Journal of Accounting Research

DOI: 10.1111/j.1475-679X.2011.00422.x
Journal of Accounting Research
Vol. 49 No. 5 December 2011
Printed in U.S.A.

CHICAGO BOOTH

Analyst Following and Forecast Accuracy After Mandated IFRS Adoptions

HONGPING TAN,* SHIHENG WANG,† AND MICHAEL WELKER‡

Received 27 October 2009; accepted 30 May 2011

ABSTRACT

This study investigates how accounting harmonization affects one particular group of financial statement users—financial analysts. We find that mandatory International Financial Reporting Standards (IFRS) adoption attracts foreign analysts, particularly those from countries that are simultaneously adopting IFRS along with the covered firm's country and those with prior IFRS experience. We also find that mandatory IFRS adoption improves foreign analysts' forecast accuracy. The change in analyst following increases with the distance between prior local Generally Accepted Accounting Principles (GAAP) and IFRS and with the extent to which IFRS adoption eliminates GAAP differences between the firm's country and the analyst's country. IFRS adoption also attracts more local analysts, particularly those with prior IFRS experience and with an international portfolio prior to mandated IFRS adoption in their home country. Local analysts' forecast accuracy is not affected by IFRS adoption. Overall, our results suggest that accounting harmonization brings comparability benefits that enhance the usefulness of accounting data.

*University of Waterloo; †Hong Kong University of Science and Technology; ‡Queen's University. We are grateful for comments from a very helpful anonymous referee, the editor, and workshop participants at the University of Wisconsin, the University of Waterloo, McMaster University, and the Hong Kong University of Science and Technology. We are grateful for financial support from the Social Sciences and Humanities Research Council of Canada. Welker is grateful for financial support from the KPMG fellowship at Queen's University. Wang is grateful for financial support from Hong Kong Research Grants Council (Project No. DAG08/09.BM08).

1. Introduction

This study investigates how the recent mandatory adoption of International Financial Reporting Standards (IFRS) affects financial analysts. There is extensive research on the relation between various properties of financial reporting and analyst behavior. Internationally, Bushman, Piotroski, and Smith [2004] and Lang, Lins, and Miller [2003, 2004] all document a positive correlation between analyst following and disclosure transparency. Ashbaugh and Pincus [2001] and Guan, Hope, and Kang [2006] find that analyst accuracy improves after firms voluntarily adopt internationally recognized accounting standards, such as International Accounting Standards (IAS)[1] or U.S. Generally Accepted Accounting Principles (GAAP), or use accounting standards similar to these standards. Bae, Tan, and Welker [2008] find that differences in accounting standards dissuade analysts from following firms from foreign countries and impede their ability to accurately forecast earnings for the foreign firms they do follow. The general finding in this literature is that accounting quality and accounting standard differences affect analysts' coverage decisions and their earnings forecast performance.

We investigate these issues in the context of mandatory IFRS adoption. This is interesting because one of the most important motivations for accounting harmonization is to enhance the usefulness of accounting information across countries. Analysts are among the most important and sophisticated users of financial statements, so an examination of how harmonization affects analysts, especially foreign analysts who are impacted by the existence of different accounting standards across countries, adds to the literature documenting other effects of harmonization. In addition, analysts forecast earnings and other accounting numbers produced by GAAP, so an examination of analysts' forecasts allows an assessment of how accounting standard harmonization affects financial statement users' forecasting accuracy.

The potential effects of mandatory IFRS adoption on analyst following and forecast accuracy are not obvious. On one hand, widespread mandatory IFRS adoption can reduce information acquisition and processing costs for analysts so that learning a new set of accounting standards is not an impediment to following foreign firms. This would allow foreign analysts to cover more firms from different countries that have mandated IFRS reporting. The foreign analysts should also be more accurate in their earnings forecasts if accounting harmonization eliminates forecast errors caused by differences in accounting standards. Furthermore, the more comprehensive disclosure requirements under IFRS relative to some domestic accounting standards may make earnings easier to understand and predict,

[1] International Accounting Standards (IAS) were renamed IFRS in 2001. We use IAS and IFRS interchangeably but do not assume that earlier IAS and later IFRS adoption have the same consequences.

improving analyst forecast accuracy (e.g., Ball [2006]). In addition, the extensive fair value accounting rules under IFRS could possibly incorporate more timely information about economic gains and losses. If IFRS adoption increases the timeliness and volatility of accounting numbers, this could increase analyst following due to the enhanced usefulness and/or comparability of the data, but could decrease forecast accuracy due to increased earnings volatility.

On the other hand, opponents of accounting harmonization argue that unique accounting issues, history, culture, and institutional frameworks in each country determine the optimal accounting standards. Hence, an appropriate set of accounting standards in one country is not necessarily an appropriate set of accounting standards in another country. Opponents also criticize IFRS for allowing too much judgment in fair value measurements. Increased subjectivity of accounting estimates could decrease the transparency and comparability of reported accounting numbers across firms, industries, and countries. If this subjectivity results in increased earnings smoothing, then analyst following could decline due to the diminished usefulness of accounting data, but forecast accuracy could improve. These arguments also suggest that mandating the use of a common set of accounting standards across countries may not achieve accounting harmonization in practice. In addition, Ball [2006] notes that IFRS adoption imposes a one-time cost on analysts to learn the new standards, and that IFRS adoption means that analysts would not have a history of IFRS numbers to facilitate forecasting. These arguments suggest that IFRS adoption may not necessarily lower all analysts' costs, and also suggest that the effects on analyst following and forecast accuracy may not be identical. Hence, the net effects of the mandated IFRS adoption on analyst following and forecast accuracy are empirical questions.

Our primary empirical tests focus on the impact of IFRS adoption on foreign analysts to provide an assessment of how mandated IFRS adoption affects the usefulness of accounting data across borders. We find that IFRS adoption attracts foreign analysts. The results are stronger for analysts located in the 25 IFRS adopting countries in our sample and for those with prior IFRS experience. We find that IFRS adoption improves all foreign analysts' forecast accuracy. Of course, it is possible that these results reflect an overall trend in analyst coverage and forecast accuracy that is unrelated to IFRS adoption. To address this issue, we perform three sets of additional analyses.

First, we repeat our tests for firms domiciled in countries that did not adopt IFRS in our sample period. We do not find a significant change in either foreign analyst following or forecast accuracy for this control sample. Compared to non-IFRS countries, IFRS-adopting countries attract significantly more foreign analysts from countries simultaneously adopting IFRS and foreign analysts with prior IFRS experience, and fewer analysts from countries not adopting IFRS during our sample period. The improvement in foreign analysts' forecast accuracy is significantly greater

for firms in IFRS-adopting countries than for firms in non-IFRS-adopting countries.

Second, we test for changes in foreign analyst following and forecast accuracy for IFRS-adopting countries in time periods just before mandated IFRS adoption takes effect in these countries. Again, we do not find a significant change in foreign analyst following or forecast accuracy outside of our sample period, and the changes in analyst following and forecast accuracy are generally significantly greater after IFRS adoption than such changes occurring in time periods prior to IFRS adoption.

Third, we also examine local analysts and find that IFRS adoption attracts more local analysts, particularly those with prior IFRS experience and those who follow an international portfolio of firms prior to mandated IFRS adoption in their home country. Generally, there are not significant differences in the changes in foreign analysts and local analysts that follow IFRS adopting firms. Local analysts' forecast accuracy is not affected by IFRS adoption and the improvement in forecast accuracy is generally significantly greater for foreign analysts than for local analysts.

In cross-sectional analyses, we find that firms located in countries where local GAAP differed more from IFRS prior to IFRS adoption gain more foreign analysts than do firms located in countries with local GAAP more similar to IFRS. We also find that foreign analyst following increases more when IFRS adoption causes a greater reduction of GAAP differences between analysts' home countries and firms' home countries. The improvements in forecast accuracy occur for most foreign analyst groups we examine and are generally unrelated to our measures of how IFRS adoption affects GAAP differences from IFRS or from other sample countries. The combined results of these empirical tests provide evidence consistent with the idea that widespread adoption of IFRS provides benefits to financial analysts, and further suggest that increased comparability plays an important role in enhancing the usefulness of accounting data after IFRS adoption.

Our study is related to some studies that examine changes in earnings forecast accuracy after mandatory IFRS adoption in the European Union (EU). Horton, Serafeim, and Serafeim [2008] show that mandatory adopters experience improved earnings forecast accuracy and the improvement is greater for firms with accounting practices that diverge the most from IFRS. Wang, Young, and Zhuang [2008] find that earnings forecast errors and earnings forecast dispersion decrease after mandatory adoption dates for both voluntary and mandatory adopters in 17 EU countries. They also show that stock return variance surrounding earnings announcements increases for both sets of firms after mandatory IFRS adoption dates, suggesting IFRS-based earnings are more informative than local-GAAP-based earnings. Byard, Li, and Yu [2011] find that the decrease in earnings forecast errors is greater for firms located in countries where domestic GAAP diverges relatively more from IFRS, and for firms located in countries with better legal enforcement.

Our study is distinguished from these other studies of mandated IFRS adoption because of two important and unique features of our analysis. First, our study provides an extensive analysis of various analyst groups. We utilize analyst location data that allow us to separately examine foreign and local analysts, and to test cross-sectional predictions based on country–pair GAAP changes. One of the most important reasons to promote IFRS adoption around the world is to eliminate cross-border accounting differences so as to facilitate global capital flows. Our ability to identify analysts' locations allows us to provide unique insights into this role of IFRS adoption. Second, we examine the impact of IFRS adoption on both analyst following and earnings forecast accuracy, while other studies limit their analysis to earnings forecast properties alone. The impact of IFRS adoption on analysts' decisions to follow a firm and on their ability to forecast earnings accurately may not be identical. Our results suggest that studies that focus exclusively on analysts' forecasts accuracy fail to document some of the most important IFRS adoption effects.

Our study also complements recent research that investigates the relation between firms' choice of accounting standards and investor interest, including international investment allocation decisions (e.g., Bradshaw, Bushee, and Miller [2004], Covrig, DeFond, and Hung [2007], Florou and Pope [2009], Yu [2009], Brüggemann et al. [2009], and DeFond et al. [2011]). In general, this stream of studies suggests that accounting standard differences across borders impose economic costs on investors, while convergence in accounting standards potentially reduces such costs.[2] Our study adds to this literature by focusing on analysts' behavior rather than investor portfolio allocation decisions.

The rest of the paper is organized as follows. In the next section, we discuss motivation and develop our hypotheses. Section 3 presents our sample selection procedures. Section 4 describes our research design and provides descriptive data. Section 5 presents empirical evidence regarding the impact of IFRS adoption on analyst following and earnings forecast accuracy. Section 6 concludes.

2. *Motivation and Hypotheses Development*

The development of a set of globally accepted accounting standards formally began in 1973 with the establishment of the International Accounting Standards Committee (IASC), which aimed to improve and harmonize financial reporting around the world. In April 2001, the International Accounting Standards Board (IASB) succeeded the IASC. This change in structure of the standard setting body was one of many factors in the early 2000s that contributed to an acceleration of IFRS adoption internationally. As of August 2010, there were 123 jurisdictions around the globe that

[2] Platikanova [2009] and Daske et al. [2008] provide early evidence of the economic consequences of mandating IFRS around the world.

permit or require IFRS for their domestically listed companies.[3] Our study is intended to provide a comprehensive assessment of how mandatory IFRS adoption affects financial analysts.

The goal of accounting harmonization is to establish a single global set of standards to facilitate cross-border comparisons of financial data, allowing analysts and other market participants to better use their current expertise to analyze firms from other countries. To the extent that widespread IFRS adoption reduces accounting standard–induced differences in financial reporting across countries, it should facilitate cross-border comparisons of financial data and make it easier for analysts to cover foreign firms using IFRS. Furthermore, the more comprehensive disclosure requirements under IFRS relative to most local GAAPs make earnings easier to understand and predict, which should motivate analysts to cover more foreign firms (e.g., Ball [2006], Barth, Landsman, and Lang [2008]). Ernst & Young's [2007] survey of the first annual reports prepared under IFRS by major European firms finds that annual report length has increased on average by 20–30%. The survey attributes this to the fact that IFRS disclosure requirements exceed those of most European local GAAPs. In addition, the extensive fair value accounting rules under IFRS could possibly incorporate more timely information about economic gains and losses. This could increase analyst following due to the enhanced usefulness and/or comparability of the accounting data.

Because lowering costs to analysts is also expected to improve their forecast accuracy, we make similar predictions about foreign analysts' forecast accuracy. However, we acknowledge that it is possible that the decision to follow a firm indicates that the benefits of following the firm outweigh the costs of learning the effects of different GAAPs on the accounting representation of firm performance. If so, analysts who choose to follow foreign firms using local GAAP might incur those costs and successfully understand the effects of GAAP differences such that eliminating GAAP differences through convergence would have negligible effects on forecast accuracy. In addition, some features of IFRS, such as fair value accounting, could increase earnings volatility, which could decrease forecast accuracy. The above discussion leads to our first hypothesis stated below in alternative form:

H1: IFRS adoption is associated with increased coverage by foreign analysts and an improvement in foreign analysts' earnings forecast accuracy.

There are also reasons to be suspicious of the premise that simply mandating IFRS would make financial reporting more comparable or more informative. Opponents argue that inconsistent oversight and enforcement

[3] The website of IASplus provides a list of jurisdictions where the basis of preparation note and the auditor's report refer to conformity with IFRS. Please refer to http://www.iasplus.com/country/useias.htm.

across countries will diminish any possible comparability benefits and criticize IFRS for allowing too much managerial judgment. In addition, IFRS adoption imposes a one-time cost on analysts to learn the new standards, and IFRS adoption means that analysts would not have a history of IFRS numbers to facilitate their forecasting. These arguments suggest that IFRS adoption may not necessarily lower analysts' costs, and also suggest that the effects on analyst following and forecast accuracy may not be identical.

We do not expect the effects of IFRS adoption to be similar for all adopting firms, nor do we expect the effects to be similar across all firm-analyst pairs. We expect that IFRS adoption will reduce information acquisition and processing costs and reputational costs to a greater extent for foreign analysts from countries that adopt IFRS at the same time as the home countries of covered firms, and for foreign analysts who have already covered firms that voluntarily adopted IFRS before mandatory IFRS reporting. In both cases, these analysts have either already incurred the costs to become familiar with IFRS, or are essentially forced to do so because their home country is also adopting IFRS. This diminishes the impact of the one-time learning costs associated with IFRS adoption and therefore should increase the net benefits of IFRS adoption for these analysts. These arguments lead to our second hypothesis stated below in alternative form.

H2: Increases in foreign analyst following and improvements in foreign analysts' forecast accuracy following IFRS adoption are more pronounced for analysts located in countries that adopt IFRS at the same time as the firm's home country and for analysts with previous IFRS experience.

We also provide an extensive analysis of local analysts, but do not make predictions or state hypotheses about the effects of IFRS adoption on local analysts. On the one hand, Bae, Stulz, and Tan [2008] find that local analysts make more precise earnings forecasts than foreign analysts in periods prior to widespread IFRS adoption. They provide evidence suggesting that local analysts have better access to information than their foreign counterparts. They find that local analysts' advantage is greater in countries where earnings are smoothed more, less information is disclosed by firms, and firm idiosyncratic information explains a smaller fraction of stock returns. To the extent that mandating IFRS adoption provides more comprehensive and transparent financial data to foreign analysts that is already available to local analysts, the information advantage enjoyed previously by local analysts would diminish. In this case, local analysts would not be expected to benefit from IFRS adoption like their foreign counterparts.

On the other hand, it is possible that local analysts also benefit from enhanced disclosure under IFRS just like their foreign counterparts. In addition, local analysts may also benefit from enhanced comparability if they follow a portfolio of both local and international firms prior to mandatory IFRS adoption in their home country. In this case, the effects of IFRS adoption on local analysts may be similar to the effects on foreign analysts.

Our final hypothesis predicts that the effects of IFRS adoption depend on the extent to which IFRS adoption reduces GAAP differences from IFRS or between countries. When harmonization causes a greater reduction in GAAP differences, it is expected to cause a more dramatic change in the costs and benefits of covering foreign firms. We therefore predict that firms in countries where local GAAP differ more from IFRS prior to IFRS adoption will receive greater benefits than firms from countries where local GAAP are already close to IFRS, increasing their foreign analyst following and improving their forecast accuracy. We also predict that the extent to which IFRS adoption reduces GAAP differences between the analyst home country and the firm home country will be positively associated with changes in the number of analysts from that foreign country and their forecast accuracy. As noted earlier, Bae, Tan, and Welker [2008] provide evidence that foreign analyst following and forecast accuracy decline as the GAAP distance between countries increases. If harmonization is effective in reducing GAAP differences across countries, the net benefits should be positively related to the extent of prior GAAP differences. We do note, however, that the relation between measures of the extent to which GAAP changes upon IFRS adoption and forecast accuracy could be moderated because, while greater GAAP changes might provide more comparability benefits, greater GAAP changes may also make converting from local GAAP to IFRS forecasting more difficult, increasing forecast errors.

H3: Increases in foreign analyst following and improvements in foreign analysts' forecast accuracy following IFRS adoption are more pronounced for firms from countries with local GAAP that differed more from IFRS prior to IFRS adoption, and are positively associated with the extent to which GAAP differences between the analyst's home country and the firm's home country are reduced by IFRS adoption.

3. Data and Sample Selection

3.1 ANALYST LOCATION

We use the annual volumes of *Nelson's Directory of Investment Research* for 1998–2007 to identify the locations of financial analysts. These directories provide information on nearly 1,700 research firms with approximately 40,000 equity analysts covering publicly traded companies located around the world. We obtain the full names of equity analysts and the research firms they are associated with from these annual volumes of *Nelson's Directories* and follow the same procedure as Bae, Tan, and Welker [2008] to match them to the analysts in the I/B/E/S database.

We are interested in identifying analyst location because analysts' locations are expected to correlate with their GAAP knowledge and familiarity. Implicit in our hypothesis development is the assumption that analysts' locations are stable—analysts by and large work in the country where they

have been trained and educated such that they are most familiar with the GAAP in the country where they are currently located. Of course, like any profession, there is some international mobility among financial analysts. Consistent with Bae, Tan, and Welker [2008], less than 6% of analysts with multiple years of location data relocate to another country, suggesting that, while cross-border relocations by financial analysts do occur, they are not common.[4]

3.2 IDENTIFICATION OF SAMPLE FIRMS

We obtain historical information on the use of accounting standards during 1988 to 2007 for a total of 21,723 firms based on the item "Accounting standards followed" in the Worldscope database. We restrict our sample firms to 25 countries where we can identify the date that a country announces its intention to mandate IFRS and the date IFRS reporting becomes compulsory in the country. Following the definition of IFRS adopters in Daske et al. [2007], we identify 6,859 firms that have used IFRS. Appendix A shows the specific Worldscope accounting standard codes that we classify as indicating IFRS use. We exclude the following dubious IFRS users: (1) the 54 firms that adopted IFRS before year 2005 but used IFRS for only one year, (2) the 40 firms that switched from IFRS to local standards, and (3) the 16 firms that switched from IFRS to U.S. GAAP and 12 firms that switched between IFRS and U.S. GAAP from time to time. This yields a total of 6,737 firms that have adopted IFRS during the period 1988–2007. We follow the same procedure to exclude 255 dubious IFRS users for the full sample of 21,723 firms in the Worldscope universe, which we use to evaluate analysts' experience with the use of IFRS based on the full set of firms they have covered in the past.

We require that the firms have financial data needed to calculate control variables and be covered in I/B/E/S for at least one year during the two years immediately prior to the IFRS mandatory adoption year and for at least another year during the two years after IFRS adoption. We lose 3,457 firms due to missing financial data in Worldscope or analyst coverage in I/B/E/S, of which 2,261 firms do not have the required data in any year of the sample period and 1,196 firms have the required data in either the pre-IFRS or post-IFRS period, but not both. The full sample comprises 12,010 firm-years, covering 3,280 unique firms from 25 countries. We identify 1,865 analysts from 34 countries who follow foreign sample firms and 3,135 local analysts who follow local sample firms. The sample size varies across different empirical tests, depending on further data restrictions. Appendix B shows our sample selection criteria.

Since Daske et al. [2008] find that voluntary adopting firms enjoy economic benefits at the time that the first mandatory IFRS annual reports are

[4] As explained in more detail below, we drop analysts who change country locations during our sample period.

TABLE 1
Distribution of Voluntary and Mandatory IFRS Adopters by Country

Country	Mandatory Adoption for FYE	Voluntary	Mandatory			
			31/12/2005	2006	2007	Total
Australia	31-Dec-05	3	50	279	1	330
Austria	31-Dec-05	31	5	0	0	5
Belgium	31-Dec-05	20	46	7	0	53
Czech Republic	31-Dec-05	3	2	0	0	2
Denmark	31-Dec-05	12	46	14	0	60
Finland	31-Dec-05	10	78	2	0	80
France	31-Dec-05	31	215	55	0	270
Germany	31-Dec-05	178	71	15	2	88
Greece	31-Dec-05	4	71	2	0	73
Hong Kong	31-Dec-05	14	211	0	2	213
Hungary	31-Dec-05	11	2	1	0	3
Ireland	31-Dec-05	0	21	10	6	37
Italy	31-Dec-05	128	27	2	0	29
Luxembourg	31-Dec-05	8	3	0	0	3
Netherlands	31-Dec-05	8	85	8	0	93
Norway	31-Dec-05	2	82	4	2	88
Philippines	31-Dec-05	0	33	2	0	35
Poland	31-Dec-05	5	17	0	0	17
Portugal	31-Dec-05	4	24	0	0	24
Singapore[a]	31-Dec-03	3	0	0	0	119
South Africa	31-Dec-05	20	20	76	0	96
Spain	31-Dec-05	0	84	3	1	88
Sweden	31-Dec-05	3	126	11	1	138
Switzerland	31-Dec-05	98	24	2	0	26
The U.K.	31-Dec-05	5	275	327	107	709
Total	-	601	1,618	820	122	2,679

This table presents IFRS announcement and mandatory adoption dates together with the progress of IFRS adoption over time for each of the 25 sample countries. We identify IFRS adopters and the related adoption dates based on the item "Accounting standards followed" in the Worldscope database (field 07536). We classify those firms that applied IFRS before mandatory adoption dates as *voluntary* adopters. *Mandatory* adopters indicate firms that switched to IFRS on or after the mandatory date of IFRS reporting for each country. We further classify mandatory IFRS adopters into three groups, depending on whether the fiscal year end of the initial IFRS adoption falls on December 31, 2005, on any date in 2006, or on any date in 2007.

[a]Singapore mandated IFRS for fiscal years ending on December 31, 2003 and afterward. A total of 119 Singaporean firms had adopted IFRS as of December 31, 2003.

disclosed in their country, we follow their empirical design to isolate voluntary adopters to see if these firms also benefit from greater foreign analyst following and forecast accuracy due to mandatory IFRS reporting in their countries. We classify sample firms into *Mandatory* or *Voluntary* adopters depending on their first IFRS adoption dates. Mandatory adopters are those firms that switch to IFRS for fiscal years beginning on or after the earliest mandatory IFRS application date for their countries. Voluntary adopters are firms that apply IFRS before this date.

Table 1 presents the IFRS adoption dates together with the progress of IFRS adoption over time for each sample country. All the European countries in our sample mandate IFRS for fiscal years beginning on or after

January 1, 2005. Singapore mandates IFRS for fiscal years ending on or after December 31, 2003. South Africa, the Philippines, and Hong Kong mandate IFRS compliance commencing on the same date as the European countries.

The total number of sample firms that have adopted IFRS, including both voluntary and mandatory adopters, ranges from 5 in the Czech Republic to 714 in the United Kingdom, with Australia, France, Germany, and Hong Kong each having more than 200 IFRS adopters. We report the progress of IFRS adoption for each country under the headings *voluntary* and *mandatory*. We further classify mandatory IFRS adopters into three groups, depending on whether the fiscal year end of the initial IFRS adoption falls on December 31, 2005, on any date in 2006, or on any date in 2007. There are 601 voluntary adopters and 2,679 mandatory adopters in our final sample. Consistent with Barth, Landsman, and Lang [2008] and Daske et al. [2007], Germany, Italy, and Switzerland have the largest number of voluntary IFRS adopters in our sample.[5] Sixty percent of mandatory adopters started to use IFRS for the fiscal year ending on December 31, 2005. Thirty-one percent of mandatory adopters adopted IFRS for fiscal years ending during 2006, the majority of which are in Australia and the United Kingdom as the fiscal year end for a large number of firms in these two countries falls on March 31 or June 30. A total of 119 Singaporean firms had adopted IFRS as of December 31, 2003. The majority of the firms adopting IFRS in 2007 are from the United Kingdom, where firms listed on the Alternative Investment Market (AIM) of the London Stock Exchange are not subject to the EU IFRS regulation. The AIM adopted a rule requiring companies to submit IFRS financial statements starting in 2007. Other countries, such as Norway and Germany had rules in place that allowed some firms to adopt in 2007 under specific circumstances.

3.3 IDENTIFICATION OF SAMPLE ANALYSTS

We initially identify foreign analysts who follow our sample firms. Foreign analysts reside in a different country from the country where the firm is headquartered. There are 34 countries that are home to at least one foreign analyst following at least one sample firm. New analysts enter the profession and existing analysts exit the profession from time to time. An analyst may stop covering a firm not because the firm decides to switch to IFRS but because the analyst has left the profession. Alternatively, an analyst may cover firms only in the post-IFRS period simply because the analyst had not started her career prior to the IFRS adoption date of the covered firms.

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[5] Following the Daske et al. [2007, 2008] definition of IFRS adopters, 100 Italian firms that followed "local standards with some IASC guidelines" before IFRS was mandated are classified as voluntary IFRS adopters. Our conclusions remain the same if we reclassify these firms as mandatory IFRS adopters.

To reduce the impact of analyst entry and exit on our measures of analyst following around IFRS adoption, we impose the following restriction. We find the first and last forecast dates in the I/B/E/S universe for each of our sample analysts. For any particular firm that has mandatorily adopted IFRS, we keep only those analysts who are active in the I/B/E/S database from before the beginning of the firm's first IFRS fiscal year to after the end of the firm's first IFRS fiscal year. For example, if a firm adopts IFRS for the fiscal year ending December 31, 2005, we require the analysts that cover this firm be active in I/B/E/S from before December 31, 2004 to after December 31, 2005. In this way, we ensure that the analysts are active in the I/B/E/S database during both the pre-IFRS period and post-IFRS period.[6] For firms voluntarily adopting IFRS, we keep those foreign analysts who are active in the I/B/E/S database at least one year before the IFRS adoption implementation date in the firm's home country and continue to be active in I/B/E/S database after the end of the first IFRS fiscal year in the firm's home country. For example, if a country mandates IFRS for fiscal years ending on December 31, 2005, but a local firm voluntarily adopts IFRS beginning with the fiscal year ending on December 31, 2002, we require that analysts be active in I/B/E/S before December 31, 2004 and continue to be active in the I/B/E/S database until after December 31, 2005. This reflects the fact that our time-series tests focus on the period around mandatory IFRS adoption, even for early adopters.

Defining a variable to capture analysts' IFRS experience is complicated by the fact that firms adopt IFRS at various dates before and during our sample period. Clearly, the number of analysts without IFRS experience would decline dramatically for firm-years ending after December 31, 2005 if this variable were to be coded on an annual basis. To avoid this problem, we code IFRS experience (which is coded for each firm-analyst pair) as follows. First, analysts who have never followed a firm using IFRS for a fiscal year ending prior to December 31, 2005 (or December 31, 2003 for Singaporean firms) are treated as analysts with no IFRS experience throughout our sample period. Analysts who have followed a firm using IFRS for a fiscal period prior to December 31, 2002 (or December 31, 2000 for Singaporean firms) are coded as analysts with IFRS experience throughout our sample period. In some cases, an analyst begins following an IFRS firm with a fiscal year ending in 2003–2004 (or 2001–2002 for Singaporean firms), and this is the first time this analyst follows an IFRS firm. With respect to this initial firm, the analyst is treated as an analyst with no IFRS experience throughout our sample period. This explains how a voluntary adopting firm can have inexperienced analysts—that is, if the voluntary adopter is the first IFRS firm the analyst follows. If this analyst subsequently begins following

[6] Alternatively, we require that foreign analysts be present in I/B/E/S from two years before to two years after the firm's first IFRS fiscal year. The results under this alternative specification (reported in table 8) support the same general inferences.

any other IFRS firm in our sample period, the analyst is then coded as having IFRS experience with respect to that firm thereafter. Appendix C lists the definitions for all the variables used in this study.

For the foreign analysts in our sample, we keep the last annual earnings forecast in I/B/E/S for each of the two fiscal years immediately prior to a firm's IFRS adoption date and for each of the two fiscal years immediately after the adoption date. We then count the number of unique foreign analysts that follow each firm-year. If there is no identified foreign analyst covering a firm-year, we set the number of foreign analysts following the firm to zero that year. We exclude from our sample foreign analysts who reside in a country where the firm is cross-listed. When the firm is cross-listed in a foreign country, we presume that the firm provides additional information associated with the cross-listing, and may provide financial statements prepared in accordance with, or reconciled to, local GAAP of that foreign country.[7]

We then follow the same procedures to identify a sample of local analysts who follow sample firms headquartered in the same country where the analyst is located. As noted earlier, there are a few cases where analysts change countries during our sample period. Since we are interested in time-series changes in analyst coverage and do not want our time-series data to be influenced by analysts changing locations rather than changing coverage, we exclude all analysts who change country location during our sample period from all of our analyses.

Table 2 shows the distribution of sample firms, analysts, and firm size by country. Column 1 is the number of unique sample firms located in each country. Columns 2–4 report within the sample period the total number of I/B/E/S analysts covering sample firms in each country, the number of analysts in I/B/E/S covering sample firms in each country for whom we could identify their country location using *Nelson's Directory of Investment Research*, and the corresponding matching rate. Column 5 shows the number of sample foreign analysts who follow the sample firms in each country. France attracts the largest number of foreign analysts. Thirteen countries have 100 or more foreign analysts covering firms in their markets, 18 countries have at least 50 foreign analysts, and all countries attract at least 20 foreign analysts. Column 6 shows the number of local analysts who follow the sample firms in each country. The United Kingdom is home to the largest number of sample local analysts. Austria, the Czech Republic, Hungary, and Poland each have fewer than 10 local analysts. Columns 7 and 8 show the total number of earnings forecasts for firms located in each country by foreign analysts and local analysts, respectively. Eight countries have over 1,000 foreign forecasts and all but two have more than 100 foreign forecasts. Fourteen countries have over 1,000 local forecasts and all but three have more than 100 local forecasts. Column 9 presents the mean

[7] We are grateful to Sergei Sarkissian for sharing his data on international cross-listings.

TABLE 2

Sample Firms and Analysts by IFRS Adopting Country

Country	Number of IFRS Firms (1)	Analysts Present in I/B/E/S (2)	Identified Analysts (3)	Matching Rate (4) = (3)/(2)	Foreign Analysts (5)	Local Analysts (6)	Forecasts by Foreign Analysts (7)	Forecasts by Local Analysts (8)	Firm Size (U.S. $ billion) (9)
Australia	333	334	302	0.90	35	267	104	6,639	5.36
Austria	36	185	152	0.82	145	7	405	126	13.07
Belgium	73	312	270	0.87	236	34	765	893	16.91
Czech Republic	5	40	31	0.78	28	3	86	8	9.75
Denmark	72	273	243	0.89	197	46	646	868	7.43
Finland	90	303	215	0.71	170	45	674	1,413	2.72
France	301	1,138	910	0.80	601	309	2,949	6,663	13.58
Germany	266	964	804	0.83	540	264	2,440	5,628	15.15
Greece	77	125	86	0.69	58	28	226	911	4.59
Hong Kong	227	472	365	0.77	52	313	149	6,360	5.76
Hungary	14	60	41	0.68	37	4	118	52	3.72
Ireland	37	171	100	0.58	59	41	215	335	24.35
Italy	157	531	463	0.87	366	97	1,636	2,866	20.86
Luxembourg	11	128	95	0.74	46	49	106	132	13.97
Netherlands	101	640	499	0.78	392	107	1,475	3,211	15.68
Norway	90	251	206	0.82	130	76	379	1,672	4.22
Philippines	35	52	42	0.81	20	22	86	418	2.26
Poland	22	57	32	0.56	27	5	109	72	4.50
Portugal	28	111	82	0.74	72	10	271	229	11.07

(*Continued*)

TABLE 2— *Continued*

Country	Number of IFRS Firms (1)	Analysts Present in I/B/E/S (2)	Identified Analysts (3)	Matching Rate (4) = (3)/(2)	Foreign Analysts (5)	Local Analysts (6)	Forecasts by Foreign Analysts (7)	Forecasts by Local Analysts (8)	Firm Size (U.S. $ billion) (9)
Singapore	122	208	185	0.89	87	98	419	2,781	3.25
South Africa	116	139	121	0.87	34	87	126	1,586	5.41
Spain	88	481	393	0.82	299	94	1,229	2,318	18.12
Sweden	141	529	417	0.79	289	128	1,329	2,842	9.34
Switzerland	124	567	444	0.78	359	85	1,436	2,385	10.22
U.K.	714	1,493	1,184	0.79	268	916	1,104	16,176	9.06

The final sample includes 1,865 foreign analysts and 3,135 local analysts covering a total of 3,280 IFRS-adopting firms during 2001–2007. For each firm-year, we keep the last annual earnings forecast for each analyst before the earnings announcement based on I/B/E/S. For a particular firm-year, we keep only those foreign (or local) analysts who are present in I/B/E/S at least one year before the firm's IFRS adoption date and continue to be active in I/B/E/S until after this adoption date. For firm-years in which we are unable to identify coverage by any foreign (or local) analyst, we assume the coverage by foreign (or local) analyst is zero. Column 1 is the number of unique sample firms located in each country. Columns 2–4 report the total number of I/B/E/S analysts meeting all sample selection criteria except location who follow at least one sample firm in that country, the number of I/B/E/S analysts that follow sample firms in that country for whom we could identify their country location using *Nelson's Directory of Investment Research*, and the corresponding matching rate. Columns 5–6 show the number of sample foreign analysts and local analysts who follow the sample firms in that country, respectively. Columns 7–8 show the total number of earnings forecasts issued by foreign analysts and local analysts for the sample firms, respectively. Column 9 presents the average firm size based on total assets.

value of firm size in the sample countries. The covered firms are smallest in the Philippines and largest in Ireland, with average total assets of U.S. $2.26 and U.S. $24.35 billion, respectively. [8]

4. Research Design and Descriptive Information

4.1 ANALYST FOLLOWING

The main dependent variables of this study are foreign analyst following and foreign analysts' earnings forecast accuracy surrounding each firm's mandatory IFRS adoption. To test our hypotheses, we divide foreign analysts into five different categories: (1) *all*, foreign analysts from all of the 34 countries that are home to analysts who cover sample firms; (2) *ctry25*, foreign analysts who are located in the 25 sample countries that mandate IFRS adoption; (3) *nctry25*, foreign analysts who are not located in the 25 sample countries that mandate IFRS adoption; (4) *ifrsexp*, foreign analysts with prior IFRS experience as defined in section 3.3; and (5) *nifrsexp*, foreign analysts who do not have prior IFRS experience as defined in section 3.3. To test H1 and H2, we compute the total number of foreign analysts from each of the five analyst categories who cover firm i in year t.

Panel A of table 3 shows the average number of foreign analysts who follow voluntary and mandatory IFRS-adopting firms around the mandatory IFRS adoption date. For mandatory adopters, the pre-IFRS period refers to the two years before the firm first uses IFRS and the post-IFRS period refers to the two years after the firm first uses IFRS. This coding reflects the fact that mandatory IFRS adopters begin using IFRS at different times (due to, for example, differences in fiscal year end). For voluntary adopters, the pre-IFRS period refers to the two years before IFRS became mandatory in the firm's home country and the post-IFRS period refers to the two years after IFRS became mandatory in the firm's home country. This coding reflects our interest in examining how voluntary adopters are affected by mandatory IFRS adoption in their home country. The average numbers of foreign analysts from all of the 34 analyst countries, from the 25 countries that mandate IFRS adoption and those with prior IFRS experience, have all increased from two years before the IFRS adoption date to two years after the IFRS adoption date for mandatory adopters. Similar increases in these

[8] For simplicity, column 2 only reports the total number of I/B/E/S analysts who meet all our selection criteria except for identification of location, and column 3 only reports those analysts from column 2 whose location we identify. As a sensitivity check on the analysts for whom we cannot identify country location, we mechanically assign them a country location based on where the majority of the firms they follow each year are located as long as these analysts cover at least a total of five firms in I/B/E/S. We estimate the regressions reported in tables 4 and 5 for this sample and all of our inferences remain qualitatively unchanged. We also estimate our regressions including analysts who change country location and our inferences are qualitatively unchanged.

TABLE 3

Foreign Analyst Following and Forecast Accuracy Surrounding IFRS Adoption

Panel A: Foreign analyst following in pre- and post-IFRS adoption periods

	Voluntary Adopters						Mandatory Adopters					
	Post-IFRS (n = 1,137)		Pre-IFRS (n = 1,054)		Difference		Post-IFRS (n = 4,874)		Pre-IFRS (n = 4,945)		Difference	
Variable	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
all	2.610	0.000	2.241	0.000	0.369*	0.000**	1.127	0.000	0.988	0.000	0.139**	0.000**
ctry25	2.536	0.000	2.194	0.000	0.342*	0.000**	1.084	0.000	0.949	0.000	0.135**	0.000**
nctry25	0.074	0.000	0.047	0.000	0.027**	0.000*	0.042	0.000	0.039	0.000	0.003	0.000
ifrsexp	2.165	0.000	1.612	0.000	0.553***	0.000***	0.830	0.000	0.638	0.000	0.192***	0.000***
nifrsexp	0.445	0.000	0.629	0.000	−0.184***	0.000***	0.296	0.000	0.350	0.000	−0.054***	0.000***

Panel B: Foreign analyst forecast accuracy in pre- and post-IFRS adoption periods

	Voluntary Adopters						Mandatory Adopters					
	Post-IFRS (n = 3,068)		Pre-IFRS (n = 3,122)		Difference		Post-IFRS (n = 5,758)		Pre-IFRS (n = 6,534)		Difference	
Variable	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
all	−1.650	−0.597	−2.323	−0.919	0.673***	0.322***	−1.492	−0.570	−2.667	−1.015	1.175***	0.445***
ctry25	−1.666	−0.599	−2.319	−0.920	0.653***	0.322***	−1.494	−0.567	−2.649	−1.015	1.155***	0.448***
nctry25	−1.060	−0.547	−2.501	−0.771	1.441*	0.224**	−1.437	−0.745	−3.227	−0.986	1.790***	0.241***
ifrsexp	−1.690	−0.602	−2.260	−0.570	0.583***	0.307***	−1.527	−0.560	−2.716	−1.056	1.189***	0.496***
nifrsexp	−1.481	−0.558	−2.487	−0.954	1.006***	0.396***	−1.406	−0.589	−2.577	−0.944	1.171***	0.355***

(*Continued*)

TABLE 3 — *Continued*

Panel C: Firm and analyst characteristics

	Voluntary Adopters						Mandatory Adopters					
	Post-IFRS		Pre-IFRS		Difference		Post-IFRS		Pre-IFRS		Difference	
Variable	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Firm characteristics based on the panel A sample												
firm size	12.568	1.114	11.804	0.942	0.764	0.172*	10.252	0.607	8.785	0.451	1.467*	0.156***
market to book	2.446	1.890	1.796	1.365	0.650***	0.525***	2.760	2.100	2.266	1.610	0.494***	0.490***
intangible assets	0.297	0.210	0.274	0.181	0.023*	0.029***	0.314	0.206	0.283	0.168	0.031***	0.038***
return volatility	0.025	0.020	0.027	0.021	−0.002*	−0.001*	0.027	0.022	0.030	0.023	−0.003***	−0.001
security issuance	0.368	0.000	0.283	0.000	0.085***	0.000***	0.429	0.000	0.367	0.000	0.062***	0.000***
stock turnover	0.778	0.413	0.655	0.282	0.123**	0.131***	0.939	0.598	0.857	0.508	0.082***	0.090***
stock return	−0.035	−0.033	−0.005	0.017	−0.030*	−0.050***	−0.031	−0.026	0.045	0.068	−0.076***	−0.094***
number of analysts	10.776	7.000	10.810	6.000	−0.034	1.000*	9.407	6.000	9.202	6.000	0.205	0.000***
adr	0.060	0.000	0.061	0.000	−0.001	0.000	0.065	0.000	0.065	0.000	0.000	0.000
Analyst characteristics based on the panel B sample												
horizon	0.371	0.296	0.367	0.301	0.004	−0.005	0.365	0.285	0.382	0.299	−0.017***	−0.014***
firmexp	3.346	3.000	2.744	2.000	0.602***	1.000***	3.240	3.000	2.649	2.000	0.591***	1.000***
genex	6.541	6.000	5.337	5.000	1.204***	1.000***	6.484	6.000	5.137	5.000	1.347***	1.000***
nfirm	9.882	9.000	9.471	9.000	0.411***	0.000***	9.908	9.000	9.534	9.000	0.374***	0.000***
brsize	140.196	125.000	136.152	125.000	4.044*	0.000**	136.614	123.000	131.805	120.000	4.809***	3.000***

For mandatory adopters, Pre-IFRS period refers to the two years before the firms adopt IFRS, while post-IFRS period refers to the two years after the firms adopt IFRS. For voluntary adopters, pre-IFRS period refers to the two years before mandatory IFRS adoption in the firm's home country and post-IFRS refers to the two years after mandatory IFRS adoption in the firm's home country. Panel A presents the changes in foreign analyst following for the sample that includes 1,865 foreign analysts from 34 countries covering a total of 3,280 firms and 12,010 firm-years during 2001–2007. Panel B presents the changes in earnings forecast accuracy and the sample covers 18,482 forecasts issued by 1,865 foreign analysts on 911 firms from 25 countries during 2001–2007. For each analyst in each firm-year, we keep the last forecast before the actual earnings are announced. Panel C presents the changes in firm and analyst characteristics, with firm characteristics based on the sample in panel A and analyst characteristics based on the sample in panel B. All the variables are defined in appendix C. ***, **, * indicate the difference between the pre-IFRS and post-IFRS periods is significant at the 1%, 5% and 10% level, respectively (two-tailed).

analyst groups are observed for voluntary adopters.[9] In contrast, the average number of foreign analysts without prior IFRS experience has decreased from two years before the IFRS adoption to two years after the IFRS adoption date for both voluntary and mandatory adopters.

4.2 FORECAST ACCURACY

As explained earlier, we keep only those foreign analysts who are present in I/B/E/S at least one year before the firm's IFRS adoption date and continue to be present in I/B/E/S after this adoption date. In addition, we require that a firm have at least one foreign analyst forecast observation during the two years immediately before the firm's IFRS adoption date (i.e., $[-2, -1]$) and at least one foreign analyst forecast observation during the two years immediately after the IFRS adoption date (i.e., $[0, 1]$). Both of these restrictions are intended to ensure that any changes in forecast accuracy surrounding IFRS adoption are not due to changes in our sample of firms or analysts between the pre- and post-IFRS periods.

We obtain from I/B/E/S the last annual earnings forecast by foreign analyst j before the annual earnings announcement date for firm i in year t. We then deflate the absolute differences between the earnings forecast and actual earnings by the latest available stock price in the previous year from the I/B/E/S summary file. To facilitate exposition, we multiply this variable by -100 so that greater values indicate more accurate earnings forecasts.

Panel B of table 3 reports the mean and median foreign analysts' earnings forecast accuracy for 911 distinct firms surrounding the IFRS adoption date for the five analyst groups discussed earlier. Once again, we present these results for voluntary and mandatory adopters, respectively. We find that forecast accuracy for all of the foreign analyst groups improves from two years before IFRS adoption to two years after IFRS adoption for both voluntary and mandatory IFRS adopters. In these univariate analyses, the improvement appears somewhat greater for mandatory adopting firms than for voluntary adopting firms.

4.3 MULTIVARIATE ANALYSES OF ANALYST FOLLOWING AND FORECAST ACCURACY

We incorporate various factors as control variables for the determinants of foreign analyst following and earnings forecast accuracy in our multivariate regression analyses. In the analysis of foreign analyst following, we control for firm size, cross-listing in the United States, market value to

[9] Recall that experience is coded only once for each firm-analyst pair, so changes in this variable over time are due to changes in the analysts who follow the firm over time, not due to changes in IFRS experience that would occur mechanically over time for our sample analysts. An analyst is coded as inexperienced for the first voluntary IFRS firm he or she covers, which explains why there is nonzero inexperienced analyst following of voluntary adopting firms.

book value of equity, intangible assets, stock return volatility, security issuance, stock turnover, and stock return. These variables are drawn from the past literature that shows that they affect analyst following in at least some circumstances (e.g., Bhushan [1989], O'Brien and Bhushan [1990], Lang and Lundholm [1996], Barth, Kasznik, and McNichols [2001], and Lang, Lins, and Miller [2004]). In the analysis of earnings forecast accuracy, we also control for the number of analysts following the firm, earnings forecast horizon, analysts' general experience and firm-specific experience, the number of analysts working for the brokerage that an analyst is associated with, and the number of firms covered by an analyst, as prior research (e.g., Clement [1999], Ang and Ciccone [2001]) finds that these factors are systematically associated with earnings forecast accuracy.

Following Rock, Sedo, and Willenborg [2001] and Bae, Tan, and Welker [2008], we use the negative binomial model to estimate foreign analyst following. In interpreting some of the results that follow, it is useful to remember that the negative binomial model is a nonlinear model where the coefficient estimates reflect the average *percentage* change in analyst following that accompanies a one-unit change in the independent variable. Our benchmark models for the determinants of foreign analyst following and earnings forecast accuracy are as follows:

$$\begin{aligned} for_{it} = {} & \beta_0 + \beta_1 Post_{it} + \beta_2 Voluntary_i + \beta_3 Post_{it} \times Voluntary_i + \beta_4 Size_{it} \\ & + \beta_5 Market\ to\ book_{it} + \beta_6 Intangible\ assets_{it} + \beta_7 Return\ Volatility_{it} \\ & + \beta_8 ADR_{it} + \beta_9 Security\ Issuance_{it} + \beta_{10} Stock\ Turnover_{it} \\ & + \beta_{11} Stock\ return_{it} + \varepsilon_i \end{aligned} \tag{1}$$

$$\begin{aligned} afep_{ijt} = {} & \beta_0 + \beta_1 Post_{it} + \beta_2 Voluntary_i + \beta_3 Post_{it} \times Voluntary_i + \beta_4 Size_{it} \\ & + \beta_5 Market\ to\ book_{it} + \beta_6 Number\ of\ analysts_{it} + \beta_7 Intangible\ assets_{it} \\ & + \beta_8 Return\ Volatility_{it} + \beta_9 ADR_{it} + \beta_{10} Security\ Issuance_{it} \\ & + \beta_{11} Stock\ Turnover_{it} + \beta_{12} Stock\ return_{it} + \beta_{13} Horizon_{ijt} \\ & + \beta_{14} Firmex_{ijt} + \beta_{15} Genex_{jt} + \beta_{16} Nfirm_{jt} + \beta_{17} Brsize_{jt} + \varepsilon_i \end{aligned} \tag{2}$$

where for_{it} stands for firm i's number of foreign analysts at year t for each of the five categories of foreign analysts identified earlier, while $afep_{ijt}$ stands for the accuracy of the earnings forecast issued by analyst j for firm i at year t. $Post_{it}$ is a dummy variable indicating the post-IFRS adoption period for firm i. For mandatory adopters, *post* equals one for the period after the firm adopts IFRS, zero otherwise. For voluntary adopters, *post* equals one for the fiscal year ending on December 31, 2005 (or December 31, 2003 for Singaporean firms) and afterward, zero otherwise. All variables are defined and summarized in appendix C. We also control for country, industry, and

year fixed effects and adjust standard errors for country-level clustering. Panel C of table 3 provides descriptive information on control variables in the pre- and post-IFRS periods for voluntary and mandatory adopting firms. Not surprisingly, there are many significant changes in these control variables between the pre- and post- periods, suggesting that controlling for these determinants of analyst following and forecast accuracy is important. Our first two hypotheses predict: (1) a positive value for β_1 and (2) that β_1 is more positive when the dependent variable is $ctry25_{it}$ or $ifrsexp_{it}$ (or $afep_{ijt}$ for these analysts) than when the dependent variable is $nctry25_{it}$ or $nifrsexp_{it}$ (or $afep_{ijt}$ for these analysts).

4.4 CHANGES IN GAAP CAUSED BY IFRS ADOPTION

Bae, Tan, and Welker [2008] develop two measures of differences in accounting standards across countries based on *GAAP 2001: A Survey of National Accounting Rules Benchmarked Against International Accounting Standards* (IFAD 2001). The two measures of GAAP differences across countries (*gaapdiff1* and *gaapdiff2*) are based on a list of 21 and 52 accounting items, respectively.[10]

We use the Bae, Tan, and Welker [2008] measures to construct two related but distinct measures of the extent to which IFRS adoption eliminates accounting standard differences. First, we use the Bae, Tan, and Welker [2008] measure of the number of differences between local GAAP and IAS as a measure of the extent to which the mandatory adoption of IFRS produces more comparable reporting (relative to other IFRS firms internationally) for firms in each country. Since IFRS adoption results in zero differences between local GAAP and IFRS, the number of differences between local GAAP and IFRS prior to IFRS adoption serves as a measure of the number of accounting differences relative to IFRS that are eliminated by IFRS adoption in each country. We label these two measures *ifrsdiff1* for the measure based on Bae, Tan, and Welker [2008]'s *gaapdiff1* and *ifrsdiff2* for the measure based on their *gaapdiff2*. We predict that firms from countries where a greater number of accounting differences are eliminated by IFRS adoption benefit more from the adoption since these firms overcome greater "GAAP differences" (i.e., the increase in foreign analyst following and foreign analyst forecast accuracy is increasing in *ifrsdiff1* and *ifrsdiff2*). This prediction applies to all analyst groups we examine. To examine the impact of the distance between local GAAP and IFRS prior to IFRS adoption on foreign analyst following and earnings forecast accuracy, we estimate equations (3) and (4) below for our various analyst samples in

[10] A detailed list of the 21 accounting items and the differences between local GAAP and IFRS by country used in *gaapdiff1* and a list of the 52 accounting items used in *gaapdiff2* are provided as appendices in Bae, Tan, and Welker [2008].

changes rather than levels.[11]

$$\begin{aligned}\Delta for_i = {} & \beta_0 + \beta_1 ifrsdiff_f + \beta_2 \Delta Size_i + \beta_3 \Delta Market\ to\ book_i \\ & + \beta_4 \Delta\ Intangible\ assets_i + \beta_5 \Delta\ Return\ Volatility_i \\ & + \beta_6 \Delta\ Security\ Issuance_i + \beta_7 \Delta\ Stock\ Turnover_i \\ & + \beta_8 \Delta\ Stock\ return_t + \varepsilon_i \end{aligned} \tag{3}$$

$$\begin{aligned}\Delta afep_i = {} & \beta_0 + \beta_1\ ifrsdiff_f + \beta_2 \Delta Size_i + \beta_3 \Delta\ Market\ to\ book_i \\ & + \beta_4 \Delta\ Number\ of\ analysts_i + \beta_5 \Delta Intangible\ assets_{it} \\ & + \beta_6 \Delta Return\ Volatility_{it} + \beta_7 \Delta Security\ Issuance_{it} \\ & + \beta_8 \Delta Stock\ Turnover_i + \beta_9 \Delta Stock\ return_i + \beta_{10} \Delta Horizon_{ij} \\ & + \beta_{11} \Delta Firmex_{ij} + \beta_{12} \Delta Genex_j + \beta_{13} \Delta Nfirm_j + \beta_{14} \Delta Brsize_j + \varepsilon_i \end{aligned} \tag{4}$$

where Δfor_i and $\Delta afep_i$ stand for changes from the pre-IFRS period to the post-IFRS period in the number of foreign analysts and earnings forecast accuracy, respectively. A positive value indicates increases in the number of foreign analysts or earnings forecast accuracy. All control variables are also measured as the changes in the firm-level mean value from the pre- to the post- period.[12] In addition, we exclude voluntary IFRS adopters as *ifrsdiff1* and *ifrsdiff2* would be zero in both pre- and post-IFRS periods for these firms. H3 predicts positive values for β_1 in both models 3 and 4.

We also develop an additional measure that captures the extent to which IFRS adoption eliminates (or possibly creates) GAAP differences between the firm's home country and the analyst's home country. If the analyst's home country and the home country of the covered firm adopt IFRS simultaneously, we assume that both measures of GAAP differences for this country-pair decrease to zero after IFRS adoption. If only one country in a firm-analyst country-pair switches to IFRS while the other country stays with domestic GAAP, we assume that the GAAP difference measures for this country pair in the post-IFRS period become the difference between IFRS and the domestic accounting standards of the country that has not

[11] We conduct all of the tests of the relation between changes in GAAP and analyst following and forecast accuracy in changes rather than in levels form because the GAAP differences we examine are not the same in the pre- and post- periods. We predict that analyst following and forecast accuracy change along with the change in GAAP, not that there is a change from the pre- to post- period in the relationship between GAAP differences and analyst following and forecast accuracy. In other words, we do not predict or test for a change in the slope coefficient relating a constant level of GAAP differences to our test variables between the pre- and post-periods.

[12] We do not include the change in cross-listing status in the analyst following or forecast accuracy regressions because only two sample firms change cross-listing status between the pre- and post- periods.

adopted IFRS. We then compute the change in GAAP differences from the pre-IFRS period to the post-IFRS period for each country pair. We label the IFRS adoption-induced changes in GAAP differences across countries as $\Delta gaapdiff1$ and $\Delta gaapdiff2$. These variables take on 761 values, one for each firm country–analyst country pair represented in our sample, and capture the change in GAAP differences for each country-pair between the pre- and post-IFRS adoption periods. A positive value indicates a decrease in the country-pair GAAP differences due to IFRS adoption. $\Delta gaapdiff1$ has a mean of 6.56 and a median of 7, and ranges between -11 and 17. $\Delta gaapdiff2$ has a mean of 9.18 and a median of 10, and ranges between -10 and 25.

We estimate the following regressions for the determinants of changes in foreign analyst following and changes in earnings forecast accuracy, respectively, both now measured at the country-pair level. Utilizing data on changes at the country-pair level aligns the measurement of the dependent variable with the test variable. Since these regressions utilize data at the country-pair level, we no longer partition our analysts into five groups. We control for industry fixed effects and adjust the standard errors for country-pair clusters.

$$\begin{aligned}\Delta for_{ia} = {} & \beta_0 + \beta_1 \Delta gaapdiff_{af} + \beta_2 \Delta Size_i + \beta_3 \Delta Market\ to\ book_i \\ & + \beta_4 \Delta Intangible\ assets_i + \beta_5 \Delta Return\ Volatility_i \\ & + \beta_6 \Delta Security\ Issuance_i + \beta_7 \Delta Stock\ Turnover_i \\ & + \beta_8 \Delta Stock\ return_i + \varepsilon_i \end{aligned} \tag{5}$$

$$\begin{aligned}\Delta afep_{ia} = {} & \beta_0 + \beta_1 \Delta gaapdiff_{af} + \beta_2 \Delta Size_i + \beta_3 \Delta Market\ to\ book_i \\ & + \beta_4 \Delta Number\ of\ analysts_i + \beta_5 \Delta Intangible\ assets_i \\ & + \beta_6 \Delta Return\ Volatility_i + \beta_7 \Delta Security\ Issuance_i \\ & + \beta_8 \Delta Stock\ Turnover_i + \beta_9 \Delta Stock\ return_i + \beta_{10} \Delta Horizon_{ij} \\ & + \beta_{11} \Delta Firmex_{ij} + \beta_{12} \Delta Genex_j + \beta_{13} \Delta Nfirm_j + \beta_{14} \Delta Brsize_j + \varepsilon_i \end{aligned} \tag{6}$$

where Δfor_{ia} stands for changes from the pre-IFRS period to the post-IFRS period in the number of foreign analysts from country a who cover firm i. A positive value indicates increases in the number of foreign analysts. To calculate Δfor_{ia}, we first compute the total number of foreign analysts from country a who cover firm i in year t. We then compute the average annual number of foreign analysts from country a who cover firm i during the two-year pre-IFRS period and two-year post-IFRS period, respectively. Finally, we use the difference between the post-IFRS and pre-IFRS periods to measure the change in the average number of

foreign analysts from country a who cover firm i after the firm's IFRS adoption.[13]

$\Delta afep_{ia}$ stands for changes from the pre-IFRS period to the post-IFRS period in earnings forecast accuracy of foreign analysts from country a who cover firm i. A positive value indicates improvement in earnings forecast accuracy. To calculate $\Delta afep_{ia}$, we require that foreign analysts cover the same firm in both the pre-IFRS and post-IFRS periods. For a given firm, we first compute the average earnings forecast accuracy for each foreign analyst in the pre-IFRS and post-IFRS periods, respectively. We then compute the difference between the post-IFRS and pre-IFRS periods to measure the change in earnings forecast accuracy of each foreign analyst around the firm's IFRS adoption. Alternatively, we require a firm be covered by foreign analysts from a *particular country* in both the pre-IFRS and post-IFRS period, but not necessarily covered by the same analyst from that foreign country. For a given firm, we first compute the average earnings forecast accuracy for all the foreign analysts from a particular country in the pre-IFRS period and post-IFRS periods, respectively. We then compute the difference between the post-IFRS and pre-IFRS periods to measure the changes in earnings forecast accuracy by foreign analysts from the particular country around the firm's IFRS adoption. $\Delta gaapdiff_{af}$ stands for changes in GAAP differences between analyst country a and firm country f following IFRS adoption in either country a or f, or both. H3 predicts positive values for β_1 in both models 5 and 6.

5. *Empirical Results*

5.1 THE IMPACT OF IFRS ADOPTION ON FOREIGN ANALYST FOLLOWING AND EARNINGS FORECAST ACCURACY

Table 4 shows the impact of IFRS adoption on foreign analyst following based on the negative binomial model for 3,280 firms and 12,010 firm-years. Columns 1–5 show the determinants of *all*, *ctry25*, *nctry25*, *ifrsexp*, and *nifrsexp*, respectively, as defined in section 4.1. On the whole, firm size, market value to book value of equity, intangible assets, cross-listing in the United States, and stock turnover are positively related to analyst following, while return volatility and stock return are negatively related to analyst following. The coefficients on *post* are significantly positive for columns 1,

[13] We also develop an alternative measure of Δfor_{ia}. We count the number of *unique* foreign analysts from country a who cover firm i during the pre-IFRS and post-IFRS periods. We then use the difference in the number of unique foreign analysts between the post- and pre- periods as an alternative measure for the change in the number of foreign analysts from country a who cover firm i after the firm's IFRS adoption. Our first measure assigns a value of 0.5 to an analyst who covers an IFRS-adopting firm in only one of the two pre- or post-IFRS years, while this measure assigns a value of 1 to this analyst. The findings for the association between changes in foreign analyst following and changes in GAAP differences are qualitatively similar using this alternative measure of Δfor_{ia}.

TABLE 4

The Impact of IFRS Adoption on Foreign Analyst Following

Variable	*all* (1)	*ctry25* (2)	*nctry25* (3)	*ifrsexp* (4)	*nifrsexp* (5)
post (A)	0.182***	0.264***	−0.284**	0.285***	0.051
	(2.88)	(3.31)	(−2.10)	(3.60)	(0.57)
voluntary	0.356**	0.341*	0.881***	0.354*	0.504**
	(1.99)	(1.88)	(3.33)	(1.94)	(2.21)
voluntary ∗ post (B)	0.023	0.019	0.226	−0.000	−0.145
	(0.41)	(0.30)	(1.19)	(−0.00)	(−1.27)
firm size	0.010***	0.011***	0.005***	0.010***	0.008***
	(12.58)	(13.16)	(2.78)	(11.95)	(9.05)
market to book	0.102***	0.096***	0.115***	0.091***	0.114***
	(3.15)	(2.73)	(4.94)	(2.72)	(5.03)
intangible assets	0.419**	0.420**	0.646	0.586***	0.326
	(2.50)	(2.06)	(1.06)	(3.03)	(1.59)
return volatility	−14.654***	−14.927***	−11.412***	−15.137***	−13.812***
	(−6.17)	(−5.92)	(−2.86)	(−5.90)	(−5.27)
adr	0.958***	1.029***	−0.963**	0.972***	1.010***
	(10.86)	(10.67)	(−2.02)	(10.73)	(7.99)
security issuance	0.087*	0.092*	0.001	0.083*	0.125*
	(1.70)	(1.90)	(0.01)	(1.86)	(1.79)
stock turnover	0.368***	0.377***	0.183***	0.370***	0.253***
	(4.38)	(4.28)	(3.24)	(4.03)	(5.59)
stock return	−0.368***	−0.399***	−0.069	−0.430***	−0.330***
	(−3.51)	(−3.94)	(−0.50)	(−3.27)	(−3.24)
Constant	−1.431***	−1.728***	−3.690***	−2.848***	−2.313***
	(−7.11)	(−8.42)	(−10.78)	(−13.47)	(−9.28)
A+B = 0 [*p-value, two-tailed*]	[0.01]	[0.00]	[0.80]	[0.00]	[0.56]
post(2) = post(3), post(4) = post(5) [*p-value, two-tailed*]		[0.00]		[0.02]	
Mandatory adopters					
Pre-IFRS predicted value	0.401	0.322	0.012	0.233	0.141
Marginal effects	0.080***	0.097***	−0.003**	0.077***	0.007
Voluntary adopters					
Pre-IFRS predicted value	1.389	1.252	0.030	1.004	0.318
Marginal effects	0.277***	0.378***	−0.007	0.331**	0.017
No. of obs.	12,010	12,010	12,010	12,010	12,010
Log Likelihood	−13,618	−12,983	−1,848	−11,257	−7,230

This table shows the impact of IFRS adoption on foreign analyst following based on the negative binomial model for 3,280 firms and 12,010 firm-years from 25 IFRS adopting countries during the four-year window surrounding IFRS mandatory adoption dates. All the regressions control for country, industry, and year fixed effects. Robust *z*-statistics adjusted for country-level clustering are in parentheses. All the variables are defined in appendix C. *Pre-IFRS predicted value* represents the predicted value of analyst following for mandatory adopters (voluntary adopters) when *post* = 0 and all control variables are held at sample mean values of mandatory adopters (voluntary adopters). *Marginal effects* represents the changes in analyst following when *post* increases from 0 to 1 and all control variables are held at mean values of mandatory adopters (voluntary adopters). ***, **, and * indicate significance at 1%, 5%, and 10% levels (two-tailed), respectively.

2, and 4, significantly negative in column 3, and insignificant in column 5, which indicates that the numbers of foreign analysts from all of the 34 countries, from the 25 countries that mandate IFRS adoption, and analysts with prior IFRS experience have all increased, while the number of foreign analysts outside the 25 IFRS countries declines. The *post* coefficient is significantly different between the sample of analysts from the 25 IFRS adopting

countries and analysts outside the 25 IFRS adopting countries, and between the sample of analysts with IFRS experience and the analysts without IFRS experience. The coefficient on *voluntary* is positive in each column, suggesting enhanced following for these firms prior to the mandatory IFRS adoption date. The coefficients on the interaction terms *post* ∗ *voluntary* are generally insignificant, suggesting that voluntary adopters experience an increase in foreign analysts in the post- period that is not different from the increase experienced by the mandatory adopters. The overall change in foreign analyst following for voluntary adopters in the post- period (the sum of the coefficients on *post* and the *post* ∗ *voluntary*) is significantly positive for the samples of all analysts from 34 countries, for analysts from the 25 IFRS adopting countries, and for analysts with prior IFRS experience.

Pre-IFRS predicted value represents the predicted number of foreign analysts for mandatory adopters (or voluntary adopters) when *post* = 0 and all control variables are held at the sample mean values of mandatory adopters (or voluntary adopters). *Marginal effects* represents the change in the number of foreign analysts of mandatory adopters (or voluntary adopters) from the pre- to the post-IFRS period, while all control variables are held at the sample mean values of mandatory adopters (or voluntary adopters).[14] For equation (1), the number of all foreign analysts following mandatory adopting firms increases by about 20% (0.080/0.401) from the pre-IFRS to the post-IFRS period. For analysts from the 25 countries that mandate IFRS adoption and for analysts with IFRS experience, analyst following increases by over 30%. The percentage changes in analyst following among those groups for voluntary adopters are similar.

Table 5 shows the determinants of foreign analyst forecast accuracy using OLS regression for 911 firms and up to 18,482 analyst forecasts. The number of firms in our forecast accuracy sample is smaller than the number of firms in our analyst following sample because we require that each firm have at least one forecast issued by foreign analysts in the pre- and post- periods, respectively. Overall, return volatility and forecast horizon are strongly negatively related to forecast accuracy, while the number of analysts following the firm, market value to book value of equity, turnover, and stock return are all positively related to accuracy. Other control variables exhibit less explanatory power. Columns 1–5 show a positive coefficient on *post* for all five groups of foreign analysts, though the coefficient is not significantly different from zero for analysts not located in the 25 countries that mandate IFRS adoption.[15] The *post* coefficient is not

[14] Predicted values for foreign analyst following are low relative to the descriptive statistics when sample wide mean values for the control variables are used due to the nonlinearity of the model. If we repeat this analysis using the firm-specific mean values of control variables during the sample period, we produce predicted values and marginal effects quite close to the descriptive statistics in table 4. However, the percentage changes are similar.

[15] We note that the sample sizes for analysts not located in the 25 countries that mandate IFRS adoption are quite small, so the insignificant coefficient may reflect a lack of statistical power in that sample.

TABLE 5

The Impact of IFRS Adoption on Foreign Analysts' Earnings Forecast Accuracy

Variable	*all* (1)	*ctry25* (2)	*Nctry25* (3)	*ifrsexp* (4)	*nifrsexp* (5)
post (A)	0.366*	0.364*	0.463	0.331*	0.521*
	(2.00)	(1.93)	(0.81)	(1.94)	(1.88)
voluntary	0.568*	0.572*	1.176	0.673**	0.336
	(1.76)	(1.78)	(1.42)	(2.25)	(0.82)
voluntary ∗ post (B)	−0.525*	−0.536*	−1.153	−0.671**	−0.136
	(−1.77)	(−1.82)	(−1.12)	(−2.39)	(−0.32)
firm size	0.000	0.000	−0.003	0.001	−0.002
	(0.03)	(0.04)	(−0.46)	(0.36)	(−0.44)
market to book	0.128**	0.122*	0.262**	0.091	0.213***
	(2.17)	(2.02)	(2.27)	(1.30)	(4.17)
number of analysts	0.046***	0.046***	0.072***	0.045***	0.044***
	(6.19)	(6.12)	(3.60)	(4.73)	(7.81)
intangible assets	0.100	0.118	−1.206	0.085	0.046
	(0.26)	(0.29)	(−1.33)	(0.18)	(0.08)
return volatility	−39.593***	−39.437***	−44.346*	−43.039***	−32.562***
	(−4.87)	(−4.74)	(−1.91)	(−5.36)	(−3.34)
adr	−0.813*	−0.814*	0.576	−0.901*	−0.522
	(−1.78)	(−1.78)	(0.50)	(−1.91)	(−1.26)
security issuance	−0.168	−0.167	−0.431	−0.187	−0.044
	(−1.25)	(−1.23)	(−0.87)	(−1.48)	(−0.28)
stock turnover	0.164*	0.183**	−0.383**	0.178*	0.116**
	(1.98)	(2.13)	(−2.49)	(1.74)	(2.25)
stock return	1.458***	1.513***	0.108	1.778***	0.772**
	(6.00)	(6.46)	(0.13)	(6.88)	(2.58)
horizon	−0.987***	−0.968***	−1.911***	−0.872***	−1.355***
	(−5.23)	(−5.30)	(−2.93)	(−5.76)	(−3.51)
firmex	−0.020	−0.019	−0.085	−0.022	−0.018
	(−1.17)	(−1.11)	(−0.54)	(−1.35)	(−0.47)
genex	0.007	0.009	−0.047	0.004	−0.000
	(0.65)	(0.69)	(−1.08)	(0.34)	(−0.02)
nfirm	−0.004	−0.006	0.032	−0.007	0.001
	(−0.68)	(−0.84)	(0.76)	(−0.79)	(0.15)
brsize	−0.000	0.000	−0.003	−0.000	0.001
	(−0.15)	(0.07)	(−1.02)	(−0.90)	(1.68)
Constant	−5.460***	−6.254***	−2.381	2.526	−8.074***
	(−6.95)	(−6.96)	(−1.62)	(1.64)	(−9.34)
A + B = 0 [*p*-value, two-tailed]	[0.41]	[0.34]	[0.55]	[0.11]	[0.09]
post (2) = post (3), post (4) = post (5) [*p*-value, two-tailed]		[0.42]		[0.20]	
Mandatory adopters					
Pre-IFRS predicted value	−2.288	−2.278	−2.611	−2.293	−2.305
Marginal effects	0.366**	0.364*	0.463	0.331*	0.521*
Voluntary adopters					
Pre-IFRS predicted value	−2.171	−2.176	−1.972	−2.135	−2.291
Marginal effects	−0.159	−0.172	−0.690	−0.340	0.385*
No. of obs.	18,482	17,963	519	13,046	5,436
R^2	0.13	0.13	0.21	0.14	0.11

This table shows the impact of IFRS adoption on foreign analysts' earnings forecast accuracy, using OLS for 911 sample firms and 18,482 forecasts during the four-year window surrounding IFRS mandatory adoption dates. All the regressions control for country, industry, and year fixed effects. We report *t*-statistics adjusted for country-level clustering in parentheses. All the variables are defined in appendix C. *Pre-IFRS predicted value* represents the predicted value of forecast accuracy for mandatory adopters (voluntary adopters) when *post* = 0 and all control variables are held at sample mean values of mandatory adopters (voluntary adopters). *Marginal effects* represents the changes in earnings forecast accuracy when *post* increases from 0 to 1 and all control variables are held at mean values of mandatory adopters (voluntary adopters). ***, **, and * indicate significance at 1%, 5%, and 10% levels (two-tailed), respectively.

significantly different between the sample of analysts from the 25 IFRS adopting countries and the sample of analysts from other countries, or between the experienced and inexperienced analyst samples. The coefficient on *voluntary* is generally positive in columns 1–5, suggesting that foreign analysts issue more accurate forecasts for voluntary adopters before mandatory IFRS adoption. After mandatory IFRS adoption, the forecast accuracy advantage previously enjoyed by early adopting firms largely disappears, as suggested by the generally negative coefficients on the interaction terms *post* ∗ *voluntary*. These negative coefficients, and the general lack of significance of the sum of the coefficients on *post* and the *post* ∗ *voluntary* interaction, indicate that voluntary adopters do not enjoy the increase in forecast accuracy in the post- period that the mandatory adopters enjoy.

Pre-IFRS predicted value represents the predicted earnings forecast accuracy of mandatory adopters (or voluntary adopters) when *post* = 0 and all control variables are held at sample mean values of mandatory adopters (or voluntary adopters). *Marginal effects* represents the changes in earnings forecast accuracy from the pre- to the post-IFRS period for mandatory adopters (or voluntary adopters), while all control variables are held at the sample mean values of mandatory adopters (or voluntary adopters). For mandatory adopters, the *Pre-IFRS predicted value* in column 1 is −2.288, and the marginal effect of *post* is 0.366.[16] Thus, foreign analyst forecast accuracy for all foreign analysts increases by 16% (0.366/2.288) from the pre-IFRS to the post-IFRS period. The change is similar for the other analyst groups. Consistent with the coefficient estimates reported earlier, the marginal effects for voluntary adopters are generally negative and insignificant. We do provide one caution in interpreting these results, however. We do not have data that allow us to ascertain whether there is a change in the provision of management guidance during our sample period. While the positive coefficient on *post* is consistent with IFRS producing accounting earnings numbers that foreign analysts find easier to predict, it is also possible that management provides more guidance in the post-IFRS period due to the accounting change.[17]

There is no evidence that forecast accuracy increases more for analysts from the 25 countries that mandate IFRS adoption or for those with prior IFRS experience. As noted earlier, this could reflect the fact that forecasts are only issued by analysts who have decided to incur the costs to understand the GAAP used by any firm they follow. Tables 4 and 5 thus provide strong support for our H1 that IFRS adoption is associated with increased coverage by foreign analysts and an improvement in foreign analysts' earnings forecast accuracy. Table 4 provides support for H2 since it shows that mandatory IFRS adoption induces analysts from countries simultaneously

[16] The marginal effects from OLS regressions are simply the estimated coefficients on *post*.

[17] However, additional analysis of local analysts that we report later shows that local analysts do not experience increased forecast accuracy after IFRS adoption. Increased guidance would be expected to affect both foreign and local analysts.

adopting IFRS and analysts with prior IFRS experience to follow adopting firms, but not analysts outside those 25 countries or analysts without prior IFRS experience. Table 5 does not support the prediction of H2 that foreign analysts from those 25 IFRS countries and analysts with prior IFRS experience will exhibit a greater improvement in forecast accuracy.

5.2 BENCHMARKING AGAINST NON-IFRS-ADOPTING COUNTRIES AND OTHER TIME PERIODS IN IFRS-ADOPTING COUNTRIES

Like most research that attempts to examine the effects of major policy initiatives, we test for time-series changes around the time of IFRS implementation in adopting countries. Of course, IFRS implementation does not occur in a vacuum, and it is difficult to isolate the effects of IFRS adoption versus other factors that might cause changes in foreign analyst activities over time. To address this issue, we perform two sets of additional analyses. First, we test for changes in foreign analyst following and forecast accuracy occurring for fiscal years ending on or after December 31, 2005 for firms that are not located in the IFRS-adopting countries. Second, we test for changes in foreign analyst following and forecast accuracy for firms domiciled in the IFRS adopting countries in time periods just before mandated IFRS adoption takes effect in these countries. If our results reflect time trends in the IFRS adoption countries or reflect other changes occurring coincident with IFRS adoption that affect all firms, we should observe similar results in these alternative samples.

5.2.1. Benchmark Against Changes in Foreign Analyst Activities in Non-IFRS-Adopting Countries. We test for changes in foreign analyst following and forecast accuracy occurring between 2003 and 2006 for a sample of 6,851 firms domiciled in 21 countries that do not adopt IFRS prior to 2006. We structure these tests to mirror the analysis performed on the IFRS adopting countries, with fiscal years falling in 2003 and 2004 forming a pseudo pre- period and fiscal years falling in 2005 and 2006 forming a pseudo post-period for these firms. We impose the same restrictions for a firm or an analyst to be included in this analysis that we impose for the sample of IFRS adopting firms.[18] We include a *post* indicator variable for 2005 and 2006, and include the same control variables that we include in our main analysis

[18] The 21 countries in this sample include: Argentina, Brazil, Canada, Chile, China, India, Indonesia, Israel, Japan, South Korea, Malaysia, Mexico, New Zealand, Pakistan, Peru, Russia, Slovenia, Taiwan, Thailand, Turkey, and the United States. We set similar data requirements to identify foreign analysts following firms in non-IFRS countries—we keep only those analysts who are active in the I/B/E/S database from before December 31, 2004 (the beginning of the first IFRS fiscal year) to after December 31, 2005, that is, the end of the first IFRS fiscal year. Moreover, we require that firms have required control variables during the sample period. Two non-IFRS countries that are included in Bae, Tan, and Welker [2008], Egypt and Estonia, do not have any firms meeting our data requirements in the sample period. Venezuela, which mandated IFRS adoption in 2005, is excluded from our IFRS sample due to missing data.

except we replace the voluntary indicator with an indicator variable indicating firm-years using either IFRS or U.S. GAAP, and we do not interact this variable with *post*. We again perform this analysis on the same five groups of analysts that we examine in our main tests, specifically all foreign analysts, analysts from the 25 IFRS-adopting countries or not from these countries, and analysts with or without prior IFRS experience.

Columns 1–5 of panel A of table 6 show the results of foreign analyst following in non-IFRS countries based on negative binomial regressions. We do not tabulate the coefficient estimates of control variables to conserve space. The coefficients on the pseudo *post* indicator are positive for *all*, *ctry25*, *nctry25,* and *nifrsexp* and negative for *ifrsexp*, but insignificant for all of the analyst groups we examine, indicating there is not a significant percentage change in foreign analyst following in 2005/2006 for firms domiciled outside the IFRS-adopting countries. We follow Paternoster, Mazerolle, and Piquero [1998] to test the equality of regression coefficients across different samples. *P*-values from this test are reported at the bottom of panel A of table 6. We find that, compared to non-IFRS-adopting countries, IFRS-adopting countries experience a significantly greater percentage increase in foreign analysts from the 25 adopting countries and in foreign analysts with prior IFRS experience. In contrast, the non-IFRS-adopting countries experience a greater increase in foreign analysts who are not from the 25 adopting countries.[19] These comparisons are broadly consistent with the predictions in H2.

Columns 1–5 of panel B of table 6 show the results of foreign analyst forecast accuracy in non-IFRS countries based on OLS regressions. We find that the coefficients on the pseudo *post* indicator are negative but insignificant, indicating that there is not a significant change in foreign analyst forecast accuracy in 2005/2006 for firms domiciled outside the IFRS-adopting countries for any of the analyst groups we examine. *P*-values at the bottom of panel B of table 6 show that the coefficients on *post* are significantly greater for IFRS countries than for non-IFRS countries for all analyst groups except for the *nctry25* group. We conclude from this analysis that the forecast accuracy effects we document for firms domiciled in IFRS-adopting countries do not reflect other changes that are occurring contemporaneously with mandated IFRS adoption that affect all firms.

5.2.2. Benchmark Against Changes in Foreign Analyst Activities in IFRS-Adopting Countries in Other Time Periods. We also benchmark changes in

[19] Alternatively, we assess the difference in the change of analyst following across the IFRS-adopting samples and non-IFRS-adopting samples by first calculating the incremental effect of *post* for each sample firm at the mean of the control variables for that sample firm, then testing for the equality of the incremental effect between these two samples. This method tests whether the absolute change in analyst following differs across samples rather than whether the percentage change differs across samples. Based on this method, we find that the difference in the change of foreign analyst following between the sample of IFRS-adopting firms and the sample of non-IFRS-adopting firms is significant for all analyst partitions.

TABLE 6

Foreign Analyst Following and Earnings Forecast Accuracy for Non-IFRS Countries and Local Analyst Following and Forecast Accuracy in IFRS Countries

Panel A: Foreign analyst following in non-IFRS countries and local analyst following in IFRS countries

	Foreign Analyst Following in Non-IFRS Countries					Local Analyst Following in IFRS Countries				
Variable	*all* (1)	*ctry*25 (2)	*nctry*25 (3)	*ifrsexp* (4)	*nifrsexp* (5)	*all* (6)	*ifrsexp* (7)	*nifrsexp* (8)	*Local only* (9)	*intl* (10)
post (A)	0.053	0.059	0.036	−0.033	0.064	0.204***	0.386***	0.093	0.089**	0.373***
	(0.67)	(0.71)	(0.29)	(−0.25)	(0.51)	(3.58)	(4.85)	(1.23)	(2.25)	(5.14)
ifrs/US gaap	0.122	0.385*	−0.616	0.338	−0.179					
	(0.37)	(1.70)	(−1.25)	(1.36)	(−0.37)					
voluntary						0.148**	0.170***	0.454***	0.139	0.146**
						(1.97)	(2.90)	(3.63)	(1.22)	(2.38)
voluntary ∗ post (B)						−0.047	−0.166**	−0.532***	−0.042	−0.025
						(−0.91)	(−2.49)	(−3.63)	(−0.64)	(−0.60)
(A) + (B) = 0 [*p*-value, two-tailed]						[0.01]	[0.00]	[0.00]	[0.41]	[0.00]
Post (7) = post (8), post (9) = post (10) [*p*-value, two-tailed]								[0.00]		[0.00]
Test of difference with table 4 [*p*-value, two-tailed]	[0.19]	[0.07]	[0.08]	[0.04]	[0.93]	[0.79]	[0.42]	[0.71]		
No. of obs.	25,136	25,136	25,136	25,136	25,136	12,010	12,010	12,010	12,010	12,010
Log likelihood	−10,664	−6,318	−6,425	−4,626	−8,197	−29,083	−22,205	−19,609	−23,735	−18,644

(*Continued*)

TABLE 6 — *Continued*

Panel B: Earnings forecast accuracy for foreign analysts in non-IFRS countries and local analysts in IFRS countries

	Foreign Analysts in Non-IFRS Countries					Local Analysts in IFRS Countries				
Variable	*all* (1)	*ctry*25 (2)	*nctry*25 (3)	*ifrsexp* (4)	*nifrsexp* (5)	*all* (6)	*ifrsexp* (7)	*nifrsexp* (8)	*Local only* (9)	*intl* (10)
post (A)	−0.249	−0.344	−0.031	−0.250	−0.176	0.049	0.196	−0.073	−0.098	0.196
	(−0.73)	(−0.65)	(−0.17)	(−0.52)	(−0.60)	(0.33)	(1.02)	(−0.56)	(−0.86)	(0.87)
ifrs/US gaap	0.689**	0.118	2.531***	0.319	1.265*					
	(2.29)	(0.45)	(3.63)	(0.84)	(1.77)					
voluntary						−0.609	−0.466*	−0.893	−0.612	−0.611*
						(−1.70)	(−1.98)	(−1.10)	(−1.52)	(−1.77)
voluntary ∗ post (B)						0.249	0.053	0.665	0.390	0.091
						(0.69)	(0.19)	(0.96)	(0.97)	(0.27)
(A) + (B) = 0 [*p*-value, two-tailed]						[0.33]	[0.36]	[0.34]	[0.45]	[0.31]
Post (7) = post (8), post (9) = post (10) [*p*-value, two-tailed]								[0.01]		[0.05]
Test of difference with table 5 [*p*-value, two-tailed]	[0.06]	[0.07]	[0.44]	[0.07]	[0.08]	[0.08]	[0.55]	[0.02]		
No. of obs.	5,044	2,552	2,492	1,732	3,312	66,584	34,924	31,660	33,349	32,452
R^2	0.20	0.22	0.23	0.23	0.20	0.12	0.11	0.13	0.11	0.13

This table shows foreign analyst following and earnings forecast accuracy in non-IFRS countries and local analyst following and forecast accuracy in IFRS countries. Panel A shows negative binomial regressions of analyst following for foreign analysts in non-IFRS countries and local analysts in IFRS countries, respectively. Panel B shows OLS regressions on forecast accuracy for foreign analysts in non-IFRS countries and local analysts in IFRS countries, respectively. There are 6,851 firms and 25,136 firm-years from 21 non-IFRS countries during the four-year window surrounding 2005. For local analyst analysis, there are 3,280 firms and 12,010 firm-years from 25 IFRS countries during the four-year window surrounding the IFRS mandatory adoption date. All the regressions control for country, industry, and year fixed effects. Robust *z*-statistics (panel A) and *t*-statistics (panel B) adjusted for country-level clustering are in parentheses. All the variables are defined in appendix C. ***, **, and * indicate significance at 1%, 5%, and 10% levels (two-tailed), respectively.

foreign analyst following and earnings forecast accuracy after IFRS adoption against those occurring in the IFRS-adopting countries in pseudo test periods preceding IFRS adoption that we construct as follows. We construct four overlapping four-year windows: 1998–2001, 1999–2002, 2000–2003, and 2001–2004, based on the same 25 sample countries.[20] The first two years and the last two years in each window are treated as a pseudo pre-IFRS and pseudo post-IFRS period, respectively, in each of the four-year windows. To reduce the impact of analyst entry and exit on our measures of analyst following in the pre- and post- periods, in each four-year window we keep only those foreign analysts who are active in the I/B/E/S database at least one year during the pre- period and continue to be active in the I/B/E/S database in the post- period. To be included in a particular four-year window, a sample firm must have at least one year's observation during the pre- period and post- period, respectively. These are the same restrictions we impose for the IFRS adoption window. We run regression models 1 and 2 separately for each window. In these regressions, an indicator variable is again used to indicate firms that use either U.S. GAAP or IFRS during these sample periods. This indicator variable is used instead of the voluntary adopter indicator variables used in the original equations (1) and (2). Once again, we perform this analysis on the five analyst groups identified earlier.

We do not tabulate the results of this analysis to conserve space. Of the 20 coefficients on the pseudo *post* indicator variable in the analyst following regressions, 7 are positive and 13 are negative. No coefficient is statistically different from zero. For the analyst groups consisting of all analysts, analysts from the 25 IFRS-adopting countries, and analysts with prior IFRS experience, we find that the percentage change in analyst following is greater in the IFRS adoption period at the 0.10 level or better in 11 of 12 comparisons (three analyst groups multiplied by four prior time periods). There is no difference in the percentage change in analyst following for analysts located outside of the IFRS adopting countries or for analysts without prior IFRS experience. These comparisons are again broadly consistent with H1 and H2. Of the 20 coefficients on the pseudo *post* indicator variable in the forecast accuracy regressions, 6 are positive and 14 are negative, and there is one statistically significant positive and one statistically significant negative coefficient. Across all analyst groups, the increase in forecast accuracy is significantly greater in the IFRS period at the 0.10 level or better in 10 of 20 comparisons. While these tests are, of course, not independent, overall the evidence from these pseudo test periods is consistent with two conclusions. First, these tests suggest that our test statistics for our sample firms are distributed roughly as one would expect under the null hypothesis of no changes outside of our test period. Second, the observed changes in foreign analyst activities in our main tests do not represent time trends that

[20] Singaporean firms are excluded from the windows 2000–2003 and 2001–2004 since Singapore mandated IFRS for fiscal periods beginning on December 31, 2003.

are present in the data outside of our test period. We continue to caution, however, that these tests do not completely eliminate the alternative explanation that something other than mandatory IFRS adoption is responsible for the changes observed in our test period.

5.3 ANALYSIS OF LOCAL ANALYSTS

So far, our focus has been on foreign analysts since harmonization is intended to facilitate comparisons of accounting data across borders. However, it is also possible that the mandatory transition to IFRS impacts local analysts. For example, if IFRS produces more informative accounting reports, the past literature suggests this could enhance analyst following and improve forecast accuracy. Alternatively, for local analysts that follow voluntary IFRS-adopting firms or a combination of local and foreign firms prior to mandatory IFRS adoption, the transition to IFRS potentially reduces the number of different GAAPs in the analyst's portfolio. If so, IFRS adoption could bring comparability benefits that lower costs for local analysts and make it possible for them to follow more local firms and/or forecast their existing local firms more accurately.

To explore these issues, we repeat the analysis of analyst following and forecast accuracy focusing on 3,135 local analysts who cover our sample firms during the sample period. Local analysts are analysts who reside in the country where the firm is headquartered. We use the same sample of firms used in our foreign analyst tests, and impose the same restrictions for a local analyst to be eligible to be included in our sample that we impose for a foreign analyst to be included in our earlier samples. We run this analysis first on all local analysts, then partition the sample based on previous IFRS experience as defined before. In addition, we partition local analysts into two groups depending on the composition of the portfolio of firms the analyst follows in the pre-IFRS adoption period. A substantial number of analysts follow only local firms in the pre- period. Another significant group of analysts follows both local firms and foreign firms in the pre- period (we refer to this as an international portfolio).[21] If comparability effects are the most important effects of IFRS adoption, we expect to find stronger results in the set of local analysts who follow voluntary adopting firms in the pre- period, and among the group of analysts following both local and foreign firms in the pre- period. If IFRS primarily results in an increase in the informativeness of accounting reports, then the results should be similar across all these groups of local analysts.

Columns 6–10 of panel A of table 6 show the results for local analyst following. Column 6 shows a significant increase in following from all local analysts in the post-IFRS period. Columns 7 and 8 show that this increase

[21] There is a much smaller group of analysts who follow only foreign firms in the pre- period. We do not analyze this group in detail because it is a small group and because there are no pre-IFRS forecasts for local firms from this group of analysts, so analyzing changes in forecast accuracy is not possible.

is concentrated among those analysts with prior IFRS experience: the coefficient on *post* is significant only for the experienced analysts, and is significantly larger for the experienced sample than for the inexperienced sample. Across all columns, the coefficients on control variables (untabulated) are generally consistent with the past literature and with the results for the foreign analyst sample reported in table 4. *P*-values reported at the bottom of columns 6–8 of panel A of table 6 indicate that there are no significant differences between the changes in local analyst following and the changes in foreign analyst following for these three analyst groups. A possible explanation is that local analysts also receive the same potential comparability benefits as foreign analysts due to the nature of the portfolio of firms the local analysts covered in the pre-IFRS adopting period.

Columns 9 and 10 show that, while both local analysts who follow only local firms in the pre- period and analysts who follow local and foreign firms in the pre- period increase their coverage of local firms in the post-period, those with international portfolios display a statistically larger increase. In order to further explore potential comparability benefits for the analysts in our sample, we also examine the portfolios of the analysts who are located within the 25 IFRS adopting countries. These analysts appear in our analysis as foreign analysts if they follow foreign firms from the same 25 countries, and/or as local analysts if they follow firms located in their home countries. For purposes of analyzing the analysts' portfolios, we form two groups of analysts based on the portfolio of firms the analyst follows in the pre-IFRS adoption period. The first group of analysts follows only local firms in the pre- period. We find that this group of analysts has a portfolio with a median of only one set of GAAP in the pre- period, that is, the local GAAP of the analyst's home country, and this does not change in the post- period as these analysts still have a portfolio with one GAAP on average, that is, IFRS. These analysts increase their coverage of local firms *and* begin to follow foreign firms of IFRS countries in the post-IFRS period. The analysts following only local firms in the pre- period are able to expand their coverage of local firms and include foreign firms in their portfolio in the post- period *without* adding additional GAAPs to their portfolio. The other group of analysts we examine are analysts who follow both local and foreign firms in the pre-IFRS period. This group also expands its coverage of both local and foreign firms, and enjoys a marked reduction in the number of GAAPs in their portfolio. In the pre- period, these analysts have a median of three distinct GAAPs in their portfolios, and this number falls to one in the post- period. Hence, both sets of analysts benefit from comparability that allows them to add firms to their portfolio without increasing the number of GAAPs in their portfolios. For analysts who are already following foreign firms, there is an additional benefit of a reduction in the number of GAAPs in their portfolios subsequent to mandatory IFRS adoption.

Columns 6–10 of panel B of table 6 present the results of the analysis of local analysts' forecast accuracy. Coefficients on control variables

(untabulated) are generally consistent with the foreign analyst sample, except that local analysts are less accurate in forecasting the voluntary adopters in the pre- period. Unlike the analysis of foreign analysts presented earlier, no group of local analysts we examine is more accurate in forecasting local firms in the post- period. *P*-values reported at the bottom of columns 6–8 of panel B of table 6 show that coefficients on *post* are greater for all foreign analysts and foreign analysts without IFRS experience than for their local counterparts. The fact that foreign analysts forecast more accurately in the post- period but local analysts do not suggests that IFRS adoption reduces or eliminates the forecasting advantage of local analysts documented in Bae, Stulz, and Tan [2008]. It also suggests that increased management guidance is not likely to be causing the increase in foreign analyst forecast accuracy since this guidance should affect all analysts equally.

5.4 THE IMPACT OF IFRS-INDUCED CHANGES IN GAAP ON FOREIGN ANALYST FOLLOWING AND FORECAST ACCURACY

Table 7 presents the results of analyzing the effects of country-level changes in GAAP resulting from IFRS adoption. The dependent variable in panel A is the change from the pre- to the post- period in the average number of foreign analysts from each of the five analyst groups. The dependent variable of panel B is the change from the pre- to the post- period in the mean forecast accuracy for foreign analysts from each of the five analyst groups. We include *ifrsdiff1* or *ifrsdiff2* as measures of the extent to which GAAP changes from local GAAP to IFRS.

Panel A of table 7 shows that the increase in total foreign analyst following is significantly positively associated with the difference between previously used local GAAP and IFRS for foreign analysts from 34 countries, for analysts from the 25 countries that mandate IFRS adoption, and for analysts with prior IFRS experience. Changes in firm size and stock turnover are weakly positively associated with changes in foreign analysts, in line with the signs of these control variables in our level analysis. The changes in the other control variables are generally unrelated to changes in analyst following.

Panel B of table 7 shows that the majority of the associations between the number of differences between local GAAP and IFRS and changes in forecast accuracy are negative, though none is significant at conventional levels. Hence, there is no evidence that removing more GAAP differences between local standards and IFRS through mandatory IFRS adoption increases forecast accuracy. One possible reason is that, while removing a larger number of differences between local GAAP and IFRS may enhance comparability with other IFRS users, it also increases the number of changes in GAAP that analysts must deal with in converting from forecasting local GAAP numbers to forecasting IFRS numbers. In addition, forecasts are only observed when an analyst chooses to follow a firm, which could indicate that the analyst has chosen to incur the costs of understanding whatever GAAP the firm

TABLE 7

The Effects of IFRS Adoption–Induced GAAP Changes on Foreign Analyst Following and Earnings Forecast Accuracy

Panel A: Dependent variables are changes in the mean numbers of foreign analysts from one of the five analyst groups

Variable	Δ*all* (1)	Δ*ctry*25 (2)	Δ*nctry*25 (3)	Δ*ifrsexp* (4)	Δ*nifrsexp* (5)	Δ*all* (6)	Δ*ctry*25 (7)	Δ*nctry*25 (8)	Δ*ifrsexp* (9)	Δ*nifrsexp* (10)
ifrsdiff1	0.017***	0.016***	0.000	0.023***	−0.006					
	(3.88)	(3.92)	(0.20)	(4.06)	(−1.61)					
ifrsdiff2						0.012***	0.012***	−0.000	0.017***	−0.005
						(3.09)	(2.95)	(−0.11)	(2.83)	(−1.29)
Δ*firm size*	0.038***	0.037***	0.001	0.018***	0.020**	0.039***	0.038***	0.001	0.019***	0.020**
	(2.85)	(2.82)	(0.73)	(2.94)	(2.21)	(2.87)	(2.85)	(0.72)	(3.02)	(2.18)
Δ*market to book*	0.002	−0.011	0.013	−0.013	0.015	0.004	−0.009	0.013	−0.011	0.015
	(0.11)	(−0.52)	(1.54)	(−0.81)	(1.60)	(0.17)	(−0.43)	(1.52)	(−0.65)	(1.57)
Δ*intangible asset*	0.128	0.130	−0.002	0.423*	−0.295***	0.091	0.095	−0.005	0.374*	−0.284***
	(0.74)	(0.84)	(−0.06)	(2.02)	(−2.90)	(0.54)	(0.62)	(−0.15)	(1.83)	(−2.82)
Δ*return volatility*	−1.556	−1.509	−0.048	−2.367	0.810	−1.218	−1.186	−0.032	−1.914	0.696
	(−0.90)	(−0.90)	(−0.26)	(−1.65)	(0.88)	(−0.68)	(−0.68)	(−0.16)	(−1.33)	(0.79)
Δ*security issuance*	0.029	0.024	0.005	−0.004	0.033	0.041	0.035	0.006	0.012	0.028
	(0.69)	(0.60)	(0.62)	(−0.07)	(0.88)	(0.95)	(0.85)	(0.75)	(0.23)	(0.76)
Δ*stock turnover*	0.096**	0.088**	0.008*	0.091**	0.004	0.097**	0.089**	0.008*	0.094**	0.004
	(2.60)	(2.38)	(1.80)	(2.12)	(0.19)	(2.59)	(2.38)	(1.77)	(2.07)	(0.16)
Δ*stock return*	−0.142**	−0.132**	−0.010	−0.084	−0.057	−0.131**	−0.121**	−0.010	−0.070	−0.061
	(−2.38)	(−2.28)	(−0.42)	(−1.30)	(−1.41)	(−2.19)	(−2.14)	(−0.40)	(−1.11)	(−1.58)
Constant	0.043	−0.003	0.046*	−0.013	0.056	0.060	0.010	0.049**	0.004	0.055
	(0.39)	(−0.03)	(1.92)	(−0.13)	(0.71)	(0.51)	(0.09)	(2.16)	(0.04)	(0.65)
No. of firms	1,938	1,938	1,938	1,938	1,938	1,938	1,938	1,938	1,938	1,938
R^2	0.06	0.07	0.03	0.06	0.06	0.06	0.06	0.03	0.05	0.06

(*Continued*)

TABLE 7 — *Continued*

Panel B: Dependent variables are changes in mean value of earnings forecast accuracy for foreign analysts from one of the five analyst groups

Variable	Δ*all* (1)	Δ*ctry*25 (2)	Δ*nctry*25 (3)	Δ*ifrsexp* (4)	Δ*nifrsexp* (5)	Δ*all* (6)	Δ*ctry*25 (7)	Δ*nctry*25 (8)	Δ*ifrsexp* (9)	Δ*nifrsexp* (10)
ifrsdiff1	−0.032	−0.028	−0.003	−0.039	−0.059					
	(−1.12)	(−0.87)	(−0.04)	(−1.54)	(−0.86)					
ifrsdiff2						−0.043	−0.038	−0.058	−0.046	−0.110
						(−1.58)	(−1.33)	(−0.61)	(−1.59)	(−1.54)
Δ*firm size*	0.002	0.006	0.001	−0.012	−0.010	−0.001	0.004	−0.011	−0.015	−0.013
	(0.07)	(0.23)	(0.01)	(−0.54)	(−1.11)	(−0.02)	(0.13)	(−0.10)	(−0.69)	(−1.44)
Δ*market to book*	0.231***	0.258***	0.116*	0.213***	0.496**	0.231***	0.257***	0.120	0.214***	0.493**
	(4.69)	(5.01)	(1.82)	(4.00)	(2.22)	(4.56)	(5.16)	(1.62)	(3.81)	(2.19)
Δ*number of analysts*	0.055*	0.054	0.048	0.026	0.041	0.052*	0.052	0.052	0.025	0.040
	(1.79)	(1.53)	(1.20)	(0.75)	(0.51)	(1.87)	(1.61)	(1.51)	(0.76)	(0.57)
Δ*intangible assets*	2.811**	3.396***	−0.890	3.385***	1.644	2.691**	3.249***	−1.023	3.180***	1.460
	(2.77)	(3.03)	(−0.22)	(3.11)	(0.60)	(2.66)	(2.97)	(−0.25)	(3.06)	(0.53)
Δ*return volatility*	−21.992***	−24.586***	1.480	−27.628***	−15.972	−22.048***	−24.539***	−6.470	−28.099***	−14.712
	(−3.38)	(−3.51)	(0.08)	(−3.10)	(−0.92)	(−3.25)	(−3.35)	(−0.31)	(−3.03)	(−0.81)
Δ*security issuance*	0.191	0.157	−0.376	0.210	0.202	0.148	0.120	−0.504	0.158	0.206
	(1.07)	(0.84)	(−0.31)	(0.95)	(0.75)	(0.79)	(0.62)	(−0.44)	(0.70)	(0.76)
Δ*stock turnover*	0.036	0.144	0.271	0.306**	−0.172	0.007	0.113	0.243	0.281*	−0.216
	(0.26)	(1.25)	(0.31)	(2.09)	(−0.52)	(0.05)	(0.98)	(0.29)	(1.94)	(−0.63)
Δ*stock return*	0.511	0.562	0.224	0.520	0.450	0.494	0.547	0.133	0.465	0.456
	(1.26)	(1.38)	(0.17)	(0.93)	(0.59)	(1.15)	(1.29)	(0.11)	(0.80)	(0.63)

(*Continued*)

TABLE 7 — *Continued*

Panel B: Dependent variables are changes in mean value of earnings forecast accuracy for foreign analysts from one of the five analyst groups

Variable	Δ*all* (1)	Δ*ctry*25 (2)	Δ*nctry*25 (3)	Δ*ifrsexp* (4)	Δ*nifrsexp* (5)	Δ*all* (6)	Δ*ctry*25 (7)	Δ*nctry*25 (8)	Δ*ifrsexp* (9)	Δ*nifrsexp* (10)
Δ*horizon*	−1.756***	−1.635***	−2.371**	−2.226***	−2.727***	−1.611***	−1.491***	−2.513**	−2.153***	−2.769***
	(−6.34)	(−6.23)	(−2.40)	(−6.11)	(−3.67)	(−5.41)	(−5.57)	(−2.83)	(−5.88)	(−3.74)
Δ*firmex*	−0.270***	−0.174*	0.109	−0.308***	−0.211	−0.300***	−0.206**	0.098	−0.344***	−0.232
	(−3.06)	(−1.93)	(0.15)	(−2.94)	(−1.36)	(−3.42)	(−2.28)	(0.14)	(−3.44)	(−1.53)
Δ*genex*	0.005	−0.001	−0.127	−0.038	0.000	0.024	0.022	−0.163	−0.017	0.004
	(0.05)	(−0.01)	(−0.72)	(−0.55)	(0.00)	(0.22)	(0.20)	(−1.00)	(−0.25)	(0.03)
Δ*nfirm*	−0.004	−0.003	0.058	0.051**	0.036	0.002	0.003	0.089	0.062**	0.048
	(−0.18)	(−0.15)	(0.75)	(2.25)	(1.09)	(0.07)	(0.18)	(0.93)	(2.70)	(1.32)
Δ*brsize*	0.001	0.001	−0.009	0.001	0.001	0.000	0.001	−0.010	0.001	0.001
	(0.29)	(0.51)	(−1.08)	(0.59)	(0.64)	(0.13)	(0.35)	(−1.14)	(0.31)	(0.69)
Constant	1.636*	1.851**	0.396	1.589**	2.859	1.752**	1.979**	0.729	1.678**	3.274
	(1.97)	(2.19)	(0.31)	(2.57)	(1.32)	(2.17)	(2.33)	(0.58)	(2.72)	(1.55)
No. of firms.	653	613	81	512	377	653	613	81	512	377
R^2	0.14	0.15	0.17	0.19	0.13	0.15	0.15	0.20	0.19	0.14

(*Continued*)

TABLE 7 — *Continued*

Panel C: The association between changes in country-pair GAAP differences and changes in foreign analyst following and earnings forecast accuracy

	Change in Mean Number of Foreign Analysts		Change in Individual Analysts' Forecast Accuracy		Change in Country-Level Average Forecast Accuracy	
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Δ*gaapdiff1*	0.062**		−0.009		−0.047	
	(2.10)		(−0.26)		(−1.33)	
Δ*gaapdiff2*		0.027*		−0.044		−0.059
		(1.70)		(−1.49)		(−1.57)
Δ*firm size*	0.123**	0.123**	−0.008	−0.010	0.005	0.004
	(2.58)	(2.58)	(−1.06)	(−1.29)	(0.32)	(0.30)
Δ*market to book*	0.017	0.018	0.231***	0.231***	0.301***	0.298***
	(0.20)	(0.21)	(2.94)	(2.95)	(4.18)	(4.19)
Δ*total analysts*			0.018	0.022	0.060*	0.058*
			(0.66)	(0.81)	(1.69)	(1.76)
Δ*intangible asset*	0.153	0.117	2.029	1.918	3.280**	3.253**
	(0.25)	(0.19)	(1.23)	(1.18)	(2.30)	(2.30)
Δ*return volatility*	−2.290	−2.302	−20.413*	−19.710*	−23.970*	−23.895*
	(−0.59)	(−0.60)	(−1.79)	(−1.73)	(−1.89)	(−1.87)
Δ*security issuance*	0.085	0.092	−0.037	−0.043	−0.040	−0.042
	(0.57)	(0.62)	(−0.14)	(−0.17)	(−0.13)	(−0.14)
Δ*stock turnover*	0.414***	0.417***	0.307*	0.297*	0.406*	0.398*
	(3.01)	(3.02)	(1.88)	(1.80)	(1.86)	(1.79)
Δ*stock return*	−0.335*	−0.337*	1.109	1.169	0.847	0.885
	(−1.85)	(−1.85)	(1.49)	(1.59)	(1.23)	(1.31)
Δ*horizon*			−0.966**	−0.985**	−2.422***	−2.426***
			(−2.25)	(−2.30)	(−3.96)	(−3.97)
Δ*firmex*			−0.033	−0.040	−0.188	−0.176
			(−0.10)	(−0.12)	(−1.52)	(−1.42)

(*Continued*)

TABLE 7 — *Continued*

Panel C: The association between changes in country-pair GAAP differences and changes in foreign analyst following and earnings forecast accuracy

	Change in Mean Number of Foreign Analysts		Change in Individual Analysts' Forecast Accuracy		Change in Country-Level Average Forecast Accuracy	
Variable	(1)	(2)	(3)	(4)	(5)	(6)
Δ*genex*			0.340	0.354	0.144	0.141
			(1.02)	(1.07)	(1.43)	(1.41)
Δ*nfirm*			−0.021	−0.021	−0.012	−0.013
			(−0.81)	(−0.81)	(−0.47)	(−0.48)
Δ*brsize*			−0.000	−0.000	0.002	0.002
			(−0.13)	(−0.14)	(0.70)	(0.67)
Constant	−0.141	0.035	0.707	1.025	1.878*	2.017*
	(−0.35)	(0.09)	(0.96)	(1.44)	(1.70)	(1.88)
No. of obs.	64,031	64,031	2,263	2,263	1,051	1,051
R^2	0.00	0.00	0.05	0.06	0.09	0.09

Panel C reports changes in the total number of foreign analyst following and earnings forecast accuracy from the pre- to post-IFRS adoption period. Pre-IFRS period refers to the two years immediately prior to the first IFRS adoption year, and post-IFRS period refers to the first two years since IFRS is adopted. The sample in columns 1 and 2 contains 1,938 distinct firms from 23 countries covered by foreign analysts from up to 34 countries, yielding a total of 761 firm-country/analyst-country pairs. The dependent variables in columns 1 and 2 are changes around IFRS adoption in the average yearly number of foreign analyst following from each analyst country. The dependent variables of columns 3–6 are changes around IFRS adoption in the earnings forecast accuracy of foreign analysts from each analyst country. To compute the average earnings forecast accuracy at the firm-level in columns 3 and 4, *an analyst* must issue earnings forecast for the firm in both pre-IFRS and post-IFRS periods. For columns 5 and 6, *a foreign country* must have analysts issuing earnings forecast for the firm in both pre-IFRS and post-IFRS periods. For the determinants of foreign analyst following, we multiply the dependent variables by 100 for reporting purpose. We compute the total number of GAAP differences between firm country and analyst country based on the two GAAP difference measures benchmarked against IFRS from Bae, Tan, and Welker [2008]. Positive values of Δ*gaapdiff1* and Δ*gaapdiff2* indicate a decrease in the country-pair GAAP differences from the pre- to post-IFRS period. We estimate all the regressions using OLS, controlling for industry fixed effects. Robust *t*-statistics adjusted for the country-pair clustering are reported in parentheses. This table shows the impact of the distance between local GAAP and IFRS prior to IFRS adoption on changes in foreign analyst following and earnings forecast accuracy. The dependent variables in panel A are changes around IFRS adoption in the average yearly number of foreign analysts from each of the five analyst groups. The dependent variables in panel B are changes around IFRS adoption in the earnings forecast accuracy of foreign analysts from each of the five analyst groups. All the regressions are estimated by OLS and control for industry fixed effects. Robust *t*-statistics adjusted for country-level clustering are in parentheses. All the variables are defined in appendix C. *Ifrsdiff1* and *ifrsdiff2* are the number of differences between local GAAP and IFRS as measured by *gaapdiff1* and *gaapdiff2* from Bae, Tan, and Welker [2008]. ***, **, and * indicate significance at 1%, 5%, and 10% level (two-tailed), respectively.

uses. If so, then changes in GAAP would have a negligible effect on forecast accuracy.

Panel C of table 7 reports the impact of IFRS-induced changes in GAAP differences between countries, *gaapdiff1,* and *gaapdiff2* on foreign analyst following and earnings forecast accuracy. The dependent variables in columns 1 and 2 are changes around IFRS adoption in the mean number of foreign analyst following from each analyst country. The pre-IFRS period refers to the two years immediately prior to the first IFRS adoption year, and the post-IFRS period refers to the first two years after IFRS is adopted. The sample in columns 1 and 2 contains 1,938 distinct firms from 23 countries, covered by foreign analysts from 34 countries, yielding a total of 761 firm-country/analyst-country pairs.[22] For the determinants of foreign analyst following, we multiply the dependent variables by 100 for reporting purposes.

The dependent variables of columns 3–6 are changes in the earnings forecast accuracy of foreign analysts around IFRS adoption. Columns 3 and 4 present the changes in the mean earnings forecast accuracy of individual foreign analysts from the pre- to post-IFRS adoption period. The sample contains 573 unique firms from 25 countries covered by 1,043 unique foreign analysts from 26 countries. Columns 5 and 6 present the changes in earnings forecast accuracy by foreign analysts from countries that have analysts, but not necessarily the same analysts, following the firm in both the pre- and the post-IFRS periods. The sample contains 627 unique firms from 25 countries covered by foreign analysts from 27 countries. We compute changes for all the other control variables from the pre- to the post-IFRS adoption period. We estimate all the regressions using OLS, controlling for industry fixed effects, and adjusting the standard errors for country-pair clusters.

The coefficients on Δ*gaapdiff1* and Δ*gaapdiff2* are significantly positive in columns 1 and 2, indicating that changes in foreign analyst following are positively related to the extent to which IFRS adoption decreases country-pair GAAP differences.[23] The changes in firm size and stock turnover are positively associated with changes in foreign analyst following. The coefficients on Δ*gaapdiff1* and Δ*gaapdiff2* are not significantly different from zero in columns 3–6, indicating no relation between changes in forecast accuracy and the extent to which IFRS adoption eliminates GAAP differences between countries. These results provide support for the predictions of H3 that larger changes between local GAAP and IFRS, and larger reductions in the number of GAAP differences between the firm's country and

[22] We exclude voluntary IFRS adopters from this sample. In this sample, firms in 21 sample countries are covered by foreign analysts from 33 countries and firms in two sample countries are covered by 34 foreign countries. Thus, there are $21 \times 33 + 2 \times 34 = 761$ country-pairs.

[23] We also examined changes in the number of unique foreign analysts following each firm, as discussed in footnote 13. The results for this sample are similar except the coefficient on Δ*gaapdiff2* loses significance at conventional levels.

the analyst's country, are both associated with greater foreign analyst following. The predictions of H3 regarding the positive association between these GAAP difference measures and forecast accuracy are not supported, again, possibly for the reasons stated earlier.

5.5 SENSITIVITY ANALYSES

5.5.1. Analysts Who Are Present in I/B/E/S Throughout Our Sample Period. To further control for the fact that analysts do enter and exit the I/B/E/S database, we require that identified foreign analysts be present in I/B/E/S from two years before a firm's IFRS adoption date to two years after that date. Our initial restriction requires that the analyst be present in the database in the pre- and post- periods, but not necessarily for the entire four-year test period. We repeat the tests in tables 4 and 5. The results are reported in table 8, column 1 of panels A and B. Our inferences remain the same.

5.5.2. Sample Firms Present Throughout Our Sample Period. Our main tests reported in tables 4 and 5 require that a firm have at least one observation during the two years prior to IFRS adoption and at least one observation during the two years after IFRS is adopted. As a sensitivity test, we require that a firm be present in the sample for the entire test period, from two years before the IFRS adoption date to two years after the date. We repeat the tests in tables 4 and 5. The results are reported in table 8, column 2 of panels A and B. Except that the change in the number of total foreign analysts becomes insignificantly different from zero, all other inferences regarding foreign analyst following and foreign analysts' earnings forecast accuracy remain similar to tables 4 and 5, though the coefficients on *post* are somewhat smaller for this sample.

5.5.3. Dropping U.K. Firms. Table 2 shows that the largest number of firms comes from the United Kingdom. Out of a total of 3,280 firms, 714 are from the United Kingdom. We rerun the regressions in tables 4 and 5 after dropping firms from the United Kingdom. Estimates are reported in table 8, column 3 of panels A and B. Except that the change in the number of total foreign analysts becomes insignificantly different from zero, our main results remain qualitatively the same for this reduced sample for the other groups of foreign analysts.

5.5.4. Dropping Firms and Foreign Analysts from the United Kingdom. Table 2 shows that the United Kingdom houses the largest number of analysts covering IFRS firms in the rest of the 24 sample countries. We rerun the regressions in tables 4 and 5 after dropping both analysts from the United Kingdom and U.K. sample firms. Table 8, column 4 of panels A and B reports the determinants of foreign analyst following and earnings forecast accuracy, respectively. Again, our main results remain qualitatively similar

TABLE 8

The Impact of IFRS Adoption on Foreign Analyst Following and Earnings Forecast Accuracy—Sensitivity Tests

Panel A: Sensitivity tests of foreign analyst following

	Constant Analyst Sample (1)	Constant Firm Sample (2)	Drop U.K. Firms (3)	Drop U.K. Firms and U.K. Analysts (4)
***all* as dependent variables**				
post	0.214**	0.126	0.160	0.230
	(2.40)	(1.40)	(1.59)	(1.15)
voluntary	0.364*	0.298	0.363**	0.371**
	(1.79)	(1.49)	(2.02)	(2.12)
voluntary ∗ *post*	0.027	0.035	0.031	0.096
	(0.46)	(0.64)	(0.54)	(1.46)
Pre-IFRS predicted value	0.300	0.527	0.504	0.221
Marginal effects	0.072**	0.071	0.087	0.057
***ctry25* as dependent variables**				
post	0.229***	0.156*	0.217**	0.340*
	(2.73)	(1.67)	(2.03)	(1.70)
voluntary	0.358*	0.284	0.350*	0.327*
	(1.73)	(1.41)	(1.94)	(1.78)
voluntary ∗ *post*	0.019	0.036	0.029	0.094
	(0.28)	(0.61)	(0.47)	(1.40)
Pre-IFRS predicted value	0.250	0.445	0.405	0.139
Marginal effects	0.065**	0.075*	0.098**	0.056*
***nctry25* as dependent variables**				
post	0.061	−0.083	−0.098	−0.098
	(0.27)	(−0.62)	(−0.55)	(−0.55)
voluntary	0.768**	0.913***	0.861***	0.861***
	(2.18)	(2.86)	(2.89)	(2.89)
voluntary ∗ *post*	0.270	0.219	0.254	0.254
	(1.23)	(1.05)	(1.14)	(1.14)
Pre-IFRS predicted value	0.008	0.012	0.010	0.010
Marginal effects	0.001	−0.001	−0.001	−0.001
***ifrsexp* as dependent variables**				
post	0.212***	0.206*	0.267**	0.395*
	(2.76)	(1.77)	(2.26)	(1.93)
voluntary	0.358*	0.295	0.366**	0.347
	(1.83)	(1.47)	(2.03)	(1.57)
voluntary ∗ *post*	−0.002	0.037	−0.005	0.076
	(−0.04)	(0.69)	(−0.08)	(1.02)
Pre-IFRS predicted value	0.193	0.315	0.281	0.108
Marginal effects	0.046***	0.072*	0.086**	0.052**
***nifrsexp* as dependent variables**				
post	0.294*	0.051	0.083	0.041
	(1.77)	(0.43)	(0.63)	(0.19)
voluntary	0.536*	0.425*	0.509**	0.609***
	(1.84)	(1.71)	(2.18)	(3.62)
voluntary ∗ *post*	−0.113	−0.199*	−0.118	−0.099
	(−0.77)	(−1.78)	(−0.96)	(−0.58)
Pre-IFRS predicted value	0.086	0.176	0.179	0.085
Marginal effects	0.029*	0.009	0.016	0.004
No. of firms	3,280	2,355	2,566	2,566
No. of obs.	12,010	9,420	9,448	9,448

(*Continued*)

TABLE 8 — *Continued*

Panel B: Sensitivity tests of earnings forecast accuracy	Constant Analyst Sample (1)	Constant Firm Sample (2)	Drop U.K. Firms (3)	Drop U.K. Firms and Analysts (4)
***afep* of *all* as dependent variables**				
post	0.420**	0.387*	0.383*	0.376*
	(2.16)	(1.86)	(2.05)	(1.91)
voluntary	0.583*	0.498	0.526*	0.865**
	(1.89)	(1.38)	(1.73)	(2.39)
voluntary ∗ *post*	−0.548*	−0.599	−0.431	−0.488
	(−2.01)	(−1.52)	(−1.59)	(−1.34)
Pre-IFRS predicted value	−2.187	−2.287	−2.278	−2.478
Marginal effects	0.420**	0.387*	0.383**	0.376*
***afep* of *ctry25* as dependent variables**				
post	0.378*	0.374*	0.353*	0.308*
	(1.92)	(1.78)	(1.87)	(1.81)
voluntary	0.567*	0.500	0.536*	0.907**
	(1.83)	(1.40)	(1.78)	(2.46)
voluntary ∗ *post*	−0.533*	−0.596	−0.448	−0.544
	(−1.95)	(−1.55)	(−1.65)	(−1.46)
Pre-IFRS predicted value	−2.154	−2.276	−2.257	−2.444
Marginal effects	0.378*	0.374*	0.353*	0.308*
***afep* of *nctry25* as dependent variables**				
post	1.176*	1.053**	0.930	0.930
	(1.85)	(2.14)	(1.23)	(1.23)
voluntary	1.650*	1.197*	0.776	0.776
	(2.04)	(1.76)	(1.17)	(1.17)
voluntary ∗ *post*	−2.218**	−2.085	−0.061	−0.061
	(−2.52)	(−1.72)	(−0.08)	(−0.08)
Pre-IFRS predicted value	−2.932	−2.809	−2.795	−2.795
Marginal effects	1.176*	1.053**	0.930	0.930
***afep* of *ifrsexp* as dependent variables**				
post	0.449**	0.375*	0.377*	0.343*
	(2.23)	(1.97)	(2.03)	(1.98)
voluntary	0.726**	0.627*	0.656**	1.090***
	(2.28)	(1.88)	(2.24)	(2.84)
voluntary ∗ *post*	−0.794***	−0.796**	−0.651**	−0.898**
	(−2.83)	(−2.07)	(−2.34)	(−2.18)
Pre-IFRS predicted value	−2.230	−2.302	−2.338	−2.506
Marginal effects	0.449**	0.375**	0.377**	0.343*
***afep* of *nifrsexp* as dependent variables**				
post	0.508	0.510	0.398	0.562
	(1.53)	(1.44)	(1.52)	(1.40)
voluntary	0.222	0.192	0.149	0.323
	(0.62)	(0.44)	(0.44)	(0.75)
voluntary ∗ *post*	0.256	−0.074	0.172	0.700
	(0.66)	(−0.15)	(0.58)	(1.51)

(*Continued*)

TABLE 8 — *Continued*

Panel B: Sensitivity tests of earnings forecast accuracy

	Constant Analyst Sample (1)	Constant Firm Sample (2)	Drop U.K. Firms (3)	Drop U.K. Firms and Analysts (4)
Pre-IFRS predicted value	−2.157	−2.294	−2.155	−2.470
Marginal effects	0.508	0.510	0.398	0.562
No. of firms	754	580	807	652
No. of obs.	11,757	16,143	17,378	6,482

This table reports changes in the number of foreign analyst following (panel A) and earnings forecast accuracy (panel B) under alternative specifications. Column 1 examines changes in foreign analysts who are present in the I/B/E/S database during the two years before a firm's IFRS adoption date and continue to be present in the I/B/E/S database for another two years after the adoption date of the underlying firm. Column 2 examines changes in foreign analysts for sample firms with data for all four years around IFRS adoption. Column 3 excludes U.K. firms from the sample. Column 4 excludes both firms and foreign analysts domiciled in the United Kingdom. *Pre-IFRS predicted value* represents the predicted value of foreign analyst following (or forecast accuracy) for mandatory adopters when *post* = 0 and all control variables are held at mean values of mandatory adopters. *Marginal effects* represents the changes in foreign analyst following (or earnings forecast accuracy) when *post* increases from 0 to 1 and all control variables are held at mean values of mandatory adopters. All the regressions control for country, industry and year fixed effects. Robust *z*-statistics adjusted for country level clustering are reported in parentheses. ***, **, and * indicate significance at 1%, 5% and 10% levels (two-tailed), respectively.

to those in tables 4 and 5, except that the change in the number of total foreign analysts loses significance.[24]

6. *Conclusions*

This study investigates the impact of recent widespread mandatory adoption of IFRS on financial analysts. While there have been several studies that examine various financial accounting outcomes surrounding IFRS adoption, we believe this to be the first study to separately examine how accounting harmonization affects both foreign and local financial analysts. We find that IFRS adoption attracts foreign analysts, particularly those who are located in a country that adopts IFRS at the same time as the firm's country and those with prior IFRS experience. We also find that IFRS adoption improves foreign analysts' forecast accuracy. Gains in foreign analyst following are larger for firms located in countries that have greater differences between local GAAP and IFRS prior to IFRS adoption. They are also increasing in the extent to which IFRS adoption eliminates accounting differences between the firm's country and the analyst's country. Increases in foreign analysts' forecast accuracy are unrelated to these two measures of GAAP changes caused by IFRS adoption.

We do not find changes in foreign analyst following or forecast accuracy for firms in non-IFRS-adopting countries, nor do we detect these effects in the IFRS adopting countries in time periods other than the period when

[24] Note that dropping U.K. analysts has no effect on analysts who are not from the 25 countries that mandate IFRS adoption. Hence, the coefficient estimates reported for these analysts are the same in columns 3 and 4.

IFRS is mandated. Compared to non-IFRS countries, IFRS adopting countries attract significantly more foreign analysts from countries simultaneously adopting IFRS and foreign analysts with prior IFRS experience, and fewer analysts from countries not adopting IFRS during our sample period. The improvement in foreign analysts' forecast accuracy is generally greater for firms in IFRS-adopting countries than for firms in non-IFRS adopting countries. This suggests that the effects we document for firms domiciled in IFRS-adopting countries after IFRS adoption reflect the effects of IFRS adoption rather than stable time trends or the effects of other changes impacting all firms.

We also find that IFRS adoption is associated with an increase in local analyst following. The increase is concentrated in local analysts with prior IFRS experience and in local analysts with an international portfolio in the pre-IFRS adoption period. Local analysts' forecast accuracy is not affected by IFRS adoption. Overall, our results are consistent with the argument that accounting harmonization in the form of widespread IFRS adoption enhances the usefulness of accounting data to financial analysts, and suggest that enhanced comparability of accounting data plays a major role in this enhanced usefulness. We believe these results will be of interest to accounting academics interested in accounting harmonization, and regulators and practitioners in countries that have either adopted IFRS or are considering doing so.

Of course, there are limitations to our study that we caution the readers to be aware of in interpreting our main results. First, we stress that we have in no way provided a comprehensive assessment of the costs and benefits of IFRS adoption at the country level. While we provide evidence consistent with some benefits associated with IFRS adoption, our analysis is silent about whether these benefits outweigh the costs. Second, many of the countries that we study adopt IFRS as part of a broader strategy to reform financial reporting. Our analyses do not allow us to determine conclusively whether IFRS adoption or some other part of the reform package is responsible for our results.

APPENDIX A

Accounting Standard Classifications

The classification of accounting standard for each firm-year is based on the item "Accounting Standards Followed" (Field 07536) from the Worldscope database.

Code	The Worldscope Description
We code firm-year observations as IFRS if one of the following cases applies:	
02	International standards
06	International standards and some EU guidelines

(*Continued*)

APPENDIX A—*Continued*

Code	The Worldscope Description
08	Local standards with EU and IASC guidelines
12	International standards—inconsistency problems
16	International standards and some EU guidelines—inconsistency problems
18	Local standards with some IASC guidelines
19	Local standards with OECD and IASC guidelines
23	IFRS
We code firm-year observations as local if one of the following cases applies:	
01	Local standards
05	EU standards
07	Specific standards set by the group
09	Not disclosed
10	Local standards with some EU guidelines
11	Local standards—inconsistency problems
14	Commonwealth standards—inconsistency problems
15	EEC standards—inconsistency problems
17	Local standards with some OECD guidelines
21	Local standards with a certain reclassification for foreign companies
22	Other

APPENDIX B

Sample Firm Selection Procedures

Following the definition of IFRS adopters in Daske et al. [2007], we identify 6,859 firms from 25 countries that have used IFRS during 1988–2007. We exclude the dubious IFRS adopters and require nonmissing financial data for a firm-year to be included in the sample. In addition, a firm must have at least one year's observation during the two years before (i.e., years [−2, −1]) and at least one year's observation during the two years after (i.e., years [0, 1]) the mandatory IFRS adoption date in the firm's country. Our final sample includes 3,280 IFRS adopters.

Firms from 25 countries that have ever used IFRS, based on the Wordscope database	6,859
Exclude	
Firms that adopted IFRS before the mandatory adoption date but used the standards for only one year	(54)
Firms that switched back to local GAAP	(40)
Firms that switched to U.S. GAAP	(28)
	6,737
Firms that do not have required financial data or are not covered in I/B/E/S during the two years before the IFRS adoption date to two years after this date	(2,261)
	4,476
Firms have required financial data and are covered in I/B/E/S in either the pre-IFRS or post-IFRS period, but not both	(1,196)
Final Sample	3,280

APPENDIX C

Variable Descriptions

Dependent Variables	
all_{it}	Number of foreign analysts from all of the 34 countries who cover firm i in year t.
$ctry25_{it}$	Number of foreign analysts from the 25 countries that mandate IFRS adoption who cover firm i in year t.
$nctry25_{it}$	Number of foreign analysts not from the 25 countries that mandate IFRS adoption who cover firm i in year t.
$ifrsexp_{it}$	Number of foreign analysts with previous IFRS experience who cover firm i in year t.
$nifrsexp_{it}$	Number of foreign analysts without previous IFRS experience who cover firm i in year t.
$afep_{ijt}$	Absolute forecast accuracy scaled by the most recent stock price in the previous year. It is computed as the price scaled absolute difference between the last forecast issued by analyst j before the earnings announcement date and the actual earnings for firm i in year t. To facilitate exposition, we multiply this variable by -100 so that larger values represent more accurate forecasts.
Independent Variables	
post	Indicator variable indicating post-IFRS adoption period. For mandatory adopters, *post* equals one for the period after the firm adopts IFRS, zero otherwise. For voluntary adopters, *post* equals one for the fiscal year ending on December 31, 2005 (or December 31, 2003 for Singaporean firms) and afterward, zero otherwise.
$voluntary_i$	Indicator variable equals one if firm i adopts IFRS before IFRS reporting becomes mandatory.
firm size$_{\text{it}}$	Total assets in U.S. $ billion for firm i at the beginning of year t.
market to book$_{it}$	The ratio of market value of equity to book value of equity for firm i at beginning of year t.
intangible asset$_{it}$	The ratio of intangible assets to total assets for firm i at the beginning of year t.
return volatility$_{it}$	Standard deviation of weekly stock return for firm i at year $t-1$.
security issuance$_{it}$	Indicator variable equals one if firm i issued equity or debt greater than 5% of total assets in year t.
stock turnover$_{it}$	Number of shares traded in year t, divided by the firm's average number of shares outstanding in year t for firm i.
stock return$_{it}$	Annual stock return for firm i at year $t-1$, adjusted for contemporaneous annual market return.
no. of analysts$_{it}$	Total number of I/B/E/S analysts covering firm i in year t.
adr_{it}	Indicator variable equals one if firm i has an ADR program in place as of year t. The data are from the Web sites of Bank of New York, JP Morgan, and Citi Bank.
$horizon_{ijt}$	Forecast age in years between the forecast date and the corresponding I/B/E/S date of the actual earnings report.
$firmex_{ijt}$	Analyst firm-specific experience, defined as the time interval in years between analyst j's first forecast for a particular firm i in I/B/E/S database and her forecast at time t for firm i.
$genex_{jt}$	Analyst general experience, defined as the number of years between analyst j's first forecast in I/B/E/S and her current forecast at time t.

(*Continued*)

APPENDIX C—*Continued*

$brsize_{jt}$	Brokerage size, defined as the number of analysts working for the I/B/E/S brokerage that analyst j is associated with in year t.
$nfirm_{jt}$	Number of firms analyst j covers in year t in the I/B/E/S database.
$ifrsdiff_f$	Number of differences between local GAAP of firm country f and IFRS as measured by the *gaapdiff1* and *gaapdiff2* measures from Bae, Tan, and Welker [2008].
$gaapdiff_{af}$	Total number of GAAP differences between analyst country a and firm country f, based on the two GAAP difference measures from Bae, Tan, and Welker [2008].

REFERENCES

ANG, J. S., AND S. J. CICCONE. "International Differences in Analyst Forecast Properties." Working paper, Florida State University, 2001. Web site, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=275091.

ASHBAUGH, H., AND M. PINCUS. "Domestic Accounting Standards, International Accounting Standards, and the Predictability of Earnings." *Journal of Accounting Research* 39 (2001): 417–34.

BAE, K.-H.; R. M. STULZ; AND H. TAN. "Do Local Analysts Know More? A Cross-Country Study of the Performance of Local Analysts and Foreign Analysts." *Journal of Financial Economics* 88 (2008): 581–606.

BAE, K.-H.; H. TAN; AND M. WELKER. "International GAAP Differences: The Impact on Foreign Analysts." *The Accounting Review* 83 (2008): 593–628.

BALL, R. "IFRS: Pros and Cons for Investors." *Accounting and Business Research*, International Accounting Policy Forum (2006): 5–27.

BARTH, M.; R. KASZNIK; AND M. MCNICHOLS. "Analyst Coverage and Intangible Assets." *Journal of Accounting Research* 39 (2001): 1–34.

BARTH, M.; W. LANDSMAN; AND M. LANG. "International Accounting Standards and Accounting Quality." *Journal of Accounting Research* 46 (2008): 467–98.

BHUSHAN, R. "Firm Characteristics and Analyst Following." *Journal of Accounting and Economics* 11 (1989): 255–74.

BRADSHAW, M.; B. BUSHEE; AND G. MILLER. "Accounting Choice, Home Bias, and U.S. Investment in Non-U.S. Firms." *Journal of Accounting Research* 42 (2004): 795–841.

BRUGGEMANN, U.; K. DASKE; C. HOMBURG; AND P. POPE. "How Do Individual Investors React to Global IFRS Adoption." Working paper, Humboldt University of Berlin, 2009. Web site, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1458944.

BUSHMAN, R.; J. D. PIOTROSKI; AND A. SMITH. "What Determines Corporate Transparency?" *Journal of Accounting Research* 42 (2004): 207–52.

BYARD, D.; Y. LI; AND Y. YU. "The Effect of Mandatory IFRS Adoption on Financial Analysts' Information Environment." *Journal of Accounting Research* 49 (2011): 69–96.

CLEMENT, M. B. "Analyst Forecast Accuracy: Do Ability, Resources, and Portfolio Complexity Matter?" *Journal of Accounting and Economics* 27 (1999): 285–303.

COVRIG, V.; M. L. DEFOND; AND M. HUNG. "Home Bias, Foreign Mutual Fund Holdings, and the Voluntary Adoption of International Accounting Standards." *Journal of Accounting Research* 25 (2007): 41–70.

DASKE, H.; L. HAIL; C. LEUZ; AND R. VERDI. "Adopting a Label: Heterogeneity in the Economic Consequences of IFRS Adoptions." Working paper, University of Pennsylvania and University of Chicago, 2007. Web site, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=979650.

DASKE, H.; L. HAIL; C. LEUZ; AND R. S. VERDI. "Mandatory IFRS Reporting Around the World: Early Evidence on the Economic Consequences." *Journal of Accounting Research* 46 (2008): 1085–1142.

DEFOND, M.; X. HU; M. Y. HUNG; AND S. LI. "The Impact of IFRS Adoption on U.S. Mutual Fund Ownership: The Role of Comparability." *Journal of Accounting and Economics* 51 (2011): 240–58.

ERNST & YOUNG. *IFRS: Observations on the Implementation of IFRS*. London: EYGM Limited, 2007.

FLOROU, A., AND P. F. POPE. "Mandatory IFRS Adoption and Investor Asset Allocation Decisions." Working paper, University of Macedonia, 2009 Web site, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1362564.

GUAN, Y.; O.-K. HOPE; AND T. KANG. "Does Similarity of Local GAAP to U.S. GAAP Explain Analysts' Forecast Accuracy?" *Journal of Contemporary Accounting and Economics* 2 (2006): 151–69.

HORTON, J.; G. SERAFEIM; AND I. SERAFEIM. "Does Mandatory IFRS Adoption Improve the Information Environment?" Working paper, London School of Economics, 2008. Web site, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1264101.

LANG, M. H.; K. V. LINS; AND D. P. MILLER. "ADRs, Analysts, and Accuracy: Does Cross Listing in the U.S. Improve a Firm's Information Environment and Increase Market Value?" *Journal of Accounting Research* 41 (2003): 317–45.

LANG, M. H.; K. V. LINS; AND D. P. MILLER. "Concentrated Control, Analyst Following, and Valuation: Do Analysts Matter Most When Investors Are Protected Least?" *Journal of Accounting Research* 42 (2004): 589–623.

LANG M., AND R. LUNDHOLM. "Corporate Disclosure Policy and Analyst Behavior." *The Accounting Review* 71 (1996): 467–92.

O'BRIEN, P. C., AND R. BHUSHAN. "Analyst Following and Institutional Ownership." *Journal of Accounting Research* 28 (1990) (supplement): 55–76.

PATERNOSTER, R.; P. MAZEROLLE; AND A. PIQUERO. "Using the Correct Statistical Test for Equality of Regression Coefficients." *Criminology* 36 (1998): 859–66.

PLATIKANOVA, P. "Market Liquidity Effects of the IFRS Introduction in Europe." Working paper, ESADE – Ramon Llull University, 2009. Web site, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1005364.

ROCK, S.; S. SEDO; AND M. WILLENBORG. "Analyst Following and Count-Data Econometrics." *Journal of Accounting and Economics* 30 (2001): 351–73.

YU, G. "Accounting Standards and International Portfolio Holdings: Analysis of Cross-Border Holdings Following Mandatory Adoption of IFRS." Working paper, University of Michigan Ross School of Business, 2009. Web site, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1430589.

WANG, X.; D. YOUNG; AND Z. ZHUANG. "The Effects of Mandatory Adoption of International Financial Reporting Standards on Information Environments." Working paper, The Chinese University of Hong Kong, 2008.