHINA CO LTD
AEGON N V	PORTUGAL TELECOM S G P S SA
AIXTRON AKTIENGESELLSCHAFT	PRUDENTIAL PLC
ALCATEL LUCENT	RANDGOLD RESOURCES LTD
ALLIANZ S E	REED ELSEVIER N V
ASTRAZENECA PLC	REED ELSEVIER PLC
B H P BILLITON PLC	REPSOL YPF S A
B P PLC	RIO TINTO PLC
BRITISH SKY BROADCASTING GR PLC	ROSTELECOM LONG DIST & INTL TELE
C G G VERITAS	ROYAL DUTCH SHELL PLC
C R H PLC	ROYAL KPN NV
CADBURY PLC	RYANAIR HOLDINGS PLC
CHINA EASTERN AIRLINES CORP LTD	SANOFI AVENTIS
CHINA PETRO & CHEMICAL CORP	SAPPI LTD
CHINA TELECOM CORP LTD	SASOL LTD
CRUCELL N V	SIEMENS A G
DEUTSCHE TELEKOM AG	SINOPEC SHANGHAI PETRO CO LTD
DIAGEO PLC	SMITH & NEPHEW P L C
E N I SPA	SYNGENTA AG
ERICSSON L M TELEPHONE CO	TELECOM CORPORATION NEW ZEALAND
ETABLISSEMENTS DELHAIZE FRER S A	TELECOM ITALIA S P A NEW
FRANCE TELECOM	TELEFONICA S A
GLAXOSMITHKLINE PLC	TENARIS S A
I N G GROEP N V	TERNIUM S A
INTERCONTINENTAL HOTELS GRP PLC	THOMSON REUTERS PLC
LIHIR GOLD LTD	TOTAL S A
MAGYAR TELEKOM TELECOM PLC	TRINITY BIOTECH PLC
NOKIA CORP	TURKCELL ILETISIM HIZMETLERI A S
NOVARTIS A G	VODAFONE GROUP PLC NEW
PEARSON PLC	W P P PLC
	YANZHOU COAL MINING CO LTD

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Table 2 – Descriptive Statistics				
Panel A: Full Sample	n	Mean	Median	Std. Deviation
AFEmean	233	33.36	5.74	100.50
lnAFEmean	233	2.13	1.91	1.39
AFEmedian	233	33.49	5.53	101.35
lnAFEmedian	233	2.11	1.88	1.40
Forecastsdev	196	19.66	4.05	87.40
lnForecastdev	196	1.81	1.62	1.13
*Assets (*in millions)	233	94,658.07	14,466.96	247,146.81
LnAssets	233	9.67	9.58	2.09
NumEst	233	7.58	5.00	6.36
AbsEPSchg	233	119.80	31.17	339.11
lnAbsEPSchg	233	3.61	3.47	1.43
Panel B: US GAAP firms		Mean	Median	Std. Deviation
AFEmean	121	22.28	3.45	83.28
lnAFEmean	121	1.74	1.49	1.30
AFEmedian	121	22.70	3.32	84.60
lnAFEmedian	121	1.72	1.46	1.31
Forecastsdev	120	21.89	3.36	109.33
lnForecastdev	120	1.60	1.47	1.14
Assets (in millions)	121	46,660.94	7,652.42	99,447.54
lnAssets	121	9.06	8.94	2.03
NumEst	121	11.26	12.00	5.98
AbsEPSchg	121	160.05	40.88	445.16
lnAbsEPSchg	121	3.75	3.73	1.53
Panel C: IFRS firms		Mean	Median	Std. Deviation
AFEmean	112	45.33	7.98	115.48
lnAFEmean	112	2.57	2.20	1.36
AFEmedian	112	45.14	8.16	116.04
lnAFEmedian	112	2.52	2.21	1.39
Forecastsdev	76	16.14	6.36	29.64
lnForecastdev	76	2.14	2.00	1.04
Assets (in millions)	112	146,512.12	36,239.59	334,290.16
lnAssets	112	10.34	10.50	1.95
NumEst	112	3.60	2.00	3.88
AbsEPSchg	112	76.32	28.49	149.82
lnAbsEPSchg	112	3.47	3.38	1.31

$AFEmean = |(F_{i,j,mean} − EPS_{i,j})/ EPS_{i,j}| * 100$, where $F_{i,j,mean}$ is equal to the mean of all analyst forecasts of earnings per share for firm i and year j, $EPS_{i,j}$ is equal to firm i's actual earnings per share for year j.

$lnAFEmean$ = the natural log of ($AFEmean + 1$).

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AFEmedian = |($F_{i,j,median} - EPS_{i,j}$)/ $EPS_{i,j}$)| * 100, where $F_{i,j,median}$ is equal to the median of all analyst forecasts of earnings per share for firm i and year j, $EPS_{i,j}$ is equal to firm i's actual earnings per share for year j.

lnAFEmedian = the natural log of (*AFEmedian* + 1).

Forecastsdev = the standard deviation of all analyst forecasts of earnings per share for each firm-year observation with more than one analyst estimate of earnings per share, scaled by $F_{i,j,mean}$, with the result multiplied by 100. This variable is only calculated for firm-years with more than one analyst estimate.

lnForecastsdev = the natural log of (*Forecastsdev* +1).

Assets = firm i's total assets (in millions of dollars) at the end of year j.

lnAssets = the natural log of *Assets*.

NumEst = The number of analyst estimates used in computing the mean and median forecasts for each firm-year observation.

AbsEPSchg = |($EPS_{ij} - EPS_{ij-1}$)/$EPS_{i,j-1}$| * 100, where EPS_{ij} is equal to earnings per share for firm i and year j.

AbsEPSchg = the natural log of (*AbsEPSchg* +1).

Table 3
Association between 20-F reconciliation and forecast error

	Panel A—Mean AFEs			Panel B—Median AFEs		
Variables	Full Sample	US GAAP Firm Years	IFRS Firm Years	Full Sample	US GAAP Firm Years	IFRS Firm Years
Intercept	0.163 (0.35)	0.152 (0.24)	0.751 (0.97)	0.334 (0.70)	0.238 (0.38)	0.982 (1.28)
lnAssets	0.081* (1.82)	0.070 (0.95)	0.077 (1.26)	0.080* (1.79)	0.061 (0.83)	0.066 (1.08)
Numest	-0.053*** (-2.96)	-0.034 (-1.37)	-0.088*** (-2.91)	-0.064*** (-3.60)	-0.035 (-1.41)	-0.119*** (-3.94)
lnAbsEPSchg	0.297*** (5.31)	0.263*** (3.78)	0.362*** (3.88)	0.289*** (5.15)	0.264*** (3.80)	0.342*** (3.69)
Loss	0.985*** (3.42)	1.193*** (3.31)	0.664 (1.34)	1.067*** (3.69)	1.314*** (3.65)	0.737 (1.50)
Postrecon	0.405* (1.89)	0.421** (2.02)	0.086 (0.37)	0.357* (1.65)	0.374* (1.80)	0.115 (0.49)
IFRS	0.619** (2.22)			0.471** (1.68)		
IFRS*Postrecon	-0.321 (-1.04)			-0.253 (-0.82)		
Observations	233	121	112	233	121	112
Adjusted R^2	0.287	0.240	0.197	0.298	0.256	0.238

***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively. Numbers in parentheses are t-statistics.

The dependent variable in Panel A is *lnAFEmean*.

The dependent variable in Panel B is *lnAFEmedian*.

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Loss = 1 if net income for a firm year was negative; 0 otherwise.

IFRS = 1 if IFRS was used in creating the firm's financial statements and 0 if US GAAP was used.

PostRecon = 1 for fiscal years ending between November 15, 2008 and November 14, 2009 and 0 for fiscal years ending before November 15, 2008.

Other variables are described in Table 2.

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	Table 4 Association between 20-F reconciliation and standard deviation of analyst earnings forecasts		
Variables	**Full Sample**	**US GAAP Firm Years**	**IFRS Firm Years**
Intercept	0.669 (1.55)	0.191 (0.35)	1.776** (2.38)
lnAssets	0.007 (0.16)	0.0563 (0.82)	-0.041 (-0.67)
Numest	-0.013 (-0.83)	-0.020 (-0.89)	-0.011 (-0.42)
lnAbsEPSchg	0.213*** (4.47)	0.246*** (4.05)	0.150* (1.91)
Loss	1.141*** (4.07)	1.326*** (4.20)	0.406 (0.58)
Postrecon	0.199 (1.12)	0.175 (0.96)	0.739*** (3.24)
IFRS	0.410 (1.64)		
*IFRS*Postrecon*	0.490* (1.70)		
Observations	196	120	76
Adjusted R^2	0.266	0.256	0.169

***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively. Numbers in parentheses are t-statistics.

The dependent variable in the above regressions is *lnForecastsdev*.