Accounting Comparability and Economic Outcomes of Mandatory IFRS Adoption*

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ABSTRACT

This study examines the associations between four economic outcomes of the 2005 mandatory adoption of International Financial Reporting Standards (IFRS) and concurrent changes in two important accounting constructs, accounting comparability and reporting quality. My primary purpose is to evaluate the relative importance of cross-country accounting comparability and firm-specific reporting quality in explaining previously documented increases in Tobin's Q, stock liquidity, analyst forecast accuracy, and analyst forecast agreement following IFRS adoption. Given that improvements in both comparability and reporting quality are primary stated objectives of the International Accounting Standards Board (IASB), it is important to understand their relative roles in shaping the information environment of financial statement users following IFRS adoption. Using 1,861 first-time adopters in 23 countries, I find that firms with a larger improvement in comparability have larger increases in Q, liquidity, forecast accuracy, and forecast agreement following adoption, relative to other adopters. In contrast, improvements in reporting quality around adoption appear to have only a second-order effect that is generally limited to Q effects among those adopters with concurrent improvements in comparability. These results are robust to alternative design and variable specifications. Finally, I continue to find these results for samples restricted to countries with weaker pre-adoption institutional environments and countries that did not initiate proactive financial statement reviews, indicating that strong institutions and regulatory improvements are not driving the results. Overall, my results suggest that improvements in cross-country accounting comparability played an important role in the previously documented economic benefits that accrued to 2005 mandatory IFRS adopters.

Comparabilité des données comptables et résultats économiques de l'adoption obligatoire des IFRS

RÉSUMÉ

L'auteur étudie les liens entre quatre résultats économiques de l'adoption, rendue obligatoire en 2005, des Normes internationales d'information financière (IFRS) et la modification concurrente de deux notions comptables importantes : la comparabilité des données comptables et la qualité de l'information. Son objectif premier est d'évaluer l'importance relative de la comparabilité des données comptables entre les pays et de la qualité de l'information propre à l'entreprise dans l'explication des hausses antérieurement documentées du ratio *q* de Tobin, de la liquidité des titres, de l'exactitude des prévisions des analystes et de la concordance des prévisions des analystes, après l'adoption des IFRS. Compte tenu du fait que l'amélioration de la comparabilité des données comptables et l'amélioration de la qualité de l'information

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sont les objectifs primordiaux déclarés de l'International Accounting Standards Board (IASB), il importe de comprendre leurs rôles respectifs dans le façonnement de l'environnement d'information des utilisateurs des états financiers à la suite de l'adoption des IFRS. Analysant un échantillon de 1 861 nouveaux adoptants de 23 pays, l'auteur constate que les sociétés dont la comparabilité des données comptables connaît l'amélioration la plus importante affichent des hausses supérieures du ratio *q*, de la liquidité des titres, de l'exactitude des prévisions et de la concordance des prévisions après l'adoption, comparativement aux autres adoptants. En revanche, les améliorations de la qualité de l'information à proximité de la date de l'adoption semblent n'avoir qu'une incidence de second ordre qui se limite généralement à des répercussions sur le ratio *q* parmi ces adoptants et à des améliorations concurrentes dans la comparabilité des données. Ces résultats résistent à différentes spécifications quant au plan de recherche et aux variables. Enfin, l'auteur observe les mêmes résultats dans des échantillons confinés aux pays dont l'environnement institutionnel antérieur à l'adoption est moins solide et aux pays n'ayant pas procédé à un exercice proactif d'examen des états financiers, ce qui révèle que des institutions solides et une amélioration de la réglementation ne conditionnent pas les résultats. Dans l'ensemble, les conclusions de l'étude donnent à penser que l'amélioration de la comparabilité des données comptables entre les pays a joué un rôle déterminant dans les avantages économiques déjà documentés dont ont bénéficié les sociétés contraintes d'adopter les IFRS en 2005.

1. Introduction

A growing literature points to variation in how the mandatory introduction of International Financial Reporting Standards (IFRS) impacts firm valuations, stock liquidity, and analyst forecast properties. Prior papers generally examine country-level differences in these economic outcomes of IFRS adoption, focusing on differences in institutional quality and reporting incentives across adopter countries (see, e.g., Daske, Hail, Leuz, and Vendi 2008; Li 2010; Byard, Ying, and Yu 2011; Christensen, Hail, and Leuz 2013; Horton, Serafeim, and Serafeim 2013).[1] However, this focus on country-level differences provides an incomplete picture of IFRS effects (Daske, Hail, Leuz, and Vendi 2013). This paper, in contrast, examines *firm-level differences* in the economic outcomes of mandatory IFRS adoption. Specifically, I examine the role that changes in firm-specific reporting quality and accounting comparability around IFRS adoption play in the economic outcomes of adoption. In doing so, I contribute to the IFRS literature, generally, and to the literature that examines variation in the outcomes of IFRS adoption in particular.

The unique innovation and contribution in this paper is in (i) linking the accounting effects and economic effects of IFRS adoption together, and (ii) evaluating the relative importance of reporting quality and comparability on the economic effects. Using accounting, analyst, and market data for a large number of firms over an eight-year period from 2001 to 2008, I examine variation in the empirical association between mandatory IFRS adoption and several market and analyst proxies for information asymmetry, conditional on changes in comparability and reporting quality around the adoption date. After controlling for other influential factors at the firm and macro level, the results show that economic benefits to IFRS adoption are most pronounced among firms that exhibit larger improvements in cross-country accounting comparability. In contrast, an improvement in firm-specific reporting quality appears to have only a marginal effect that is generally limited to valuation effects among those adopters that also exhibit a concurrent increase in comparability.

I focus on the two financial reporting constructs, comparability and reporting quality, for several reasons. First, improvements in both are primary stated objectives of the

1. There are a few papers that examine firm-level differences in economic outcome of adoption. I discuss these exceptions later in the introduction.

International Accounting Standards Board (IASCF 2001). Therefore, it is important to understand their relative roles in shaping the information environment of financial statement users following adoption. Second, the two constructs differ in the information they convey about the firm. Comparability describes the degree of similarity in the accounting outcomes among two or more firms (FASB 2010). As such, it is different from commonly studied accounting quality measures, such as discretionary accruals, accrual quality and income smoothing. These earnings attributes are firm-specific and often computed independently of the attributes of other firms (De Franco, Kothari, and Verdi 2011). Moreover, comparability is unique in its ability to facilitate benchmarking across firms. Third, recent research documents that comparability increased, on average, following mandatory IFRS adoption (Yip and Young 2012). In contrast, the evidence is mixed across several papers with respect to how mandatory IFRS adoption impacts reporting quality (Barth, Landsman, and Lang 2008; Christensen, Lee, and Walker 2008; Ahmed, Neel, and Wang 2013; Capkun, Collins, Daniel, and Jeanjean 2013). Fourth, prior studies have shown that both reporting quality and comparability are associated with empirical proxies for information asymmetry (e.g., Welker 1995; Brown and Hilligeist 2007; De Franco et al. 2011; Lang, Lins, and Maffett 2012). However, no study that I am aware of attempts to assess the relative importance of the two financial reporting constructs with respect to each other, despite conjecture that the two might be related (Barth, Landsman, Lang, and Williams 2012).

The economic outcome variables that I include in this study are intended to capture complementary aspects of changes in information asymmetry around mandatory IFRS adoption. I focus on four previously studied economic outcomes of adoption: firm valuations, stock liquidity, analyst accuracy in forecasting income, and analyst agreement in forecasting income. I measure firm valuation using Tobin's Q and measure liquidity using the Amihud (2002) price impact of trades, Lesmond, Ogden, and Trzcinka (1999) total trading costs, and Roll (1984) effective bid-ask spreads. I measure absolute analyst forecast errors using the average consensus earnings forecast and analyst forecast dispersion using the standard deviation of analysts' earnings forecasts. Together, these should reflect, among other things, the level of information asymmetry among both sophisticated and unsophisticated investors.

I use a research design in which I partition mandatory IFRS adopters into four distinct treatment groups based on concurrent changes in both cross-country comparability and reporting quality around adoption. I assess the cross-country comparability of a firm with its industry peers using three measures that follow the same underlying logic of the FASB's and IASB's conceptual frameworks that two firms have more comparable accounting if they report similar accounting amounts when they experience similar economic outcomes. Specifically, the three measures are based on the similarity in firms' earnings-return relation, earnings-cash flow relation, and accruals-cash flow relation (e.g., De Franco et al. 2011; Barth et al. 2012). I assess the financial reporting quality of a firm using three measures: income smoothing measured as the firm-level correlation between accruals and cash flow, accrual quality based on the model in Dechow and Dichev (2002), and accrual quality as in Wysocki (2009).

My sample includes 1,861 mandatory IFRS adopters and I use a bifurcated sample period that straddles the mandatory IFRS adoption date of January 1, 2005: a pre-adoption period (2001–2004) in which the sample uses their home-country domestic accounting standards; and a post-adoption period (2005–2008) in which the sample uses IFRS. I perform univariate tests and estimate panel regressions that account for time-varying firm characteristics, industry fixed effects, and country fixed effects. In this analysis, I place each adopter into one of four distinct treatment groups based on the firm's change in both comparability and reporting quality around adoption. My research design draws inferences based on the *relative* magnitude of the IFRS effect across these four treatment groups.

The results indicate that firms with a large increase in comparability exhibit better economic outcomes to mandatory IFRS adoption, relative to all other firms. This result holds for tests of firm valuations, liquidity and analyst properties. In contrast, I find no evidence that a large increase in reporting quality predicts better liquidity or analyst outcomes. I do find that a large increase in reporting quality predicts a larger increase in Tobin's Q, but this result is restricted to those firms that also exhibit a large increase in comparability. These results are consistent with (i) comparability improvements having a first-order effect on the economic outcomes of IFRS adoption, and (ii) reporting quality improvements having only a marginal effect that is restricted to firms with a larger concurrent improvement in comparability.

I also perform several robustness tests that provide additional support for my primary inferences. First, I use alternative measures of reporting quality. Second, I test whether my results are sensitive to using alternative industry definitions when computing comparability. Third, I test whether my results are sensitive to using industry mean comparability instead of median comparability. Fourth, I repeat the analysis using semi-annual data to measure comparability. Fifth, I repeat the analysis using aggregate factors for comparability and reporting quality. Sixth, I exclude countries with strong enforcement or that initiated proactive financial statement reviews around the time of IFRS adoption to confirm that strong institutions are not driving my results. Seventh, I exclude countries with weak enforcement. Lastly, I exclude fiscal 2007 or 2008 to accommodate potential confounds relating to the financial crisis.

My final analysis is descriptive in nature and provides insight into the institutions that are associated with the effect of IFRS adoption on comparability and reporting quality. The results indicate a larger increase in comparability in countries with (i) more transparent pre-IFRS reporting, (ii) pre-IFRS domestic GAAP that were more similar to IFRS, (iii) increased international integration measured as growth in exports, and (iv) a civil law legal tradition. In contrast, I find little evidence that these institutions are able to explain variation in reporting quality changes around adoption.

This paper's two main contributions to the literature are as follows. First, existing studies focus on either economic outcomes of adoption (e.g., Daske et al. 2008; Byard et al. 2011; Christensen et al. 2013) or accounting outcomes of adoption (e.g., Christensen et al. 2008; Ahmed et al. 2013; Yip and Young 2012) independently. My study is the first to link the economic effects of mandatory IFRS adoption to multiple accounting effects of adoption. In doing so, I extend and bring together both of these literatures. Additionally, I contribute to the literature on the importance of firms' financial reporting characteristics on their information environment (e.g., Francis, Lafond, Olsson, and Schipper 2004; Lang et al. 2012).

Second, and more importantly, my study is the first to focus on and test the *relative* importance of two integral financial statement characteristics, comparability and reporting quality, on the economic effects of mandatory IFRS adoption in a multicountry setting. My study shows that improvements in cross-country comparability play a significant role for the economic effects of mandatory IFRS adoption. In contrast, I also show that improvements in reporting quality have only a marginal effect that largely depends on concurrent improvements in comparability. In doing so, I contribute to the literature on firm-level heterogeneity in the economic effects of IFRS adoption (e.g., Byard et al. 2011; Daske et al. 2013; Horton et al. 2013). Previously, this literature has focused on either voluntary IFRS adopters, firm-level variation in reporting incentives, or relatively small and specialized samples. I extend this literature in three ways. First, I examine mandatory IFRS adopters. Prior research suggests that mandatory and voluntary adopters exhibit different accounting outcomes to IFRS adoption. Second, I integrate firm-level variation in multiple accounting outcomes into tests of the economic effects of adoption; and, importantly, I differentiate between the roles played by those accounting outcomes. Third, I perform

large sample analysis on a broad cross section of countries that participated in the first implementation of mandated IFRS adoption.

The remainder of the paper is organized as follows. Section 2 provides background and develops my hypotheses. In section 3, I discuss my sample and research design. Section 4 describes the data and presents the results. Section 5 presents sensitivity/additional analysis. Section 6 concludes.

2. Background and hypothesis

Recent evidence is consistent with economic benefits of mandatory IFRS adoption. For example, mandatory adoption is associated with increases in firm valuations and stock liquidity and improvements in sell-side analysts' information environment (Daske et al. 2008; Byard et al. 2011; Horton et al. 2013). However, the source of these economic benefits is not yet well understood. The unique innovation and contribution in this paper is in (i) linking the accounting and economic effects of IFRS adoption together, and (ii) evaluating the relative importance of reporting quality and comparability as drivers of the economic effects.

The IASB Conceptual Framework lists (i) faithful representation, and (ii) comparability as fundamental and enhancing characteristics, respectively, of useful financial information. A perfectly faithful representation describes financial information that is "complete, neutral, and free from error" and one of the IASB's objectives is to maximize those qualities (IASCF 2001). In accounting research, faithful representation is often encapsulated by terms such as "reporting quality" and measured with empirical constructs such as the Dechow and Dichev (2002) accrual quality, Jones (1991) model abnormal accruals, and earnings smoothing (e.g., Leuz, Nanda, and Wysocki 2003; Barth et al. 2008; Ahmed et al. 2013). While reporting quality describes a single item or reporting entity, comparability describes a comparison of multiple items or entities. Comparability should enable users to "identify and understand similarities in, and differences among, items" (IASCF 2001) and to evaluate the relative financial position and performance of different entities.

There are at least five reasons why the 2005 mandatory adoption of IFRS is likely to lead to positive economic outcomes related to improvements in accounting comparability. First, practitioners (GAAP 2001), standard setters (FASB 2010), and regulators (SEC press release 2010–27 Feb. 24, 2010) expected adoption of IFRS to improve comparability. Consistent with this, recent research provides evidence of both anticipated and realized increases in comparability following IFRS adoption in 2005 (e.g., Armstrong, Barth, Jagolinzer, and Riedl 2010; DeFond, Hu, Hung, and Li 2011; Yip and Young 2012; Brochet, Jagolinzer, and Riedl 2013). Second, De Franco et al. (2011) report a negative relation between comparability and analyst forecast errors and dispersion, concluding that comparability increases analysts' ability to evaluate firm performance and increases the weight that analysts place on public (versus private) information. Higher-quality public information should reduce information asymmetry and increase liquidity through both a decrease in the relative level of informed trading (Brown and Hilligeist 2007; Brown, Hilligeist, and Lo 2004) and a reduction in the incentives for private information searches (Verrecchia 1982; Diamond 1985). Similar reasoning suggests that a decrease in information asymmetry due to more comparable accounting will, ceteris paribus, increase firms' valuations through a reduction in the cost of equity capital (Healy, Hutton, and Palepu 1999; Easley, Hvidkjaer, and O'Hara 2002, 2005). Third, an increase in comparability could increase foreigners' willingness to invest (Merton 1987), leading to economic benefits. Fourth, the FASB and IASB characterize comparability as a complement to reporting quality (i.e., enhancing characteristic), suggesting that improvements in comparability are likely to have the largest economic effects in those countries that already have relatively higher-quality financial reporting. Leuz et al. (2003) document that pre-IFRS reporting quality was

TABLE 1
Sample composition

Panel A: Sample selection

Non-financial firms from COMPUSTAT Global	9,231
Delete: Firms with missing years from 2001 to 2008	(5,198)
Delete: Firms that do not adopt IFRS in mandatory year	(985)
Delete: Firms with missing data to estimate CompAcct and ρ(Acc, CF)	(1,152)
Delete: Firms with missing data for Tobin's Q and associated control variables	(35)
Number of firms in sample	1,861

Panel B: Sample composition by country

	No. of firms	Percentage	Legal enforcement	Pro-active reviews	Transparency	GAAP-IFRS similarity	Civil law	Exports
Australia	184	9.9	Strong	0	23.5	14	0	26.1
Austria	13	0.7	Strong	0	0.0	6	1	14.1
Belgium	33	1.8	Weak	0	8.8	5	1	11.7
Czech Republic	1	0.1	Weak	0	–	6	1	21.8
Denmark	36	1.9	Strong	0	12.3	7	1	21.4
Finland	60	3.2	Strong	1	16.3	3	1	17.8
France	259	13.9	Weak	0	14.8	6	1	3.1
Germany	166	8.9	Strong	1	6.8	7	1	23.7
Greece	48	2.6	Weak	0	0.0	1	1	4.5
Hong Kong	79	4.2	Weak	0	8.8	15	0	–
Ireland	24	1.3	Weak	0	23.2	17	0	–0.5
Italy	110	5.9	Weak	0	3.5	6	1	13.0
Luxembourg	5	0.3	Strong	0	–	0	1	17.1
Norway	52	2.8	Strong	1	22.5	11	1	15.5
Philippines	18	1.0	Weak	0	19.5	8	1	–
Poland	25	1.3	Weak	0	–	6	1	6.4
Portugal	19	1.0	Weak	0	3.2	5	1	15.3
South Africa	76	4.1	Weak	0	22.7	18	0	34.8
Spain	61	3.3	Weak	0	9.7	2	1	2.3
Sweden	129	6.9	Strong	0	21.5	8	1	16.3
Switzerland	26	1.4	Strong	0	6.3	6	1	21.8
Netherlands	80	4.3	Strong	1	11.8	14	1	15.4
U.K.	357	19.2	Strong	1	21.3	17	0	15.8
Total	1,861	100						

Notes:

Panel A shows the sample selection and panel B shows the distribution of sample firms across countries. The sample consists of 1,861 firms that switched from their domestic accounting standards to IFRS beginning in fiscal year 2005.

already high, on average, in the EU. Lastly, information gains are likely to be concave in comparability (i.e., diminishing returns). Bae, Tan, and Welker (2008) document substantial cross-country heterogeneity in pre-IFRS domestic accounting standards (see Table 1). Thus, information (and economic) gains to comparability are likely to be largest as firms initially increase from relatively lower levels of comparability.

Prior research has also found evidence that higher reporting quality is associated with greater liquidity and higher firm valuations (Lang et al. 2012) and smaller analyst forecast errors and dispersion (Behn, Choi, and Kang 2008). However, there are at least three reasons why the 2005 mandatory adoption of IFRS may not lead to the expected relationship between economic outcomes and changes in reporting quality. First, IFRS adoption may not lead to an increase in reporting quality for a majority of firms. In particular, IFRS adoption may have little or no impact on reporting quality in countries that already exhibit relatively high quality. This setting exists in the European Union, which contains the majority of firms that adopted IFRS in 2005. While variation in reporting quality is present in the EU, Leuz et al. (2003) document that reporting quality was already high in the EU on average, relative to other countries in their sample. Second, prior literature provides evidence that countries' institutions can dominate accounting standards in determining reporting quality (Ball, Robin, and Wu 2003). Thus, reporting quality may simply be insensitive to the adoption of IFRS. Consistent with this possibility, recent papers have provided mixed evidence on how IFRS impacts reporting quality (Barth et al. 2008; Ahmed et al. 2013; Capkun et al. 2013). Third, even if IFRS adoption leads to an improvement in reporting quality at the margin, the economic gains to that improved quality are likely to be relatively small in a majority of the sample countries. Lang et al. (2012) show that the positive association between stock liquidity and financial reporting transparency is substantially weaker in countries that have strong institutions. While Lang et al. (2012) are silent on whether this attenuation reflects weaker demand for transparency when institutions are strong or diminishing returns to increasingly higher transparency, countries with strong institutions are also where I expect to see the highest levels of pre-IFRS transparency. Taken together, the above motivates the following hypothesis:

H1. *Improvements in cross-country accounting comparability have a greater positive effect on the valuation, liquidity, and analyst outcomes of mandatory IFRS adoption, relative to improvements in reporting quality.*

3. Sample selection and research design

Sample selection

I obtain accounting and market data from Global COMPUSTAT, and analyst forecast data from I/B/E/S. I use a bifurcated sample period that straddles the mandatory IFRS adoption date of January 1, 2005: a pre-adoption period (2001–2004) in which the treatment sample uses their home-country domestic accounting standards; and a post-adoption period (2005–2008) in which the sample uses IFRS.

I first select all non-financial public firms present on COMPUSTAT Global during 2001–2008. I exclude firms that are not present for the entire eight-year sample period and firms that COMPUSTAT codes as adopting IFRS in a year other than the mandatory fiscal year.[2] I also exclude firms with missing data to estimate *CompAcct* and $\rho(ACC, CF)$, the least restrictive measures of comparability and reporting quality (discussed below), for the entire sample period. Finally, I exclude firms with missing data to calculate Tobin's Q and its associated control variables (discussed below) for the entire sample period. My final constant sample contains 1,861 firms (14,888 firm-years) from 23 countries that

2. I restrict the potential sample to countries included in Daske et al. (2008) to increase the comparability of my results with theirs. I require a constant sample over the eight years in order to compute comparability in both the pre- and post-adoption periods. This requirement likely induces a survivor bias that might skew the sample towards larger firms. I note, however, that the median size of my sample firms is fairly modest at $190 million (U.S.). This is similar to other papers examining accounting outcomes of IFRS adoption (Barth et al. 2008; Christensen et al. 2008; Ahmed et al. 2013).

adopted IFRS for the first time when it became mandatory in 2005. Table 1, panel A provides greater detail about the sample selection. Panel B reports the sample composition by country.

Comparability measures

I use three related measures to assess cross-country accounting comparability. Although the measures differ in terms of their specific inputs and outputs, they all follow the same underlying logic of the FASB's and IASB's conceptual frameworks that two firms, *i* and *j*, have more comparable accounting if they report similar accounting amounts when they experience similar economic outcomes (and report different accounting amounts when they experience different economic events).

CompAcct

For my first measure I follow De Franco et al. (2011) who use an earnings-return regression to estimate a firm's mapping between economic events and accounting outcomes. De Franco et al. (2011) follow Ball, Kothari, and Robin (2000) and maintain that share returns measure economic events and use a time-series of 16 quarterly earnings-return observations. This design is consistent with Barth et al. (2012) who use returns as an economic outcome because they are a summary measure of "change in equity value that reflect investors' capital allocation decisions." Because of data constraints unique to an international setting, I use four years of annual data and estimate the following equation at the firm level for both the pre-IFRS (2001–2004) and post-IFRS (2005–2008) periods:[3]

$$Earnings_{it} = \alpha_i + \beta_i Return_{it} + \varepsilon_{it}. \quad (1)$$

The subscript *i* refers to firm *i* and the subscript *t* refers to year *t*. *Earnings* is earnings before extraordinary items scaled by market value of equity nine months prior to the fiscal year-end. *Return* is the buy-and-hold percentage stock return from nine months prior to the fiscal year-end to three months after the fiscal year-end. I require each firm to have available data for the entire sample period (2001–2008) and winsorize the top and bottom 1 percent of the distributions of *Earnings* and *Return* to reduce the influence of outliers. The coefficients (α_i and β_i) are the estimate of the accounting function for firm *i* during the four years included in each regression and reflect how economic events (i.e., *Return*) are reflected in accounting income (i.e., *Earnings*). Similarly, the accounting function for firm *j* is reflected by α_j and β_j, estimated using the earnings and return for firm *j*.

The similarity of the functions for firm *i* and firm *j* represents the comparability of their accounting. To estimate the similarity in functions, I predict firm *i*'s earnings using its own function and firm *j*'s function, but assuming the same economic income (i.e., *Return*). Specifically, I calculate:

$$E(Earnings)_{iit} = \hat{\alpha}_i + \hat{\beta}_i Return_{it}, \quad (2)$$

$$E(Earnings)_{ijt} = \hat{\alpha}_j + \hat{\beta}_j Return_{it}. \quad (3)$$

$E(Earnings)_{iit}$ is the predicted earnings of firm *i* using firm *i*'s function and firm *i*'s return in period *t*, and $E(Earnings)_{ijt}$ is the predicted earnings of firm *i* using firm *j*'s function and firm *i*'s return in period *t*. Using the same return to compute both predicted earnings holds constant economic income.

3. De Franco et al. (2011) estimate comparability among U.S. firms with readily available quarterly data. This data are generally unavailable for non-U.S. firms. In later analysis I show that computing comparability using semi-annual data does not change my inferences.

Next I compute the accounting comparability between firm i and firm j ($Comp_{ij}$) in both the pre-IFRS and post-IFRS period as the negative value of the average absolute difference between the predicted earnings using firm i's and firm j's accounting functions. I require that firms i and j be in the same two-digit SIC code, share the same fiscal year-end date, and be from different countries:[4]

$$COMP_{ij} = -1/4 \times \sum_{t-3}^{t} |\mathrm{E}(Earnings)_{iit} - \mathrm{E}(Earnings)_{ijt}|. \quad (4)$$

Larger (i.e., less negative) values for $COMP1_{ij}$ indicate greater cross-country comparability of firm i with firm j. Finally, I compute a firm level measure of accounting comparability for both the pre-IFRS and post-IFRS periods by aggregating over all of the firm i – firm j combinations for a given firm i. Specifically, I compute $CompAcct_i$ as the median $COMP_{ij}$ for all firms j with firm i. I use this firm level measure in all analysis.

CompCF

My second measure of comparability does not rely on market data and uses a regression of earnings on subsequent year's cash flow to estimate a firm's mapping between economic outcomes and accounting amounts. I follow Barth et al. (2012) and use subsequent year's cash flow as an economic outcome because "forecasting future cash flow plays a key role in economic models of equity value" and should be informative for capital allocation decisions. I use four years of annual data and estimate the following equation for both the pre-IFRS (2001–2004) and post-IFRS (2005–2008) periods:

$$Earnings_{it} = \alpha_i + \beta_i CF_{it+1} + \varepsilon_{it}. \quad (5)$$

CF_{it+1} is cash flow (computed using the balance sheet) in year $t + 1$ scaled by market value of equity three months after fiscal year-end t, for firm i. $Earnings_{it}$ is earnings before extraordinary items scaled by market value of equity nine months prior to the fiscal year-end, for firm i in year t. I use equation (5) and the procedure described above to compute $CompCF_i$.

CompAccrual

The two comparability measures above use returns and subsequent cash flows to measure economic events based on the financial reporting objective of providing information that is useful to investors in making their capital allocation decisions. In contrast, my third measure of comparability uses contemporaneous cash flows and accruals to proxy for economic events and accounting amounts, respectively. The association between contemporaneous cash flows and accruals should be informative about both the noise reduction role of accruals (Dechow 1994) and the gain and loss recognition role of accruals (Ball and Shivakumar 2006). Again, I use four years of annual data and estimate the following equation for both the pre-IFRS (2001–2004) and post-IFRS (2005–2008) periods:

$$ACC_{it} = \alpha_i + \beta_i CF_{it} + \varepsilon_{it}. \quad (6)$$

ACC_{it} is accruals (computed using the balance sheet) scaled by market value of equity nine months prior to the fiscal year-end. CF_{it} is cash flow (computed using the balance sheet) scaled by market value of equity nine months prior to the fiscal year-end. I use equation (6) and the procedure described above to compute $CompAccrual_i$.

4. I follow De Franco et al. (2011) and exclude holding firms and limited partnerships, which I identify based on a word search of firms' COMPUSTAT name (e.g., Holding, Group, LP, etc.)

I use multiple measures of comparability because each has unique strengths and weaknesses. First, *CompAcct* uses stock returns which is an intuitive summary measure for changes in equity value, reflects underlying firm economics, and is commonly used in accounting research. However, returns can also reflect cross-country differences (or changes) in cost of capital and the efficiency of price formation, which will not necessarily be reflected in earnings. Thus, it is possible that *CompAcct* is confounded by firms' similarities (and differences) beyond accounting. Second, *CompCF* uses subsequent cash flows which have the advantage of not being market-driven and directly impacted by cross-country differences in cost of capital and price formation. Thus, potential confounds are limited. However, one-year-ahead cash flows only convey information about a limited time horizon. In contrast, returns (arguably) reflect investors' expectations for cash flows over a much longer horizon. Third, *CompAccrual* uses contemporaneous cash flows and accruals. Accrual accounting is at the foundation of financial reporting and the association between accruals and cash flows is widely used as a summary measure to compare and contrast firms' financial reporting. However, as noted above, the accrual–cash flow relationship is a complex one that simultaneously reflects multiple roles of accruals. Thus, it is possible that the design of equation (6), which is required by my reliance on annual data, is an oversimplification.

Reporting quality measures

I use two measures of reporting quality that prior research indicates were impacted by mandatory IFRS adoption (e.g., Christensen, Lee, and Walker 2007; Chen, Tang, Jiang, and Lin 2010; Ahmed et al. 2013) and a third related measure proposed by Wysocki (2009). My primary measure of reporting quality, $\rho(ACC, CF)$, is the firm-level correlation between accruals and operating cash flows, both scaled by beginning assets. As firms increase accruals to create reserves during periods of high cash flows, and draw down those reserves during periods of low cash flows, accruals and cash flows will be negatively correlated. Moreover, Barth et al. (2012) conjecture that higher levels of income smoothing following mandatory IFRS adoption (Ahmed et al. 2013) are a potential source of increased comparability following adoption. I calculate $\rho(ACC, CF)$ using four years of annual data in both the pre-IFRS and post-IFRS periods. Larger (i.e., less negative) values of $\rho(ACC, CF)$ indicate less income smoothing and higher reporting quality.

A second measure of reporting quality, *AQ1*, is the standard deviation of residuals from the pooled regression of accruals on prior year, current year, and subsequent year cash flows (Dechow and Dichev 2002; Francis et al. 2004) during both the pre-IFRS and post-IFRS periods:

$$ACC_{it} = \alpha + \beta_1 CF_{it-1} + \beta_2 CF_{it} + \beta_3 CF_{it+1} + \varepsilon_{it}. \quad (7)$$

ACC is annual accruals and *CF* is annual operating cash flows, both scaled by beginning assets. I calculate the standard deviation of the residuals using four years in both the pre-IFRS and post-IFRS periods. I multiply *AQ1* by -1, such that larger (i.e., less negative) values of *AQ1* indicate higher reporting quality.

A third measure of reporting quality is based on Wysocki (2009) who conjectures that the Dechow and Dichev (2002) model will assign higher accrual quality to firms that systematically engage in opportunistic earnings management and smoothing activities compared to firms that do not. This follows from the negative correlation between accruals and cash flows embedded in the model. I follow Wysocki (2009) and calculate an alternative measure of accrual quality, *AQ2*, equal to the ratio of the standard deviation of residuals from equation (7) and the standard deviation of residuals from a version of

equation (7) that includes only CF_{it} as an explanatory variable. Larger (i.e., more positive) values of *AQ2* indicate higher reporting quality.

It is important to note that the measures of comparability and reporting quality employed in this paper necessarily overlap in the empirical relations upon which they are constructed. For example, *CompAccrual* and *AQ1* both use the cash flow-accrual relation. However, the comparability measures all reflect the similarity in the given relation between a firm and its peers. In this sense they differ fundamentally from the measures of reporting quality that are based only on the relation itself. For example, *CompAccrual* is based on the similarity in the mapping from cash flows to accruals between a firm and its peers. In contrast, *AQ1* is based on the firm's own consistency in the mapping from cash flows to accruals.

Dependent variables

I measure firm value using Tobin's Q (*Q*). I use three liquidity measures. *ILLIQUIDITY* is the yearly median of the Amihud (2002) price impact measure and captures the ability of investors to trade in a stock without affecting its price. *TRADINGCOST* measures the yearly average roundtrip transaction cost for trading in a firm's stock (Lesmond et al. 1999). *BIDASK* is an estimate of the yearly average bid-ask spread based on the negative serial dependence in successive observed market price changes induced by trading costs (Roll 1984). Lesmond (2005) finds that price-based liquidity measures proposed by Lesmond et al. (1999) and Roll (1984) perform well at representing cross-country liquidity effects, while the liquidity estimate of Amihud (2002) performs well at measuring within-country liquidity effects. The three measures are decreasing in liquidity. Analyst forecast error (*AFE*) is the absolute difference in the mean annual EPS forecast and actual EPS. Analyst forecast dispersion (*AFD*) is the standard deviation of annual EPS forecasts. I scale *AFE* and *AFD* by year-end price and multiply by 100. (See Appendix 1 for variable definitions and Appendix 2 for computational details of the liquidity measures.)

Test design

I classify firms with a change in comparability above (below) the sample median as "High Comp" ("Low Comp") adopters, and firms with a change in reporting quality above (below) the sample median as "High RQ" ("Low RQ") adopters.[5]

1. High Comp-High RQ group [ΔComparability $>$ median and $\Delta\rho(ACC, CF) >$ median],
2. High Comp-Low RQ group [ΔComparability $>$ median and $\Delta\rho(ACC, CF) \leq$ median],
3. Low Comp-High RQ group [ΔComparability $\leq$ median and $\Delta\rho(ACC, CF) >$ median], and
4. Low Comp-Low RQ group [ΔComparability $\leq$ median and $\Delta\rho(ACC, CF) \leq$ median].

My regression design is based on the following model:

$$DepVar = \alpha + \beta_1 IFRS + \beta_j Controls + CountryFE + IndustryFE + \varepsilon. \quad (8)$$

DepVar refers to the six economic effects I test. *IFRS* is a binary variable coded one for the post-adoption period (i.e., 2005–2008), and zero otherwise. I adapt equation (8) and permit the regression intercept (α) and the coefficient on *IFRS* (β_1) to vary across the reporting quality and comparability subsamples. In particular, I estimate the following model over the period 2001 to 2008:

5. Using the sample medians as the cutoff points has the desirable effect of generating "High" and "Low" subsamples that exhibit an average increase and decrease, respectively, in both comparability and reporting quality (Table 3). Additionally, using median cutoffs generates balanced subsamples. Using zero as the cutoff leads to similar inferences. I form partitions using the accrual quality measures, *AQ1* or *AQ2*, as the measure of reporting quality in later additional analysis.

$$\begin{aligned} DepVar = {} & \alpha + \beta_1 IFRS \times D_{HCOMP-HRQ} + \beta_2 IFRS \times D_{HCOMP-LRQ} \\ & + \beta_3 IFRS \times D_{LCOMP-HRQ} + \beta_4 IFRS \times D_{LCOMP-LRQit} + \beta_5 D_{HCOMP-HRQ} \\ & + \beta_6 D_{HCOMP-LRQ} + \beta_7 D_{LCOMP-HRQ} + \beta_j Controls_{it} + CountryFE \\ & + IndustryFE + \varepsilon_{it}. \end{aligned} \tag{9}$$

$D_{HCOMP\text{-}HRQ}$ is a dummy variable coded one if a treatment firm is from the High Comp-High RQ group; similarly, $D_{HCOMP\text{-}LRQ}$, $D_{LCOMP\text{-}HRQ}$ and, $D_{LCOMP\text{-}LRQ}$ are dummy variables indicating a treatment firm is from the High Comp-Low RQ, Low Comp-High RQ, and Low Comp-Low RQ groups, respectively. I include both country and two-digit SIC industry fixed effects. All continuous variables are winsorized at the bottom and top 1 percent of their distributions and all test statistics are based on robust standard errors clustered at the country level. My research design draws inferences based on comparisons of coefficients. For example, to test if a large increase in comparability predicts better valuation outcomes for High RQ and Low RQ firms, I test ($\beta_1 > \beta_3$) and ($\beta_2 > \beta_4$) respectively. Similarly, to test if a large increase in reporting quality predicts better valuation outcomes for High Comp and Low Comp firms, I test ($\beta_1 > \beta_2$) and ($\beta_3 > \beta_4$) respectively. Finally, to test H1 that the effect of comparability is larger than the effect of reporting quality, I test ($\beta_2 > \beta_3$).[6] The signs of the tests are reversed when liquidity and analyst measures are the dependent variable.

I include controls that are relevant to each dependent variable. For tests of valuation effects I control for total assets (*ASSETS*), leverage (*LEV*) and asset growth (*ASSET_GR*). For tests of liquidity effects I control for one-year lagged market value of equity (*MVE*), share turnover (*TURNOVER*) and return variability (*RET_VAR*). For tests of analyst effects I control for market value of equity (*MVE*) book-to-market (*BTM*), analyst coverage (*COVERAGE*), and forecast horizon (*DAYS*). My final three control variables account for the similarity between firms with respect to size (*ASSET_RATIO*), leverage (*LEV_RATIO*), and growth options (*MTB_RATIO*). I include these variables to control for the possibility that both a firm's information environment and accounting properties (De Franco et al. 2011) are driven by similarities with industry peers. Given that the measures are increasing in the similarity between a firm and its industry peers, I expect the coefficient on *ASSET_RATIO*, *LEV_RATIO* and *BTM_RATIO* to be positive when *Q* is the dependent variable and negative in all other cases. (See Appendix 1 for variable definitions.)

4. Sample description and results

Estimation of comparability measures

Table 2 reports descriptive statistics related to the estimation of the comparability measures. Panel A describes the variables used to estimate equations (1), (5), and (6). Panel B presents descriptive statistics for the 3,722 estimations of equation (1) used to compute *CompAcct*. I estimate the equation twice for each firm, using four firm-years from either the pre- or post-IFRS periods. The median β_1 coefficient is 0.03, indicating the expected positive relation between returns and earnings, and the median R^2 is 42 percent. Using four years of quarterly data, De Franco et al. (2011) estimate a median β_1 coefficient and R^2 of 0.01 and 7 percent, respectively. Thus, my use of annual data appears to generate sufficient explanatory power and to identify a larger, average, association between returns and earnings. Panel C reports the estimations of equation (5) used to compute *CompCF*.

6. This test is a reduced form of the following two tests of coefficients (i) ($IFRS \times D_{HCOMP\text{-}LRQ} - IFRS \times D_{LCOMP\text{-}LRQ}$) = ($IFRS \times D_{LCOMP\text{-}HRQ} - IFRS \times D_{LCOMP\text{-}LRQ}$), and (ii) ($IFRS \times D_{HCOMP\text{-}HRQ} - IFRS \times D_{LCOMP\text{-}HRQ}$) = ($IFRS \times D_{HCOMP\text{-}HRQ} - IFRS \times D_{HCOMP\text{-}LRQ}$).

TABLE 2
Comparability measures

Panel A: Descriptive statistics for variables used in regressions to estimate comparability measures

Variable	*N*	Mean	SD	10th percent	Median	90th percent
$Earnings_t$	14,888	0.01	0.23	−0.17	0.05	0.15
$Return_t$	14,888	0.11	0.56	−0.53	0.03	0.77
ACC_t	14,888	−0.11	0.27	−0.34	−0.05	0.06
CF_t	14,888	0.12	0.31	−0.12	0.09	0.37
CF_{t+1}	14,288	0.13	0.33	−0.11	0.10	0.41

Panel B: Descriptive statistics from estimations of *CompAcct* ($Earnings = \alpha + \beta_1\ Return + \varepsilon$)

Variable	*N*	Mean	SD	10th percent	Median	90th percent
Intercept (α)	3,722	0.00	0.18	−0.17	0.05	0.11
β_1 *coefficient*	3,722	0.05	0.27	−0.11	0.03	0.23
Regression R^2 (%)	3,722	44.10	32.02	1.19	42.05	89.22

Panel C: Descriptive statistics from estimations of *CompCF* ($Earnings = \alpha + \beta_1\ CF_{t+1} + \varepsilon$)

Variable	*N*	Mean	SD	10th percent	Median	90th percent
Intercept (α)	3,572	0.03	0.19	−0.16	0.06	0.17
β_1 *coefficient*	3,572	−0.05	0.66	−0.50	0.03	0.40
Regression R^2 (%)	3,572	34.15	30.64	0.98	25.22	83.82

Panel D: Descriptive statistics from estimations of *CompAccrual* ($ACC = \alpha + \beta_1\ CF + \varepsilon$)

Variable	*N*	Mean	SD	10th percent	Median	90th percent
Intercept (α)	3,722	−0.01	0.16	−0.14	0.02	0.10
β_1 *coefficient*	3,722	−0.66	0.62	−1.17	−0.73	0.01
Regression R^2 (%)	3,722	70.70	31.81	12.76	85.67	99.13

Notes:

This table reports descriptive statistics related to the estimation of three comparability measures (*CompAcct*, *CompCF*, and *CompAccrual*). *Earnings* is earnings before extraordinary items scaled by market value of equity nine months prior to the fiscal year-end. *Return* is the buy-and-hold percentage stock return from nine months prior to the fiscal year-end to three months after the fiscal year-end. *ACC* is accruals scaled by market value of equity three months after fiscal year-end. *CF* is cash flow scaled by market value of equity nine months prior to the fiscal year-end. Each regression is estimated for each firm in both the pre- and post-IFRS periods using four years of data.

The median R^2 is 25 percent and the median β_1 coefficient is 0.03. Panel D reports the estimations of equation (6) used to compute *CompAccrual*. The median R^2 is 86 percent and, expectedly, the median β_1 coefficient is significantly negative, −0.73.

Sample description

Table 3, panel A reports descriptive statistics for dependent and control variables for the pooled sample. The mean (median) *Q* is 1.55 (1.27). For the liquidity measures, the mean (median) *ILLIQUIDITY* of 2.13 (0.10) indicates that a $1,000 trade moves stock price by

TABLE 3
Descriptive statistics

Panel A: Dependent and control variables

	N	Mean	SD	10%	25%	Median	75%	90%
Q	14,888	1.55	0.95	0.82	1.00	1.27	1.73	2.54
ILLIQUIDITY	13,992	2.13	6.87	0.00	0.01	0.10	0.84	4.42
TRADINGCOST	13,720	2.59	1.61	1.20	1.53	2.12	3.12	4.55
BIDASK	13,984	1.94	1.81	0.51	0.85	1.38	2.34	3.94
AFE	6,528	2.49%	6.34%	0.05%	0.18%	0.53%	1.67%	5.37%
AFD	5,720	1.16%	1.95%	0.12%	0.24%	0.51%	1.13%	2.54%
ASSET_RATIO	14,888	0.22	0.13	0.04	0.11	0.22	0.32	0.38
LEV_RATIO	14,888	0.81	0.10	0.68	0.77	0.83	0.87	0.91
MTB_RATIO	14,888	0.47	0.21	0.24	0.38	0.52	0.60	0.66
ASSETS	14,888	3,220	14,181	26	77	277	1,133	4,965
LEV	14,888	0.21	0.17	0.00	0.06	0.20	0.33	0.45
ASSET_GR	14,888	0.11	0.35	−0.16	−0.05	0.05	0.17	0.38
MVE	13,992	2,058	7,006	16	49	190	858	3,825
RET_VAR	13,992	0.13	0.10	0.05	0.07	0.10	0.15	0.24
TURNOVER	13,992	0.72	1.04	0.06	0.17	0.42	0.88	1.60
BTM	6,528	0.65	0.54	0.18	0.31	0.50	0.80	1.26
COVERAGE	6,528	1.69	0.94	0.00	1.10	1.79	2.40	2.89
DAYS	6,528	2.64	0.78	1.61	2.08	2.71	3.22	3.33

Panel B: Experimental variables: pre- and post-mandatory-adoption windows

	Firms	Pre-period (a)	Post-period (b)	(b) − (a)	*p*-value for test of: (b) − (a) = 0
CompAcct Full Sample	1,861	−0.149	−0.095	0.054	<0.01
Low Comp	930	−0.083	−0.112	−0.029	<0.01
High Comp	931	−0.221	−0.078	0.143	<0.01
CompCF Full Sample	1,786	−0.156	−0.099	0.057	0.01
Low Comp	893	−0.092	−0.115	−0.023	<0.01
High Comp	893	−0.221	−0.082	0.139	<0.01
CompAccrual Full Sample	1,861	−0.140	−0.092	0.048	0.01
Low Comp	930	−0.079	−0.107	−0.028	<0.01
High Comp	931	−0.201	−0.077	0.124	<0.01
ρ(Acc, CF) Full Sample	1,861	−0.653	−0.719	−0.066	<0.01
Low RQ	930	−0.418	−0.861	−0.443	<0.01
High RQ	931	−0.888	−0.577	0.311	<0.01
AQ1 Full Sample	1,700	−0.049	−0.050	−0.001	0.71
Low RQ	850	−0.033	−0.065	−0.032	<0.01
High RQ	850	−0.067	−0.036	0.031	<0.01
AQ2 Full Sample	1,700	1.217	1.244	0.027	0.08
Low RQ	850	1.500	1.038	−0.462	<0.01
High RQ	850	0.976	1.456	0.480	<0.01

(The table is continued on the next page.)

TABLE 3 (continued)

Panel C: Frequencies for High (Low) Comp and High (Low) RQ partitions

	CompAcct		*CompCF*		*CompAccrual*	
	Freq.	Percentage	Freq.	Percentage	Freq.	Percentage
High COMP-High RQ	396	21	394	22	443	24
High COMP-Low RQ	535	29	499	28	488	26
Low COMP-High RQ	535	29	503	28	488	26
Low COMP-Low RQ	395	21	390	22	442	24

Panel D: Comparability and reporting quality correlation matrix

		(i)	(ii)	(iii)	(iv)	(v)	(vi)
(i)	*CompAcct*	–	0.95	0.89	−0.23	0.39	0.14
(ii)	*CompCF*	0.92	–	0.90	−0.21	0.37	0.12
(iii)	*CompAccrual*	0.85	0.89	–	−0.19	0.38	0.10
(iv)	*ρ(Acc, CF)*	−0.33	−0.26	−0.17	–	−0.31	−0.31
(v)	*AQ1*	0.43	0.42	0.48	−0.15	–	0.24
(vi)	*AQ2*	0.23	0.19	0.14	−0.49	0.27	–

Notes:

Panel A provides pooled descriptive statistics for the dependent and control variables. All variable definitions are in Appendix 1. The maximum sample consists of 1,861 firms (14,888 firm-years) that switched from their domestic accounting standards to IFRS for fiscal years beginning on or after January 1, 2005. Panel B provides a comparison of the three comparability variables (*CompAcct*, *CompCF*, and *CompAccrual*) and three reporting quality variables (*ρ(ACC, CF)*, *AQ1*, and *AQ2*) between the pre-adoption (2001–2004) and post-adoption (2005–2008) windows. See section 3 for an extended discussion of how I calculate these variables. I include tests for the full sample, Low subgroups, and High subgroups. All variables are winsorized at the 1 percent and 99 percent levels to mitigate the influence of outliers. Panel C presents frequencies, and percent of total, for the partitions I use in the analysis. High Comp and Low Comp indicate a pre-post IFRS change in comparability above and below the sample median, respectively. High RQ and Low RQ indicate a pre-post IFRS change in reporting quality above and below the sample median, respectively. I measure reporting quality using *ρ(ACC, CF)*, my proxy for income smoothing, consistent with my primary analysis. Panel D reports a correlation matrix of the comparability and reporting quality variables. Pearson (Spearman) correlations are below (above) the diagonal.

0.21 percent (0.01 percent), the mean (median) *TRADINGCOST* is 2.59 percent (2.12 percent) of price and mean (median) *BIDASK* is 1.94 percent (1.38 percent). These values are generally smaller than those obtained by Daske et al. (2008) but fall within plausible ranges. The mean (median) forecast error is 2.49 percent (0.53 percent) of price and the mean (median) forecast dispersion is 1.16 percent (0.51 percent) of price. These values are similar to those reported in Byard et al. (2011).

Table 3, panel B describes how the comparability and reporting quality variables change between the pre- and post-IFRS periods for the full sample and High and Low subsamples. There are a few noteworthy results. First, the average firm exhibits an increase in comparability following adoption for each measure, consistent with the findings in Yip and Young (2012). In contrast, the average firm exhibits a decrease, small increase,

or no change in reporting quality depending on the measure. Second, *CompAcct* indicates that average annual cross-country comparability increased from of about −14.9 percent to about −9.5 percent following IFRS adoption. As a comparison, De Franco et al. (2011) report mean quarterly comparability of about −2.5 percent, which equates to mean annual comparability of about −10 percent. Thus, cross-country comparability under IFRS appears roughly equivalent, on average, to within-country comparability under U.S. GAAP. Third, High Comp (Low Comp) firms exhibit a large increase (small decrease) in comparability. In contrast, the magnitude of the change in reporting quality is generally very similar between Low RQ and High RQ firms. All of the above provide support for the intuition in section 2 that comparability is likely to play an important role in explaining the impact of IFRS adoption on economic outcomes.

Panel C reports frequencies for the partitions I use in my primary analysis. There are two primary takeaways. First, my identification strategy results in treatment group sizes that allow for meaningful comparisons. For *CompAcct*, the percentage of adopters in the High Comp-High RQ, High Comp-Low RQ, Low Comp-High RQ, and Low Comp-Low RQ groups are 21 percent, 29 percent, 29 percent, and 21 percent, respectively. I find similar distributions for the other two comparability measures. Second, the frequencies indicate that reporting quality and comparability are distinct constructs, with a large proportion of firms appearing in the off diagonal groups (i.e., High Comp-Low RQ and Low Comp-High RQ).

Panel D reports a correlation matrix for the comparability and reporting quality variables. The correlations among the comparability variables range from 0.85 to 0.95, indicating that the three measures are all related to the same underlying construct. In contrast, the correlations among the reporting quality variables range from −0.31 to 0.27, indicating that the three measures reflect divergent aspects of reporting quality. In particular, *AQ1* and *AQ2* are positively correlated with each other, but negatively correlated with $\rho(ACC, CF)$. This might indicate that both *AQ1* and *AQ2* are positively influenced by the presence of income smoothing. Finally, the cross correlations indicate that comparability is negatively correlated with $\rho(ACC, CF)$ and positively correlated with *AQ1* and *AQ2*. This is consistent with Barth et al.'s (2012) conjecture that comparability and income smoothing may be related.

Univariate results

Table 4 reports the results of univariate tests of the economic effects of mandatory IFRS adoption, conditional on changes in comparability and reporting quality, independently. For each firm, I compute the change in the average economic outcome variable (e.g., Tobin's Q) between the pre- and post-period. Using each of the three comparability measures, I next compute the median change for Low Comp and High Comp firms, respectively, and test for a significant difference between the Low and High groups. I perform identical tests conditional on the three reporting quality measures.

The results consistently show that firms with a large increase in comparability exhibit better economic outcomes following IFRS adoption, relative to other firms. This result holds across the three comparability measures and six economic outcomes. In contrast, the results for reporting quality are mixed. I find no evidence that changes in *Q* or *ILLIQUIDITY* vary with reporting quality. Changes in reporting quality are generally associated with the other four outcome variables, although the direction of the effect is ambiguous. Next, I present results for the multivariate tests which are designed to differentiate between the reporting quality and comparability effects.

TABLE 4
Univariate tests of economic effects of mandatory IFRS adoption and changes in comparability or reporting quality

	Split by changes in comparability variables				Split by changes in reporting quality variables		
	Low (a)	High (b)	(b) − (a)		Low (a)	High (b)	(b) − (a)
ΔQ				ΔQ			
CompAcct	0.054	0.129	0.075*	*ρ(ACC, CF)*	0.083	0.087	0.004
CompCF	0.041	0.152	0.111*	*AQ1*	0.087	0.088	0.001
CompAccrual	0.026	0.164	0.138*	*AQ2*	0.083	0.093	0.010
Δ*ILLIQUIDITY*				Δ*ILLIQUIDITY*			
CompAcct	−0.005	−0.094	−0.089*	*ρ(ACC, CF)*	−0.027	−0.021	0.006
CompCF	−0.004	−0.124	−0.120*	*AQ1*	−0.017	−0.028	−0.011
CompAccrual	−0.003	−0.130	−0.127*	*AQ2*	−0.026	−0.021	0.005
Δ*TRADINGCOST*				Δ*TRADINGCOST*			
CompAcct	0.304	−0.220	−0.524*	*ρ(ACC, CF)*	−0.046	0.213	0.259*
CompCF	0.280	−0.180	−0.460*	*AQ1*	0.214	−0.026	−0.240*
CompAccrual	0.260	−0.160	−0.420*	*AQ2*	0.150	0.071	−0.079*
Δ*BIDASK*				Δ*BIDASK*			
CompAcct	0.124	−0.249	−0.373*	*ρ(ACC, CF)*	−0.095	0.029	0.124*
CompCF	0.113	−0.227	−0.340*	*AQ1*	0.074	−0.100	−0.174*
CompAccrual	−0.117	−0.225	−0.108*	*AQ2*	0.005	−0.039	−0.044
Δ*AFE*				Δ*AFE*			
CompAcct	−0.109	−0.629	−0.520*	*ρ(ACC, CF)*	−0.443	−0.122	0.321*
CompCF	−0.111	−0.700	−0.589*	*AQ1*	−0.137	−0.419	−0.282*
CompAccrual	−0.080	−0.700	−0.620*	*AQ2*	−0.176	−0.365	−0.189*
Δ*AFD*				Δ*AFD*			
CompAcct	−0.046	−0.293	−0.247*	*ρ(ACC, CF)*	−0.197	−0.029	0.168*
CompCF	−0.021	−0.353	−0.332*	*AQ1*	−0.052	−0.192	−0.140*
CompAccrual	−0.028	−0.297	−0.269*	*AQ2*	−0.063	−0.143	−0.080*

Notes:

This table reports median changes in the outcome variables between the pre- and post-IFRS periods. For each outcome variable, I test for a difference between Low Comp and High Comp subsamples. For each outcome variable, I also test for a difference between Low RQ and High RQ subsamples. I test for differences across groups using Wilcoxon signed rank tests.

* indicates significance at the 10 percent level. All variable definitions are in Appendix 1.

Multivariate results

For each outcome variable I estimate equation (9) to compare the IFRS effect across treatment subsamples that I form using the 2 × 2 identification scheme.[7] I report OLS coefficient estimates and *t*-statistics (in parentheses) clustered by country, *p*-values for tests of the rela-

7. In my primary analysis, I use income smoothing to measure reporting quality. I perform tests with the other two measures of reporting quality, *AQ1*and *AQ2*, in additional analysis.

tive effect size between High and Low groups, and *p*-values testing H1 that the comparability effect is relatively larger than the reporting quality effect.[8]

Analysis of valuation effects

Table 5 reports the results from multiple regression analyses of equation (9) with Q as the dependent variable. Focusing on High Comp adopters, the coefficients on $IFRS \times D_{HCOMP\text{-}HRQ}$ and $IFRS \times D_{HCOMP\text{-}LRQ}$ are all positive and significant ($p < 0.01$). Focusing on Low Comp adopters, the coefficients on $IFRS \times D_{LCOMP\text{-}HRQ}$ and $IFRS \times D_{LCOMP\text{-}LRQ}$ are generally insignificant across all three measures of comparability. These results suggest a difference in the valuation outcomes of adoption, conditional on changes in comparability. To test this formally, I test for differences across the coefficients and confirm that High Comp adopters exhibit better valuation outcomes than Low Comp adopters ($p < 0.02$). This result holds regardless of how reporting quality changes. In contrast, High RQ adopters only exhibit better valuation outcomes when paired with a concurrent increase in comparability ($p < 0.01$). To complete the valuation analysis, I test the relative magnitudes of the comparability and reporting quality effects and find that the comparability effect is larger for each of the three measures ($p < 0.02$). As a whole, these results indicate that improvements in comparability are a primary mechanism behind the effect of IFRS adoption on firm value.

Analysis of liquidity effects

Table 6 reports the results of nine regressions using the three liquidity measures as the dependent variable. The coefficients on $IFRS \times D_{HCOMP\text{-}HRQ}$ and $IFRS \times D_{HCOMP\text{-}LRQ}$ are generally insignificant. In contrast, the coefficients on the interaction of $IFRS \times D_{LCOMP\text{-}HRQ}$ and $IFRS \times D_{LCOMP\text{-}LRQ}$ are significantly positive in 16 of 18 cases ($p < 0.10$). As with Q above, these results suggest a difference in liquidity outcomes of adoption, conditional on changes in comparability. Next, I test for differences across the coefficients and confirm that High Comp adopters exhibit better valuation outcomes than Low Comp adopters for all liquidity and comparability measures ($p < 0.02$) (recall that lower levels of the dependent variables indicate greater liquidity). In contrast, I find no evidence that High RQ adopters exhibit better liquidity outcomes than Low RQ adopters. To complete the liquidity analysis, I test the relative magnitudes of the comparability and reporting quality effects and find that the comparability effect is larger for all test specifications ($p < 0.01$). As a whole, these results indicate that improvements in comparability are a primary mechanism behind the effect of IFRS adoption on liquidity.

Analysis of analyst forecast effects

Table 7 reports the results using forecast errors (*AFE*) and forecast dispersion (*AFD*) as the dependent variables. For High Comp adopters, the estimated coefficients on $IFRS \times$

8. My research design is not able to provide insights into the absolute effect of comparability and reporting quality on the economic outcomes of IFRS adoption. For example, a significant coefficient on a given *IFRS* interaction term does not indicate a significant economic effect of IFRS adoption for that group. Such an interpretation would require the identification and use of a benchmark sample that provides a credible counterfactual. The current counterfactual is zero change in the outcome variable, which is not likely to be correct given the macroeconomic changes occurring over the sample period. Potential benchmarks include non-IFRS countries and previous voluntary adopters from the sample countries. However, both of these alternatives present severe challenges and would be imperfect, at best. In any event, the use of a benchmark sample is unnecessary to address my research question. I thank the editor and an anonymous referee for suggesting this design choice.

TABLE 5
Tobin's Q effects of mandatory IFRS adoption and changes in comparability and reporting quality

	CompAcct (1)	*CompCF* (2)	*CompAccrual* (3)
$IFRS \times D_{HCOMP\text{-}HRQ}$	0.241***	0.284***	0.281***
	(5.82)	(4.95)	(6.10)
$IFRS \times D_{HCOMP\text{-}LRQ}$	0.148***	0.168***	0.201***
	(3.30)	(3.71)	(4.38)
$IFRS \times D_{LCOMP\text{-}HRQ}$	0.071*	0.033	0.020
	(1.88)	(1.03)	(0.70)
$IFRS \times D_{LCOMP\text{-}LRQ}$	0.051	0.040	0.005
	(1.24)	(0.78)	(0.14)
$D_{HCOMP\text{-}HRQ}$	−0.075	−0.115**	−0.143***
	(−1.54)	(−2.70)	(−3.33)
$D_{HCOMP\text{-}LRQ}$	−0.115**	−0.165***	−0.184***
	(−2.27)	(−4.48)	(−5.35)
$D_{LCOMP\text{-}HRQ}$	−0.005	−0.016	0.007
	(−0.15)	(−0.42)	(0.25)
ASSET_RATIO	−0.727***	−0.686***	−0.730***
	(−6.19)	(−6.28)	(−6.14)
LEV_RATIO	−0.567***	−0.544***	−0.568***
	(−3.88)	(−3.66)	(−3.91)
MTB_RATIO	−1.228***	−1.257***	−1.227***
	(−4.91)	(−4.93)	(−4.88)
Ln(ASSETS)	−0.016**	−0.017*	−0.017**
	(−2.10)	(−1.92)	(−2.18)
LEV	−1.173***	−1.181***	−1.154***
	(−7.70)	(−7.45)	(−7.69)
ASSET_GR	0.318***	0.318***	0.312***
	(8.82)	(7.37)	(8.34)
Fixed Effects: Country, Industry	Yes	Yes	Yes
Test for Differences across Coefficients (*p*-values):			
Increase versus Decrease in Comparability			
$IFRS \times D_{HCOMP\text{-}HRQ} > IFRS \times D_{LCOMP\text{-}HRQ}$	<0.01	<0.01	<0.01
$IFRS \times D_{HCOMP\text{-}LRQ} > IFRS \times D_{LCOMP\text{-}LRQ}$	0.01	0.02	<0.01
Increase versus Decrease in Reporting Quality			
$IFRS \times D_{HCOMP\text{-}HRQ} > IFRS \times D_{HCOMP\text{-}LRQ}$	<0.01	<0.01	<0.01
$IFRS \times D_{LCOMP\text{-}HRQ} > IFRS \times D_{LCOMP\text{-}LRQ}$	0.32	0.55	0.33
Relative Effects: $IFRS \times D_{HCOMP\text{-}LRQ} > IFRS \times D_{LCOMP\text{-}HRQ}$	0.02	<0.01	<0.01
Adj. R^2	21.2%	21.8%	21.5%
Observations	14,888	14,288	14,888

Notes:

This table reports the results of testing the relative firm valuation effects of mandatory IFRS adoption conditional on the firms' change in comparability and reporting quality around adoption. The maximum sample consists of 1,861 firms (14,888 firm-years) that switched from their domestic accounting standards to IFRS for fiscal years beginning on or after January 1, 2005. The sample period includes fiscal years 2001–2008.

All variables are defined in Appendix 1. The dependent variable is *Q*. $D_{HCOMP\text{-}HRQ}$ is a

(The table is continued on the next page.)

TABLE 5 (continued)

dummy variable coded one if a treatment firm is from the *High COMP-High RQ* group; similarly, $D_{HCOMP\text{-}LRQ}$, $D_{LCOMP\text{-}HRQ}$ and $D_{LCOMP\text{-}LRQ}$ are dummy variables indicating a treatment firm is from the High COMP-Low RQ, Low COMP-High RQ, and Low COMP-Low RQ groups, respectively. I assess comparability using *CompAcct*, *CompCF*, and *CompAccrual*. I assess reporting quality using $\rho(ACC, CF)$. All variables are defined in Appendix 1.

I include country fixed effects and industry fixed effects. All continuous variables are winsorized at the 1 percent and 99 percent levels to mitigate the influence of outliers. I cluster on country to correct for the inflation in standard errors due to multiple observations from the same country. Estimated coefficients are followed by *t*-statistics in parentheses. Significance levels at 10 percent, 5 percent, and 1 percent, two-tailed, are indicated by *, **, and ***, respectively.

I report one-tailed *p*-values from tests for differences across my primary coefficients of interest.

$D_{HCOMP\text{-}HRQ}$ and $IFRS \times D_{HCOMP\text{-}LRQ}$ are all negative and are significant in 9 of 12 cases ($p < 0.10$). For Low Comp adopters, the estimated coefficients on $IFRS \times D_{LCOMP\text{-}HRQ}$ and $IFRS \times D_{LCOMP\text{-}LRQ}$ are all positive and are significant in 11/12 cases ($p < 0.10$). As with *Q* and the liquidity measures above, these results suggest a difference in analyst outcomes of adoption, conditional on changes in comparability. Next, I test for differences across the coefficients and confirm that High Comp adopters exhibit a larger reduction in both forecast errors and forecast dispersion than Low Comp adopters for all comparability measures ($p < 0.01$). In contrast, I find no evidence that High RQ adopters exhibit better analyst outcomes than Low RQ adopters. Next, I test the relative magnitudes of the comparability and reporting quality effects and find that the comparability effect is larger for forecast errors and forecast dispersion in all test specifications ($p < 0.01$). As a whole, these results indicate that improvements in comparability are a primary mechanism behind the effect of IFRS adoption on analysts.

Taken together, the multivariate analysis shows that the economic outcomes of IFRS adoption, measured using market valuations, stock liquidity, and analysts' information environment, are heterogeneous across firms. Using a research design that partitions adopter firms into groups based on the concurrent changes in both comparability and reporting quality, I provide evidence that a large increase in comparability predicts better economic outcomes of adoption. In contrast, the effect of a large increase in reporting quality is generally limited to valuation effects for those adopters with large improvements in comparability. These results indicate that increased comparability appears to have a first-order effect on the economic outcomes of adoption. In contrast, improvements in reporting quality appear to have only second-order effects that are generally restricted to those adopters with increased comparability.

5. Additional analysis

In this section, I report the results of additional analysis (untabulated) that assesses the robustness of my primary results to alternative test specifications. Unless otherwise noted, I use *CompAcct* to measure comparability, $\rho(ACC, CF)$ to measure reporting quality, and include *Q*, *ILLIQUIDITY*, *AFE*, and *AFD* as the dependent variables in all tests.

TABLE 6
Liquidity effects of mandatory IFRS and changes in comparability and reporting quality

	ILLIQUIDITY			*TRADINGCOST*			*BIDASK*		
Dependent variable:	*CompAcct*	*CompCF*	*CompAccrual*	*CompAcct*	*CompCF*	*CompAccrual*	*CompAcct*	*CompCF*	*CompAccrual*
$IFRS \times D_{HCOMP\text{-}HRQ}$	−0.460	−0.330	−0.394	0.195	0.204*	0.257**	0.134	0.131	0.161
	(−1.33)	(−1.25)	(−1.27)	(1.49)	(1.79)	(2.13)	(1.36)	(1.27)	(1.55)
$IFRS \times D_{HCOMP\text{-}LRQ}$	−0.733*	−0.952**	−0.972**	0.037	0.031	−0.008	0.010	0.025	−0.021
	(−1.80)	(−2.39)	(−2.75)	(0.41)	(0.32)	(−0.09)	(0.11)	(0.24)	(−0.22)
$IFRS \times D_{LCOMP\text{-}HRQ}$	0.590**	0.487	0.629**	0.600***	0.595***	0.583***	0.431***	0.430***	0.432***
	(2.07)	(1.68)	(2.27)	(10.08)	(7.82)	(8.55)	(7.58)	(7.84)	(8.50)
$IFRS \times D_{LCOMP\text{-}LRQ}$	0.181	0.437*	0.341	0.507***	0.530***	0.504***	0.396***	0.406***	0.386***
	(0.61)	(1.74)	(1.07)	(6.51)	(7.36)	(7.51)	(8.80)	(8.45)	(8.96)
$D_{HCOMP\text{-}HRQ}$	−0.238	−0.002	−0.092	0.104*	0.179***	0.118**	−0.004	0.101*	0.048
	(−0.57)	(−0.01)	(−0.31)	(1.82)	(4.40)	(2.21)	(−0.05)	(1.78)	(0.80)
$D_{HCOMP\text{-}LRQ}$	0.255	0.856***	0.654**	0.254***	0.336***	0.324***	0.149*	0.252***	0.218**
	(0.63)	−2.96	(2.47)	(4.11)	(6.39)	(5.92)	(1.81)	(3.54)	(2.62)
$D_{LCOMP\text{-}HRQ}$	−0.661	−0.222	−0.471	−0.144**	−0.112**	−0.138**	−0.139**	−0.085	−0.149**
	(−1.48)	(−0.55)	(−1.38)	(−2.49)	(−2.32)	(−2.55)	(−2.25)	(−1.48)	(−2.16)
ASSET_RATIO	−11.528***	−10.859***	−11.492***	−2.237***	−2.146***	−2.224***	−2.627***	−2.506***	−2.612***
	(−7.74)	(−6.86)	(−7.64)	(−5.29)	(−4.77)	(−5.17)	(−4.86)	(−4.50)	(−4.80)
LEV_RATIO	−0.934	−1.435	−0.829	−0.514**	−0.547**	−0.506***	−0.255	−0.334*	−0.247
	(−0.66)	(−0.94)	(−0.58)	(−2.78)	(−2.81)	(−2.82)	(−1.34)	(−1.84)	(−1.29)
MTB_RATIO	−3.402***	−3.331***	−3.430***	−0.785***	−0.746***	−0.789***	−0.641***	−0.620***	−0.645***
	(−3.33)	(−3.13)	(−3.35)	(−9.70)	(−8.64)	(−9.76)	(−6.43)	(−5.71)	(−6.52)

(The table is continued on the next page.)

TABLE 6 (continued)

Dependent variable:	*ILLIQUIDITY*			*TRADINGCOST*			*BIDASK*		
	CompAcct	*CompCF*	*CompAccrual*	*CompAcct*	*CompCF*	*CompAccrual*	*CompAcct*	*CompCF*	*CompAccrual*
$Ln(MVE_{t-1})$	−1.193***	−1.161***	−1.186***	−0.276***	−0.270***	−0.272***	−0.344***	−0.338***	−0.340***
	(−7.11)	(−6.63)	(−7.07)	(−7.27)	(−7.09)	(−7.04)	(−6.34)	(−6.18)	(−6.19)
$Ln(RET\_VAR_{t-1})$	0.478**	0.408**	0.486**	0.621***	0.614***	0.627***	0.430***	0.425***	0.432***
	(2.50)	(2.23)	(2.46)	(11.22)	(11.01)	(11.61)	(8.28)	(8.15)	(8.66)
$Ln(TURNOVER_{t-1})$	−0.724***	−0.691***	−0.728***	0.085***	0.083**	0.083**	−0.024	−0.021	−0.026
	(−4.06)	(−3.46)	(−4.04)	(2.83)	(2.73)	(2.79)	(−0.57)	(−0.51)	(−0.62)
Fixed Effects: Country, Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Test for differences across coefficients (*p*-values):									
Increase versus decrease in comparability									
$IFRS \times D_{HCOMP\text{-}HRQ} < IFRS \times D_{LCOMP\text{-}HRQ}$	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
$IFRS \times D_{HCOMP\text{-}LRQ} < IFRS \times D_{LCOMP\text{-}LRQ}$	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Increase versus decrease in reporting quality									
$IFRS \times D_{HCOMP\text{-}HRQ} < IFRS \times D_{HCOMP\text{-}LRQ}$	0.78	0.96	0.52	0.99	0.99	0.99	0.94	0.92	0.99
$IFRS \times D_{LCOMP\text{-}HRQ} < IFRS \times D_{LCOMP\text{-}LRQ}$	0.88	0.55	0.56	0.98	0.96	0.98	0.71	0.65	0.86
Relative effects									
$IFRS \times D_{HCOMP\text{-}LRQ} < IFRS \times D_{LCOMP\text{-}HRQ}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

(The table is continued on the next page.)

TABLE 6 (continued)

	ILLIQUIDITY			*TRADINGCOST*			*BIDASK*		
Dependent variable:	*CompAcct*	*CompCF*	*CompAccrual*	*CompAcct*	*CompCF*	*CompAccrual*	*CompAcct*	*CompCF*	*CompAccrual*
Adj. R^2	25.2%	25.7%	25.3%	40.7%	40.7%	40.7%	31.0%	31.0%	31.0%
Observations	13,992	13,424	13,992	13,720	13,184	13,720	13,984	13,416	13,984

Notes:

This table reports the results of testing the relative liquidity effects of mandatory IFRS adoption conditional on the firms' change in comparability and reporting quality around adoption. The maximum sample consists of 1,749 firms (13,992 firm-years) that switched from their domestic accounting standards to IFRS for fiscal years beginning on or after January 1, 2005. The sample period includes fiscal years 2001–2008.

All variables are defined in Appendix 1. The dependent variables include: *ILLIQUIDITY*, *TRADINGCOST*, and *BIDASK*. See Appendix 2 for computational details of the liquidity variables. $D_{HCOMP\text{-}HRQ}$ is a dummy variable coded one if a treatment firm is from the High COMP-High RQ group; similarly, $D_{HCOMP\text{-}LRQ}$, $D_{LCOMP\text{-}HRQ}$ and $D_{LCOMP\text{-}LRQ}$ are dummy variables indicating a treatment firm is from the High COMP-Low RQ, Low COMP-High RQ, and Low COMP-Low RQ groups, respectively. I assess comparability using *CompAcct*, *CompCF*, and *CompAccrual*. I assess reporting quality using $\rho(ACC, CF)$.

I include country fixed effects and industry fixed effects. All continuous variables are winsorized at the 1 percent and 99 percent levels to mitigate the influence of outliers. I cluster on country to correct for the inflation in standard errors due to multiple observations from the same country. Estimated coefficients are followed by *t*-statistics in parentheses. Significance levels at 10 percent, 5 percent, and 1 percent, two-tailed, are indicated by *, **, and ***, respectively.

I report one-tailed *p*-values from tests for differences across my primary coefficients of interest.

TABLE 7
Analyst effects of mandatory IFRS adoption and changes in comparability and reporting quality

	AFE			*AFD*		
Dependent variable:	*CompAcct*	*CompCF*	*CompAccrual*	*CompAcct*	*CompCF*	*CompAccrual*
$IFRS \times D_{HCOMP\text{-}HRQ}$	−0.791*	−1.031***	−0.929**	−0.139	−0.104	−0.125
	(−1.86)	(−3.20)	(−2.72)	(−1.16)	(−0.67)	(−1.14)
$IFRS \times D_{HCOMP\text{-}LRQ}$	−2.155***	−2.190***	−2.425***	−0.688***	−0.750***	−0.806***
	(−4.32)	(−4.27)	(−3.96)	(−5.99)	(−6.71)	(−5.72)
$IFRS \times D_{LCOMP\text{-}HRQ}$	0.932**	0.795**	1.148**	0.355***	0.335***	0.377***
	(2.54)	(2.52)	(2.70)	(2.97)	(3.35)	(3.29)
$IFRS \times D_{LCOMP\text{-}LRQ}$	0.693**	0.491*	0.576***	0.117	0.137*	0.130**
	(2.27)	(2.01)	(3.34)	(1.30)	(1.89)	(2.25)
$D_{HCOMP\text{-}HRQ}$	0.803*	0.843**	0.730**	0.021	0.028	0.020
	(1.79)	(2.13)	(2.11)	(0.12)	(0.17)	(0.15)
$D_{HCOMP\text{-}LRQ}$	1.298**	1.510**	1.867**	0.470***	0.601***	0.624***
	(2.38)	(2.58)	(2.81)	(2.84)	(4.52)	(4.07)
$D_{LCOMP\text{-}HRQ}$	−0.497**	−0.216	−0.188	−0.270**	−0.191*	−0.208*
	(−2.40)	(−0.98)	(−0.85)	(−2.16)	(−1.84)	(−2.03)
ASSET_RATIO	−6.231***	−5.452***	−6.146***	−2.647***	−2.648***	−2.602***
	(−4.46)	(−3.07)	(−4.52)	(−7.40)	(−7.48)	(−6.99)
LEV_RATIO	−6.783***	−6.814***	−6.611***	−2.636***	−2.620***	−2.565***
	(−5.73)	(−6.00)	(−6.01)	(−6.12)	(−6.18)	(−6.33)
MTB_RATIO	−5.042***	−4.486***	−5.104***	−1.637***	−1.643***	−1.676***
	(−7.65)	(−5.07)	(−7.80)	(−4.72)	(−4.56)	(−4.86)
Ln(MVE)	−0.797***	−0.678***	−0.786***	−0.414***	−0.402***	−0.412***
	(−5.46)	(−3.74)	(−5.67)	(−9.07)	(−8.74)	(−9.00)
BTM	2.582***	2.621***	2.573***	1.057***	1.050***	1.054***
	(9.35)	(10.50)	(9.22)	(11.38)	(11.43)	(11.46)
COVERAGE	−0.585***	−0.593***	−0.574***	0.215***	0.198***	0.223***
	(−4.32)	(−4.21)	(−4.37)	(3.34)	(2.93)	(3.43)
DAYS	0.513***	0.446***	0.532***	0.062*	0.055	0.067*
	(4.35)	(3.47)	(4.45)	(1.80)	(1.60)	(1.93)

(The table is continued on the next page.)

TABLE 7 (continued)

Dependent variable:	*AFE*			*AFD*		
	CompAcct	*CompCF*	*CompAccrual*	*CompAcct*	*CompCF*	*CompAccrual*
Fixed Effects: Country, Industry	Yes	Yes	Yes	Yes	Yes	Yes
Test for differences across coefficients (*p*-values):						
Increase versus decrease in comparability						
$IFRS \times D_{HCOMP\text{-}HRQ} < IFRS \times D_{LCOMP\text{-}HRQ}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
$IFRS \times D_{HCOMP\text{-}LRQ} < IFRS \times D_{LCOMP\text{-}LRQ}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Increase versus decrease in reporting quality						
$IFRS \times D_{HCOMP\text{-}HRQ} < IFRS \times D_{HCOMP\text{-}LRQ}$	0.98	0.96	0.98	0.99	0.99	0.99
$IFRS \times D_{LCOMP\text{-}HRQ} < IFRS \times D_{LCOMP\text{-}LRQ}$	0.38	0.92	0.92	0.99	0.99	0.99
Relative effects: $IFRS \times D_{HCOMP\text{-}LRQ} < IFRS \times D_{LCOMP\text{-}HRQ}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Adj. R^2	23.4%	22.9%	23.6%	30.8%	31.2%	31.1%
Observations	6,528	6,344	6,528	5,720	5,609	5,720

Notes:

This table reports the results of testing the analyst effects of mandatory IFRS adoption conditional on the firms' change in comparability and reporting quality around adoption. The maximum sample consists of 816 firms (6,528 firm-years) that switched from their domestic accounting standards to IFRS for fiscal years beginning on or after January 1, 2005. The sample period includes fiscal years 2001–2008.

All variables are defined in Appendix 1. The dependent variables include: *AFE*, and *AFD*. $D_{HCOMP\text{-}HRQ}$ is a dummy variable coded one if a treatment firm is from the High COMP-High RQ group; similarly, $D_{HCOMP\text{-}LRQ}$, $D_{LCOMP\text{-}HRQ}$ and $D_{LCOMP\text{-}LRQ}$ are dummy variables indicating a treatment firm is from the High COMP-Low RQ, Low COMP-High RQ, and Low COMP-Low RQ groups, respectively. I assess comparability using *CompAcct*, *CompCF*, and *CompAccrual*. I assess reporting quality using $\rho(ACC, CF)$.

I include country fixed effects and industry fixed effects. All continuous variables are winsorized at the 1 percent and 99 percent levels to mitigate the influence of outliers. I cluster on country to correct for the inflation in standard errors due to multiple observations from the same country. Estimated coefficients are followed by *t*-statistics in parentheses. Significance levels at 10 percent, 5 percent, and 1 percent, two-tailed, are indicated by *, **, and ***, respectively.

I also report one-tailed *p*-values from tests for differences across my primary coefficients of interest.

Sensitivity analyses on experimental variables

Alternative proxies for reporting quality

I replace $\rho(ACC, CF)$ with either *AQ1* (Dechow and Dichev 2002) or *AQ2* (Wysocki 2009) in order to measure reporting quality. These results confirm that High Comp adopters exhibit better economic outcomes than Low Comp adopters across all specifications. In contrast, the results provide mixed evidence with respect to reporting quality. In particular, I find no evidence that High RQ firms exhibit better valuation or liquidity outcomes than Low RQ firms for either reporting quality measure. However, using *AQ1*, I find that High RQ firms exhibit better analyst outcomes than Low RQ firms. A potential explanation for this result is that *AQ1* identifies firms with higher levels of income smoothing as having higher quality accruals (Wysocki 2009). When I use *AQ2* to mitigate the potential confound of income smoothing inherent in the Dechow-Dichev measure, this result weakens substantially and becomes insignificant in 2 of 4 specifications. Importantly though, tests of the relative magnitudes of the comparability and reporting quality effects continue to indicate that the comparability effect is larger for all outcome variables ($p < 0.05$). Taken as a whole, the results support my primary inferences.

Alternative industry definitions

My primary results are based on the 2-digit SIC industry classification used in De Franco et al. (2011). As an alternative, I use both a finer industry definition (3-digit SIC) and a coarser industry definition (Campbell 1996). I continue to find that High Comp firms experience better economic outcomes than Low Comp firms. In contrast, being a High RQ adopter only predicts better valuation outcomes, and only when paired with a concurrent increase in comparability. Tests of the relative magnitudes of the comparability and reporting quality effects continue to indicate that the comparability effect is larger in all cases ($p < 0.10$).

Computing comparability based on industry mean

My primary tests follow the approach in De Franco et al. (2011) and use the median comparability of a firm with its industry peers. I test whether my results are sensitive to this choice. Using the mean (instead of median) comparability of a firm with its industry peers, the results continue to point towards High Comp firms experiencing better economic outcomes than Low Comp firms. In contrast, High RQ adopters only exhibit better valuation outcomes, and only when paired with a large increase in comparability. Tests of the relative magnitudes of the comparability and reporting quality effects are slightly weaker when using industry mean, consistent with outliers potentially adding noise to the computation of mean comparability. Nonetheless, the results continue to point toward the comparability effect being larger ($p \leq 0.11$).

Computing comparability using semi-annual data

Next, I test whether my results are sensitive to my use of annual data to estimate the comparability measures. As an alternative, I use semi-annual data (e.g., Yip and Young 2012). Although the sample size decreases due to missing semi-annual earnings information, the results continue to indicate that High Comp firms experience better economic outcomes than Low Comp firms (the effect for *AFD* remains the correct sign but is no longer significant). In contrast, High RQ adopters only exhibit better valuation outcomes, and only when paired with a large increase in comparability.

Using comparability and reporting quality factors

I use multiple measures of comparability and reporting quality in my tests in order to provide assurance that my results are not driven by the specific proxy chosen. As an alternative,

I use principal component analysis to compute unique comparability and reporting quality factors. I continue to find that High Comp firms experience better economic outcomes than Low Comp firms across all measures. In contrast, being a High RQ adopter only predicts better analyst outcomes. As noted above, a potential explanation for this result is that *AQ1* identifies firms with higher levels of income smoothing as having higher-quality accruals. Nonetheless, tests of the relative magnitudes of the comparability and reporting quality effects continue to indicate that the comparability effect is larger for all dependent variables ($p < 0.06$).

Subsample analysis

Alternative treatment samples based on country-level institutions

The firms included in my primary analysis are domiciled in countries with substantially different institutional environments. Prior literature finds that adopters in countries with higher-quality institutions exhibit more pronounced positive economic outcomes of adoption (Daske et al. 2008; Li 2010; Byard et al. 2011; Christensen et al. 2013). Thus, an alternative explanation for my primary findings is that both increased comparability and positive economic outcomes following IFRS adoption are a result of stronger institutions. If so, then I would not expect to find any effect of comparability on the economic outcomes of IFRS adoption in weaker institutional environments.

Restricting the sample to (i) countries with weak legal enforcement, or (ii) countries that did not initiate proactive financial statement reviews in 2005 (see Table 1), I continue to find that High Comp firms exhibit better economic outcomes than Low Comp firms, with the difference being significant in 14 of 16 cases. The results also confirm that High RQ firms exhibit better valuation outcomes, but only when paired with a concurrent increase in comparability. Tests of the relative magnitudes of the comparability and reporting quality effects continue to indicate that the comparability effect is unambiguously larger for the liquidity and analyst variables ($p < 0.01$). However, the results for valuation effects weaken and generally suggest that High Comp and High RQ firms exhibit similar increases in firm value. Taken as a whole, the results support my primary inferences.[9]

Effects of the financial crisis

My primary results are based on a sample period that overlaps with the financial crisis. I assess the sensitivity of my results to this potential confound by excluding fiscal years 2007 and 2008, in turn. I continue to find that High Comp firms experience better economic outcomes than Low Comp firms. In contrast, being a High RQ adopter only predicts better valuation outcomes, and only when paired with a concurrent increase in comparability. Tests of the relative magnitudes of the comparability and reporting quality effects continue to indicate that the comparability effect is larger in all cases ($p < 0.07$).

Institutions and changes in comparability and reporting quality around mandatory IFRS adoption

My final analysis is descriptive in nature and provides insight into the institutions that are associated with the effect of IFRS adoption on comparability and reporting quality. I use aggregate country-level variables that measure the change in comparability or reporting quality. For each country, I compute the average pre–post IFRS change in the three comparability variables and three reporting quality measures, respectively. I measure the

9. My primary inferences are also unchanged if I restrict the analysis to countries with strong legal enforcement, which are likely to exhibit the highest level of reporting quality prior to IFRS adoption (Leuz et al. 2003).

TABLE 8
Country-level tests of institutions and changes in comparability and reporting quality around mandatory IFRS adoption

Dependent variable:	Average change in comparability (%) (1)	Average percent of High Comp firms (2)	Average change in reporting quality (%) (3)	Average percent of High RQ firms (4)
Intercept	−16.377	−6.112	−4.130	58.137***
	(−1.59)	(−0.75)	(−0.47)	(12.82)
Transparency	0.946***	0.572**	−0.365	−0.176
	(3.18)	(2.43)	(−1.43)	(−1.34)
GAAP-IFRS Similarity	1.224*	1.407**	−0.411	−0.215
	(1.91)	(2.77)	(−0.75)	(−0.76)
Civil Law	26.497***	29.062***	−0.381	−5.006
	(3.73)	(5.17)	(−0.06)	(−1.60)
Exports	0.572**	0.823***	0.525***	−0.003
	(2.82)	(5.13)	(3.02)	(−0.03)
Adj. R^2	66.2%	78.2%	39.3%	0.9%
Observations	18	18	18	18

Notes:

This table provides descriptive evidence on country-level institutions and country-level changes in comparability and reporting quality around mandatory IFRS adoption. The sample includes 18 countries that required adoption of IFRS beginning in 2005 with required data for all variables. The dependent variables in columns (1) and (3) are the average pre-post IFRS country-level change in the three comparability variables and three reporting quality measures, respectively. I measure the pre-post IFRS change in each variable using the country median. The dependent variables in columns (2) and (4) are the average percent of firms in each country classified as High Comp and High RQ, respectively. *Transparency* is based on the Aggregate EM score from Leuz et al. (2003). I adapt the EM score such that larger values indicate more transparent earnings and normalize the least transparent country to zero. *GAAP-IFRS Similarity* is based on the number of differences between domestic GAAP and IFRS reported in Bae et al. (2008). I adapt the Bae et al. (2008) score such that larger values indicate greater similarity between domestic GAAP and IFRS and normalize the least similar country to zero. *Civil Law* equals one for countries with a civil law legal tradition and equals zero for countries with a common law legal tradition. *Exports* is the percent change in GDP-deflated exports between 2004 and 2008, as reported by the OECD. Estimated coefficients are followed by *t*-statistics in parentheses. Significance levels at 10 percent, 5 percent, and 1 percent, two-tailed, are indicated by *, **, and ***, respectively.

pre-post IFRS change in each variable using the country median. As an alternative, I also compute the average percent of firms in each country classified as High Comp and High RQ, respectively. The institutional variables in the analysis include: *Transparency*, *GAAP-IFRS Similarity*, *Civil Law*, and *Exports* (percent change in GDP-deflated exports between 2004 and 2008). This list of variables is, admittedly, ad hoc, and not intended to be fully descriptive. However, it does reflect a reasonable cross section of country-level characteristics.

The results, reported in Table 8, indicate that changes in comparability are larger in countries with more transparent pre-IFRS reporting, pre-IFRS domestic GAAP that was

more similar to IFRS, larger export growth, and a civil law legal orientation (see Table 8 for variable definitions). Model R^2s indicate that, together, the four institutional variables explain up to 78 percent of the variation in country-level change in comparability. In contrast, only export growth is associated with changes in reporting quality. However, this result is not robust to alternative variable measurement.

6. Conclusion

I examine firm-level differences in the economic effects of mandatory IFRS adoption. In particular, my study links the accounting effects and economic effects of IFRS adoption together, and evaluates the relative importance of reporting quality and comparability on those economic effects. Using accounting, analyst, and market data for a large number of firms over an eight-year period from 2001 to 2008, I examine variation in the empirical association between mandatory IFRS adoption and several market and analyst proxies for information asymmetry, conditional on changes in comparability and reporting quality around the adoption date. After controlling for other influential factors at the firm and macro level, the results show that economic benefits of IFRS adoption are most pronounced among firms that exhibit larger improvements in cross-country accounting comparability. In contrast, an improvement in firm-specific reporting quality appears to have only a marginal effect that is generally limited to valuation effects among those adopters with a concurrent increase in comparability. Overall, these results suggest that improvements in cross-country comparability have a first-order effect on firms' information environments.

This paper provides evidence about the relative importance of two financial characteristics in explaining economic benefits of mandatory IFRS adoption, and provides preliminary descriptive evidence about institutions that are associated with changes in comparability and reporting quality around adoption. Future research could extend these findings by investigating why comparability is the dominant financial characteristic driving the economic benefits. For example, the descriptive analysis presented above indicates that the incentives that mattered for higher-quality financial reporting prior to IFRS also matter for the development of comparable accounting under IFRS. Therefore, it would be informative to examine whether an increase in cross-country comparability following adoption only occurs when pre-IFRS financial reporting is already of a sufficiently high quality. This could have implications for how IFRS adoption (or convergence) might be expected to impact financial reporting, and the associated economic outcomes, in major economies with relatively weaker reporting incentives (e.g., China, India, and Russia). Future research could also investigate whether the relative importance of comparability in my setting is related to the relatively strong institutions of the E.U. In particular, it is possible that firms would exhibit a larger improvement in reporting quality in those countries that have weaker institutional environments (and relatively lower pre-IFRS reporting quality). If so, it is possible that improvements in reporting quality may prove to be a more important driver of economic outcomes in those countries. Importantly, this could have implications for the larger debate about the nature, importance, and interaction of countries' institutions and accounting standards in the development of financial reporting characteristics.

Appendix 1

Variable definitions

Dependent variables	
Q	Q is ratio of MV of assets to BV of assets
ILLIQUIDITY	Annual median of the Amihud (2002) price impact measure
TRADINGCOST	Annual average roundtrip transaction cost for trading in a firm's stock (Lesmond et al. 1999)
BIDASK	Annual average bid–ask spread estimate (Roll 1984)
AFE	Absolute analyst forecast error scaled by price, multiplied by 100
AFD	Standard deviation of analyst forecasts scaled by price, multiplied by 100
Experimental variables	
CompAcct	Measure of accounting comparability (see section 3)
CompCF	Measure of accounting comparability (see section 3)
CompAccrual	Measure of accounting comparability (see section 3)
ρ(Acc, CF)	Firm-level correlation between accruals and cash flows, computed over four years (see section 3)
AQ1	Accrual quality as in Dechow and Dichev (2002), computed over four years (see section 3)
AQ2	Accrual quality as in Wysocki (2009), computed over four years (see section 3)
Control variables	
ASSET_RATIO	Median ratio of the smaller value of $U.S. assets to the larger value of $U.S. assets using a firm's industry peers
LEV_RATIO	Median ratio of the smaller value of leverage to the larger value of leverage using a firm's industry peers
MTB_RATIO	Median ratio of the smaller value of MTB to the larger value of MTB using a firm's industry peers
ASSET_GR	Fiscal year-end percentage annual change in total assets
ASSETS	Fiscal year-end total assets in $U.S.
BTM	Fiscal year-end ratio of book value of common equity to market value of common equity
COVERAGE	Natural log of the number of analysts included in the consensus estimate to compute *AFE*
DAYS	Natural log of days between the forecast used to compute *AFE* and the earnings announcement date
IFRS	Binary variable equal to one for the post-adoption period (i.e. 2005–2008), and zero otherwise
LEV	Fiscal year-end ratio of long-term debt to total assets
MVE	Fiscal year-end market value of common equity in $U.S.
RET_VAR	Annual standard deviation of monthly stock returns.
TURNOVER	Annual $U.S. trading volume divided by market value of common equity

Appendix 2

Liquidity measures

I follow Daske et al. (2008) and calculate the following liquidity measures over a period that spans month −5 through month +7 relative to the firm's fiscal-year end. I obtain all price and volume data from COMPUSTAT Global.

Illiquidity

I calculate *Illiquidity* as the median daily price impact over the year where price impact equals the daily absolute price change in percent divided by $U.S. trading volume

(measured in thousands) from Amihud (2002). I omit zero return days from my calculation to avoid misclassifying low trading activity days as highly liquid and multiply *Illiquidity* by 1,000. Smaller values indicate greater liquidity.

Total trading costs

Lesmond et al. (1999) develop a model of total trading cost under the assumption that trading costs inhibit more informed investors from trading. When the cost of trading in a security exceeds the value of new information, the return should be zero. Because trades are constrained by transaction costs, firms' true (or desired) returns can deviate from their observed returns when transaction costs exceed the value of information. The model assumes that security returns can be represented with the market model and relies on the following relation between transaction costs and returns. Using the market model, the relation between the market return and the true return is expressed as:

$$R^*_{jt} = \beta_j R_{mt} + \varepsilon_{jt},$$

where R^*_{jt} is the true return for a security and R_{mt} is the market return. The relation between the observed return, R_{jt}, and the true return for a security is described by the following system of equations:

$$R_{jt} = R^*_{jt} - \alpha_{1j}, \quad \text{if} \quad R^*_{jt} < \alpha_{1j} \quad \text{and} \quad \alpha_{1j} < 0,$$

$$R_{jt} = 0, \quad \text{if} \quad \alpha_{2j} < R^*_{jt} < \alpha_{1j},$$

$$R_{jt} = R^*_{jt} - \alpha_{2j}, \quad \text{if} \quad R^*_{jt} > \alpha_{2j} \quad \text{and} \quad \alpha_{2j} > 0.$$

Transaction costs for firm j are represented by α_{1j}, the effective sell-side cost, and α_{2j}, the effective buy-side cost, with $\alpha_{2j} - \alpha_{1j}$ as the estimate of the total roundtrip transaction cost. I estimate the model empirically using maximum likelihood estimation under the assumption that daily returns are normally distributed. Specifically, I estimate the following log likelihood function for each firm-year using daily stock returns and an equal-weighted home country market index:

$$\begin{aligned} \ln L = & \sum\nolimits_1 \ln \frac{1}{(2\pi\sigma_j^2)^{1/2}} - \sum\nolimits_1 \frac{1}{2\sigma_j^2}(R_{jt} + \alpha_{1j} - \beta R_{mt})^2 \\ & + \sum\nolimits_2 \ln \frac{1}{(2\pi\sigma_j^2)^{1/2}} - \sum\nolimits_2 \frac{1}{2\sigma_j^2}(R_{jt} + \alpha_{2j} - \beta R_{mt})^2 \\ & + \sum\nolimits_0 \ln \Phi_2\left(\frac{\alpha_{2j} - \beta_j R_{mt}}{\sigma_j}\right) - \Phi_1\left(\frac{\alpha_{1j} - \beta_j R_{mt}}{\sigma_j}\right), \end{aligned}$$

where ln is the natural log function and Φ_i is the cumulative distribution function. *TRADINGCOST* equals $\alpha_{2j} - \alpha_{1j}$. I require at least 24 daily returns and 20 percent of the daily returns to be non-zero per firm-year observation, and multiply *TRADINGCOST* by 100.

Effective bid-ask spread

Roll (1984) developed an estimate of the effective bid-ask spread based on the bid-ask bounce-induced negative serial auto-correlation in returns. Following Roll (1984) I calculate *BIDASK* as $2\times[-\text{COV}(Ret_t, Ret_{t\text{-}1})]^{1/2}$.

Where *Ret* equals the daily return and $\text{COV}(Ret_t, Ret_{t\text{-}1})$ is the covariance of the current and prior daily returns. Roll's measure requires a negative covariance. If the covariance is positive, I force it negative and calculate the Roll estimate as if the covariance is

negative (Lesmond 2005). I require at least 24 daily returns and 20 percent of the daily returns to be non-zero per firm-year observation, and multiply *BIDASK* by 100.

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