Does Mandatory IFRS Adoption in the EU Level the Informational Playing Field Between Foreign and Domestic Analysts?

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Abstract

International Financial Reporting Standards (IFRS) have been promoted as a global set of financial reporting standards that will help integrate global capital markets. We examine whether the mandatory European-wide adoption of IFRS in 2005 improved the forecast accuracy for foreign analysts relative to that of domestic analysts. We find that, on average, foreign analysts experience no incremental improvement in forecast accuracy relative to domestic analysts. However, we find that those foreign analysts who are familiar with IFRS do experience an incremental improvement in forecast accuracy relative to domestic analysts. We also find that this incremental improvement in forecast accuracy relative to domestic analysts is concentrated among firms domiciled in countries with both strong enforcement regimes and domestic accounting standards that differ significantly from IFRS. Our results highlight that both familiarity with IFRS and the quality of countries' enforcement environments play key roles in determining the extent to which IFRS adoption can reduce information asymmetry between foreign and domestic analysts.

1. Introduction

International Financial Reporting Standards (IFRS) have emerged in recent years as a global set of financial reporting standards. As of 2006, about 100 countries either required or allowed firms to use IFRS for financial reporting purposes. Advocates of switching from domestic accounting standards to IFRS argue that as a "global set accounting standards" IFRS will increase transparency and comparability across countries. In turn, this is expected to lead to an increase in cross-border investment, i.e., a decrease in investors' home bias, which should increase capital market efficiency and reduce firms' cost of capital. This is the main argument advanced by policy-makers advocating IFRS adoption (see Regulation, 2002; Tweedie, 2006). As European Union (EU) commissioner for the internal market Charlie McCreevy observed:

> "Clearly, the Financial Services Action Plan to integrate financial markets in Europe makes no sense, if investors have to rely on financial statements based on different local GAAPs. A common accounting standard increases investor transparency and comparability. As users become more familiar and confident with IFRS, the cost of capital for companies using IFRS should fall. It should lead to more efficient capital allocation and greater cross-border investment." (McCreevy 2005; p.1)

The European-wide adoption of IFRS in 2005 represents the largest mandatory adoption of IFRS to date. This regulatory change forced over 7,000 public companies based in the 27 member countries of the EU to simultaneously switch from their various domestic accounting standards to IFRS.[1] We examine a key impact this regulatory change—whether this mandatory adoption of IFRS decreased information asymmetry between domestic and foreign analysts.

A large body of theoretical and empirical research (e.g., Gordon & Bovernberg, 1996; Kang & Stulz, 1997; Karolyi & Stulz, 2003; Aherne, Griever, & Warnock, 2004) examines investors' home bias, i.e., investors' tendency to invest disproportionately more (less) in domestic (foreign) stocks than the optimal asset allocation suggested by standard portfolio theory. These studies attribute a significant portion of home bias to domestic investors' information advantage over foreign investors arising from domestic investors' better access to

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[1] See Regulation (EC) No. 1606/2002 for details of this regulatory change.

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firm management and local media, and/or their lower information acquisition and processing costs. Because mandatory IFRS adoption changes firms' financial reporting practices, one primary (if not the only) channel through which IFRS adoption can reduce home bias is by reducing domestic investors' information advantage over foreign investors, particularly with regard to accounting information. The objective of this paper is to shed light on whether the European-wide mandatory adoption of IFRS reduces domestic investors' information advantage over foreign investors with respect to upcoming earnings. To do so, we examine whether mandatory IFRS adoption improved the accuracy of foreign analysts' earnings forecasts relative to that of domestic analysts.

We focus on financial analysts for a number of reasons. First, financial analysts are among the most sophisticated and important users of financial statements who specialize in processing and disseminating financial information for investors. Second, financial analysts explicitly forecast earnings, which allows for a direct measure of the precision of their earnings information, i.e., the accuracy of their earnings forecasts. Third, prior studies (see Orpurt, 2004; Bae, Stulz, & Tan, 2008a) document that earnings forecasts issued by domestic analysts are more accurate than those issued by foreign analysts, indicating that domestic analysts possess an information advantage over foreign analysts with respect to earnings. An incremental improvement in forecast accuracy for foreign analysts relative to domestic analysts would provide direct evidence of a reduction in domestic analysts' information advantage relative to foreign analysts.

Policy-makers argue that mandatory IFRS adoption will expand firms' public disclosures and increase comparability by making it easier for investors to compare firms based in different countries. Consistent with this expectation, studies show that IFRS are more comprehensive than European countries' domestic accounting standards (see Ding, Hope, Jeanjean, & Stolowy 2007; Bae, Tan, & Welker 2008b). In this case mandatory IFRS adoption could be expected to decrease information asymmetry between domestic and foreign analysts. However, if analysts primarily develop their private information from interpreting firms' financial statement disclosures (see

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Barth, Clinch, and Shibano, 1999), then increasing these disclosures could potentially increase the degree of information asymmetry between domestic and foreign analysts. This could arise because domestic analysts will likely have better access to other information that can use to analyze firms' increased public disclosures, so expanding public disclosures could expand their information advantage over foreign analysts. Additionally, prior studies provide mixed evidence as to the impact of mandatory IFRS adoption on firms' reporting quality. On the one hand, a number of studies find evidence of economic effects associated with mandatory IFRS adoption that are consistent with an increase in firms' reporting quality; for example, an increase in stock liquidity (Daske, Hail, Leuz, & Verdi, 2008) a reduction in firms' cost of capital (Daske et al., 2008; Li, 2010), and an improvement in firms' information environment (Horton, Serafein, & Serafeim, 2008; Byard, Li, & Yu, 2011). On the other hand, a number of studies find evidence suggesting that mandatory IFRS adoption lead to a decrease in firms' reporting quality; specifically, recent studies find evidence that mandatory IFRS adoption is associated with a decrease in firms' earnings quality (Ahmed, Neel, & Wang 2010; Capkun, Collins, & Jeanjean 2011). Additionally, any expanded public disclosures provided by IFRS are likely to favor foreign analysts who are familiar with IFRS more than those who are unfamiliar with IFRS.[2] Thus, foreign analysts' level of familiarity with IFRS will determine the effect of IFRS adoption on the degree of information asymmetry between domestic and foreign analysts. Such ability is not as important for domestic analysts because domestic analysts have access to alternative information sources about upcoming earnings (Covel & Moskowitz, 1999; Malloy, 2005).

Second, a number of prior studies show that mandatory IFRS adoption has a larger effect (or only effects) firms based in countries where *both* IFRS adoption represented a relatively large change from domestic accounting standards and a high quality enforcement environment ensures compliance with IFRS (see Daske et al. al 2008; Li 2010; Byard et al. 2010). As a result, we also

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[2] Consistent with the importance of such familiarity to financial analysts, Bae et al. (2008a) find that foreign analysts located in countries with accounting standards that differ more from the accounting standards used by the firms they follow tend to issue less accurate earnings forecasts. Similarly, Bradshaw, Bushee, & Miller (2004) show that U.S. institutional investors invest less in non-U.S. firms that use accounting policies that differ more from U.S. GAAP.

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test if any change in information asymmetry between domestic and foreign analysts is larger for firms based in such countries (e.g., Germany).

Our sample includes a constant set of analysts and firms; that is, we examine the same analysts following the same set of European-based firms before and after these firms mandatorily adopt IFRS. Using a constant sample alleviates concerns that our results are driven by changing sample composition. Our sample period includes a *pre*-adoption period (the last two years firms reported in their domestic accounting standards) and a *post*-adoption period (the first two years under IFRS). We hand-collect analyst location data from *Nelson' Directory of Investment Research*. For all analyst-firm pairs, we define domestic (foreign) analysts as those analysts (not) located in the same country as the firm being followed. Our sample is comprised of 4,303 analyst-firm pairs, representing 964 firms followed by 1,132 analysts. Of these 4,303 analyst-firm pairs, 3,376 (78.5-percent) represent coverage by domestic analysts, while 927 (21.5-percent) represent coverage by foreign analysts. We compare the change in forecast accuracy from the *pre-* to *post*-adoption period across domestic and foreign analysts.

We find that mandatory IFRS adoption does not result in a change in the degree of information asymmetry between domestic analysts and foreign analysts, on average. However, when we partition foreign analysts into two groups: a group that is familiar (unfamiliar) with IFRS, we find that foreign analysts familiar with IFRS do experience an improvement in forecast accuracy relative to domestic analysts; foreign analysts unfamiliar with IFRS experience no such incremental improvement. Foreign analysts familiar (unfamiliar) with IFRS are those located in countries with domestic accounting standards relatively similar to (different from) IFRS, e.g., the UK (Italy). The difference between these two groups of foreign analysts is statistically significant. We also find that this improvement in forecast accuracy for those foreign analysts familiar with IFRS relative to domestic analysts is attributable to firms based in countries with *both* domestic accounting standards that differ significantly from IFRS and strong enforcement environments. Finally, while our main analysis uses a cross-sectional analysis, our inferences are unchanged if we a within-firm analysis.

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The mandatory European-wide adoption of IFRS formed part of the EU's Financial Services Action Plan (FSAP), an initiative launched by the EU in the late 1990s aimed at integrating the national capital markets of EU member countries into a single capital market and harmonizing the functioning of financial intermediaries across the EU. In total, the FSAP included 27 different EU directives that had to be transcribed into the laws of each EU member state (see Kalemil-Ozcan, Papaioannou, & Peydró, 2010). The aim of the FSAP was to free the movement of capital between the member states of the EU. Our study examine a key effect of one part of the FSAP—the mandatory adoption of a single set of financial reporting rules (i.e., IFRS) across the member states of the EU.[3]

Our study makes a number of contributions. First, we provide new evidence as to the impact of mandatory IFRS adoption—specifically, its impact on the degree of information asymmetry between domestic and foreign analysts. This is important because the key motive for mandatory IFRS adoption is to reduce information asymmetry between domestic and foreign market participants and, in the process, to facilitate more cross-border investment. In this since, our analysis directly tests a key expectation of policy-makers regarding the possible effect of mandatory IFRS adoption (see EC Regulation 1601/2002; McCreevy, 2005; Tweedie, 2006). While a large number of studies examine various effects arising from mandatory IFRS adoption, to date no study provides a direct test of the effect of mandatory IFRS adoption on the degree of information asymmetry between domestic and foreign market participants. For example, a number of prior studies show that analysts' overall information environment improved following mandatory IFRS adoption (see Horton et al., 2008; Yang 2010; Beuselinck, Joos, Khurana, & Van der Meulen, 2010; Byard et al. 2011), however, these studies do not compare the change in forecast accuracy across domestic and foreign analysts, so these studies do not provide evidence as to how mandatory IFRS adoption affects information asymmetry between domestic and foreign analysts. Similarly, Tan, Wang, & Welker (2011) show that mandatory IFRS adoption is

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[3] While not member states of the EU, Switzerland and Norway also adopted IFRS.

associated with an increase in foreign analysts' following and forecast accuracy. Again, however, this study does not compare the changes in forecast accuracy across domestic and foreign analysts, so this study does not test how mandatory IFRS adoption may have changed the degree of information asymmetry between domestic and foreign analysts.

A number of concurrent studies (Florou & Pope, 2009; Yu, 2010; DeFond, Hu, Hung, & Li 2011; Bruggemann, Daske, Homburg, & Pope, 2011) examine changes in investors' cross-border holdings following mandatory IFRS adoption. These studies find evidence that institutional investors (Florou & Pope, 2009), mutual funds (Yu 2010; DeFond et al. 2011), and individual investors all increase their holdings of foreign stocks following mandatory IFRS adoption.[4] Our study complements these concurrent studies by providing direct evidence on how mandatory IFRS adoption changes domestic analysts' information advantage over foreign analysts. The alternative approaches of our study and these concurrent studies each have their pros and cons. While changes in institutions' portfolio holdings directly capture institutional investors' capital allocation decisions, such changes can also be affected by investment strategies unrelated to firm fundamentals, or based on non-accounting information. In contrast, because analysts specialize in analyzing financial statements and predicting earnings, evidence on the change in domestic analysts' information advantage over foreign analysts with respect to future earnings is likely attributable to mandatory IFRS adoption rather than to confounding concurrent events. Additionally, analyst-based evidence is less likely affected by other regulatory changes designed to remove barriers to cross-border investment in Europe, i.e., the adoption of other aspects of the FSAP.

Our results have implications for policy-makers who wish to understand the effect of mandatory IFRS adoption on cross-border investment (see EC Regulation 1601/2002; McCreevy, 2005). In particular, our results suggest that mandatory IFRS adoption reduces the

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[4] Covrig, DeFond, & Hung (2007) find a similar increase in foreing mutual funds' holdings following firms' voluntary adoption of IFRS.

information disadvantage faced by foreign investors, which in turn should lead to greater cross-border investment. However, our results also suggest that the adoption benefits of mandatory IFRS adoption are uneven across investors and across countries: both investors' familiarity with IFRS and country-level enforcement environments play critical roles in determining the extent to which mandatory IFRS adoption levels the informational playing field between foreign and domestic investors.

The paper is organized as follows. Section II develops our hypotheses. Section III presents our sample selection and study design. Section IV presents the main results, followed by Section V with additional analyses. Section VI concludes.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Home Bias and Domestic Analysts' Local Information Advantage

Home bias is the well-documented phenomenon whereby investors under- (over-) weigh their portfolio investments in foreign (domestic) stocks relative to the optimal asset allocation determined by standard portfolio theory.[5] Home bias is costly because it constrains risk sharing and results in a higher cost of capital (Lau, Ng, & Zhang, 2010). While regulatory and institutional restrictions on international capital flows may contribute to home bias, the primary cause is domestic investors' information advantage relative to foreign investors (see Coval & Moskowitz, 2001; Aherne et al., 2004; Van Nieuwerburgh & Veldkamp, 2009). Domestic investors' information advantage can arise from their better access to local media and firm management, their ability to directly observe firms' business activities, their interactions with firms' employees and suppliers, or their greater ability to extract useful information from firms' financial statements (Coval & Moskowitz, 1999). Facing a higher risk of incurring losses from trading against better-informed domestic investors, foreign investors avoid making cross-border investments. The link between domestic investors' information advantage and home bias has

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[5] See also Karolyi and Stulz (2003) for a review of the home bias literature.

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been both demonstrated analytically (e.g., Gordon & Bovenberg, 1996) and supported by empirical evidence (e.g., Kang & Stulz, 1997; Coval & Moskowitz, 1999; Aherne et al., 2004).[6]

Several empirical studies examine domestic analysts' information advantage by comparing the accuracy of earnings forecasts by domestic and foreign analysts (i.e., analysts located in a different country from the firm covered).[7] Orpurt (2004) studies seven European countries, and reports that domestic analysts issue more accurate earnings forecasts than foreign analysts. Bae et al. (2008b) find similar evidence in a larger sample of 32 countries.[8]

The Information Role of Analysts and the Possible Impact of Mandatory IFRS Adoption on Domestic Analysts' Local Information Advantage

While prior studies show that domestic analysts have an information advantage relative to foreign analysts (See Orpurt, 2004; Bae et al., 2008b), the source of this local information advantage is less clear. This is because analysts' private information—the ultimate source of any local information advantage—can come from different sources depending upon analysts' informational role. On the one hand, analysts may develop private information that is a substitute for the information provided by firms' financial statements. On the other hand, analysts may actually use firms' financial statement disclosures to develop new private information, i.e., perform an interpretive information role; in this setting analysts' private information is a complement to firm' financial statement disclosures. Prior studies provide evidence that analysts' private information can be a substitute for firms' financial disclosures (Shores, 1990; Barth, Kasznik, & McNichols 2001) or a complement to firms' financial disclosures (Lang & Lundholm 1996; Barron, Byard, & Kim, 2002; Frankel, Kothari, & Weber, 2006). Chen, Cheng, & Lo (2010) provide evidence that analysts' forecasts fulfill both information roles.

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[6] Even when investing in foreign firms, investors still have a preference for firms with a presence in their home country. Ke, Ng, & Wang (2010) show that non-US mutual funds are more likely to invest in US firms that have a presence in the countries where these non-US funds are based.

[7] Another strand of research compares the investment performance of domestic investors with that of foreign investors (see Bae et al., 2008a for a discussion).

[8] Malloy (2005) uses U.S. data to examine whether an analyst's physical distance from a firm affects forecast accuracy. He finds that analysts located closer to a firm provide more accurate earnings forecasts.

IFRS are more comprehensive and more capital market orientated than European countries' domestic accounting standards (Ding et al., 2007; Bae et al., 2008b). Thus, the switch from domestic European accounting standards to IFRS can be expected to increase the amount of public disclosures provided by European firms. If analysts primarily develop their private information from non-accounting sources (e.g., access to management, local media) that are an alternative to firm's financial statement disclosures, i.e., they mainly perform a substitutive informational role, then the increase in public disclosures could be expected decrease domestic analysts' local information advantage. This can be expected because the increased public disclosures will substitute for analysts' (alternative) private information sources that favor domestic analysts over foreign analysts. In this setting the new information analysts derive from the expanded financial disclosures or enhanced comparability of IFRS serves as a substitute for alternative information sources that typically favor domestic analysts, so mandatory IFRS adoption can be expected to reduce information asymmetry between domestic and foreign analysts (e.g., Verrecchia, 1982; Lundholm, 1991; Bushman & Smith, 2001).

On the other hand, if analysts primarily develop their private information from their analysis of firms' financial statement disclosures, i.e., they mainly fulfill a complementary informational role (see Kim and Verrecchia 1994; Barron et al., 2002), then an increase in firms' public disclosures may actually increase domestic analysts' local information advantage. This can arise because in this setting an increase in public disclosures will provide analysts with more "raw material" with which to develop their own unique insights or interpretations. If the local knowledge that analysts use to analyze firms' financial statement disclosures favors domestic analysts over foreign analysts, then, potentially, an increase in public disclosures could actually increase domestic analysts' information advantage over foreign analysts (see Kim and Verrecchia, 1994; Barth, Clinch, & Shibano, 1999). In summary, while policy-makers argue that mandatory IFRS adoption will increase firms' disclosures and comparability and, thus, result in a decrease in information asymmetry between domestic and foreign market participants, the prior theoretical and empirical evidence in the case of financial analysts is less clear cut.

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Hypotheses Development

A large number of studies examine various effects associated with mandatory IFRS adoption. While policy-makers argue that mandatory IFRS adoption will improve firms' reporting quality, the results of these studies are mixed. On the one hand, consistent with an increase in firms' reporting quality, a number of studies find evidence of positive economic effects associated with mandatory IFRS adoption, such as an increase in stock liquidity (Daske et al., 2008), a decrease in firms' cost of capital (Daske et al., 2008; Li, 2010), an improvement in firms' overall information environment (Horton et al., 2008; Yang, 2010; Beuselinck, et al., 2010; Byard et al., 2011), an increase in foreign analysts' following and forecast accuracy (Tan, et al., 2011), an increase in stock price informativeness (Beuselinck, Joos, Khurana, & Van der Meulen, 2009), and an increase in the information content of firms' earnings announcements (Landsman, Maydew, & Thornock, 2011).

On the other hand, a number of studies find evidence suggesting that firms' reporting quality decreases after firms are forced to switch from using domestic accounting standards to IFRS. Specifically, these studies find that mandatory IFRS adoption is associated with a decrease in firms' earnings quality (see Christensen, Lee, & Walker, 2008; Ahmed et al., 2010; Capkun, et al., 2011). Moreover, this evidence of a decrease in earnings quality is not entirely unexpected. Each country's domestic accounting standards evolved in conjunction with, and as an integral part of, the country's institutional setting. Domestic accounting standards may thus provide a better "institutional fit" with firms' local institutional setting than the "once size fits all" of a global set of reporting standards like IFRS (Ball, 2006). Compared to domestic accounting standards, IFRS may be ill-suited to some firms or some environments and, thus, forcing firms to adopt IFRS may result in a decrease in reporting quality.

Additionally, a key argument of proponents of mandatory IFRS adoption is that a common set of "global accounting standards" will increase the comparability of investment opportunities across countries, resulting in an improve transparency and capital allocation (e.g., see Regulation, 2002; Mc McCreevy 2005). Using different approaches to measuring

comparability, a number of recent studies directly test whether mandatory IFRS adoption improves comparability across firms based in different countries. The inferences from these studies are mixed, however. Consistent with an increase in comparability, studies find that mandatory IFRS adoption is associated with an increase in "information transfer" between firms based in different countries (Wang, 2011), a larger increase in foreign mutual fund holdings when there is a greater increase in the number of firms using the same set of accounting standards, i.e., IFRS (DeFond, et al., 2011), and an increase in firms' "accounting comparability" (Lang, Maffett, & Owens, 2010). However, Lang et al. (2010) also find that mandatory IFRS adoption increases firms' earnings comovement which actually decreases the quality of firms' information environment. It is thus unclear if firms actually benefit from improved comparability following mandatory IFRS adoption.

In summary, while policy-makers argue that switching from domestic standards to IFRS will enhance firm disclosures and increase comparability (EC Regulation No. 1606/2002) the evidence to date is mixed. As a result, our first hypothesis, stated in the null, is that mandatory IFRS adoption will result in not change in the degree of information asymmetry between foreign and domestic analysts:

> *H1:   Ceteris paribus, the mandatory European-wide adoption of IFRS did not improve the forecast accuracy for foreign analysts relative to that of domestic analysts.*

The effect of mandatory IFRS adoption on the degree of information asymmetry between domestic and foreign analysts is likely to vary across firms. Two factors are critical in determining whether IFRS adoption results in an actual change in firms' financial reporting practices. First, the degree of change from countries' domestic accounting standards to IFRS is critical. Some countries (e.g., Germany) have domestic accounting standards that are quite different from IFRS, whereas other countries have domestic accounting standards that are quite similar to IFRS (e.g., the U.K.). Mandatory IFRS adoption should have little effect on firms domiciled in countries where the domestic accounting standards are similar to IFRS (e.g., the UK).

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Second, the quality of countries' enforcement environments will also critically determine the effects of mandatory IFRS adoption. Merely mandating IFRS does not guarantee material changes in firms' actual reporting practices (Ball, 2006). Firms actual reporting practices are shaped by firms' financial reporting incentives which are determined by firms' institutional environment (e.g., Ball, Kothari, & Robin, 2000, 2003; Leuz, 2003; Burgstahler, Hail, & Leuz 2006; Lang, Ready, & Wilson, 2006). The quality of the enforcement environment plays a key role in determining firms' compliance with accounting standards (e.g., Ball et al., 2003; Leuz, Nanda, & Wysocki, 2003; Burgstahler et al., 2006; Holthausen, 2009). Mandatory IFRS adoption may only have an effect in those countries with high quality enforcement environments which ensure rigorous implementation of the enhanced disclosure requirement of IFRS.

In the case of mandatory IFRS adoption, prior studies find that the increase in stock liquidity (Daske et al., 2008), decrease in firms' cost of capital (Daske et al., 2008; Li, 2010), and improvement in firms' information environment (Byard et al., 2011) are all concentrated among firms based in countries with both relatively large differences between domestic accounting standards and IFRS and strong enforcement environments (e.g., Germany).[9] Following these studies, we test if any change in information asymmetry between domestic analysts and foreign analysts is also concentrated among firms based in countries with both domestic accounting standards that are relatively different from IFRS (so firms experience a relatively large increase in reporting requirements as a result of IFRS adoption) and high quality enforcement environments. Our third hypothesis, stated in the null, is:

> *H2: Ceteris paribus, the effect of mandatory IFRS adoption on the information asymmetry between domestic and foreing analysts is greater for firms domiciled in countries with both strong enforcement regimes and domestic accounting standards that differ significantly from IFRS than for firms based in other countries.*

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[9] However, as long as financial reporting standards allow for discretion and firms have differing reporting incentives; strong enforcement will not eliminate all variations in reporting quality across firms (Leuz, 2006).

To test H1 and H2 we undertake two tests. First, we compare the change in forecast accuracy across domestic analysts and all foreign analysts. Second, as a more powerful test, we also compare the change in forecast accuracy between domestic analysts and only those foreign analysts who are likely to be familiar with IFRS (because these foreign analysts are based in a country with domestic accounting standards that are similar to IFRS, e.g., the U.K.).[10]

If mandatory IFRS adoption is to reduce domestic analysts' information advantage over foreign analysts, then foreign analysts must be able to extract useful information from the expanded disclosures or enhanced comparability provided by IFRS-based financial statements. If some of analysts' private information comes from their analysis of firms' financial statement disclosures (see Barth et al., 1999) then, clearly, a familiarity with firms' financial reporting standards will be critical. This suggest that foreign analysts who are more familiar with IFRS will better able to analyze IFRS financial statements and, as a result, should benefit relatively more (than other foreign analysts) from mandatory IFRS adoption.[11]

3. SAMPLE SELECTION AND RESEARCH DESIGN

Sample Selection

European firms subject to mandatory IFRS adoption were required to switch to IFRS for fiscal years beginning on or after January 1, 2005. Our sample period spans two reporting regimes: a *pre*-adoption period (i.e., the last two fiscal years when a firm reported in its domestic accounting standards) and a *post*-adoption period (i.e., the first two fiscal years when a firm

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[10] Compared with foreign analysts, domestic analysts typically have greater access to alternative information sources that can serve as substitutes for accounting disclosures, so familiarity with IFRS is less likely to affect domestic analysts' earnings information.

[11] Consistent with the importance of analysts' familiarity with firms' accounting standards, Bae et al. (2008a) provide evidence that more accurate earnings forecasts are issued by foreign analysts whose home-country accounting standards differ less from the firm's home-country accounting standards. Prior studies also show that a lack of familiarity with foreign accounting standards affects investors' investment decisions. Bradshaw et al. (2004) find that U.S. institutional investment is higher in non-U.S. firms that use a greater number of accounting methods that conform with U.S. accounting standards (i.e., GAAP). Aggarwal, Klapper, & Wysocki (2005) find that U.S. mutual funds invest more in firms from emerging markets when these firms are based in countries with better accounting standards, or when the firms are listed as an American Deposit Receipt (ADR). Similarly, Yu (2011) shows that mutual funds are less likely to invest in firms based in countries with accounting standards that are relatively more different from the accounting standards of the country the mutual fund is based in.

reported in IFRS). For example, for a December year-end firm, the *pre*-adoption period includes fiscal years 2003 and 2004, while the *post*-adoption period includes fiscal years 2005 and 2006.

We begin by using the IBES international (split unadjusted) database to identify all European firms that have at least one analyst who issues annual earnings forecasts for the same firm during both the two-year *pre*-adoption period and the two-year *post*-adoption period.[12] For each analyst-firm pair, we retrieve all of the analyst's annual earnings forecasts issued during the twelve-month period prior to each year-end, and retain only the last forecast if the analyst issued more than one forecast for that year. We also require that annual earnings announcements be made no later than 240 calendar days after the fiscal year-end. This sample selection criteria results in a constant set of analysts forecasting earnings for the same set of European firms under two different reporting regimes, where each analyst issued at least one earnings forecast for the same firm in both the *pre*- and *post*-adoption periods.

Some European firms voluntarily adopted IFRS prior to the mandatory European-wide adoption of IFRS in 2005. We exclude these firms from our sample so that our sample focuses exclusively on European firms that were forced to adopt IFRS in 2005 as a result of the European-wide mandatory adoption of IFRS. We use both the Global Compustat and Datastream/Worldscope databases to retrieve data for firms' accounting standards. If these two databases provide conflicting data as to which accounting standards a firm used in a particular year, we hand-checked the auditor's report in the firm's annual report for that year. To mitigate confounding factors, we also eliminate firms that were cross-listed as American Deposit Receipts (ADRs) and firms that changed their country of domicile or primary exchange listing during the sample period.[13] This results in a sample of 1,168 European-based mandatory IFRS adopters that are followed by a constant set of 2,819 unique analysts.

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[12] Our sample includes EU member countries, as well as two non-member countries: Norway and Switzerland. Both of these countries adopt many EU regulations, including mandatory IFRS adoption (see Daske et al., 2008; Armstrong, et al., 2010). Our results are robust to excluding those two countries.

[13] Non-U.S. firms cross-listed on U.S. exchanges as ADRs were required to reconcile their non-U.S. GAAP financial statements with U.S. GAAP during our sample period. We identify these firms using ADR databases from the Bank of New York and Citibank.

For each analyst-firm pair, we classify the analyst as "domestic" or "foreign" with respect to the firm she follows. If the analyst is based in the same country as (a different country from) the firm, we classify the analyst as "domestic" ("foreign"). Since analysts' country locations are not available in any electronic database, we hand-collect this information for our four-year sample period. Specifically, we first retrieve from the IBES database the names of all analysts in our sample and the names of their brokerage firms. We then hand-match these analysts with *Nelson's Directory of Investment Research*, and retain only those analysts where we are able to match both the analyst's name and the brokerage firm's name. For the matched analysts, we hand-collect their business location from *Nelson's Directory of Investment Research*, which lists analysts' primary business location as of November of each year. We classify an analyst's location for year *t* based upon information from *Nelson's Directory* for year *t-1*. Using this approach, we are able to identify the primary business location of 1,132 analysts. Our final sample consists of 4,303 analyst-firm observations, representing 1,132 analysts and 964 firms.

< Insert Table 1 About Here >

In Table 1, the first two columns present the country distributions of the 964 firms and 1,132 analysts represented in our final sample. The firms are domiciled in over 20 European countries, with heavy concentrations in the UK (339 firms, 35.17-percent of the sample), France (148 firms, 15.35-percent of the sample), and Italy (83 firms, 8.61-percent of the sample). The majority of analysts are also located in Europe, with heavy concentrations in the UK (35.25-percent), France (15.72-percent), and Germany (10.51-percent).[14]

Of the 4,303 analyst-firm pairs in our sample, 3,376 (78.5-percent) represent pairs where the analyst is located in the same country as the firm (i.e., a domestic analyst), while 927 (21.5-percent) pairs represent cases where the analyst is located in a different country from the firm (i.e., a foreign analyst). The greater prevalence of domestic analysts is consistent with prior research which suggests that analysts mainly follow domestic firms (Bae et al., 2008a). Of the

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[14] Our results are robust to excluding the small number of analysts located in non-European countries (e.g., the United States and South Africa).

964 firms in our sample, only 255 firms are followed by both domestic and foreign analysts. Following Orpurt (2004) and Bae et al. (2008b), we conduct our main analyses using cross-sectional tests, where we use all available observations to compare domestic and foreign analysts. Then, in further analysis (see Section V), we conduct within-firm comparisons of domestic and foreign analysts using the 255 firms followed by both domestic and foreign analysts.

Testing the Average Effect of Mandatory IFRS Adoption (H1)

For each analyst-firm pair, we calculate the change in the analyst's forecast accuracy between the *pre-* and *post-*adoption periods. Specifically, similar to Duru and Reeb (2002), we first calculate analyst *i*'s forecast accuracy for firm *j* in year *t* ($ACCURACY_{ijt}$) as the *negative* of the analyst's price-scaled absolute forecast error: $ACCURACY_{ijt} = -\left(\left| Actual_{jt} - Forecast_{ijt} \right| / Stock\ Price_{jt}\right)$, where $Actual_{jt}$ is the actual annual EPS from the IBES database for firm *j* in year *t*; $Forecast_{ijt}$ is analyst *i*'s earnings forecast for firm *j* in year *t*; and $Stock\ Price_{jt}$ is the stock price of firm *j* at the beginning of year *t*. We then calculate analyst *i*'s average accuracy for firm *j* in the *pre-* and *post-*adoption periods, respectively. The change in analyst *i*'s average forecast accuracy for firm *j* ($\Delta ACCURACY_{ij}$) is the difference in analyst *i*'s average forecast accuracy for firm *j* between the *pre-* and *post-*adoption periods.

To compare the change in forecast accuracy across domestic and foreign analysts, we create an indicator variable ($FOREIGN_{ij}$) to differentiate between domestic and foreign analysts: $FOREIGN_{ij}$ equals one (zero) if analyst *i* is a foreign (domestic) analyst for firm *j*. We test H1 by estimating the following model:

$$\Delta ACCURACY_{ij} = \alpha_0 + \alpha_1 FOREIGN_{ij} + \alpha_2 \Delta LogSIZE_j + \alpha_3 \Delta LogFOLLOW_j$$
$$+ \alpha_4 \Delta LogHORIZON_j + \varepsilon_{ij} . \tag{1}$$

H1 predicts that mandatory IFRS adoption is associated with an incremental increase in forecast accuracy for foreign analysts relative to domestic analysts, i.e., $\alpha_1 > 0$.

As a second more powerful test of H1, we split foreign analysts into two groups, those familiar with IFRS (*FORIGN_FAMILIAR*) and those unfamiliar with IFRS (*FORIGN_UNFAMILIAR*). We base this categorization of foreign analysts on the degree of similarity between the accounting standards of the foreign analyst's home country and IFRS (see discussion below). Accordingly, for our second test of H1, we create two dummy variables to identify these two different types of foreign analysts: $FOREIGN\_FAMILIAR_{ij}$ equals 1 if analyst i following firm j is a foreign analyst who is familiar with IFRS, and 0 otherwise; on the other hand, $FOREIGN\_UNFAMILIAR_{ij}$ equals 1 if analyst i following firm j is a foreign analyst who is unfamiliar with IFRS, and 0 otherwise. To test H2, we estimate the following model:

$$\Delta ACCURACY_{ij} = \beta_0 + \beta_1 FOREIGN\_FAMILIAR_{ij} + \beta_2 FOREIGN\_UNFAMILIAR_{ij}$$
$$+ \beta_3 \Delta LogSIZE_j + \beta_4 \Delta LogFOLLOW_j + \beta_5 \Delta LogHORIZON_{ij} + \varepsilon_{ij} \qquad (2)$$

where the subscript i refers to analyst i and the subscript j refers to firm j. The control variables are the same as in Equation (1). A significantly positive β_1 (β_2) indicates a significant incremental improvement in forecast accuracy relative to domestic analysts for those foreign analysts who are familiar (unfamiliar) with IFRS. We expect that $\beta_1 > \beta_2$.

To define *FORIGN_FAMILIAR* and *FORING_UNFAMILIAR* we assume that analysts based in countries with accounting standards that are relatively similar to (different from) IFRS are in familiar (unfamiliar). To measure the difference between a country's accounting standards and IFRS, we use the *gaapdiff1* measure of Bae et al. (2008a, Table 1). This is a comprehensive measure designed to capture differences between a country's domestic accounting standards and IFRS along 21 key accounting items.[15] We re-label this measure *ΔACC* to emphasize that this measure captures the degree of difference between countries domestic accounting standards and IFRS. Table 1, Column 3 presents *ΔACC* scores for the home countries of all the analysts in our sample. Higher values of *ΔACC* indicate greater differences between a country's accounting

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[15] Bae et al.'s (2008) metric is more up-to-date and comprehensive than some alternative measures (see Ashbaugh & Pincus, 2001; Hung, 2001; Ding et al., 2007). For example, the Ashbaugh and Pincus' (2001) index is based on IAS standards prior to 1994, while the Hung (2001) index focuses only on differences in the use of accrual accounting. Similarly, the alternative index of Ding et al. (2007) are not available for all the EU member countries in our sample. Bae et al.'s measure is also adopted by Daske et al. (2008) and Byard et al. (2011).

standards and IFRS. For the analysts' home-countries in our sample, ΔACC scores range from 1 (the UK) to 18 (Luxembourg), with a median value of 11.[16] Foreign analysts familiar (unfamiliar) with IFRS are those analysts based in countries with domestic accounting standards relatively similar to (different from) IFRS, i.e., $\Delta ACC < 11$ ($\Delta ACC \geq 11$).

Following Byard et al. (2011), we include three control variables in Equations (1) and (2): the change in firm size (i.e., $\Delta LogSIZE_j$); the change in the number of analysts following a firm ($\Delta LogFOLLOW_j$); and the change in each analysts' forecast horizon ($\Delta LogHORIZON_{ij}$). Forecast horizon is the number of days between the forecast issue date and the earnings announcement date. Since Equations (1) and (2) are a change regression, the three control variables are also in change forms. We control for the change in analysts' forecast horizon, because earnings forecasts made closer to earnings announcement dates tend to be more accurate (e.g., Clement, 1999).

To measure the change in firm size for firm j, we first calculate the beginning-of-the-year market capitalization in U.S. dollars (using the exchange rate in effect at the beginning of the year) for each of the four sample years, and then calculate $\Delta LogSIZE_j$ as the difference in the log of average market capitalization between the *pre-* and *post*-adoption periods for firm j. We calculate the number of analysts following a firm as the total number of analysts who forecast earnings for a firm, not just the constant set of analysts who follow the firm in both the *pre-* and post-adoption periods in our sample. $\Delta LogFOLLOW_j$ is the change in the log of the average number of analysts following firm j between the *pre-* and *post*-adoption period. To calculate the

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[16] This approach assumes that analysts are primarily familiar with their domestic accounting standards; as a result, analysts based in countries with accounting standards more similar to IFRS should be more familiar with IFRS-type reporting. This assumption is reasonable because the majority of firms that analysts follow are domestic firms, and analysts rarely change their country location (Bae et al., 2008a). In our sample, over 80% of firms followed by a typical analyst are domestic firms. An alternative measure of a foreign analyst's familiarity with IFRS is the percentage of firms in the analyst's portfolio that use IFRS in the *pre*-adoption period. We do not use this alternative measure, because it ignores important country-level differences in accounting standards. For example, a German analyst and a UK analyst can have the same portfolio composition (e.g., 90% domestic firms and 10% firms that use IFRS) in the *pre*-adoption period, but substantially different expertise in analyzing IFRS-based financial statements. The UK analyst likely is more familiar with IFRS-type reporting than the German analyst, because UK accounting standards are very similar to IFRS while German accounting standards are significantly different from IFRS (see Table 1).

change in analyst i's forecast horizon for firm j, we first calculate an analyst's average forecast horizon for the *pre-* and *post*-adoption periods, respectively, and calculate $\Delta LogHORIZON_{ij}$ as the difference in the log of average horizon between the two periods.

Testing the Effect of Mandatory IFRS Adoption Conditional on Country-level Institutional Characteristics (H2)

To test H2, we first identify firms likely to experience the most significant increase in disclosures and comparability following mandatory IFRS adoption, i.e., firms domiciled in countries with both domestic accounting standards that are substantially different from IFRS and strong legal enforcement environments. Consistent with prior research (Daske et al., 2008; Byard et al., 2011), we use the 2005 value of Kaufmann et al.'s (2007) "rule of law" variable to capture the quality of countries' enforcement environments, denoted $ENFORCE$.[17] Column 4 of Table 1 shows the values of $ENFORCE$ for the countries of domicile of our sample firms. Higher values of $ENFORCE$ represent countries with stronger legal and enforcement environments. It is well known that EU countries vary substantially in their economic and political institutions, including enforcement regimes (Ball, 2006). In our sample, the minimum (maximum) value of $ENFORCE$ is 0.3 (2.0) for Poland (Switzerland), with a sample median of *1.6*. As discussed above, we use ΔACC to measure the extent to which a country's domestic accounting standards differ from IFRS (Column 3 of Table 1). The median value of ΔACC for the countries of domicile of our sample firms is *11*.[18]

We partition our sample of 964 European firms in our sample into country groups based on whether the values of ΔACC and $ENFORCE$ for a firm's country of domicile exceed the median values of these two variables for our sample. This partitioning divides our sample into

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[17] Our results are robust to using the following alternative proxies for $ENFORCE$: (1) the Kaufmann et al. (2007) "rule of law" score for 2004, 2005, 2006, or the average of the three years from 2004 to 2006; (2) the "governance effectiveness" score, the "regulatory quality" score, or the average of six governance scores for 2005 from Kaufmann et al. (2007); or (3) the mean of the three law enforcement variables from La Porta et al. (1998), as used by Leuz et al. (2003).

[18] Table 1, Column 3 presents the ΔACC scores for all countries in our sample, including firms' countries of domicile and analysts' home countries. Note that 11 is the median value for each of these two different country samples: the sample of all firms' countries of domicile, and the sample of all analysts' home countries.

three country groups of firms: (1) a *High-High* (*HH*) group that includes firms domiciled in countries with strong enforcement and domestic accounting standards that differ considerably from IFRS (*ENFORCE* ≥ 1.6 and *ΔACC* ≥ 11); (2) a *High-Low* (*HL*) group that includes firms domiciled in countries with strong enforcement and domestic accounting standards that are relatively similar to IFRS (*ENFORCE* ≥ 1.6 and *ΔACC* < 11); and (3) a *Low-High* (*LH*) group that includes firms domiciled in countries with weak enforcement and domestic accounting standards that differ considerably from IFRS (*ENFORCE* < 1.6 and *ΔACC* ≥ 11). For our sample, no country has below-median values for both *ENFORCE* and *ΔACC* (i.e., *ENFORCE* < 1.6 and *ΔACC* < 11).

Of the 964 sample firms, 100 firms are domiciled in *High-High* country group, 365 firms are domiciled in *Low-High* country group, and the remaining 499 firms are domiciled in *High-Low* country group. H3 predicts that the effect of mandatory IFRS adoption will be strongest for firms based in the *High-High* country group. That is to say, H3 predicts that the improvement foreign analysts' forecast accuracy relative to domestic analysts for foreing analsyts who are familiar with IFRS (i.e., β_1) is larger for firms based in the *High-High* group of countries than for the other two groups of countries. The *High-High* group includes firms based in Austria, Denmark, Finland, Luxembourg, Germany, and Switzerland.[19] To test H2, we re-estimate Equations (1) and (2) separately for each of these three country groups.

4. RESULTS

Descriptive Statistics

Table 2 provides descriptive statistics for our constant analyst-firm sample across the *pre-* and *post*-adoption periods. In the *pre*-adoption period, average forecast accuracy is higher for domestic analysts (-0.026) than for foreign analysts (-0.030); the difference is also statistically

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[19] The *Low-High* group (*Low ENFORCE, High ΔACC*) includes firms based in: Belgium, the Czech Republic, France, Greece, Hungry, Italy, Poland, Portugal, and Spain. The *High-Low* group (*High ENFORCE, Low ΔACC*) includes firms based in: Ireland, the Netherlands, Norway, Sweden, and the United Kingdom.

significant ($p<0.05$, two-tailed; untabulated). This result confirms the prior finding that domestic analysts issue more accurate earnings forecasts than foreign analysts (e.g., Bae et al., 2008a).

For all analysts, the mean (median) level of forecast accuracy increases from -0.028 (-0.012) in the *pre*-adoption period to -0.017 (-0.007) in the *post*-adoption period; this increase is statistically significant ($p<0.01$, two-tailed, for both a *t*-test and a signrank test). We further partition analysts into four groups: domestic analysts, all foreign analysts, the subsample of foreign analysts who are familiar with IFRS, and the subsample of foreign analysts who are unfamiliar with IFRS. The results indicate an improvement in forecast accuracy for all four groups of analysts.

Table 2 also compares the change in forecast accuracy ($\Delta ACCURACY$) across these different groups of analysts. Based on a ranksum test, forecast accuracy increases more for foreign analysts than for domestic analysts ($p<0.001$, two-tailed). Further, we compare $\Delta ACCURACY$ across domestic analysts and the two subsets of foreign analysts (foreign analysts familiar with IFRS, and foreign analysts unfamiliar with IFRS). We find that only foreign analysts familiar with IFRS experience a greater improvement in forecast accuracy than domestic analysts ($p<0.001$, two-tailed, for a ranksum test), while the improvement in forecast accuracy for foreign analysts unfamiliar with IFRS is not statistically different from that for domestic analysts. Overall, the results from these univariate comparisons provide some preliminary evidence in support of our first two hypotheses. However, these univariate tests should be interpreted with caution as they do not control for other variables that potentially affect the change in forecast accuracy (e.g., changes in forecast horizons).

Finally, Table 2 also presents summary statistics for the levels of the three control variables in Equations (1) to (2)—*LogFOLLOW*, *LogSIZE*, and *LogHORIZON*—for both the *pre-* and *post*-adoption periods. The univariate comparisons confirm that all three control variables increase significantly between the *pre-* and *post*-adoption periods ($p<0.01$, two-tailed, for all). These results highlight the importance of controlling for the changes in these variables

when examining the effect of mandatory IFRS adoption on the change in analysts' forecast accuracy.

< Insert Table 2 About Here >

The Results of Testing the Average Effect of Mandatory IFRS Adoption (H1)

Table 3 reports the results of estimating Equations (1) and (2) using our entire sample of 4,303 analyst-firm observations. We cluster on firms to adjust for heteroskedasticity and correlation for observations for the same firm (Rogers, 1993). The estimate of Equation (1) shows that the coefficient on *FOREIGN* is positive (0.0024) but not statistically significant at conventional levels (one-tailed *p*=0.156, two-tailed). Thus, we find no evidence that mandatory IFRS adoption is associated with an improvement in forecast accuracy of all foreign analysts relative to domestic analysts.

However, in our estimate of Equation (2), we find that the coefficient on *FOREIGN_FAMILIAR* is positive and statistically significant (0.0041, two-tailed *p*=0.020), indicating a significant incremental improvement in forecast accuracy for foreign analysts familiar with IFRS relative to domestic analysts. In contrast, the change in forecast accuracy does not differ between foreign analysts unfamiliar with IFRS and domestic analysts: the coefficient on *FOREIGN_UNFAMILIAR* is not statistically different from zero (0.0002, two-tailed *p*=0.913). Thus, consistent with H1, our evidence indicates that mandatory IFRS adoption does reduce the information advantage of domestic analysts over foreign analysts, but only for the sub-set of foreign analysts who are familiar with IFRS. We also compare the coefficients on *FOREIGN_FAMILAR* and *FOREIGN_UNFAMILAR*: the coefficient on *FOREIGN_FAMILAR* is significantly greater than that for *FOREIGN_UNFAMILAR* (one-tailed *p*=0.027). Our evidence thus suggests that mandatory IFRS adoption reduces domestic analysts' information advantage over foreign analysts to a greater degree when foreign analysts are more familiar with IFRS.

< Insert Table 3 About Here >

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The results for the control variables are largely consistent with prior research. In the estimate of Equation (1) the coefficient on $\Delta LogSIZE$ is significantly positive (0.0150, two-tailed $p=0.018$), indicating that forecast accuracy improves when firm size increases. The coefficient on $\Delta LogHORIZON$ is significantly negative (-0.0039, two-tailed $p=0.002$), indicating that forecast accuracy decreases as forecast horizon increases (i.e., an increase in the number of days between the forecast issue date and the earnings announcement date).

The Results of Testing the Effect of Mandatory IFRS Adoption Conditional on Countries' Institution Characteristics (H2)

To test H2 we partition our sample of 964 European mandatory adopters into three country-groups – *High-High*, *High-Low*, and *Low-High* – based on two country-level institutional characteristics: the strength of legal enforcement (*ENFORCE*) and the difference between domestic accounting standards and IFRS, i.e., the degree of change in accounting standards when firms switch from reporting in domestic accounting standards to reporting in IFRS (*ΔACC*). Table 4 reports the results of estimating Equations (1) and (2) separately for these three country groups of firms. We find that the earlier for H1 for the subset of foreign analysts familiar with IFRS (reported in Table 3 above) are driven by the *High-High* group – the coefficient on *FOREIGN_FAMILIAR* is significantly positive for the *High-High* group, but not for other two groups. That is, foreign analysts familiar with IFRS experience an improvement in forecast accuracy relative to domestic analysts only for firms based in *High-High* countries; these are the firms most likely to implement substantial changes to their financial reporting practices following mandatory IFRS adoption.

For the *High-High* group, while the coefficient on *FOREIGN_FAMILIAR* is significantly positive (0.0018, two-tailed $p=0.036$), the coefficient on *FOREIGN_UNFAMILIAR* is statistically insignificant. This suggests that, in the *High-High* countries, foreign analysts familiar with IFRS experience an incremental improvement in forecast accuracy relative to domestic

analysts; however, such an incremental improvement in forecast accuracy does not exist for foreign analysts unfamiliar with IFRS.

< Insert Table 4 About Here >

To test H2 formally, we estimate Equation (2) for all three country groups in a Seemingly Unrelated Regression (SUR) system, and test the difference in coefficients across the three groups. The bottom of Table 4 presents the results comparing the coefficient on *FOREIGN_FAMILIAR* across the three country groups. We find that the coefficient on *FOREIGN_FAMILIAR* for the *High-High* group is significantly greater than that for either the *High-Low* or *Low-High* group (one-tailed p=0.069 and 0.030, respectively). These results also support H3 that the adoption effect is greater for firms domiciled in countries with strong enforcement and accounting standards that differ considerably from IFRS, i.e., the *High-High* group, than for firms domiciled the *High-Low* or *Low-High* group.

Overall, the results indicate that the incremental improvement in forecast accuracy relative to domestic analysts for those foreign analysts familiar with IFRS is concentrated among firms domiciled in the *High-High* countries. These findings are consistent with recent evidence that mandatory IFRS adoption is more likely to result in substantial changes in financial reporting for firms domiciled in countries with stronger enforcement environments and domestic accounting standards that differ more from IFRS (e.g., Daske et al., 2008; Byard et al., 2011; Li, 2010).

5. FURTHER ANALYSIS USING A WITHIN-FIRM DESIGN

Our results in Section 4 are based on cross-sectional tests comparing domestic and foreign analysts. In this section, we investigate the robustness of these results to within-firm comparisons of domestic and foreign analysts. The cross-sectional and within-firm tests each have their strengths and weaknesses. The cross-sectional tests have more power because they utilize all available observations. However, since not every firm is followed by both domestic and foreign analysts, domestic and foreign analysts are not always compared within the same

firms. As a result, the findings can be confounded by differences in firms that attract different types of analyst following. The within-firm matching of domestic and foreign analysts controls for differences in firm characteristics, but has lower test power due to the smaller sample size.

For the within-firm analyses, we retain only firms that are followed by at least one domestic analyst and at least one foreign analyst. This results in a sample of 255 firms. If a firm has more than one domestic analyst, we take the average of the change in forecast accuracy ($\Delta ACCURACY$) across all domestic analysts; similarly, we also average across all foreign analysts. This procedure avoids giving undue weight to firms followed by a larger number of analysts. Then, for each firm, we compute the difference in the change in forecast accuracy between foreign and domestic analysts, i.e., $DIFF\_\Delta ACCURACY = (\Delta ACCURACY$ for foreign analysts $- \Delta ACCURACY$ for domestic analysts). Note there are 255 observations for $DIFF\_\Delta ACCURACY$, one for each firm.

< Insert Table 5 About Here >

The results are reported in Table 5. Cell (A,1) compares domestic and foreign analysts for all 255 firms. The mean of $DIFF\_\Delta ACCURACY$ is 0.002, statistically positive at $p<0.10$, one-tailed; the median is 0.000 and not statistically significant. Thus, the results provide some support for H1 that foreign analysts experience an improvement in forecast accuracy relative to domestic analysts.

Cell (B,1) compares domestic analysts with foreign analysts familiar with IFRS. To conduct this test, we retain only firms that are followed by at least one domestic analyst and at least one foreign analyst familiar with IFRS, which results in a sample of 184 firms.[20] For this test, we measure $DIFF\_\Delta ACCURACY$ as: $\Delta ACCURACY$ using forecasts by only those foreign analysts familiar with IFRS $- \Delta ACCURACY$ for domestic analysts. Similarly, Cell (C,1) compares domestic analysts with foreign analysts who are unfamiliar with IFRS using the 159

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[20] Of the 255 firms followed by both domestic and foreign analysts, 96 firms are followed only by domestic analysts and foreign analysts who are familiar with IFRS, 71 firms are followed only by domestic analysts and foreign analysts unfamiliar with IFRS, and the remaining 88 firms are followed by all three analyst groups: domestic analysts, foreign analysts familiar with IFRS, and foreign analysts unfamiliar with IFRS. Thus, we have 184 (=96+88) firms in Row B, and we have 159 (=71+88) firms in Row C.

firms with at least one domestic analyst and at least one foreign analyst unfamiliar with IFRS. For this test, we measure *DIFF_ΔACCURACY* as: *ΔACCURACY* using forecasts by only those foreign analysts unfamiliar with IFRS − *ΔACCURACY* for domestic analysts.

The results are consistent with the earlier results reported in Tables 3 and 4. Cell (B,1) shows that for foreign analysts familiar with IFRS, mean (median) of *DIFF_ΔACCURACY* is 0.005 (0.001), significantly greater than zero at the 0.01 (0.01) level, one-tailed, indicating that foreign analysts familiar with IFRS experience an improvement in forecast accuracy relative to domestic analysts. In contrast, Cell (C,1) shows no evidence of a difference in the change in forecast accuracy between foreign analysts unfamiliar with IFRS and domestic analysts. Consistent with H2, *DIFF_ΔACCURACY* is significantly more positive in Cell (B,1) than in Cell (C,1), as shown at the bottom of Table 5. The results indicate that the relative improvement in forecast accuracy is greater for foreign analysts familiar with IFRS than for foreign analysts unfamiliar with IFRS.

To test H3, we focus on Row B − the 184 firms followed by at least one domestic analyst and at least one foreign analyst familiar with IFRS. In Cells (B,2), (B,3) and (B,4), we partition these 184 firms into three country groups (i.e., *HH, HL,* and *LH*) based on the two country-level institutional characteristics: *ENFORCE* and *ΔACC.* Cell (B,2) shows that, for the *HH* group (i.e., firms domiciled in countries with both strong enforcement and domestic accounting standards that differ significantly from IFRS), mean and median *DIFF_ΔACCURACY* are both significantly positive (*p*<0.01, one-tailed), indicating that foreign analysts familiar with IFRS experience an improvement in forecast accuracy relative to domestic analysts. In contrast, Cells (B,3) and (B,4) show no statistically significant improvement for the other two country groups. To test H3, we compare *DIFF_ΔACCURACY* across these three country groups. The results are shown at the bottom of Table 5. We find that both the mean and median of *DIFF_ΔACCURACY* for the *HH* country group (see Cell (B,2)) are significantly greater than for either the *HL* group (see Cell (B,3)) or the *LH* group (see Cell (B,4)), providing support for H2.

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In summary, the results from these within-firm analyses are consistent with our earlier results from our cross-sectional analyses. These results increase our confidence that our results are unlikely to be driven by some correlated omitted variable(s).

6. CONCLUSION

This study examines whether the European-wide mandatory adoption of International Financial Reporting Standards (IFRS) in 2005 changed the degree of information asymmetry between foreign and domestic analysts. Specifically, we examine whether IFRS adoption improves foreign analysts' forecast accuracy relative to domestic analysts. Using a sample of analysts who forecasted earnings for the same set of firms in both *pre-* and *post-*adoption periods, we find no evidence of an improvement in forecast accuracy for foreign analysts relative to domestic analysts, on average. However, partitioning foreign analysts based on their familiarity with IFRS, we do find evidence that foreign analysts familiar with IFRS exhibit an improvement in forecast accuracy relative to domestic analysts; we find no such improvement for foreign analysts unfamiliar with IFRS. Further partitioning our sample firms based on country-level institutional factors, we find that the improvement in forecast accuracy relative to domestic analysts for those foreign analysts familiar with IFRS is concentrated among firms domiciled in countries with both domestic accounting standards that differ considerably from IFRS and strong enforcement regimes, i.e., where the requirements by IFRS adoption are likely to be both substantial and rigorously implemented.

Our results should be of interest to policy-makers who expect mandatory IFRS adoption to increase cross-border investment (e.g., see EC Regulation 1601/2002; McCreevy, 2005). Our results provide direct evidence suggesting that mandatory IFRS adoption helps reduce information asymmetry between domestic and foreign market participants, which should in turn reduce investors' home bias and encourage cross-border investment. However, our results also suggest that the effect of mandatory IFRS adoption is unlikely to be uniform across investors and across countries. Our results highlight that both investors' familiarity with IFRS and countries'

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enforcement environments play important roles in determining the extent to which mandatory IFRS adoption levels the informational playing field between foreign and domestic investors.

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TABLE 1
Sample Description

Country	# of firms (1)	# of Analysts (2)	Difference b/w Domestic Acc. Standards and IFRS (ΔACC) (3)	Enforcement Environment (*ENFORCE*) (4)
Austria	1	1	12	1.8
Belgium	32	21	13	1.4
Czech Republic	1	2	14	0.7
Denmark	27	22	11	1.9
Finland	30	26	15	1.9
France	148	178	12	1.3
Germany	23	119	11	1.7
Greece	30	19	17	0.7
Hungary	1	2	13	0.7
Ireland	24	16	1	1.6
Italy	83	47	12	0.5
Luxembourg	1		18	1.9
Netherlands	41	59	4	1.7
Norway	50	39	7	1.9
Poland	4	2	12	0.3
Portugal	5	1	13	1.1
Spain	61	57	16	1.1
Sweden	45	62	10	1.8
Switzerland	18	39	12	2.0
United Kingdom	339	399	1	1.6
Non-European Countries[1]:				
Brazil		1	11	
Korea		1	6	
Malaysia		1	8	
South Africa		3	0	
United States		15	1	
Total:	964	1,132	*Median:* 11	1.6

Our sample consists of European-domiciled firms that switched from using domestic accounting standards to IFRS as a result of the mandatory European-wide adoption of IFRS effective for fiscal years beginning on or after January 1, 2005. We identify our sample firms using data on firms' accounting standards from both Compustat and Datastream/Worldsocpe. When these two databases provide conflicting information as to a firm's accounting standards, we hand-check firms' annual reports. Using IBES data, we identify individual analysts who forecast earnings for these firms in both the two-year *pre*-adoption and *post*-adoption periods; this provides a constant analyst-firm sample. We then identify the country location of these individual analysts using both analysts' names and the names of analysts' brokerage firm employers. Using the brokerage house affiliations we are able to identify, we hand-match these analyst-broker name combinations with brokerage firm listings in *Nelson's Directory of Investment Research* for the period 2003-2006. The brokerage house listings in *Nelson's Directory of Investment Research* include the name of each individual analyst employed by a broker firm and the analyst's primary business location, i.e., the brokerage firm office where the analyst is based. Using this approach we are able to identify the primary business location of 1,132 individual analysts, approximately 40-percent of the 2,819 analysts we originally identify. The primary business location of these 1,132 unique analysts is listed in column (2). We partition foreign analysts and firms using the GAAP difference (ΔACC) measure from Bae et al. (2008, Table 1). We also partition firms using the law enforcement measure (*ENFORCE*) from Kaufmann et al. (2007). ΔACC measures differences between countries' domestic accounting standards and IFRS along 21 key accounting items; higher values of ΔACC indicate greater differences between domestic accounting standards and IFRS. *ENFORCE* is a measure of the quality of a country's legal and enforcement regime. Higher values of *ENFORCE* represent countries with stronger legal and enforcement regimes.

[1] A small number of analysts (21) are based in non-European countries. These non-European based analysts also forecast earnings for our sample European firms that are subject to mandatory IFRS adoption. We include these analysts in our analysis; however, our inferences are unaffected if we exclude these analysts.

TABLE 2
Descriptive Statistics: *Pre-* and *Post-* Mandatory IFRS Adoption Periods

	Number of Observations = 4,303			
	Pre-period (1)	Post-period (2)	Change (3)	Significance of Change (4)
	Mean (Median) [STD]	Mean (Median) [STD]	Mean (Median) [STD]	2-tailed p-values: t-test Signrank
ACCURACY	-0.028 (-0.012) [0.049]	-0.017 (-0.007) [0.029]	0.011 (0.003) [0.043]	<0.001 <0.001
ACCURACY (Domestic Analysts)	-0.026 (-0.011) [0.049]	-0.017 (-0.007) [0.030]	0.011 (0.003) [0.047]	<0.001 <0.001
ACCURACY (All Foreign Analysts)	-0.030 (-0.011) [0.051]	-0.018 (-0.006) [0.025]	0.012 (0.004) [0.028]	<0.001 <0.001
ACCURACY (Foreign Analysts Familiar with IFRS)	-0.031 (-0.011) [0.055]	-0.015 (-0.006) [0.023]	0.014 (0.005) [0.026]	<0.001 <0.001
ACCURACY (Foreign Analysts Unfamiliar with IFRS)	-0.030 (-0.011) [0.045]	-0.020 (-0.007) [0.027]	0.009 (0.002) [0.029]	<0.001 <0.001
LogFOLLOW	2.628 (2.792) [0.825]	2.699 (2.833) [0.747]	0.071 (0.030) [0.299]	<0.001 <0.001
LogSIZE	7.150 (7.094) [1.793]	7.579 (7.603) [1.723]	0.429 (0.419) [0.434]	<0.001 <0.001
LogHORIZON	4.954 (4.956) [0.417]	5.027 (5.036) [0.436]	0.073 (0.047) [0.547]	<0.001 <0.001

Comparison of ΔACCURACY Across Analyst Groups	Two-tailed p-values: t-test	Ranksum test
Domestic Analysts vs. All Foreign Analysts	p=0.520	p<0.001
Domestic Analysts vs. Foreign Analysts Familiar with IFRS	p=0.159	p<0.001
Domestic Analysts vs. Foreign Analysts Unfamiliar with IFRS	p=0.579	p=0.616
Foreign Analysts Familiar with IFRS vs. Foreign Analysts Unfamiliar with IFRS	p=0.018	p<0.001

We match individual analysts who forecast earnings for the same firm across the *pre-* and *post-*adoption periods. Similar to Duru and Reeb (2002), $ACCURACY_{ijt}$ is a measure of the accuracy of analyst i's price-scaled absolute forecast error for firm j in period t, multiplied by -1, to convert to an accuracy measure, i.e., $ACCURACY_{ijt}$ = -1 x ($|Actual_{jt} - Forecast_{ijt}| / Stock\ Price_{jt}$), where $Actual_{jt}$ is actual annual EPS from the IBES database for firm j in year t; $Forecast_{ijt}$ is analyst i's last forecast for firm j in year t; and $Stock\ Price_{jt}$ is the stock price of firm j at the start of year t. We calculate the change in each individual analyst's average forecast accuracy ($\Delta ACCURACY$) as the difference between analysts i's average forecast accuracy for firm j in the *pre-* and *post-*adoption periods. *LogFOLLOW* is the log of the total number of analysts following firm j in either the *pre-* or *post-*adoption periods. This includes all analysts following a firm, not just the constant set of analysts who forecast in both the *pre-* and *post-*adoption periods. *LogSIZE* is (the log of) average market capitalization (in US $) for firm j in either the *pre-* or *post-*adoption periods. *LogHORIZON* is the log of the average number of days between the forecast issuance dates and the earnings announcement dates for analyst i's forecasts for firm j. All variables are winsorized at the 1-percent and 99-percent levels to mitigate the influence of outliers. All *p*-values are two-tailed.

TABLE 3
Testing H1: The Effect of Mandatory IFRS Adoption on Domestic Analysts' Local Advantage (Full Sample of All Firms)

	Prediction	Coefficient (p-value)	Coefficient (p-value)
Intercept		0.0043 (0.156)	0.0043 (0.155)
FOREIGN	+	0.0024 (0.156)	
FOREIGN_FAMILIAR	+		**0.0041 (0.020)**
FOREIGN_UNFAMILIAR			0.0002 (0.913)
ΔlogSIZE		0.0150 (0.018)	0.0149 (0.018)
ΔlogFOLLOW		-0.0023 (0.554)	-0.0024 (0.543)
ΔlogHORIZON		-0.0039 (0.002)	-0.0039 (0.002)
One-tailed *p*-value for testing $\beta_1 > \beta_2$			(0.027)
Number of Observation		*4,303*	*4,303*
Adjusted R^2		*0.024*	*0.025*

The dependent variable is the change in analyst i's absolute forecast error for firm j ($\Delta ACCURACY_{ij}$) between the *pre-* and *post-*adoption periods. $FOREIGN_{ij}$ is a dummy variable equal to one (zero) if analyst i is a foreign (domestic) analyst with respect to firm j, i.e., analyst i is located in a different country from firm j. $FOREIGN\_FAMILIAR_{ij}$ is a dummy variable equal to one if analyst i following firm j is a foreign analyst who is familiar with IFRS, i.e., she is based in a low ΔACC country, and zero otherwise. $FOREIGN\_UNFAMILIAR_{ij}$ is a dummy variable equal to one if analyst i following firm j is a foreign analyst who is unfamiliar with IFRS, i.e., she is based in a high ΔACC country, and zero otherwise. The change in firm size ($\Delta LogSIZE_j$) is the change in the log of average market capitalization between the *pre-* and *post-*adoption periods for firm j; $\Delta LogFOLLOW_j$ is the change in the log of the total number of analysts following firm j between the *pre-* or *post-*adoption periods. The change in forecast horizon ($\Delta LogHORIZON_{ij}$) is the change in the log of the average forecast horizon for analyst i's forecasts for firm j between the *pre-* to the *post-*adoption periods.

$$\Delta ACCURACY_{ij} = \alpha_0 + \alpha_1 FOREIGN_{ij} + \alpha_2 \Delta LogSIZE_j + \alpha_3 \Delta LogFOLLOW_j$$
$$+ \alpha_4 \Delta LogHORIZON_j + \varepsilon_{ij} \ . \tag{1}$$

$$\Delta ACCURACY_{ij} = \beta_0 + \beta_1 FOREIGN\_FAMILIAR_j + \beta_2 FOREIGN\_UNFAMILIAR_j$$
$$+ \beta_3 \Delta LogSIZE_j + \beta_4 \Delta LogFOLLOW_j + \beta_5 \Delta LogHORIZON_j + \varepsilon_{ij} \tag{2}$$

All continuous variables are winsorized at the 1-percent and 99-percent levels to mitigate the influence of outliers. We cluster on firms to correct for the inflation in standard errors due to multiple observations for the same firm. All reported *p*-values are two-tailed.. Coefficients significant at 10-percent or better are highlighted in bold.