*Economic Consequences of IFRS Adoption: The Role of Changes in Disclosure Quality**

As Published: 10.1111/1911-3846.12638

Publisher: Wiley

Persistent URL: https://hdl.handle.net/1721.1/135575

Version: Author's final manuscript: final author's manuscript post peer review, without publisher's formatting or copy editing

Economic Consequences of IFRS Adoption: The Role of Changes in Disclosure Quality

Bin Li
University of Houston

Gianfranco Siciliano
China Europe International Business School

Mohan Venkatachalam[†]
Duke University

July 2020

ABSTRACT:

This study adopts a two-step approach to highlight the disclosure quality channel that drives economic consequences of International Financial Reporting Standards [IFRS] adoption. This approach helps address the identification challenge noted by Leuz and Wysocki (2006) and offer direct evidence on the role of disclosure quality. In the first step, we document the impact of the IFRS mandate on changes in disclosure quality proxied by the granularity of line-item disclosure in financial statements. We find that IFRS-adopting firms provide more disaggregated information upon IFRS adoption, such as more granular disclosure of intangible assets and long-term investments on the Balance Sheet and greater disaggregation of depreciation, amortization, and non-operating income items on the Income Statement. In the second step, we link the observed disclosure changes to the benefits and costs of IFRS adoption. We show that greater disaggregated information due to IFRS adoption enhances market liquidity and decreases information asymmetry, but does not affect audit fees differentially. Our evidence has implications for standard-setters as they evaluate cost-benefit tradeoffs when considering disclosure changes in the future.

Keywords: IFRS adoption; Nonmissing line items; Disclosure quality; Market liquidity; Audit fees.

JEL Classification: M41; M48; G15.

[†] Corresponding author. Email address: vmohan@duke.edu; Phone: +1-919-660-7859.

***** We thank Gerry Lobo, Bill Mayew, Eddie Riedl (the editor), Terry Shevlin, Rahul Vashishtha, Rodrigo Verdi (the discussant), two anonymous reviewers and workshop participants at Bocconi University, China Europe International Business School, University of Houston, 2018 International Accounting Section Midyear Meeting, 2018 Journal of International Accounting Research (JIAR) Conference, 2018 Berlin Annual Accounting Conference, 2018 European Accounting Association (EAA) Annual Congress, the 2018 American Accounting Association (AAA) Annual Meeting, and the 2019 Contemporary Accounting Research (CAR) Conference for helpful comments. We also thank the product consultant team at S&P Capital IQ Compustat for helpful clarifications on the data collection process. We acknowledge financial support from our respective institutions.

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1. Introduction

Numerous studies have investigated the economic consequences of adopting a superior set of accounting standards, such as the International Financial Reporting Standards (IFRS).[1] For example, several studies document a reduction in cost of capital (e.g., Li 2010; Daske, Hail, Leuz, and Verdi 2008, 2013; Florou and Kosi 2015), whereas others focus on IPO underpricing (Hong, Hung, and Lobo 2014), market liquidity (Daske et al. 2008, 2013) and earnings usefulness (Landsman, Maydew, and Thornock 2012). Leuz and Wysocki (2016, 529) point out, however, that "most studies are reduced form and directly estimate the economic consequences of regulatory changes" and this "limits our ability to produce evidence along the entire 'causal path,' that is, from regulatory changes to disclosure outcomes to economic consequences." The implication is that prior studies work under an implicit assumption that IFRS increases accounting disclosure quality that in turn drives these consequences. However, evidence from recent research (Yip and Young 2012; Ahmed, Neel, and Wang 2013; Cascino and Gassen 2015; Isidro, Nanda, and Wysocki 2020) is inconclusive whether disclosure quality improves following IFRS adoption. Thus, the channel that drives the economic consequences of IFRS adoption is still unclear. The purpose of this study is to provide direct evidence on the channel that drives the economic consequences. That is, we examine two links: (1) relating IFRS mandate to disclosure outcomes and, (2) relating changes in disclosure outcomes to economic consequences.[2]

We adopt a two-step approach to examine whether the economic consequences of IFRS adoption are attributable to the disclosure quality channel. In the first step, we document that the IFRS mandate is indeed associated with changes in disclosure quality. In the second step, we explore whether the observed disclosure changes relate to the benefits and costs of IFRS adoption. To measure disclosure quality (hereafter, DQ), we follow Chen, Miao, and Shevlin (2015) and use the degree of disaggregation of

[1] See De George, Li, and Shivakumar (2016) and Leuz and Wysocki (2016) for reviews of the IFRS literature.

[2] Leuz and Wysocki (2016, 529) recommend "linking disclosure outcomes to the regulatory changes and economic outcomes to the regulatory changes would substantially increase the confidence in the estimates."

accounting data through a count of nonmissing Compustat line items. Specifically, a higher count of nonmissing line items in the firm's annual report represents better financial reporting quality, because greater disaggregation leads to more and finer information in the financial statements. Chen et al. (2015) suggest that the "fineness" of accounting information provided through disaggregated information has two potential positive effects. One, it augments the valuation role of accounting information; it improves the precision of the information available in financial statements and thus, reduces information asymmetry and market mispricing in capital markets. Two, information that is more granular helps the contracting and stewardship role of accounting information. It enhances the credibility of financial statements by giving managers fewer degrees of freedom to manipulate accounting information.

There are several advantages to using the Chen et al. (2015) disclosure quality measure in this setting. First, many prior studies (e.g., Byard, Li, and Yu 2011; Yip and Young 2012; Landsman et al. 2012; Wang 2014) use indirect measures of reporting disclosure quality such as changes in analyst forecasts or capital market reactions as measures of reporting quality. While using these measures offer useful insights, they are also affected by other economic changes that concurrently occur surrounding the IFRS adoption. Second, under IFRS, firms are required to provide more disaggregated information either on the face of financial statements or in the footnotes (see Appendix 1 for a summary). Thus, the DQ measure fulfills our desire to obtain a direct measure of disclosure changes that is concretely linked to financial statements. Third, recent work finds evidence counter to the assumption inherent in the economic consequences literature. For example, Ahmed et al. (2013) document that accruals quality decreased and income smoothing increased subsequent to IFRS adoption, suggesting an overall decline in earnings quality (see also Neel, 2017). Fourth, Daske and Gebhardt (2006) use a researcher-constructed index of disclosure for a sample of firms that voluntarily reported under IFRS. Relatedly, Lang and Stice-Lawrence (2015) adopt a text-based proxy for a large sample of firms that mandatorily adopted IFRS to examine changes in annual report narrative disclosures. However, the text-based proxy also captures the voluntary nature of narrative disclosures and is also not available for firms that use non-English languages for financial reporting, thereby affecting the generalizability of their findings. Overall, the DQ measure

is different from other existing measures in IFRS research as it captures disclosure outcomes from a unique angle. Albeit, we acknowledge that the DQ measure captures only one aspect of disclosure quality.

As with many prior studies (e.g., Armstrong, Barth, Jagolinzer, and Riedl 2010; Li 2010; DeFond, Hu, Hung, and Li 2011), we focus on mandatory IFRS adoption to enable a difference-in-difference (DID) research design. Specifically, we use the IFRS adoption by 16 countries in 2005 because this is a unique year when a significant number of public firms ceased using their local accounting standards (local GAAP) and simultaneously adopted an entire set of uniform, and sometimes newer and arguably better, reporting standards including the presentation requirements and other mandatory disclosure requirements as described in Appendix 1. As such, we expect firms to disclose more and finer information of line items in annual reports after adopting IFRS. Our prediction is consistent with experimental findings in Libby and Brown (2012) who conjecture that income statement disaggregation under IFRS would significantly increase the reliability of income statement subtotals, because auditors permit less misstatement in the disaggregated numbers.

Our sample covers the period 2002–2007 and consists of 14,838 firm-year observations of mandatory IFRS adopters spanning 16 countries, and 51,666 firm-year observations of non-adopters spanning 17 countries and regions that have not adopted IFRS (hereafter, non-adopters or non-IFRS firms). We use fiscal years rather than calendar years in the measurement of firm-level variables to ensure that the post-IFRS adoption period is correctly captured at the firm level.[3] To avoid self-selection bias in our treatment sample, we only include firms that mandatorily adopted IFRS in fiscal year 2005. That is, we exclude voluntary IFRS adopters prior to 2005.[4]

We examine the intertemporal changes in disclosure quality (DQ) for IFRS adopters relative to non-adopters using a DID design. That is, over the sample period, we examine whether DQ changes between pre-IFRS (fiscal years 2002–2004) and post-IFRS period (fiscal years 2005–2007) for IFRS

[3] That is, firm-level variables are measured by fiscal year (see Appendix 2), and for simplicity, we use the term "year" to refer to "fiscal year" hereafter.

[4] In sensitivity tests, we include voluntary IFRS adopters, but the inclusion does not alter our inferences.

adopters are significantly greater than that for non-adopters. After controlling for firm-, industry-, and country-level characteristics in the regressions, we find that IFRS adopters disclose 3 percent more line items in the annual reports during the post-IFRS period than the pre-IFRS period. However, both IFRS adopters and non-adopters do not experience any significant DQ changes in the pre-IFRS period satisfying the parallel trend assumption necessary to draw inferences from a DID design. In contrast to the DQ changes observed for IFRS adopters, our control group of non-adopters do not exhibit similar trends in DQ in the post-IFRS period. On average, the percentage of nonmissing line items in IFRS adopters' annual reports increases by 1.8% in 2005, 2.8% in 2006, and 4.7% in 2007 relative to the pre-IFRS period; whereas non-adopters' DQ *decreases* imperceptibly during the same period.

A more in-depth analysis suggests that mandatory IFRS adoption enhances the disaggregation of line items on both the Balance Sheet and the Income Statement. In terms of specific line items, mandatory IFRS adoption results in greater disaggregation of intangible assets and long-term investments on the Balance Sheet, and more detailed disclosures of operating expenses, depreciation and amortization, and non-operating income and expense items on the Income Statement. Overall, our results confirm the prediction that the IFRS mandate improves the disaggregation of accounting items, resulting in more disaggregated information in firms' annual reports. The evidence from the above analyses helps our understanding of how the uniform and simultaneous adoption of IFRS affects firms' *actual* reporting of line items in financial statements.

The aforementioned evidence, coupled with prior research findings that IFRS adoption improves market liquidity or has other economic consequences, are insufficient to conclude that financial reporting quality changes is the mechanism through which economic consequences of IFRS adoption obtain. This is because concurrent but unrelated shocks may also affect the outcome variables of interest. Therefore, as the second step, we rely on cross-sectional variations in DQ changes for our sample of treatment firms to show that the disclosure quality channel is an important mechanism that drives the economic consequences. As we demonstrate later, this is a crucial and indispensable part of our identification strategy.

We consider both economic benefits and costs of the IFRS adoption. Specifically, we relate changes in DQ associated with IFRS adoption to market liquidity (benefit) and audit fees (cost). Given the theoretical relation between financial reporting quality and market liquidity, the literature has concentrated primarily on the liquidity effect as an important benefit from adopting IFRS (e.g., Daske et al. 2008, 2013; Christensen, Hail, and Leuz 2013). Meanwhile, prior studies use audit fees as an observable and significant implementation cost of IFRS adoption (e.g., Kim, Liu, and Zheng 2012; De George, Ferguson, and Spear 2013). Those studies find that IFRS adoption is associated with higher audit fees, implying greater IFRS implementation costs.

We begin by establishing that, on average, our sample of IFRS-adopting firms experiences a positive shock to market liquidity after the IFRS mandate, relative to non-adopting firms (e.g., Daske et al. 2008; Christensen et al. 2013). Then, we examine whether this liquidity effect is more pronounced for IFRS adopters that report more disaggregated information of line items in their annual reports after the adoption. Consistent with our prediction, the results indicate that the liquidity shock is indeed more positive for IFRS-adopting firms with greater DQ improvement in the post-IFRS period when compared with the control sample. Interestingly, most of the liquidity shock arising from the DQ improvement happens in the adoption year 2005. Furthermore, within our sample of IFRS-adopting firms, firms with more positive changes in DQ exhibit larger increases (decreases) in market liquidity (information asymmetry) than IFRS adopters with less positive changes in DQ. Together, these results complement Daske et al.'s (2013) findings that the market outcomes vary with IFRS adopters' financial reporting incentives.[5]

In the audit fee analysis, we first document a positive average effect of mandatory IFRS adoption on audit fees (Kim et al. 2012; De George et al. 2013). Next, we examine whether this effect is more

[5] Our analysis is different from that of Daske et al. (2013). We investigate financial reporting behavior in terms of disaggregating line items in firms' financial statements, whereas they examine firms' reporting incentives, which are proxied by changes in firms' characteristics upon adoption (e.g., size, profitability, growth, ownership, analyst following, etc.). In discussing alternative explanations, Daske et al. (2013, p. 502) leave open the possibility that the heterogeneity in economic consequences around adoption may also stem from prior reporting differences.

pronounced for IFRS adopters with greater disaggregation of line items in the post-IFRS period. Although we find evidence consistent with higher audit fees for firms providing greater disaggregation post adoption, this effect does not show up in the adoption year 2005. Furthermore, when we conduct the analysis exclusively for IFRS adopters, we observe no cross-sectional differences in audit fees during the post-IFRS period based on the change in disclosure quality. This result, together with the finding that IFRS adopters on average report greater audit fees, indicates that IFRS adoption is associated with a *fixed* switching cost in terms of audit fees. Our finding complements the evidence in De George et al. (2013), who find that the increase in audit fees is independent of the cross-sectional differences in the extent of firm-level complexity in IFRS-adopting firms. That we find results for market liquidity and not for audit fees also serves to highlight the importance of the two-step approach for identifying the mechanism underlying the economic consequences of IFRS adoption.

While the DID design that we use addresses the objective of isolating the disclosure channel, a reader might wonder whether concurrent changes in country factors, such as regulatory, political, social, and economic conditions, have confounding effects on the disclosure quality channel (e.g., Christensen et al. 2013; Isidro et al. 2020).[6] We conduct a variety of supplemental tests to address this concern. We first explore determinants of the DQ increases upon IFRS adoption. Our results indicate that firm-level disclosure quality in the pre-IFRS period is more important than other country-level factors in determining the extent to which IFRS improves DQ. Second, we obtain as many as 21 time-varying country attributes from Isidro et al. (2020) and use principal component analysis (PCA) to capture joint variations in those country attributes. Our results are robust to controlling for the PCA components of those country attributes, alleviating the concern about other country-level factors. Third, we use path analysis to isolate the disclosure quality channel from the direct channel through which IFRS adoption affects market liquidity. Our result indicates that the DQ channel has a prominent impact on market

[6] Unlike "traditional" measures of accounting disclosure quality based on earnings or accruals, which are often contaminated by macroeconomic factors, the disaggregation of line items is disciplined by specific IFRS rules. For example, the disaggregation of intangibles, financial instruments, and non-operating incomes and expenses is disciplined by IAS #38, IAS #28, and IAS #32, respectively (see Appendix 1 for more details).

liquidity. We also find evidence that the DQ channel is different from accounting comparability in affecting market liquidity. Lastly, we show that our results are robust to controlling for firm fixed effects, expanding the sample period, and using staggered adoption specifications. Overall, we conclude that concurrent country factors subsume neither the IFRS adoption effect on disclosure changes nor its concomitant influence on liquidity.

Our study makes three contributions. First, we validate with direct evidence the inherent assumption underlying prior research that IFRS adoption improves financial reporting quality. Second, our paper responds to the call of Leuz and Wysocki (2016) by adopting a two-step framework in examining the economic consequences of disclosure and reporting regulations. This approach addresses the identification challenge prevalent in the IFRS adoption literature. Our paper complements and extends the evidence in Lang and Stice-Lawrence (2015), who focus on the voluntary aspect of financial statement disclosure. Third, our finding that the benefits of IFRS adoption vary across firms but the audit fee costs of IFRS adoption are constant within a country suggests the importance of evaluating cost-benefit trade-offs of adopting new standards at both the firm level and the country level.

2. Related research

Prior literature on disclosure quality changes around mandatory IFRS adoption can be broadly classified into three categories: (1) studies that infer (or assume) changes in disclosure quality based on differences in economic consequences before and after IFRS adoption; (2) studies that examine changes in the attributes of certain accounting variables, such as earnings and accruals; and (3) studies that use self-constructed disclosure quality measures.

Studies in the first category generally argue that IFRS improves disclosure quality, as evidenced by predictable changes in cost of equity (Li 2010; Daske et al. 2008, 2013), cost of debt (Florou and Kosi 2015), IPO underpricing (Hong et al. 2014), market liquidity (Daske et al. 2008, 2013), and market reactions to earnings announcements (Landsman et al. 2012) surrounding IFRS adoption. These studies do not directly assess the change in accounting disclosure quality; instead, they assume that the larger the differences between IFRS and local GAAP prior to the IFRS adoption, the greater the improvement in

disclosure quality, and thus the greater are the attendant economic consequences. Maintaining this assumption, Ashbaugh and Pincus (2001), Bae, Tan, and Welker (2008), Byard et al. (2011), Tan, Wang, and Welker (2008), and Horton, Serafeim, and Serafeim (2013) document that analyst forecast dispersion and forecast errors decrease after IFRS adoption, and this improvement is positively associated with the extent of accounting differences between IFRS and preexisting local GAAP. Daske et al. (2008) suggest that, on average, market liquidity increases after IFRS adoption, but this occurs only in countries where differences between local GAAP and IFRS are larger. In addition, Kim et al. (2012) use the extent to which (pre-IFRS) local GAAP deviates from IFRS to proxy for audit complexity, and they find that the IFRS-related audit fee premium increases with audit complexity brought about by IFRS.

A major limitation of these approaches is that the properties of local GAAPs (antecedent to the IFRS adoption) are highly correlated with the institutional characteristics of the countries, so it is possible that the measures capture institutional differences other than accounting standards. A recent paper by Isidro et al. (2020) warns that, due to concurrent changes in country attributes, it is empirically challenging to isolate the individual effect of IFRS adoption on accounting disclosure quality from those time-varying country attributes. Moreover, the difference between IFRS and local GAAP is a country-level measure that does not allow firm-level variations in disclosure quality *within* a given country, so we cannot directly link the economic consequences to firm-level changes in disclosure quality. Finally, the majority of these studies rely on an indicator variable (IFRS) marking the post-IFRS adoption period. As Leuz and Wysocki (2016, 544) point out, this design "poses major challenges to identification and hence makes these studies prone to spurious effects."

The second category of prior literature includes studies that examine changes in accounting attributes around the mandatory switch from local GAAP to IFRS. This literature, however, documents mixed empirical results. For example, Barth, Landsman, and Lang (2008) and Hung and Subramanyam (2007) document that financial reporting quality under IFRS is better than that under local GAAP. These studies typically use earnings smoothing, accruals quality, and earnings timeliness as measures of accounting quality. In contrast, Ahmed et al. (2013) find that IFRS adoption leads to lower financial

reporting quality, whereas Atwood, Drake, Myers, and Myers (2011) report that on average there are no quality effects.[7] Using another measure, financial reporting comparability, Yip and Young (2012) and Barth, Landsman, Lang, and Williams (2012) find that IFRS adoption increases accounting comparability. However, Cascino and Gassen (2015) report that any increase in financial reporting comparability due to IFRS is marginal at best.

The last category of research measures the impact of IFRS on accounting disclosure quality based on self-constructed indices or measures of annual report textual quality. For example, based on independent experts' assessment of financial statements quality, Daske and Gebhardt (2006) find that in Austria, Germany, and Switzerland, firms using local GAAP exhibit lower disclosure quality than those using IFRS or U.S. GAAP. Using a sample of German firms, Leuz and Verrecchia (2000) document that an international reporting strategy (International Accounting Standards [IAS] or U.S. GAAP) in contrast to local GAAP is associated with market liquidity benefits. However, this approach is subject to limitations in that it uses researcher-subjective weights to disclosure items that may differ from their true relative importance. In addition, the self-constructed indices are unavailable for the vast majority of IFRS-adopting firms, affecting the generalizability of the findings.

Relatedly, Lang and Stice-Lawrence (2015) find that IFRS-adopting firms produce longer, more readable, and more comparable annual reports, and this correlates in a predictable way to greater market liquidity, institutional ownership, and analyst following. This measure, however, is limited to English-language disclosures. Also, the narratives examined in the study are likely to be voluntary, limiting generalizability of the findings. Our study complements and extends this research by examining the *accounting* effect of IFRS adoption on a broader set of countries.

[7] See Soderstrom and Sun (2007) and Brüggemann, Hitz, and Sellhorn (2013) for a detailed review of the mixed evidence in the literature.

3. Research design and sample

Our main empirical analyses are based on a two-step research design in which we first evaluate the impact of IFRS adoption on accounting disclosure quality, and then associate the changes in disclosure quality to economic consequences. This way we attempt to isolate the channel that drives the economic consequences of IFRS adoption.

For implementing the first step, it is important to consider an appropriate measure of accounting disclosure quality that captures the changes associated with IFRS adoption. We use the level of disaggregation of accounting numbers reported in financial statements, proposed by Chen et al. (2015), as our disclosure quality measure. The underlying premise is that finer disaggregation indicates higher-quality information. We expect that mandatory IFRS adoption improves the degree of disaggregation of financial data items in the financial statements and disclosure quality for several reasons. First, IFRS requires firms to report a long list of line items on the face of financial statements with additional line items and subtotals reported on the face or in the footnotes (see Appendix 1 for a detailed list of IFRS requirements for disaggregation). More specific to the income statement, IFRS firms have an option to report expenses using a classification based on their nature or function, whichever is more reliable and relevant. However, if a manager continues classifying expenses by function, additional disaggregation by nature is required in the notes to financial statements (IAS 1.104).

Second, IFRS requires firms to report more information that assists external users in gathering, processing, or analyzing data in financial statements. For example, IFRS requires firms to use cross-references on the face of financial statements to any related information in the notes (IAS 1.104) in addition to tables (in place of narratives). By establishing a direct link between the face of the financial statements and the notes, these cross-references enhance external users' ability to locate the information needed to back up the summary number depicted with captions on the face of the financial statements. As a result, users of accounting information are more easily able to disaggregate items in the financial statements. For some line items, IFRS requires firms to report more disaggregated information through

tabular reconciliations of the carrying amounts between the beginning and end of the period.[8] This helps external users understand why an account changed during a period (Barth and Schipper 2008).

Additionally, IFRS adoption enhances accounting comparability across countries and within industries (e.g., DeFond et al. 2011; Barth et al. 2012), so it becomes more difficult for a firm to withhold information and justify low levels of disaggregation in the post-IFRS period.[9] This is supported by DeFond et al.'s (2011) finding that mandatory IFRS adoption improves accounting comparability when there is a large number of industry peers using the same accounting standards.

In general, our arguments above are consistent with both analytical and behavioral research that documents that disaggregation of line items increases the reliability of accounting numbers and lowers information asymmetry between insiders and accounting information users, mitigating management's misreporting incentives and enhancing auditors' monitoring of firm misreporting (e.g., Libby and Brown 2013; Amir, Einhorn, and Kama 2014).

The Chen et al. (2015) approach has other advantages. First, this measure can be easily computed and is replicable for a broad cross-section of firms. Second, the measure is based on actual accounting information in financial statements, which is devoid of the subjectivity and English-language constraint in self-constructed disclosure indices. It also allows estimating the effect of IFRS adoption on accounting disclosure at the firm level, and exploiting disclosure variations within each country-year. This is different from prior studies that assume homogeneity in IFRS effects on accounting disclosure within a given country-year, and thus rely on an indicator variable to mark the pre- and the post-IFRS periods. Third, our approach provides better identification of the IFRS effect on disclosure quality in that it holds the information generation process constant across countries and over time.[10] Finally, the measure is

[8] Examples include IAS 16.73(e) for Property, Plant and Equipment; IAS 19.120(c) for Employees Benefits; IAS 32.74(a) for financial instruments exposed to interest rate price risk.

[9] This argument is based on institutional theory, more specific on mimetic isomorphism (see, e.g., DiMaggio and Powell 1983).

[10] All financial statements are processed by database analysts with the same template across countries and years (see Appendix 1). From our private correspondence with S&P Global data analysts, we obtained confirmation that

constructed from detailed line items, so it allows for examining which part of the financial statements contributes more to variations in disclosure quality.

The DQ measure developed by Chen et al. (2015) differs from other traditional measures of disclosures in the following sense. As Chen et al. (2015) argue, "DQ captures the 'fineness' of data, as reflected in the level of disaggregation of accounting data items in the financial statements" (p. 1019), and thus, "DQ is conceptually very different from existing measures of disclosures, which are often limited to a subset of firms, to a subset of disclosed items, or to texts in MD&A" (p. 1021). Moreover, while some existing measures of financial reporting quality (e.g., those based on earnings or accruals) are often contaminated by underlying economics or firm fundamentals, the disaggregation of specific line items is clearly disciplined by IFRS rules (see Appendix 1). In addition, the DQ measure allows us to capture the disclosure quality of specific statement sections or accounts as well as disclosure quality of the entire financial statements, while other existing measures of disclosures do not allow us to do so.

Measuring DQ

Chen et al.'s (2015) approach uses the proportion of nonmissing items relative to total possible items in a firm's financial statements as the measure of financial disclosure quality (*DQ*).[11] We use the Compustat database to identify missing items on the financial statements.[12] One has to be careful,

Compustat Global line items were essentially unchanged around mandatory IFRS adoption in 2005. Specifically, the product consultant team at S&P Capital IQ Compustat maintained that "there was no major change as the changes were only done on the backend tables but the major line items were mostly kept the same."

[11] Chen et al. (2015) construct DQ based on Compustat North America, whereas our study relies on Compustat Global. Our extensive communications with the Compustat data provider reveals that: (1) Compustat North America and Compustat Global follow similar rules in collecting line items; (2) there are no systematic differences in data collection across countries and over time; and (3) it is rarely the case that a firm reports an item but Compustat reports it as missing.

[12] Worldscope Datastream is an alternative data provider. We use Compustat Global for the following reasons. First, the accounting template of Compustat shows detailed aggregation and nesting features of all line items, whereas Datastream's accounting template does not provide such detailed aggregation. Second, through our communications with both data providers, Compustat consultants confirm that its accounting template was held constant around IFRS adoption, while Datastream consultants confirm that (new) supplementary data fields were introduced after IFRS adoption and some of them cannot be allocated to a corresponding parent account. Thus, we cannot guarantee the consistency of the Datastream template over our sample period. Third, Compustat has a wider coverage of firms around IFRS adoption than Datastream. Finally, since Chen et al. (2015) develop the DQ measure based on Compustat data, it is ex ante unclear whether switching to a different data provider may affect the construct validity.

however, to distinguish the following two scenarios that can lead to a missing item in Compustat files: (1) a firm has an underlying item (e.g., R&D expense) but does not report it, and Compustat database codes it as missing; or (2) the firm does not have the underlying item, and Compustat codes it as missing. The Chen et al. (2015) approach relies on the nesting feature (i.e., the sum of the components equals the total) of line item accounts as a screening mechanism to mitigate the impact of scenario (2) on *DQ*. This feature is enabled by the Compustat templates that illustrate the interrelations among standardized data items on financial statements. Appendix 1 presents two abbreviated templates for the Balance Sheet and the Income Statement to serve as illustrations.[13] Using the Balance Sheet template as an example, we classify all line items into three levels. Level III accounts are nested to corresponding Level II accounts, and all Level II accounts add up to Level I accounts. Essentially, all asset subaccounts add up to total assets, and all liabilities/equity subaccounts add up to total liabilities/shareholders' equity. We use the screening mechanisms proposed by Chen et al. (2015) to mitigate Type I error (coding an item as missing when in fact it is not missing) in constructing the *DQ* measure.[14] Following Chen et al. (2015), we value-weight all Balance Sheet accounts to approximate the economic significance of the line items relative to total assets by using the following formula:

$$\sum_{k=1}^{7}\{(\frac{\#Nonmissing\ items}{\#Total\ Items})_k \times \frac{\$Account_k}{\$Total\ Assets}\} \div 2, \quad (1)$$

To check the robustness of our results, we conduct a small sample analysis (not reported) using Datastream, and our main interpretations are unaffected.

[13] Casey, Gao, Kirschenheiter, Li, and Pandit (2018) put forth a measure of financial reporting quality based on the disaggregation quality (*DQ*) measure from Chen et al. (2015). This new measure includes accounting items from the cash flow statement. Consistent with Chen et al. (2015), we do not measure *DQ* for the Statement of Cash Flows for three reasons. First, in Compustat, the variation in the number of missing items for the Statement of Cash Flows is marginal (Chen et al. 2015). Second, Compustat Global does not accurately report cash flow classification (Gordon, Henry, Jorgensen, and Linthicum 2017). Third, the Statement of Cash Flows was not formally considered as a separate financial statement in the EU until IFRS was mandatorily adopted in 2005 (see Directive 78/660/EEC). As a result, it is difficult to construct a meaningful *DQ* score for all companies and years before 2005, and we acknowledge this as a limitation of our study.

[14] Upon request we can provide details of the screening mechanism, the linking tables for the line items, as well as an example of constructing DQ using Compustat Global data to facilitate replication of both the measure and our findings.

where *k* indexes Level I accounts. For the Balance Sheet, we have seven groups based on all Level I accounts, which are linked to 45 subaccounts. The seven groups are current assets (ACT), net PP&E (PPENT), intangible assets (INTAN), investment, advances, and other noncurrent assets (IVAEO), current liabilities (LCT), long-term liabilities (LLT), and shareholders' equity (SEQ) (see Appendix 1 for detailed variable descriptions). There are 11 items under current assets, 11 items under Non-Current Assets, 7 items under Current Liabilities, 4 items under Long-Term Liabilities, and 12 items under Shareholders' Equity. For each group, we count the number of nonmissing items in the subaccounts, and divide this number by the total number of subaccounts in that group. For example, if three out of eleven subaccounts under ACT (total current assets) are missing, the ratio of nonmissing items in this group is 8/11. Finally, we value-weight the ratios for all seven groups, and divide the score by two so that the Balance Sheet *DQ* score (*DQ_BS*) has a theoretical range between 0 and 1. Higher *DQ_BS* implies greater disclosure quality.

For the Income Statement, we first identify six Level I accounts, including total revenues (REVT), total operating expenses (XOPR), depreciation and amortization (DP), interest and related expenses (XINT), non-operating income (NOPI), and income taxes (TXT). Similar to our approach of Balance Sheet items, we link each Level I account on the Income Statement to all the associated subaccounts in Level II or Level III after performing the screening mechanisms described previously.[15] We then follow Chen et al. (2015) to compute an equal-weighted *DQ* score for the Income Statement (*DQ_IS*) by averaging the ratio of nonmissing items over the six groups.[16] Thus, *DQ_IS* also varies between 0 and 1. Similar to *DQ_BS,* higher *DQ_IS* implies greater disclosure quality.

[15] Different from Compustat North America, Compustat Global has multiple income statement formats for Total Operating Expenses (XOPR), for example, cost of sales format, purchase or production format, and others. Therefore, the number of subaccounts under XOPR depends on which format the firm uses (Compustat Global: ISMOD). See Appendix 1 for details.

[16] Note that we use value-weighting for the Balance Sheet but not for the Income Statement because the Income Statement has both positive (e.g., revenues) and negative (e.g., expenses) items making it more difficult to interpret the weights meaningfully (see Chen et al. 2015, 1030). Nevertheless, our untabulated results show that, when we use equal-weighted scheme for the Balance Sheet *DQ*, our results are qualitatively similar.

We create a summary measure of disclosure quality (*DQ*) computed as the simple average of *DQ_BS* and *DQ_IS*. The count embedded in *DQ* captures the fineness and the extent of detail on both the Balance Sheet and Income Statement. It is noteworthy that, by design, these *DQ* variables are measured by firm and fiscal year, so that we ensure the effect of IFRS adoption on financial reporting is correctly captured. Generally speaking, our count of nonmissing Compustat items for each firm-year represents the granularity of accounting data in the financial statements, so it is a direct measure of accounting disclosure quality based on the firm's annual reports. In addition, our measure is comparable across firms and countries and, thus, fits our research design needs well.

We point out that for country-level differences in accounting standards and practices, the financial statement templates from the Compustat Global database are much less disaggregated than those from the Compustat North America database. In other words, Compustat Global provides much less detailed disaggregation for many line items relative to Compustat North America. For example, in Compustat North America, the parent account "Long-Term Debt" (DLTT) consists of six subaccounts, including "Debt—Capitalized Lease Obligations" (DCLO), "Debt—Convertible" (DCVT), "Debt—Debentures" (DD), "Debt—Notes" (DN), "Debt—Subordinated" (DS), and "Other Long-Term Debt" (DLTO), whereas the parent account "Long-Term Debt" (DLTT) cannot be further disaggregated in Compustat Global. Suppose most firms have long-term debt; it follows that the DQ score for DLTT is likely lower based on Compustat North America data because DLTT in Compustat Global is always nonmissing. That said, the reason for the discrepancy lies in the different scope of the two data files. Compustat Global covers many countries worldwide, and firms from different jurisdictions exhibit a large variation in the recognition and disclosure of line items in their financial statements, since they are subject to country-specific regulations such as recognition of different equity reserves, employee obligations based on country-specific labor laws, and so on. Data analysts at Compustat Global have to go through a nontrivial process of line item standardization to ensure comparability across firms and countries. As a result, Compustat Global uses less disaggregated financial statement templates to account for those cross-country differences, and thus, its financial statement templates exhibit lower disaggregation (or more

standardization) of line items than Compustat North America's. This explains the difference in DQ statistics between our study and that of Chen et al. (2015). However, we argue that, to the extent that Compustat's data collection and coding scheme are not systematically biased across firms, more missing line items (after our adjustment) would indicate a firm has less information disclosed in its financial statements.[17]

Sample and data

Our empirical analysis is based on a balanced sample of firms over the period 2002–2007 (fiscal years) from all countries and regions included in Compustat Global, for which we can construct our test variable (*DQ*). We start with a sample of 119,703 firm-year observations for 24,612 firms from 40 countries.[18] From this sample, we exclude 877 firm-year observations for 278 firms in the financial industry (SIC codes 6000–6999). We eliminate 4,915 firm-years when the accounting standard variable is missing or coded as U.S. GAAP.[19] We also remove 34,129 observations for 10,902 firms that do not have data for the entire sample period under investigation and two countries with fewer than 25 firms per year. Because all treatment firms were required to adopt IFRS in the year 2005, we exclude firms that

[17] We have confirmed the data collection process via our extensive communications with the product consultant team at the S&P Global Market Intelligence. Generally speaking, data analysts at Compustat Global are required to go through a four-step process in the collection and standardization of corporate financial data, including: (1) alignment of data according to IFRS, U.S. GAAP, or other local accounting standards; (2) data extraction from the financial statements and notes; (3) examination of the quality of any data integrated from third-party partners by Compustat data analysts; and (4) completion of comprehensive data reviews including over 14,000 system-based validity checks. More detailed information about this process can be found at http://www.compustat.com/Compustat_Standardization (September 20, 2019).

[18] By mandatorily adopting IFRS in 2005, the EU becomes the largest jurisdiction in the world to make IFRS the only applicable financial reporting standards for publicly listed companies. There are, however, countries outside the EU that adopted IFRS starting in 2005. In line with prior studies (e.g., Landsman et al. 2012, Christensen et al. 2013), our IFRS sample also includes other non-EU countries (i.e., Australia and South Africa). Moreover, we include Norway as a member of the European Economic Area (EAA), because the EAA agreement is based on the legislation of the EU. However, we do not include Switzerland, because IFRS has never been compulsory in this country (Nobes and Zeff 2016).

[19] We use the variable "datatype" (ACCTSTD) in Compustat Global to identify the accounting standards followed by a firm in each year. Following Daske et al. (2013), we label firm-years with ACCTSTD coded as "DO," "DS," and "DR" as LOCAL GAAP users, and firm-years with ACCTSTD coded as "DA," "DI," or "DT" as IFRS users (see Appendix 2).

switch their accounting standards multiple times during the sample period, or firms that switch to IFRS in a year different from 2005 (i.e., voluntary IFRS adopters or late IFRS adopters).[20]

Our selection criteria result in a final sample of 66,504 observations for 11,084 firms. Of these, 2,473 firms (treatment group) mandatorily switched to IFRS in 2005, and the remaining 8,611 firms (control group) use local GAAP throughout the sample period (see Panel A of Table 1). Panels B and C of Table 1 report the distribution of IFRS-adopting and non-adopting firms, respectively. There are 14,838 firm-years from 16 countries in the treatment group, with Australia, the United Kingdom, and France having the highest proportion of observations. The control group consists of 51,666 firm-years from 17 countries and regions, with Japan, India, and China accounting for the highest number of observations.

[Place Table 1 about here]

In Table 2, we present descriptive statistics of the *DQ* measures and other firm characteristics for IFRS-adopting and non-adopting firms before and after mandatory IFRS adoption. Panel A presents summary statistics for the IFRS-adopting and non-adopting firms in the pre-adoption period (2002–2004). Panel A contains 7,419 firm-years from the IFRS adopting sample and 25,833 firm-years from the non-adopting sample. The average values of *DQ* are similar between the two groups in the pre-adoption period. After partitioning *DQ* into *DQ_BS* and *DQ_IS*, we observe that IFRS-adopting firms exhibit a higher level of Income Statement disaggregation and a lower level of Balance Sheet disaggregation, although the economic magnitudes of the differences are modest. Panel B shows summary statistics for the IFRS-adopting firms and non-adopting firms in the post-adoption period (2005–2007). The difference in *DQ* between the two groups increases from 0.001 to 0.029 after the IFRS adoption. We also observe that the difference in *DQ_IS* has a more pronounced increase than the difference in *DQ_BS* after IFRS adoption.

[Place Table 2 about here]

[20] For example, Regulation 1606/2002 (art. 9) of the European Parliament allowed firms to postpone IFRS adoption on or after January 2007 if they were publicly traded in a non-EU country that already required international accepted standards before the publication of the Regulation, or they had only publicly traded debt on a regulated market of any Member State of the EU. In a robustness check (not tabulated), we further include voluntary and late adopters in the sample, and our interpretations of the results are unaffected.

As discussed previously, we consider both economic benefits and costs of *DQ* changes arising from mandatory IFRS adoption. Following the IFRS literature (e.g., Daske et al. 2008, 2013; Christensen et al. 2013; Kim et al. 2008; De George et al. 2013), we measure the liquidity effect as a key benefit from IFRS adoption using the logarithm of the Amihud (2002) price impact of trades, *Ln(PRC_IMPACT)*, and the logarithm of bid-ask spread, *Ln*(*BASPRD*). The logarithm of audit fees, *Ln(AUDFEES)*, captures an observable and significant implementation cost associated with IFRS adoption. The median values reported for liquidity and audit fee variables are broadly consistent with those reported in other studies (Christensen et al. 2013; Kim et al. 2012).

Table 2 also presents descriptive statistics for our main control variables in the pre- and post-adoption periods for the IFRS-adopting firms and non-adopting firms, respectively. The first set of control variables includes firm characteristics that are associated with a firm's disclosure policies (see, for example, Cooke 1989; Wallace, Naser, and Mora 1994; Welker 1995; Leuz and Verrecchia 2000). Specifically, we include log total assets (*SIZE*), firm leverage (*LEV*), sales growth (*SALEGR*), earnings (*ROA*), and an indicator variable for merger and acquisition activities (*M&A*). Following prior research (e.g., Lang and Lundholm 1996; Heflin, Shaw, and Wild 2005; Francis and Wang 2008), we also control for the external information environment and audit quality, using financial analyst coverage (*ANALYSTS*), a big-4 auditor indicator (*BIG4*), and the presence of a qualified audit opinion (*QUALIFIED*). Additionally, we control for stock return volatility (*Ln(RET_VOL)*) at the beginning of the year to account for firm risk (e.g., Heflin et al. 2005), and we use country-level variables to isolate the effects of IFRS adoption from other possible confounding country factors (e.g., Ali and Hwang 2000). Specifically, country-level variables include the country's annual market capitalization of all listed firms per capita (*Ln(FIN_DVLP)*) and its GDP per capita (*Ln(GDP_PC)*). For detailed variable definitions, please refer to Appendix 2.

Panel A shows that, during the pre-adoption period, firms from IFRS-adopting countries are larger (*SIZE*) and more levered (*LEV*) with higher sales growth (*SALEGR*), more M&A activities (*M&A*), more analyst following (*ANALYSTS*), and lower return volatility (*Ln(RET_VOL)*). They are more likely

to be audited by the big-4 auditing firms (*BIG4*), receive a qualified audit opinion (*QUALIFIED*), and located in countries with a higher GDP per capita (*Ln(GDP_PC)*). Panel B shows that most control variables remain different between IFRS-adopting and non-adopting firms in the post-adoption period. We observe a similar trend in the difference between the means of the control variables, except for *ROA*, *SALEGR*, and *Ln(RET_VOL)*. In sum, Table 2 reveals the necessity to control for differences in firm characteristics between IFRS-adopting and non-adopting firms.[21]

4. IFRS adoption and disclosure quality changes (*Step One*)

Following prior research (e.g., Landsman et al. 2012; Hong et al. 2014), we estimate the following DID model (firm and time subscripts are omitted for convenience):

$$DQ = \alpha_1 IFRS + \alpha_2 POST + \alpha_3 IFRS \times POST + \sum \alpha_k Controls_k + \sum \alpha_j IndustryFE_j + \varepsilon, \quad (2)$$

where *IFRS* is an indicator variable that equals one for the treatment (IFRS-adopting) group, and zero for the control (non-adopting) group. *POST* is a time indicator that equals one for the post-IFRS period (2005–2007) and zero for the pre-IFRS period (2002–2004). The interaction term, *IFRS*×*POST*, is our DID estimator effectively capturing the change in *DQ* for the treatment group (first difference) relative to contemporaneous change in *DQ* for the control group (second difference). *Controls* denotes a set of control variables described above. Additionally, we control for industry fixed effects based on Campbell's (1996) industry classification (Christensen et al. 2013) and cluster the standard errors by firm (Landsman et al. 2012).[22]

Average effect of IFRS adoption on DQ

We start the analysis by graphically depicting the time-series patterns of *DQ* in IFRS-adopting and non-adopting countries during the period 2002–2007. Figure 1 offers three insights. First, there are virtually no perceptible changes in *DQ* leading up to mandatory IFRS adoption in 2005 for both groups.

[21] To control for the differences in firm characteristics between the two groups, we repeat all our analyses using the entropy-balancing approach and find that our main results continue to hold (not tabulated).

[22] The interpretation of our main results remains unchanged when we use country-level clustering and firm fixed effects in the robustness checks (not tabulated).

This pattern alleviates concerns about the parallel trend assumption underlying the DID design. Second, IFRS-adopting countries exhibit a substantial *DQ* increase in the year 2005 when mandatory IFRS adoption occurs, whereas non-adopting countries do not display a similar pattern for changes in *DQ*. Third, the *DQ* improvement persists after 2005, suggesting that the positive effect of IFRS on *DQ* does not reverse after the first year of IFRS adoption.[23]

[Place Figure 1 about here]

In Table 3, we provide the regression estimates of equation (2). In Column (1), we first estimate a reduced form of equation (2), where we include only the DID estimator, *IFRS*×*POST*. Column (1) shows a significant *DQ* increase for IFRS-adopting countries in the post-IFRS period (coefficient on *IFRS*×*POST* = 0.027; *t*-statistic = 26.92) and a significant decline in *DQ* for non-adopting countries in the same period (coefficient on *POST* = –0.005; *t*-statistic = –14.37). When we add the control variables and industry fixed effects in Column (2), the results are similar. The coefficient on *IFRS*×*POST* equals 0.032 (*t*-statistic = 24.39), and the coefficient on *POST* equals –0.011 (*t*-statistic = –26.97). This result implies that, in the post-IFRS period, an average firm in IFRS-adopting countries reports 3.2% more line items than previously, whereas an average firm in non-adopting countries reports 1.1% fewer line items.

[Place Table 3 about here]

To validate the parallel trends assumption, we include the interaction terms, *IFRS*×*D2003* and *IFRS*×*D2004,* to capture the treatment effects prior to IFRS adoption. Consistent with Figure 1, the results reveal that the differences in *DQ* between the treatment and control groups do not change prior to IFRS adoption. Specifically, the coefficients on the interaction terms are statistically insignificant in Column (3). Thus, the evidence satisfies the parallel trends assumption for the pre-adoption period (Angrist and Pischke 2009). At the same time, the coefficient on the main variable of interest, *IFRS*×*POST*, continues

[23] We also computed the DQ measure for both IFRS-adopting and non-adopting firms for a longer period, 1999–2010, and find that (1) IFRS-adopting and non-adopting firms have similar DQ in years up to 2004; (2) both types have declining DQ trends in 2006 and 2007; and (3) the trend of IFRS-adopting firms stabilizes after 2008, but the trend of non-adopting firms keeps declining. Of course, as we move away from the adoption year (2005), it becomes more difficult to attribute any changes in DQ to the adoption of IFRS.

to be positive, with comparable magnitudes as before.

For a deeper analysis of the intertemporal changes in *DQ* post adoption, we replace *POST* with yearly indicators for 2005, 2006, and 2007 (*D2005–D2007*). The interactions between *IFRS* and each of these three yearly indicators capture the intertemporal *DQ* changes in each of the post-adoption years relative to the average *DQ* in the pre-IFRS period. The results, presented in Column (4), indicate that the coefficients on the DID estimators, *IFRS*×*D2005*, *IFRS*×*D2006*, and *IFRS*×*D2007*, are increasingly positive and statistically significant (0.018, 0.028, and 0.047; *t*-statistics = 12.97, 19.95, and 30.75, respectively). This evidence implies that the treatment firms exhibit higher reporting quality relative to the control firms across each of the years following IFRS adoption. Overall, the evidence in Table 3 supports our prediction that IFRS improves the disaggregation of accounting items in the financial statements. This satisfies the relation that is often assumed in prior research and fulfils the objectives of the first step.

Disaggregation of the Balance Sheet and Income Statement

Next, we investigate how mandatory IFRS adoption affects the disaggregation of line items in the Balance Sheet (*DQ_BS*) and in the Income Statement (*DQ_IS*), separately. Table 4 reports the results for *DQ_BS* (*DQ_IS*) in the first (last) two columns. For brevity, we only tabulate the coefficients on interaction terms of yearly indicators (i.e., *D2005*, *D2006*, and *D2007*) with *IFRS*.

[Place Table 4 about here]

Across all models, the coefficients on the interaction terms between *IFRS* and the yearly indicator variables are significantly positive, suggesting that mandatory IFRS adoption enhances the disaggregation of accounting data items in both the Balance Sheet and the Income Statement. This effect, however, is more pronounced for the Income Statement. Comparing the results in Columns (2) and (4), where all control variables and industry fixed effects are included, we find that the IFRS effect on *DQ_IS* is almost twice as large as the IFRS effect on *DQ_BS* in the years 2005 (0.023 vs. 0.013) and 2006 (0.037 vs. 0.020). Additionally, the IFRS effect on *DQ_IS* intensifies in 2007, over three times larger than the concurrent IFRS effect on *DQ_BS* (0.073 vs. 0.020). Overall, Table 4 provides evidence that IFRS adoption has a

more positive impact on the disaggregation of line items in the Income Statement than in the Balance Sheet.

Disaggregation of specific accounts

Reports by auditing firms (e.g., Ernst and Young 2005) often identify six key accounting policies of IFRS as having a substantial impact on financial statement preparation (see De George et al. 2013, 451). These standards relate to Intangibles (IAS 38/AASB 138), Impairment (IAS 36/AASB 136), Financial Instruments (IAS 32/39; AASB 132/139), Share-Based Payments (IFRS 2/AASB 2), Income Taxes (IAS 12/AASB 112), and Employee Benefits (IAS 19/AASB 119). Specifically, IAS 38 mandates that a reporting entity shall disclose "each class of intangible assets" together with their "gross carrying amount and any accumulated amortization (aggregated with accumulated impairment losses) at the beginning and end of the period," and IAS 28 requires the entity to separately disclose: "a) the investor's share of the profit or loss of associates accounted for using the equity method; b) the carrying amount of those investments; and c) the investor's share of any discontinued operations of such associates." See Appendix 1 for specific IFRS mandates with respect to both the disclosure and disaggregation for the line items on the Balance Sheet and the Income Statement. As the final test of *DQ* changes, we explore how mandatory IFRS adoption affects the disaggregation of specific (Level I) accounts on the financial statements.

Table 5 presents the estimates separately for the balance sheet accounts (Panel A) and the income statement accounts (Panel B). Panel A shows that IFRS has the most positive impact on the disaggregation of intangible assets (*DQ_INTAN*) and financial investment (*DQ_IVAEO*) on the Balance Sheet. That is, the coefficients on the interaction terms (*IFRS×Time Indicators*) are positive and statistically significant for these two items. These results are generally consistent with the intuition that IFRS imposes higher requirements on accounting disclosure of intangible and goodwill balances as well as financial

instruments (e.g., Horton and Serafeim 2010; De George et al. 2013).[24] Additionally, Panel A reveals that IFRS has a small negative impact on the disaggregation of current assets (*DQ_ACT*). We, however, are unable to conjecture a reason for this decline in the disaggregation of current assets.

[Place Table 5 about here]

Panel B suggests that IFRS largely improves the disclosure of depreciation and amortization costs (*DQ_DP*) and the disclosure of non-operating income (*DQ_NOPI*). The depreciation and amortization cost results (*DQ_DP*) are consistent with the IAS 38 mandate described above and the result documented earlier regarding changes in the disclosure quality of intangible assets (*DQ_INTAN*). The non-operating income results (*DQ_NOPI*) are consistent with the disclosure requirements in IAS 32, which disciplines the income statement disclosure of non-operating income/expenses from financial instruments. The disclosure changes of operating expense items (*DQ_XOPR*) are ambiguous. That is, the coefficients on the interaction terms, *IFRS×Time Indicators*, are sometimes positive (*IFRS×D2006* and *IFRS×D2007*) and sometimes negative (*IFRS×D2005*).

Overall, our findings reported in this section indicate that: (1) firms provide more disaggregated information in the annual report following IFRS adoption, and (2) the improvement in disclosure quality occurs in both balance sheet and income statement accounts—primarily in the disaggregation of intangibles and investment accounts on the Balance Sheet as well as depreciation, amortization, and non-operating income items on the Income Statement. The accounting literature provides abundant evidence to explain why disclosing information about intangibles and financial instruments is important for investors and other information users. In the modern economy, intangibles are increasingly important yet poorly disclosed (e.g., Amir and Lev 1996; Aboody and Lev 1998, 2000; Koh and Reeb 2015). To the extent that IFRS disciplines the disclosure and disaggregation of intangible accounts, it follows that IFRS

[24] IAS 38 imposes the reporting of all intangible expenditures as intangible assets if, and only if: (a) it is probable that future economic benefits attributable to the asset will flow to the entity, and (b) the cost of this asset can be measured reliably (IAS 38, § 22). An intangible expenditure must therefore be either expensed or capitalized. Optional treatments in local GAAP no longer exist after IAS 38.

adoption should lower information asymmetry and thus improve market liquidity. Moreover, a finer disclosure of financial instruments will provide more value-relevant information to investors (e.g., Venkatachalam 1996; Schrand 1997; Ahmed, Kilic, and Lobo 2006). Similarly, a finer disclosure of equity investment under IFRS reduces managers' ability to manipulate accounting numbers through affiliated transactions (e.g., Hsu and Pourjalali 2015). Therefore, we expect that the disaggregation of intangibles and financial instruments is particularly useful for accounting information users.

5. Economic consequences of IFRS adoption (*Step Two*)

In this section, we analyze whether the observed changes in *DQ* due to mandatory IFRS adoption translate into economic consequences. We investigate both the benefits (market liquidity) and the costs (audit fees) associated with mandatory IFRS adoption. This step allows us to offer direct evidence on the channel (i.e., improved disclosure quality) that drives the economic consequences.

Market liquidity tests

To analyze the economic benefits from IFRS adoption, we estimate the following model (firm and year subscripts are suppressed for convenience):

$$LIQUID = \beta_1 IFRS + \beta_2 POST + \beta_3 \Delta DQ\_POS + \beta_4 IFRS \times POST + \beta_5 IFRS \times \Delta DQ\_POS + \beta_6 POST \times \Delta DQ\_POS + \beta_7 IFRS \times POST \times \Delta DQ\_POS + \sum \beta_k Controls_k + \sum \beta_j FE_j + \varsigma, \quad (3)$$

where *LIQUID* denotes market liquidity, proxied by the logarithm of Amihud (2002) price impact measure, *Ln*(*PRC_IMPACT*), and the logarithm of bid-ask spread, *Ln*(*BASPRD*). These variables are inverse measures of market liquidity. *ΔDQ_POS* is an indicator variable that takes the value of one if the firm exhibits a positive change in the average DQ from the pre-IFRS adoption period (2002–2004) to the post-IFRS adoption period (2005–2007) and zero otherwise, regardless of whether the firm locates in an IFRS-adopting country or not. We use the difference in the average *DQ* across the pre- and post-IFRS adoption years to determine whether *DQ* improved after IFRS adoption. This variable allows us to differentiate the liquidity effects of mandatory IFRS adoption for firms with positive *DQ* changes (*IFRS*×*POST*×*ΔDQ_POS*) versus firms with non-positive *DQ* changes (*IFRS*×*POST*). This research

design allows us to investigate directly the link between changes in *DQ* and potential benefits of IFRS adoption. In particular, a negative coefficient on the triple interaction term, *IFRS*×*POST*×*ΔDQ_POS*, would be consistent with changes in disclosure quality increasing the liquidity of IFRS-adopting firms after IFRS adoption. We estimate the specification after controlling for other determinants of liquidity (*Controls*), such as lagged firm size, stock liquidity, and return volatility (e.g., Leuz and Wysocki 2000; Christensen et al. 2013). We also include industry fixed effects in the empirical specifications and cluster the standard errors by firm.

Table 6 reports the results of estimating equation (3). In Column (1), we report estimates from a baseline regression of *Ln(PRC_IMPACT)* on *IFRS*, *POST,* and *IFRS*×*POST* without including *ΔDQ_POS* and the control variables for the entire sample period (2002–2007). The coefficient on *IFRS*×*POST* is significantly negative (β_4 = –0.174, *t*-statistic = –3.93), suggesting that market liquidity increases after IFRS adoption. This evidence is consistent with prior research (e.g., Daske et al. 2008, 2013).

[Place Table 6 about here]

Column (2) presents the results from estimating the full model. The coefficient of interest in this column is the interaction term, *IFRS*×*POST*×*ΔDQ_POS*. As predicted, this coefficient is reliably negative (β_7 = –0.956, *t*-statistic = –7.72). In this specification, the coefficient on the interaction term, *IFRS*×*POST*, captures the change in liquidity for IFRS-adopting firms that experience a decline in *DQ*. The interaction term is positive and statistically significant (β_4 = 0.489; *t*-statistic = 7.51), leading to the interpretation that there is a *decline* in market liquidity for IFRS-adopting firms with negative *DQ* changes. Together, the evidence suggests that the liquidity benefits accrue only to IFRS-adopting firms with positive *DQ* changes, and not to all firms adopting IFRS.

Next, following Daske et al. (2013) we restrict the sample period to end in 2005, so that we can evaluate the effects of disclosure quality changes solely during the year of IFRS adoption. This design helps to rule out the possibility that our results are driven by other confounding factors in the post-IFRS adoption period. The results in Column (3) indicate that not only is the interaction term *IFRS*×*POST*×*ΔDQ_POS* negative and significant (β_7 = –0.614, *t*-statistic = –5.04), but also that the

magnitude of this coefficient is more than 60% of that reported in Column (2) for the entire sample period (–0.614 vs. –0.956). This finding suggests that a significant portion of the liquidity benefits arising from the improvement in *DQ* occurs in the IFRS adoption year 2005.

Furthermore, to explore the cross-sectional variation in the disclosure quality effects on market liquidity, we focus on the subsample of IFRS-adopting countries. To accomplish this, we modify equation (3) as follows:

$$LIQUID = \beta_1 POST + \beta_2 \Delta DQ\_POS + \beta_3 POST \times \Delta DQ\_POS + \sum \beta_k Controls_k + \sum \beta_j FE_j + \varsigma, \qquad (3')$$

The coefficient of interest in equation (3') is the interaction term, *POST×ΔDQ_POS*, which captures the liquidity changes for IFRS-adopting firms with positive disclosure quality changes in the post-adoption period. The expected sign on this coefficient is negative. The results in Column (4) of Table 6 suggest that mandatory IFRS adoption has a positive effect on market liquidity for firms that provide "finer" information in the financial statements. That is, the coefficient on *POST×ΔDQ_POS* is negative and significant (β_3 = –0.409; *t*-statistic = –5.74). In addition, most of the liquidity benefits accrue in the year of IFRS adoption (see Column (5)). That is, when we restrict the sample period to 2005, we find that the coefficient on the interaction term is over 60% of the coefficient in Column (4) (–0.262 vs. –0.409). This result is robust to controlling for country fixed effects (see Column (6)). Thus, it is unlikely that institutional characteristics of the IFRS-adopting countries drive the liquidity benefits.

In Table 7, we repeat the tests in Table 6 with another dependent variable, bid-ask spread (*Ln(BASPRD)*). None of our inferences change. In fact, the results are even stronger—that is, we find that most of the liquidity benefits from positive disclosure changes accrue in the year of adoption 2005. Overall, our findings in Tables 6 and 7 suggest that the economic benefits arising from mandatory IFRS adoption accrue only to firms with *DQ* improvements. These analyses, in turn, help us provide direct evidence on the disclosure channel underlying the liquidity benefits of IFRS adoption.

[Place Table 7 about here]

Audit fee tests

In this section, we investigate the economic costs associated with mandatory IFRS adoption by examining the relation between IFRS adoption and audit costs. Prior research by Kim et al. (2012) documents that audit fees increase from the pre-IFRS to the post-IFRS period for IFRS-adopting firms relative to non-adopting firms. We adopt an empirical specification similar to that of Kim et al. (2012) to test the channel that drives this audit fee increase (firm and year subscripts are suppressed for convenience):

$$Ln(AUDFEES) = \gamma_1 IFRS + \gamma_2 POST + \gamma_3 \Delta DQ\_POS + \gamma_4 IFRS \times POST \quad (4)$$
$$+ \gamma_5 IFRS \times \Delta DQ\_POS + \gamma_6 POST \times \Delta DQ\_POS + \gamma_7 IFRS \times POST \times \Delta DQ\_POS$$
$$+ \sum \gamma_k Controls_k + \sum \gamma_j FE_j + \epsilon,$$

where *Ln(AUDFEES)* is the natural logarithm of audit fees paid by the firm and *Controls* denotes a set of firm-specific factors related to audit costs used in prior studies (e.g., Kim et al. 2012). Specifically, we include standard determinants of audit fees such as a loss indicator, leverage, short-term solvency proxied by quick ratio, a special items indicator, earnings, and qualified audit opinions. We also include a big-4 indicator to capture the big-4 auditor fee premium, firm size, and the ratio of inventories and receivables to assets to capture client size and complexity.

As with liquidity tests, we also focus on the subsample of IFRS-adopting countries using a modification of equation (4):

$$Ln(AUDFEES) = \gamma_1 POST + \gamma_2 \Delta DQ\_POS + \gamma_3 POST \times \Delta DQ\_POS + \sum \gamma_k Controls_k + \quad (4')$$
$$\sum \gamma_j FE_j + \varsigma,$$

If the increase in disclosure results in greater implementation costs and associated resources spent in auditing the firm's activities, we would expect the coefficient on the triple-interaction term, *IFRS*×*POST*×*ΔDQ_POS*, to be positive in equation (4). Similarly, in equation (4'), we predict the interaction term, *POST*×*ΔDQ_POS*, to be positive.

We present the results of estimating equations (4) and (4') in Table 8. Consistent with prior studies (e.g., Kim et al. 2012; De George et al. 2013), Column (1) suggests an increase in audit fees after mandatory IFRS adoption. The coefficient on *IFRS*×*POST* is reliably positive (γ_4 = 0.613, *t*-statistic = 16.18), indicating that IFRS adoption is generally associated with higher implementation costs. In Column (2), we find that the coefficient on *IFRS*×*POST*×*ΔDQ_POS* is significantly positive (γ_7 = 0.197, *t*-statistic = 3.64). This evidence indicates that audit costs increase to a greater extent for IFRS-adopting firms with more disaggregated disclosure of line items in the financial statements.

[Place Table 8 about here]

However, when we restrict the sample to the period 2002–2005, the coefficient on *IFRS*×*POST*×*ΔDQ_POS* is no longer statistically significant (γ_7 = 0.022, *t*-statistic = 0.42). Notice, however, that the coefficient on *IFRS*×*POST* remains positive and significant (γ_4 = 0.281, *t*-statistic = 7.72). This result suggests that the increase in audit fees in the first post-adoption year is independent of the extent of *DQ* changes. Furthermore, when we restrict the sample to IFRS-adopting firms, the results convey a similar picture. Results presented in the last three columns of Table 8 reveal that the coefficients on *POST*×*ΔDQ_POS* are insignificant. But, the coefficient on *POST* that captures the average change in audit fees during the post-adoption period is positive and significant in each of the columns. Together, the results in Table 8 suggests that IFRS adoption is associated with a *fixed* switching cost regardless of the improvements in disclosure quality.

6. Supplemental analysis

Our analyses thus far suggest that: (1) IFRS-adopting firms may receive more capital market (liquidity) benefits from providing "finer" disclosure of line items in the financial statements; and (2) they may also incur higher implementation costs via audit fees post IFRS adoption, but the fees are independent of financial statement disaggregation. Thus, while the costs are the same for all IFRS-adopting firms, the benefits are much higher for firms that improved disclosure quality.

A natural question that arises from the above findings is whether and to what extent time-varying country factors (e.g., other regulations and enforcements) have a confounding effect on the relation

between IFRS adoption on DQ changes (e.g., Christensen et al. 2013; Isidro et al. 2020). We conduct the following tests to address this concern.

Which firms experience higher DQ changes following IFRS adoption?

First, we examine which firms experience higher DQ changes following IFRS adoption by relating the DQ changes to their pre-IFRS condition of disclosure quality (*PRE_DQ*). We also include three country factors that are widely used in prior IFRS studies (e.g., Bae et al. 2008; Brown, Preiato, and Tarca 2014), such as the extent of accounting differences between IFRS and local GAAP (*ACCT_DIST*), compliance enforcement changes surrounding IFRS adoption (*ΔENFORC*), and capital market development (*Ln(FIN_DVLP)*).[25] We expect that *DQ* changes would be more pronounced for firms with lower pre-IFRS DQ. To alleviate concerns about confounding effects, we focus on the *DQ* change in the IFRS adoption year (i.e., 2005) by estimating the empirical specification below.

$$\Delta DQ_{2005} = \delta_1 PRE_{DQ} + \delta_2 ACCT_{DIST} + \delta_3 \Delta ENFORC + \delta_4 Ln(FIN\_DVLP) + \sum \delta_k Controls_k + \sum \delta_j FE_j + \upsilon, \quad (5)$$

where ΔDQ_{2005} is the change in *DQ* from 2004 to 2005. The variable *PRE_DQ* is an indicator that equals one when the firm's *DQ* in 2004 is below the median value in IFRS-adopting countries. The vector of controls includes a loss indicator, an M&A indicator, a big-4 auditor indicator, sales growth, leverage, and firm size. The descriptive statistics are shown in Panel A of Table 9.

[Place Table 9 about here]

Figure 2 plots the time-series patterns of *DQ* for IFRS-adopting firms with high and low pre-IFRS *DQ*, which is defined as the top and bottom terciles of average *DQ* in the pre-IFRS period. As expected, it shows very different time-series patterns of *DQ* for firms with high versus low pre-IFRS *DQ*. Firms with low pre-IFRS *DQ* exhibit large increases in *DQ* upon IFRS adoption. Their average *DQ*

[25] This measure reflects a country-specific level of enforcement activities promoting compliance with accounting standards. Brown et al. (2014) provide this measure at three different dates to measure changes around IFRS adoption (2002, 2005, and 2008). Specifically, they maintain (p. 4): "the index may be useful in future cross-country studies, particularly those exploring the impact of IFRS on aspects of financial reporting." Note that the enforcement data are not available for Nigeria and Sri Lanka.

increases from 0.86 to 0.92 in 2005, representing 6% more nonmissing line items in the financial statements. In contrast, no such pattern is found for firms with high pre-IFRS *DQ*. In fact, these firms register a small decline in *DQ* in 2005. This figure confirms our intuition that pre-IFRS *DQ* is a key determinant of *DQ* changes upon IFRS adoption. This is consistent with Daske et al.'s (2013, p. 502) conjecture that the heterogeneity in economic consequences around adoption may also stem from prior reporting differences.

[Place Figure 2 about here]

Table 9, Panel B, reports the estimates of equation (5). Column (1) documents that disclosure improvement is greater for firms located in countries with greater differences between IFRS and local GAAP, with enhanced compliance enforcements, and with more developed financial markets (e.g., Bae et al. 2008; Byard et al. 2011; DeFond et al. 2011). All three variables, together with industry fixed effects, explain 11.8% (R^2) of the variation in *DQ* changes. The R^2 of including *PRE_DQ* is much higher, at 34.1%. When other control variables are included, the coefficients on *ACCT_DIST*, *ΔENFORC*, and *Ln(FIN_DVLP)* become less significant in Column (3). When country fixed effects are included in Column (4), the coefficients on the three country-level factors either disappear or become insignificant, while the coefficient on *PRE_DQ* remains significantly positive, indicating that firms with low *DQ* disclose 4.8% more line items upon the IFRS adoption within each country. The result also confirms that pre-IFRS DQ is an important determinant of the DQ changes for IFRS-adopting firms.

Controlling for other country factors

A recent paper by Isidro et al. (2020) indicates that the synchronicity of time-varying country factors poses an identification challenge for researchers to isolate the individual effect of IFRS adoption on accounting disclosure quality from other country factors. Our research design alleviates such a concern in two aspects. First, unlike traditional disclosure quality based on certain accounting numbers (e.g., earnings or accruals), the disaggregation of line items is disciplined by specific IFRS rules and, thus, less likely contaminated by other country attributes. Second, the second-step tests in our paper focus on cross-sectional differences in the economic consequences between IFRS-adopting firms with positive versus

negative DQ changes, and our results hold after controlling for country fixed effects. While Isidro et al.'s (2020) results are based on country-level analyses, it is silent on intra-country differences in the economic consequences of DQ changes due to IFRS adoption.

To fully address any remaining concerns about time-varying country factors, we take a more comprehensive approach by obtaining as many as 21 country attributes, including regulatory, political, social, and economic conditions, before and after IFRS adoption from Isidro et al. (2020).[26] Following Isidro et al. (2020), we focus on IFRS-adopting countries and implement the principal component analysis (PCA) approach to create four country-level latent factors (i.e., *PC1–PC4*) that capture joint variations in the country attributes. Panel A of Table 10 shows our first-step tests after controlling for *PC1–PC4*, and the results remain robust. For the second-step tests, we control for changes in those latent factors surrounding the IFRS adoption year (i.e., *ΔPC1–ΔPC4*) as well as their interactions with the *POST* in equation (3), so that the new variables are consistent with *ΔDQ_POS* and *POST×ΔDQ_POS*. The results are shown in Panel B of Table 10. Again, our main results are unaffected.

[Place Table 10 about here]

Put together, our results in the above sub-sections complement each other. While the first set of tests allows us to look into more specific effects of enforcement changes, capital market development, and the extent of accounting differences between IFRS and local GAAP, the second set of analyses allows us to control for a larger set of country attributes to ensure robustness of findings.

Path analysis

A related question is how important the DQ channel is relative to other channels in affecting the economic consequences of IFRS adoption. Following Landsman et al. (2012), we utilize the path analysis design as an attempt to isolate the effect of the DQ channel from all other channels. In a typical path analysis, "there is a hypothesized chain of relations where a source variable affects a mediating variable, which in turn affects an outcome variable" (Landsman et al. 2012, 40). In this study, the source variable

[26] Please refer to Appendix 1 in Isidro et al. (2020): "Change variables by country and IFRS periods."

is the post-IFRS indicator (*POST_IFRS*), the mediating variable is disclosure quality (*DQ*), and the outcome variable is market liquidity. Path analysis allows us to determine the importance of the DQ channel (i.e., the indirect effect) relative to other channels (i.e., the direct effect). The results are shown in Figure 3. Consistent with our previous findings, Figure 3 shows that IFRS adoption (*POST_IFRS*) increases firms' disclosure quality (*DQ*), which in turn causes liquidity improvements. However, the direct effect of IFRS adoption on market liquidity is statistically insignificant, implying that the DQ channel is probably more important than the direct channel in affecting stock liquidity. In Figure 4, we partition *DQ* into *DQ_BS* and *DQ_IS* and use them as the two mediating variables. The results suggest that higher market liquidity upon IFRS adoption is more attributable to the disaggregation of Income Statement items than the disaggregation of Balance Sheet items, consistent with our previous findings.

[Place Figure 3 and Figure 4 about here]

Additional sensitivity tests

We conduct a battery of additional sensitivity tests to further strengthen identification. First, we reestimate the first-step and second-step tests by including firm fixed effects. Our results remain robust, suggesting that our findings above are unlikely driven by time-invariant firm-level omitted factors. Second, to address potential concerns about the sample period or regression specifications, we expand our sample period to a longer period (2000–2015) and use the staggered adoption design in Daske et al. (2013, Eq. [1]), and our results still hold. Third, we explore cross-sectional differences in the relations among IFRS adoption, DQ changes, and the liquidity effect. We find evidence that IFRS adoption has a more positive impact on DQ and, consequently, market liquidity for firms located in countries with better reporting enforcements. This evidence complements Christensen et al. (2013) by showing a joint effect of IFRS and enforcements on market liquidity. Finally, we control for voluntary disclosure by including management forecasts in the main regression specifications, and we find robust results.

7. Conclusions

In this study, we explore the role of changes in disclosure quality stemming from the IFRS mandate on the economic consequences of IFRS adoption. Prior research on economic consequences

inherently assumes that IFRS adoption results in improvements in disclosure quality. We adopt a two-step approach to better understand the importance of the disclosure channel on the economic consequences of IFRS adoption. Using a difference-in-difference research design, we first document that firms that mandatorily adopt IFRS improve their disclosure quality as measured by the extent of disaggregated information provided in their annual financial statements. In the second step, we examine whether the observed disclosure changes are related to the benefits and costs of IFRS adoption.

We report two key findings. First, we document that firms that adopt IFRS experience significant increases in market liquidity but that this increase is greater for firms that provide more disaggregated information. Thus, we infer that the improvements in market liquidity following IFRS adoption are at least partially attributable to disclosure improvements that occur from IFRS adoption. Second, we document that while IFRS-adopting firms experience an increase in audit fees, the audit fees do not vary based on the disclosure improvements from IFRS adoption. Neither result is affected by confounding effects of concurrent changes in country factors. Taken together, the findings imply that, while more disaggregated information provided by IFRS-adopting firms offers incremental capital market benefits (liquidity), all IFRS-adopting firms incur the same costs (audit fees) regardless of the disclosure improvements. Thus, the cost-benefit trade-offs not only vary across IFRS-adopting countries but also vary across IFRS-adopting firms within a country.

Our study has implications for research and practice. First, our paper supports the call by Leuz and Wysocki (2016) about the importance of adopting a two-step approach when examining the economic consequences of disclosure regulation. Second, the evidence in the paper suggests that the measure developed by Chen et al. (2015) has empirical validity beyond the US setting and future researchers can adapt this measure for exploring interesting questions in international accounting (see also Isidro et al. 2020). Last, but not least, our evidence that IFRS adopting firms incur the same audit fees despite the disclosure improvements is insightful for future adopters and informative to standard-setters.

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Appendix 1

Financial Statement Templates (Compustat Global)

Balance Sheet Template

Level III ACCOUNTS	Level II	Level I	IFRS REQUIREMENTS
Current Assets (11 items)	= CHE + RECT + INVT + ACO		
Cash and Short-Term Investments			
Cash (CH)	CHE	ACT	IAS 7.45: An entity shall disclose the components of cash and cash equivalents.
+ Short-Term Investments (IVST)	CHE	ACT	
Receivables			
Receivables - Trade (RECTR)	RECT	ACT	IAS 1.75: receivables are disaggregated into amounts receivable from trade customers, receivables from related parties, prepayments and other amounts.
+ Receivables - Other (RECCO)	RECT	ACT	
Inventories			
Inventories - Raw Materials (INVRM)	INVT	ACT	IAS 1.75: inventories are sub-classified, in accordance with IAS 2, Inventories, into classifications such as merchandise, production supplies, materials, work in progress and finished goods.
+ Inventories - Work in Process (INVWIP)	INVT	ACT	
+ Inventories - Finished Goods (INVFG)	INVT	ACT	
+ Inventories - Other (INVO)	INVT	ACT	
Other Current Assets			
Prepaid Expenses (XPP)	ACO	ACT	
+ Treasury Stock - Current Assets (TSCA)	ACO	ACT	IAS 32.34: the amount of treasury shares held is disclosed separately, either on the face of the balance sheet or in the notes.
+ Other Current Assets - Sundry (ACOX)	ACO	ACT	
Non-Current Assets (11 items)	= PPENT + INTAN + IVAEO*		
Property Plant and Equipment - Net			
Gross PP&E (PPEGT)	PPENT	PPENT	IAS 16.73: The financial statements shall disclose, for each class of PP&E, the gross carrying amount and the accumulated depreciation (aggregated with accumulated impairment losses) at the beginning and end of the period.
– Accumulated Depreciation (DPACT)	PPENT	PPENT	
– Investment Grants and Other Deductions (IVGOD)	PPENT	PPENT	
Intangible Assets	INTAN	INTAN	IAS 38.118: An entity shall disclose the following for each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets: ... d) the gross carrying amount and any accumulated amortization (aggregated with accumulated impairment losses) at the beginning and end of the period.
Investment and Advances - Equity	IVAEQ	IVAEO*	IAS 28.38: The following shall be separately disclosed: a) the investor's share of the profit or loss of associates accounted for using the equity method; b) the carrying amount of those investments; and c) the investor's share of any discontinued operations of such associates.
Investment and Advances - Other	IVAO	IVAEO*	
Other Noncurrent Assets			
Deferred Charges (DC)	AO	IVAEO*	
+ Treasury Stock - Long-Term Assets (TSTLTA)	AO	IVAEO*	IAS 32.34: the amount of treasury shares held is disclosed separately, either on the face of the balance sheet or in the notes.
+ Unappropriated Net Loss (UNL)	AO	IVAEO*	
+ Exchange Adjustments - Assets (EA)	AO	IVAEO*	IAS 16.73: a reconciliation of the carrying amount at the beginning and end of the period showing: … viii) the net exchange differences arising on the translation of the financial statements from the functional currency into a different presentation currency, including the translation of a foreign operation into the presentation currency of the reporting entity.
+ Other Assets - Sundry (AOX)	AO	IVAEO*	
Assets – Total		**AT**	

Level III ACCOUNTS	Level II	Level I	IFRS REQUIREMENTS
Current Liabilities (7 items)	= DLC + AP + LCO		
Debt in Current Liabilities			
Debt - Due in 1st Year (DD1)	DLC	LCT	IAS 1.61: Some current liabilities, such as trade payables and some accruals for employee and other operating costs, are part of the working capital used in the entity's normal operating cycle. Such operating items are classified as current liabilities even if they are due to be settled more than twelve months after the balance sheet date.
+ Notes Payable (NP)	DLC	LCT	
Account Payable	AP	LCT	
Other Current Liabilities			
Accrued Expense (XACC)	LCO	LCT	
+ Income Taxes Payable (TXP)	LCO	LCT	IAS 1.68: As a minimum, the face of the balance sheet shall include line items that present the following amounts: … m) liabilities and assets for current tax, as defined in IAS 12 Income Taxes.
+ Other Accounts Payable (APO)	LCO	LCT	
+ Other Current Liabilities - Sundry (LCOX)	LCO	LCT	
Long-Term Liabilities (4 items)	= TXDB + DLTT + RVUTX + LO		
Deferred Taxes -Balance Sheet	TXDB	LLT*	IAS 1.68: As a minimum, the face of the balance sheet shall include line items that present the following amounts: … n) deferred tax liabilities and deferred tax assets, as defined in IAS 12.
Long-Term Debt	DLTT	LLT*	
Reserves - Untaxed	RVUTX	LLT*	
Other Liabilities	LO	LLT*	
Liabilities - Total		**LT**	
Common Stock	CSTK	SEQ	IAS 1.76: The entity shall disclose the following, either on the face of the balance sheet or in the notes: a) for each class of share capital: i) the number of shares authorized; ii) the number of shares issued and fully paid, and issued but not fully paid; iii) par value per share, or that the shares have no par value; iv) a reconciliation of the number of shares outstanding at the beginning and at the end of the period; v) the rights, preferences and restrictions attaching to that class, including restrictions on the distribution of dividends and the repayment of capital.
Preferred Stock			
Preferred Stock - Redeemable (PSTKR)	PSTK	SEQ	
+ Preferred Stock - Nonredeemable (PSTKN)	PSTK	SEQ	
Stockholders Equity - Total (12 items)		**SEQ**	

Income Statement Template

Level III ACCOUNTS	Level II	Level I	IFRS REQUIREMENTS
Revenue - Total (2 items)	= SALE + OPRO		
Sales/Turnover - Net (SALE)	REVT		IAS 18.35: An entity shall disclose: … b) the amount of each significant category of revenue recognized during the period, including revenue arising from: i) the sale of goods; ii) the rendering of services; iii) interest; iv) royalties; v) dividends; and c) the amount of revenue arising from exchanges of goods or services included in each significant category of revenue.
Operating Revenues - Other (OPRO)	REVT		
Operating Expense - Total (12 items)			
Model 1 - Cost of sales format: **XPRO = COGS – XOPRO – XSGA**			IAS 1.91: 2) Under the 'nature of expense' method, expenses are aggregated in the income statement according to their nature, and are not reallocated among various functions within the entity.
Model 2 - Purchase format: **XPRO = XOPRO + RAWMSM + XSTF – CAPCST – STKCH**			
Model 3-5: All available items are used.			
Cost of Goods Sold (COGS)	XPRO		IAS 1.92: 3) The second form of analysis is the 'function of expense' or 'cost of sales' method, which classifies expenses according to their function as part of cost of sales or, for example, the costs of distribution or administrative activities. At a minimum, an entity discloses its cost of sales under this method separately from other expenses. This method can provide more relevant information to users than the classification of expenses by nature, but allocating costs to functions may require arbitrary allocations and involve considerable judgement.
Selling, General and Administrative Expenses (XSGA)	XPRO		
Raw Materials, Supplies, and Merchandise (RAWMSM)	XPRO		
Change in Stocks (STKCH)	XPRO		
Capitalized Costs (CAPCST)	XPRO		
Staff Expense - Income Account (XSTF)	XPRO		
Other Operating Expense (XOPRO)	XPRO		
Depreciation and Amortization - Total (2 items)	= DFXA + AM		
Depreciation of Fixed Assets - Tangible (DFXA)	DP		IAS 16.73: The financial statements shall disclose, for each class of property, plant and equipment: vii) depreciation.
+ Amortization of Intangibles (AM)	DP		IAS 38.118: An entity shall disclose the following for each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets: ... e) the line item(s) of the income statement in which any amortization of intangible assets is included; and ... vi) any amortization recognized during the period.
Interest and Related Expense (1 item)	XINT		IAS 32.94 (h): An entity shall disclose material items of income, expense and gains and losses resulting from financial assets and financial liabilities, whether included in profit or loss or as a separate component of equity.
Non-operating Income/Expense (4 items)	= SPI + FCA + INTC + IDIT		
Special Items (SPI)	NOPI		IAS 32.35: Interest, dividends, losses and gains relating to a financial instrument or a component of a financial instrument that is a financial liability shall be recognized as income or expense in profit or loss.
+ Foreign Exchange Income/Loss (FCA)	NOPI		
+ Interest Capitalized (INTC)	NOPI		
+ Interest and Related Income (IDIT)	NOPI		
Pretax Income **(**= REVT **– XOPR – DP + XINT + SPI + NOPI)**		**PI**	
Income Taxes - Total (3 items)	= TXC + TXDI + TXO		
Income Taxes - Current (TXC)	TXT		IAS 12.79: The major components of tax expense/income shall be separately disclosed. IAS 12.80: Note: Components of tax expense (income) may include: current tax expense (income); any adjustments recognized in the period for current tax of prior periods; the amount of deferred tax expense (income) relating to the origination and reversal of temporary differences; the amount of deferred tax expense (income) relating to changes in tax rates or the imposition of new taxes; etc.
+ Income Taxes - Deferred (TXDI)	TXT		
+ Income Taxes - Other (TXO)	TXT		
Income before Extraordinary Items and Non-controlling Interest		**IBMII**	

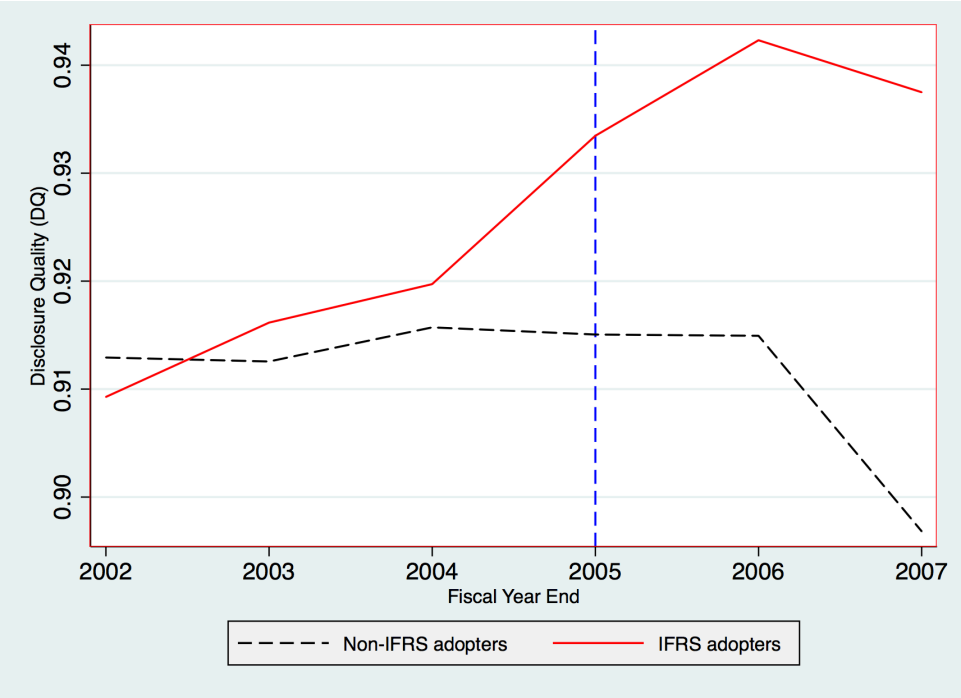
Notes: Investment, Advances, and Other Assets (INVAEO) and Long-term Liabilities (LLT) are created for the computation of value-weighted nonmissing Balance Sheet items. IVAEO = AT – ACT – PPENT – INTAN, and LLT = LT – LCT.

Appendix 2
Variable Definitions

Variable Name	Variable Definition	Data Source
DQ	The average value of *DQ_BS* and *DQ_IS* (see Section 3)	Compustat Global
DQ_BS	Disclosure quality measure based on balance sheet items (see Section 3)	Compustat Global
DQ_IS	Disclosure quality measure based on income statement items (see Section 3)	Compustat Global
POST	An indicator variable that equals one for fiscal years 2005–2007, and 0 for fiscal years 2002–2004.	Compustat Global
SIZE	Natural logarithm of total assets.	Compustat Global
LEV	Ratio of year-end total liabilities to total assets.	Compustat Global
SALEGR	Percentage change in sales growth.	Compustat Global
ROA	Ratio of earnings before extraordinary items to average total assets.	Compustat Global
M&A	An indicator variable that equals one if "acqmeth" and "compst" are equal to one, and zero otherwise.	Compustat Global
BIG4	An indicator variable that equals one when the firm has a big-4 auditor, and zero otherwise.	Compustat Global
QUALIFIED	An indicator variable that equals one if the firm receives a qualified opinion from the auditor, and zero otherwise.	Compustat Global
ANALYSTS	An indicator variable that equals one if the firm has analysts following, and zero otherwise.	I/B/E/S/
Ln(RET_VOL)	Natural logarithm of the standard deviation of daily returns computed over the fiscal year, i.e., the 12-month period around the fiscal year end.	Compustat Global
Ln(PRC_IMPACT)	Natural logarithm of median value of the Amihud (2002) illiquidity measure (daily absolute stock returns divided by US$ trading volume) computed over the fiscal year, i.e., the 12-month period around the fiscal year end.	Compustat Global
ZRDAYS	Ratio of zero-return trading days to all potential trading days over the fiscal year, i.e., the 12-month period around the fiscal year end.	Compustat Global
Ln(BASPRD)	Natural logarithm of the median daily spread (the difference between the closing bid price and ask price divided by the mid-point and multiplied by 100) over the fiscal year, i.e., the 12-month period around the fiscal year end.	Datastream
Ln(AUDFEES)	Natural logarithm of audit fees (US $).	Datastream
Ln(FIN_DVLP)	Natural logarithm of the ratio of the market capitalization (US $) of all listed firms deflated by the population in a country.	World Bank
QUICK	Quick assets divided by current liabilities.	Compustat Global

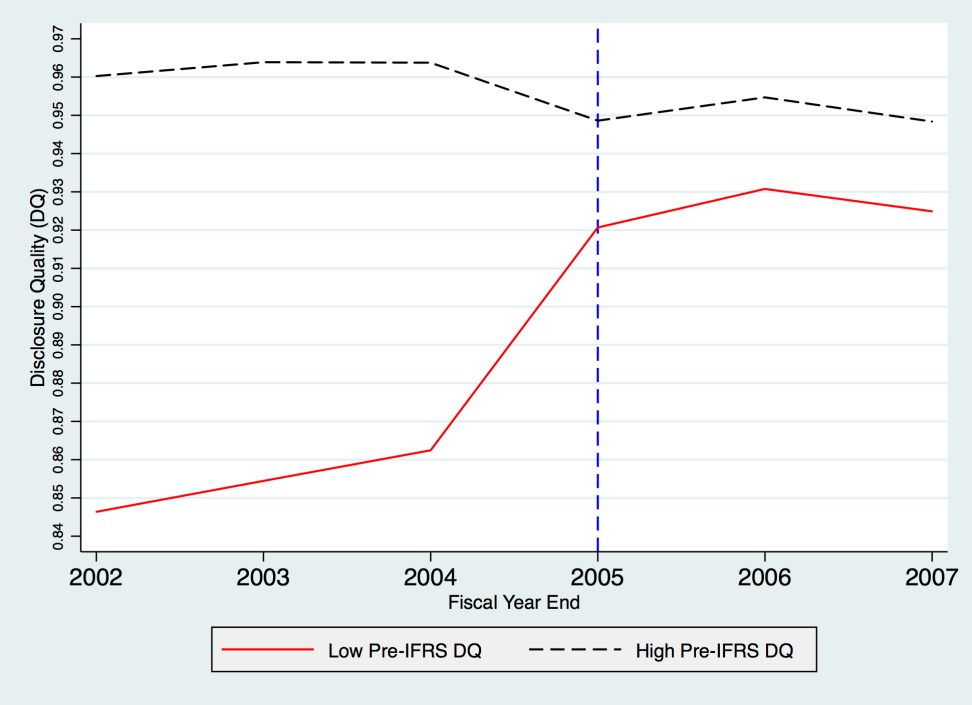
Variable Name	Variable Definition	Data Source
INVREC	Sum of inventory and receivables divided by total assets.	Compustat Global
SPECIAL_ITEMS	An indicator variable that equals one if the firm reports special items, and zero otherwise.	Compustat Global
Ln(GDP_PC)	Natural logarithm of Gross Domestic Product (GDP) per capita (US $) in a country.	World Bank
ΔDQ_POS	An indicator variable that equals one if the firm exhibits a positive change in the average *DQ* from the pre-IFRS adoption period (fiscal years 2002–2004) to the post-IFRS adoption period (fiscal years 2005–2007), and zero otherwise (regardless of whether the firm is located in an IFRS-adopting country or not).	Compustat Global
PRE_DQ	An indicator variable that equals one if the firm's DQ in fiscal year 2004 is below the median value in IFRS-adopting countries, and zero otherwise.	Compustat Global
ΔDQ_{2005}	Change in *DQ* between fiscal years 2004 and 2005.	Compustat Global
ΔENFORC	Change in the country-based enforcement score from calendar year 2002 to 2005 in Brown et al. (2014).	Brown et al. (2014)
ACCT_DIST	Difference between local GAAP and IFRS in Bae et al. (2008).	Bae et al. (2008)
LOSS	An indicator variable that equals one for loss firms, and zero otherwise.	Compustat Global
LOCAL GAAP	An indicator variable that equals one for firm-years with "Accounting Standards" (ACCTSTD) coded as DO, DS, DR, and zero otherwise.	Compustat Global
IFRS	An indicator variable that equals one for firm-years with "Accounting Standards" (ACCTSTD) coded as DA, DI, DT and zero otherwise.	Compustat Global
POST_IFRS	An indicator variable that equals one for years in which a firm follows IFRS, and zero otherwise.	Compustat Global
PCi (*i* = 1, 2, 3, 4)	The *i'*th principal component of 21 country-level economic and social conditions. *ΔPCi* denote the change in *PCi* surrounding IFRS adoption.	Appendix A in Isidro et al. (2020)

Figure 1. Changes in disclosure quality for IFRS adopters and non-adopters



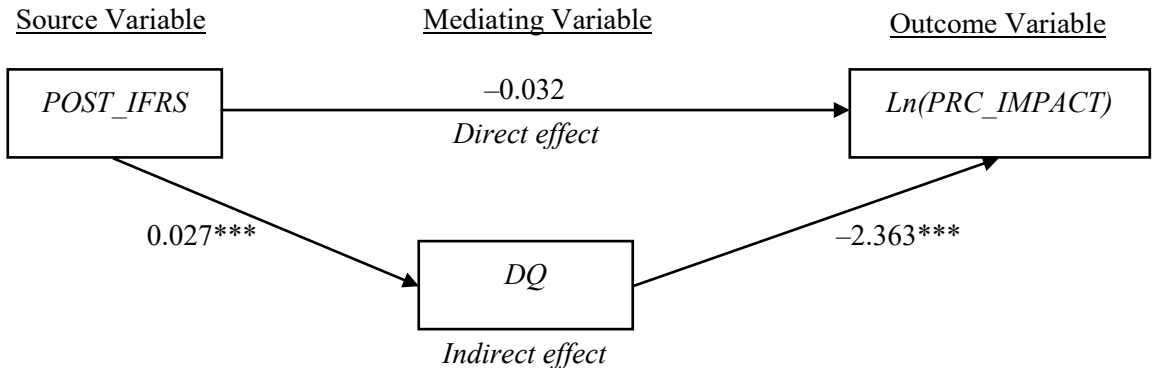
Notes: This figure plots the time-series patterns of disclosure quality (*DQ*) for firms in IFRS-adopting and non-adopting countries during 2002–2007. The list of IFRS and non-adopting countries are reported in Table 1. *DQ* is defined in Appendix 2.

Figure 2. The effects of IFRS adoption conditional on pre-IFRS disclosure duality



Notes: This figure plots the time-series patterns of disclosure quality (*DQ*) for IFRS adopters with high *vs.* low pre-IFRS *DQ*. High (low) pre-IFRS *DQ* is defined as the top (bottom) tercile of 3-year averages of *DQ* during 2002–2004 at the firm-level. *DQ* is defined in Appendix 2.

Figure 3. Path analysis with *DQ* as the mediating variable



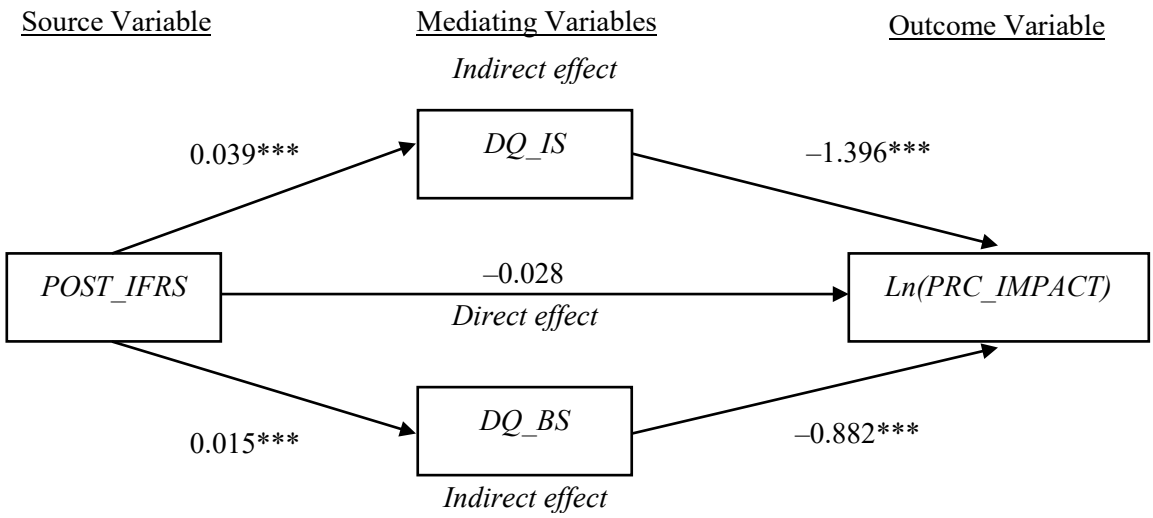
Notes: This figure plots path analysis of the relations among mandatory IFRS adoption (*POST_IFRS*), the mediating variable (*DQ*), and *Ln(PRC_IMPACT)*). Using the entire sample in the period 2002–2007, we estimate a structural equation model (SEM) of the direct effect of IFRS adoption on market liquidity as well as the indirect effects of IFRS adoption on market liquidity through improved disclosure quality (*DQ*). The equations in the SEM include a regression of *DQ* on *POST_IFRS* with all control variables in Table 3 and country and industry fixed effects, as well as a regression of *Ln(PRC_IMPACT)* on *DQ* and *POST_IFRS* with all control variables in Table 6 and country and industry fixed effects. Specifically, the path analysis is based on the following system of equations:

$$DQ = \alpha_1 POST\_IFRS + \sum \alpha_j Controls_{DQ} + CountriesFE + IndustryFE + \varepsilon,$$

$$Ln(PRC\_IMPACT) = \beta_1 DQ + \beta_2 POST\_IFRS + \sum \beta_k Controls_{Liquidity} + CountriesFE + IndustryFE + v.$$

We present the standardized path coefficients, with ***, **, and * indicating statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Goodness of Fit Index is 0.95. All variables are defined in Appendix 2.

Figure 4. Path analysis with *DQ_BS* and *DQ_IS* as the mediating variables



Notes: This figure plots path analysis of the relations among mandatory IFRS adoption (*POST_IFRS*), the mediating variables (*DQ_IS* and *DQ_BS*), and *Ln(PRC_IMPACT)*. Using the entire sample in the period 2002–2007, we estimate a structural equation model (SEM) of the direct effect of IFRS adoption on market liquidity as well as the indirect effects of IFRS adoption on market liquidity through improved *DQ_IS* and *DQ_BS*. The equations in the SEM include a regression of *DQ_IS* on *POST_IFRS* with all control variables in Table 4 and country and industry fixed effects, a regression of *DQ_BS* on *POST_IFRS* with all control variables in Table 4 and country and industry fixed effects, as well as a regression of *Ln(PRC_IMPACT)* on *DQ_IS, DQ_BS* and *POST_IFRS* with all control variables in Table 6 and country and industry fixed effects. Specifically, the path analysis is based on the following system of equations:

$$DQ\_IS = \alpha_1 POST\_IFRS + \sum \alpha_j Controls_{DQ} + CountriesFE + IndustryFE + \vartheta,$$

$$DQ\_BS = \delta_1 POST\_IFRS + \sum \delta_j Controls_{DQ} + CountriesFE + IndustryFE + \epsilon,$$

$$Ln(PRC\_IMPACT) = \beta_1 DQ\_IS + \beta_2 DQ\_BS + \beta_3 POST\_IFRS + \sum \beta_k Controls_{Liquidity} + CountriesFE + IndustryFE + v.$$

We present the standardized path coefficients, with ***, **, and * indicating statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. The Goodness of Fit Index is 0.95. All variables are defined in Appendix 2.

TABLE 1
Sample composition

Panel A: Number of firms in IFRS-adopting and non-adopting countries by fiscal year

YEAR	IFRS adopters			Non-adopters	
	Local GAAP	IFRS	Total	Local GAAP	Total
2002	2,473	0	2,473	8,611	8,611
2003	2,473	0	2,473	8,611	8,611
2004	2,473	0	2,473	8,611	8,611
2005	0	2,473	2,473	8,611	8,611
2006	0	2,473	2,473	8,611	8,611
2007	0	2,473	2,473	8,611	8,611

Panel B: Mandatory IFRS-adopting firms and observations by country

COUNTRY	Unique Firms		Pre-IFRS adoption period		Post IFRS-adoption period	
	Number of firms	% of firms	Firm-year obs.	% of firm-year obs.	Firm-year obs.	% of firm-year obs.
Australia	740	29.92	2,220	29.92	2,220	29.92
Belgium	42	1.70	126	1.70	126	1.70
Denmark	54	2.18	162	2.18	162	2.18
Finland	79	3.19	237	3.19	237	3.19
France	307	12.41	921	12.41	921	12.41
Germany	107	4.33	321	4.33	321	4.33
Greece	75	3.03	225	3.03	225	3.03
Italy	150	6.07	450	6.07	450	6.07
Netherlands	81	3.28	243	3.28	243	3.28
Norway	102	4.12	306	4.12	306	4.12
Poland	36	1.46	108	1.46	108	1.46
Portugal	26	1.05	78	1.05	78	1.05
South Africa	63	2.55	189	2.55	189	2.55
Spain	68	2.75	204	2.75	204	2.75
Sweden	183	7.40	549	7.40	549	7.40
United Kingdom	360	14.56	1,080	14.56	1,080	14.56
Total	2,473	100.00	7,419	100.00	7,419	100.00

Panel C: Non-adopting firms and observations by country and region

COUNTRY	Unique Firms		Firm-year observations	
	Number of firms	% of firms	Firm-years obs.	% of firm-year obs.
Argentina	43	0.50	258	0.50
Brazil	208	2.42	1,248	2.42
Chile	118	1.37	708	1.37
China	1,219	14.16	7,314	14.16
India	1,813	21.05	10,878	21.05
Indonesia	200	2.32	1,200	2.32
Japan	2,377	27.60	14,262	27.60
Malaysia	566	6.57	3,396	6.57
Mexico	72	0.84	432	0.84
Nigeria	25	0.29	150	0.29
Peru	36	0.42	216	0.42
Philippines	54	0.63	324	0.63
Singapore	315	3.66	1,890	3.66
South Korea	313	3.63	1,878	3.63
Sri Lanka	27	0.31	162	0.31
Taiwan	973	11.30	5,838	11.30
Thailand	252	2.93	1,512	2.93
Total	8,611	100.00	51,666	100.00

Notes: This table reports the composition of the sample. In Panel A, we present the number of firms by year in the IFRS and in the non-adopting countries and regions during fiscal years 2002–2007. The IFRS sample consists of all countries that mandated IFRS financial reporting in fiscal year 2005. The non-adopting sample consists of all countries and regions that did not adopt IFRS during fiscal years 2002–2007. In Panel B and Panel C, we report the composition of IFRS and non-adopting firms by country, respectively. The complete sample consists of 66,504 firm-year observations of 11,084 firms with fiscal year-ends between January 1, 2002 and December 31, 2007 and with nonmissing disclosure quality (*DQ*). We apply the following data screens to identify the sample: we require firms to have nonmissing data for *ACCTSTD* in Compustat Global between fiscal year 2002 and fiscal year 2007; we exclude firms in the financial industry (SIC codes: 6000–6999); and we remove countries with data available for less than 25 listed firms per year. We further exclude firm-year observations for firms reporting under U.S. GAAP. We define IFRS and local GAAP following Daske et al. (2013, Appendix 1).

TABLE 2
Summary statistics

Panel A: Descriptive statistics for IFRS-adopters and non-adopters prior to IFRS adoption

	IFRS-adopting firms (a)				*Non-adopting firms (b)*				Mean diff.	Median diff.
VARIABLES	*N*	Mean	Median	Std. Dev.	*N*	Mean	Median	Std. Dev.	(a) − (b)	(a) − (b)
DQ	7,419	0.915	0.934	0.059	25,833	0.914	0.933	0.053	0.001*	0.001***
DQ_BS	7,419	0.955	0.987	0.069	25,833	0.963	0.991	0.052	−0.008***	−0.004***
DQ_IS	7,419	0.875	0.917	0.083	25,833	0.864	0.896	0.084	0.011***	0.021***
Ln(PRC_IMPACT)	3,835	−3.015	−2.781	2.707	10,035	−2.992	−3.022	2.308	−0.023	0.241
Ln(BASPRD)	4,066	0.344	0.325	1.127	11,595	0.151	−0.049	1.297	0.193***	0.374***
Ln(AUDFEES)	4,076	5.143	5.124	1.937	3,519	3.787	3.761	1.223	1.356***	1.363***
Control variables										
SIZE	4,854	5.527	5.426	1.979	16,349	5.473	5.341	1.493	0.054**	0.085
LEV	4,854	0.558	0.568	0.210	16,349	0.507	0.510	0.212	0.051***	0.058***
SALEGR	4,854	0.245	0.157	0.581	16,349	0.177	0.111	0.416	0.068***	0.046***
ROA	4,854	0.018	0.037	0.138	16,349	0.031	0.028	0.079	−0.013***	0.009***
M&A	4,854	0.259	0.000	0.438	16,349	0.046	0.000	0.209	0.213***	0.000***
BIG4	4,854	0.711	1.000	0.453	16,349	0.240	0.000	0.427	0.471***	1.000***
QUALIFIED	4,854	0.179	0.000	0.384	16,349	0.122	0.000	0.327	0.057***	0.000***
ANALYSTS	4,854	0.509	1.000	0.500	16,349	0.485	0.000	0.500	0.024***	1.000***
Ln(RET_VOL)	4,854	−3.627	−3.772	0.737	16,349	−3.638	−3.706	0.562	0.011	−0.066***
Ln(FIN_DVLP)	4,854	9.956	10.127	0.009	16,349	8.514	8.882	0.014	1.442***	1.245***
Ln(GDP_PC)	4,854	10.440	10.489	0.409	16,349	8.759	9.628	1.677	1.681***	0.861***

Panel B: Descriptive statistics for IFRS-adopters and non-adopters after IFRS adoption

	IFRS-adopting firms (a)				*Non-adopting firms (b)*				Mean diff.	Median diff.
VARIABLES	*N*	Mean	Median	Std. Dev.	*N*	Mean	Median	Std. Dev	(a) − (b)	(a) − (b)
DQ	7,419	0.938	0.948	0.040	25,833	0.909	0.922	0.055	0.029***	0.026***
DQ_BS	7,419	0.971	0.993	0.049	25,833	0.963	0.989	0.053	0.008***	0.004***
DQ_IS	7,419	0.905	0.917	0.056	25,833	0.855	0.896	0.088	0.050***	0.021***
Ln(PRC_IMPACT)	4,565	−3.791	−3.515	2.633	12,067	−3.711	−3.819	2.344	−0.080*	0.304
Ln(BASPRD)	4,137	−0.218	−0.160	1.213	11,208	−0.220	−0.471	1.310	0.002	0.311***
Ln(AUDFEES)	5,048	5.755	5.700	1.802	6,758	3.759	3.829	1.667	1.996***	1.871***
Control variables										
SIZE	5,355	5.890	5.758	1.953	19,062	5.577	5.452	1.529	0.313***	0.306***
LEV	5,355	0.559	0.574	0.204	19,062	0.499	0.506	0.206	0.060***	0.068***
SALEGR	5,355	0.227	0.134	0.600	19,062	0.170	0.096	0.431	0.057***	0.038***
ROA	5,355	0.048	0.053	0.118	19,062	0.040	0.036	0.084	0.008***	0.017***
M&A	5,355	0.104	0.000	0.305	19,062	0.029	0.000	0.169	0.075***	0.000***
BIG4	5,355	0.657	1.000	0.475	19,062	0.262	0.000	0.440	0.395***	1.000***
QUALIFIED	5,355	0.276	0.000	0.447	19,062	0.187	0.000	0.390	0.089***	0.000***
ANALYSTS	5,355	0.583	1.000	0.493	19,062	0.496	0.000	0.500	0.087***	1.000***
Ln(RET_VOL)	5,355	−3.665	−3.806	0.698	19,062	−3.528	−3.575	0.598	−0.137***	−0.231***
Ln(FIN_DVLP)	5,355	10.433	10.532	0.576	19,062	8.713	9.130	1.799	1.720***	1.402***
Ln(GDP_PC)	5,355	10.632	10.704	0.424	19,062	8.729	8.857	1.663	1.903***	1.847***

Notes: This table presents descriptive statistics for the variables used in our main analyses. Panel A (B) presents descriptive statistics for IFRS-adopting and non-adopting firms prior to (after) IFRS adoption. The sample consists of a maximum of 66,504 firm-year observations for 11,084 firms with fiscal year-ends between January 1, 2002 and December 31, 2007 and with nonmissing disclosure quality (*DQ*). The *DQ* measures are constructed following Chen et al. (2015). This table also reports summary statistics for *Ln(PRC_IMPACT)*, the natural log of median value of the Amihud (2002) illiquidity measure calculated over the fiscal year; *Ln(BASPRD)*, the natural log of the median daily spread calculated over the fiscal year; *Ln(AUDFEES)*, the natural log of audit fees for the fiscal year. All variables are defined in Appendix 2. Continuous variables are winsorized at the 1st and 99th percentiles on annual basis.

TABLE 3
The effect of mandatory IFRS adoption on disclosure quality

VARIABLES	Pred. Sign	Dependent variable: *DQ* (1)	(2)	(3)	(4)
IFRS	?	0.001	−0.041***	−0.040***	−0.040***
		(1.15)	(−25.37)	(−21.41)	(−25.06)
IFRS × POST	+	0.027***	0.032***	0.031***	
		(26.92)	(24.39)	(19.23)	
IFRS × D2003	?			−0.002	
				(−1.37)	
IFRS × D2004	?			−0.001	
				(−0.94)	
IFRS × D2005	+				0.018***
					(12.97)
IFRS × D2006	+				0.028***
					(19.95)
IFRS × D2007	+				0.047***
					(30.75)
POST		−0.005***	−0.011***	−0.010***	
		(−14.37)	(−26.97)	(−17.48)	
SIZE			−0.005***	−0.005***	−0.005***
			(−17.41)	(−17.40)	(−16.79)
LEV			0.017***	0.017***	0.016***
			(8.88)	(8.88)	(8.45)
SALEGR			−0.003***	−0.003***	−0.002***
			(−4.93)	(−5.01)	(−3.52)
ROA			0.027***	0.027***	0.031***
			(7.59)	(7.54)	(8.49)
M&A			0.010***	0.010***	0.009***
			(9.49)	(9.49)	(8.58)
BIG4			0.017***	0.016***	0.016***
			(16.41)	(16.30)	(15.73)
QUALIFIED			0.003***	0.003***	0.005***
			(2.84)	(2.87)	(4.52)
ANALYSTS			0.014***	0.014***	0.014***
			(16.98)	(16.99)	(17.10)
Ln(RET_VOL)			−0.004***	−0.004***	−0.002***
			(−5.22)	(−5.09)	(−2.92)
Ln(FIN_DVLP)			0.002***	0.003***	0.005***
			(5.74)	(5.70)	(11.19)
Ln(GDP_PC)			0.014***	0.014***	0.012***
			(26.91)	(25.59)	(22.74)
INDUSTRY F.E.		NO	YES	YES	YES
N		66,504	45,620	45,620	45,620
Adj. R^2		2.5%	29.9%	29.9%	31.2%

Notes: This table presents OLS coefficient estimates and *t*-statistics (in parentheses) based on robust standard errors clustered by firm. The dependent variable is disclosure quality (*DQ*) constructed per Chen et al. (2015). In Column (1) and (2), the main explanatory variables are the interactions between *IFRS* (an indicator that is equal to one for firms located in IFRS-adopting countries, and zero otherwise) and *POST* (an indicator that is equal to one for fiscal years 2005–2007, and zero for fiscal years 2002–2004). In Column (3), the main explanatory variables are the interactions between IFRS and year indicators equal to one for two years prior to IFRS adoption (i.e., *D2003, D2004*). In Column (4), the main explanatory variables are the interactions between IFRS and year indicators for the years post IFRS adoption (i.e., *D2005*, *D2006*, *D2007*). In Columns (3) and (4), we also include the year indicator variables, but suppress them for brevity. The models in Column (2), (3), and (4) include Campbell (1996) industry fixed effects (unreported for brevity). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. All variables are defined in Appendix 2, and continuous variables are winsorized at the 1st and 99th percentiles on annual basis.

TABLE 4
The effect of mandatory IFRS adoption on balance sheet and income statement disclosure quality

VARIABLES	Pred. Sign	*DQ_BS*		*DQ_IS*	
		(1)	(2)	(3)	(4)
IFRS	?	−0.008***	−0.024***	0.010***	−0.055***
		(−6.54)	(−14.60)	(6.02)	(−23.28)
IFRS × D2005	+	0.013***	0.013***	0.021***	0.023***
		(9.47)	(8.82)	(12.56)	(10.58)
IFRS × D2006	+	0.018***	0.020***	0.034***	0.037***
		(13.11)	(12.40)	(20.09)	(17.45)
IFRS × D2007	+	0.018***	0.020***	0.061***	0.073***
		(12.82)	(12.23)	(32.75)	(32.29)
CONTROLS		NO	YES	NO	YES
INDUSTRY F.E.		NO	YES	NO	YES
N		66,504	45,620	66,504	45,620
Adj. R^2		0.5%	14.4%	4.8%	29.9%

Notes: This table presents OLS coefficient estimates and *t*-statistics (in parentheses) based on robust standard errors clustered by firm. The dependent variables are *DQ_BS* and *DQ_IS*, which capture disclosure quality of line items on the Balance Sheet and the Income Statement, respectively. The main explanatory variables are the interactions between *IFRS* and year indicators. We do not report coefficients on the year indicator variables for brevity. The models in Column (2) and (4) include the control variables reported in Table 3 and Campbell (1996) industry-fixed effects (unreported for brevity). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. All variables are defined in Appendix 2 and Table 3, and continuous variables are winsorized at the 1st and 99th percentiles on annual basis.

TABLE 5
The effect of mandatory IFRS adoption on the disaggregation of financial statement items

Panel A: IFRS adoption and the disaggregation of balance-sheet items

VARIABLES	Pred. Sign	*DQ_ACT* (1)	*DQ_PPENT* (2)	*DQ_INTAN* (3)	*DQ_IVAEO* (4)	*DQ_LCT* (5)	*DQ_LLT* (6)	*DQ_SEQ* (7)
IFRS	?	0.004	−0.041***	0.047***	−0.036***	−0.005	0.009*	0.004
		(1.24)	(−13.66)	(23.64)	(−18.56)	(−0.52)	(1.94)	(0.33)
IFRS × D2005	+	−0.007***	−0.001	0.011***	0.009***	−0.001	0.001	0.001
		(−3.71)	(−0.64)	(9.22)	(6.54)	(−0.08)	(0.10)	(0.06)
IFRS × D2006	+	−0.005**	−0.006***	0.019***	0.009***	−0.068	0.000	−0.065
		(−2.27)	(−2.78)	(12.15)	(5.99)	(−1.37)	(0.03)	(−1.28)
IFRS × D2007	+	−0.012***	−0.001	0.023***	0.008***	0.009	0.001	0.013
		(−5.18)	(−0.65)	(13.16)	(5.00)	(0.40)	(0.09)	(0.51)
CONTROLS		YES	YES	YES	YES	YES	YES	YES
INDUSTRY F.E.		YES	YES	YES	YES	YES	YES	YES
N		45,620	45,620	45,620	45,620	45,620	45,620	45,620
Adj. R^2		24.3%	20.0%	30.5%	9.9%	0.6%	6.8%	0.3%

Panel B: IFRS adoption and the disaggregation of income statement items

VARIABLES	Pred. Sign	*DQ_XOPR* (1)	*DQ_NOPI* (2)	*DQ_DP* (3)	*DQ_XINT* (4)
IFRS	?	0.002**	0.003***	−0.061***	0.000
		(2.32)	(7.04)	(−31.27)	(0.04)
IFRS × D2005	+	−0.006***	0.001***	0.027***	−0.000
		(−8.07)	(3.78)	(15.24)	(−0.42)
IFRS × D2006	+	0.006***	0.001***	0.031***	−0.000
		(7.30)	(3.17)	(16.98)	(−0.52)
IFRS × D2007	+	0.011***	0.025***	0.031***	0.007***
		(14.48)	(27.09)	(16.69)	(9.30)
CONTROLS		YES	YES	YES	YES
INDUSTRY F.E.		YES	YES	YES	YES
N		45,620	45,620	45,620	45,620
Adj. R^2		18.4%	36.8%	32.2%	2.2%

Notes: This table presents OLS coefficient estimates and *t*-statistics (in parentheses) based on robust standard errors clustered by firm. Panel A reports regressions of *DQ_ACT*, *DQ_PPENT*, *DQ_INTAN*, *DQ_IVAEO*, *DQ_LCT*, *DQ_LLT*, and *DQ_SEQ*; and Panel B presents regressions of *DQ_XOPR*, *DQ_NOPI*, *DQ_DP*, and *DQ_XINT* (see Section 3 for variable definitions). The main explanatory variables are the interactions between *IFRS* and year indicators. We do not report coefficients on the year indicator variables for brevity. All models include the control variables reported in Table 3 and Campbell (1996) industry-fixed effects (not reported for brevity). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. All controls variables are defined in Appendix 2 and Table 3, and continuous variables are winsorized at the 1st and 99th percentiles on annual basis.

TABLE 6
The effect of disclosure quality changes around IFRS adoption on price impact

VARIABLES	Dependent variable: *Ln(PRC_IMPACT)*					
	(1)	(2)	(3)	(4)	(5)	(6)
		All countries			*IFRS countries*	
	2002–2007	2002–2007	2002–2005	2002–2007	2002–2005	2002–2005
IFRS	0.070	−0.685***	−0.617***			
	(0.90)	(−8.02)	(−7.42)			
POST	−0.634***	−0.421***	−0.414***	0.002	−0.136**	−0.091
	(−28.69)	(−18.13)	(−17.39)	(0.03)	(−2.20)	(−1.64)
ΔDQ_POS		−0.525***	−0.617***	0.633***	0.625***	−0.064
		(−4.86)	(−5.68)	(6.45)	(6.38)	(−0.68)
IFRS × POST	−0.174***	0.489***	0.284***			
	(−3.93)	(7.51)	(4.58)			
IFRS × ΔDQ_POS		1.204***	1.279***			
		(8.15)	(8.72)			
POST × ΔDQ_POS		0.508***	0.368***	−0.409***	−0.262***	−0.269***
		(5.19)	(3.77)	(−5.74)	(−3.83)	(−4.16)
IFRS × POST × ΔDQ_POS		−0.956***	−0.614***			
		(−7.72)	(−5.04)			
$ZRDAYS_{t-1}$		6.294***	5.252***	2.791***	2.123***	5.064***
		(26.90)	(21.02)	(6.72)	(4.71)	(12.81)
$SIZE_{t-1}$		−0.883***	−0.875***	−0.957***	−0.953***	−0.738***
		(−57.06)	(−52.00)	(−29.34)	(−26.70)	(−22.33)
$Ln(RET\_VOL)_{t-1}$		0.608***	0.825***	0.733***	0.829***	0.865***
		(11.47)	(14.45)	(8.28)	(8.66)	(10.92)
INDUSTRY F.E.	YES	YES	YES	YES	YES	YES
COUNTRY F.E.	NO	NO	NO	NO	NO	YES
N	30,502	29,942	17,893	8,099	5,087	5,087
Adj. R^2	7.0%	51.4%	54.0%	54.4%	53.7%	67.8%

Notes: This table presents OLS coefficient estimates and *t*-statistics (in parentheses) based on robust standard errors clustered by firm. We use *Ln(PRC_IMPACT)* as the dependent variable. In Column (1), the main explanatory variable of interest is *IFRS × POST*. In Columns (2) and (3), the main explanatory variable of interest is *IFRS×POST×ΔDQ_POS*. In Column (4), we present the results for the same model, but focusing only on firm-years observations from IFRS-adopting countries. In Column (5), we present the results by considering only fiscal year 2005 in the post-IFRS adoption period. In Column (6), we report the results for the model in Column (5) with country fixed effects. This table includes Campbell (1996) industry fixed effects in all regressions. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. All control variables are defined in Appendix 2, and continuous variables are winsorized at the 1st and 99th percentiles on annual basis.

TABLE 7
The effect of disclosure quality changes around IFRS adoption on bid-ask spread

VARIABLES	Dependent variable: *Ln(BASPRD)*					
	(1)	(2)	(3)	(4)	(5)	(6)
		All countries			*IFRS countries*	
	2002–2007	2002–2007	2002–2005	2002–2007	2002–2005	2002–2005
IFRS	0.324***	0.040	0.087***			
	(9.94)	(1.53)	(3.51)			
POST	−0.211***	−0.262***	−0.095***	−0.184***	−0.231***	−0.242***
	(−15.02)	(−21.77)	(−8.34)	(−6.76)	(−9.70)	(−10.64)
ΔDQ_POS		0.008	−0.012	0.003	−0.010	−0.067**
		(0.18)	(−0.26)	(0.11)	(−0.31)	(−2.01)
IFRS × POST	−0.363***	0.169***	−0.095***			
	(−16.03)	(5.62)	(−3.75)			
IFRS × ΔDQ_POS		0.061	0.051			
		(1.06)	(0.91)			
POST × ΔDQ_POS		0.209***	0.081*	−0.049	−0.087***	−0.076***
		(4.94)	(1.91)	(−1.52)	(−3.07)	(−2.79)
IFRS × POST × ΔDQ_POS		−0.333***	−0.187***			
		(−6.01)	(−3.59)			
$ZRDAYS_{t-1}$		4.996***	4.358***	3.181***	3.057***	2.736***
		(47.44)	(42.32)	(25.30)	(22.76)	(17.20)
$SIZE_{t-1}$		−0.216***	−0.219***	−0.325***	−0.280***	−0.285***
		(−34.60)	(−31.53)	(−30.49)	(−23.70)	(−21.77)
$Ln(RET\_VOL)_{t-1}$		0.151***	0.262***	0.173***	0.202***	0.167***
		(8.57)	(12.03)	(5.84)	(6.69)	(5.94)
INDUSTRY F.E.	YES	YES	YES	YES	YES	YES
COUNTRY F.E.	NO	NO	NO	NO	NO	YES
N	31,006	23,017	15,551	6,661	4,365	4,365
Adj. R^2	8.4%	50.1%	53.6%	65.6%	65.2%	69.2%

Notes: This table presents OLS coefficient estimates and *t*-statistics (in parentheses) based on robust standard errors clustered by firm. The dependent variable is *Ln(BASPRD)*, multiplied by 100. In Column (1), the main explanatory variable of interest is *IFRS×POST*. In Column (2) and (3), the main explanatory variable of interest is *IFRS×POST×ΔDQ_POS*. In Column (4), we present the results for the same model, but focusing only on firm-years observations from IFRS-adopting countries. In Column (5), we report the results by considering only fiscal year 2005 in the post-IFRS adoption period. In Column (6), we report the results for the model in Column (5) with country fixed effects. This table includes Campbell (1996) industry fixed effects. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. All variables are defined in Appendix 2, and continuous variables are winsorized at the 1st and 99th percentiles on annual basis.

TABLE 8
The effect of disclosure quality changes around IFRS adoption on audit fees

VARIABLES	Dependent variable: *Ln(AUDFEES)*					
	(1)	(2)	(3)	(4)	(5)	(6)
		All countries			*IFRS countries*	
	2002–2007	2002–2007	2002–2005	2002–2007	2002–2005	2002–2005
IFRS	1.446***	1.399***	1.424***			
	(25.16)	(31.90)	(32.53)			
POST	−0.040	−0.045	−0.108***	0.140***	0.161***	0.191***
	(−1.35)	(−1.63)	(−4.23)	(5.73)	(6.01)	(7.44)
ΔDQ_POS		0.049	0.062	0.049	0.054	0.163***
		(1.05)	(1.35)	(1.26)	(1.39)	(4.28)
IFRS × POST	0.613***	0.187***	0.281***			
	(16.18)	(5.17)	(7.72)			
IFRS × ΔDQ_POS		0.012	−0.002			
		(0.19)	(−0.04)			
POST × ΔDQ_POS		−0.233***	−0.027	−0.051	−0.005	0.000
		(−5.43)	(−0.69)	(−1.58)	(−0.14)	(0.01)
IFRS × POST × ΔDQ_POS		0.197***	0.022			
		(3.64)	(0.42)			
SIZE		0.658***	0.611***	0.638***	0.648***	0.638***
		(92.90)	(68.47)	(68.41)	(61.57)	(59.44)
LEV		0.018	0.268***	0.359***	0.372***	0.368***
		(0.30)	(3.98)	(4.85)	(4.56)	(4.75)
LOSS		0.057**	0.043	−0.058	−0.020	−0.023
		(2.12)	(1.36)	(−1.62)	(−0.49)	(−0.65)
BIG4		0.456***	0.454***	0.318***	0.286***	0.301***
		(19.42)	(16.37)	(10.17)	(7.93)	(8.76)
QUALIFIED		−0.137***	−0.076**	−0.054	−0.059	0.067*
		(−5.96)	(−2.19)	(−1.61)	(−1.38)	(1.73)
QUICK		−0.020***	−0.018***	−0.015***	−0.014***	−0.012***
		(−5.66)	(−4.63)	(−3.97)	(−3.27)	(−2.88)
ROA		−0.995***	−0.678***	−0.862***	−0.777***	−0.749***
		(−14.29)	(−8.84)	(−11.45)	(−9.32)	(−9.45)
INVREC		0.450***	0.409***	0.404***	0.360***	0.400***
		(6.51)	(5.01)	(4.18)	(3.25)	(3.78)
SPECIAL_ITEMS		0.118***	−0.115	−0.067	0.086	0.097
		(3.78)	(−1.22)	(−1.36)	(0.87)	(1.03)
INDUSTRY F.E.	YES	YES	YES	YES	YES	YES
COUNTRY F.E.	NO	NO	NO	NO	NO	YES
N	19,401	19,232	10,378	9,071	5,617	5,617
Adj. R^2	26.4%	78.5%	78.2%	81.9%	82.6%	84.8%

Notes: This table presents OLS coefficient estimates and *t*-statistics (in parentheses) based on robust standard errors clustered by firm. The dependent variable is *Ln(AUDFEES)*. In Column (1), the main explanatory variable of interest is *IFRS × POST*. In Column (2) and (3), the main explanatory variable of interest is *IFRS×POST×ΔDQ_POS*. In Column (4), we present the results for the same model, but focusing only on firm-years observations from IFRS-adopting countries. In Column (5), we present the results by considering only fiscal year 2005 in the post-IFRS adoption period. In Column (6), we report the results for the model in Column (5), but including also country fixed effects. This table includes Campbell (1996) industry fixed effects. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. All variables are defined in Appendix 2, and continuous variables are winsorized at the 1st and 99th percentiles on annual basis.

TABLE 9
The determinants of disclosure quality changes around IFRS adoption

Panel A: Descriptive statistics

VARIABLES	*N*	Mean	SD	P5	Q1	Median	Q3	P95
PRE_DQ	2,473	0.014	0.057	−0.070	−0.016	0.000	0.042	0.121
ACC_DIST	16	9.938	5.066	1.000	5.500	11.500	13.000	17.000
ΔENFORC	16	0.911	1.122	0.000	0.000	0.700	0.833	4.000
Ln(FIN_DVLP)	16	9.860	0.776	7.813	9.526	10.043	10.395	10.853

Panel B: Determinants of disclosure quality changes around IFRS adoption

VARIABLES	(1)	(2)	(3)	(4)
	Dependent variable: ΔDQ_{2005}			
PRE_DQ		0.057***	0.056***	0.048***
		(29.19)	(28.98)	(23.84)
ACCT_DIST	0.005***	0.003***	0.003***	
	(13.67)	(9.10)	(8.60)	
ΔENFORC	0.005***	0.003**	0.002*	
	(3.07)	(2.27)	(1.69)	
Ln(FIN_DVLP)	0.024***	0.020***	0.019***	−0.001
	(5.12)	(4.76)	(4.50)	(−0.04)
LOSS			−0.000	0.001
			(−0.10)	(0.65)
M&A			−0.014***	−0.010***
			(−5.25)	(−3.53)
BIG4			−0.007***	−0.002
			(−3.32)	(−0.84)
SALEGR			−0.000***	−0.000***
			(−7.39)	(−5.70)
LEV_{2004}			−0.000	−0.003
			(−0.02)	(−0.78)
$SIZE_{2004}$			0.003***	0.003***
			(5.91)	(5.15)
INDUSTRY F.E.	YES	YES	YES	YES
COUNTRY F.E.	NO	NO	NO	YES
N	2,473	2,473	2,473	2,473
Adj. R^2	11.8%	34.1%	36.0%	40.1%

Notes: This table presents the results of the analysis of the determinants of Disclosure Quality changes in fiscal year 2005 for the IFRS-adopting countries. Panel A provides the descriptive statistics of ΔDQ_{2005} and the country-level variables. Descriptive statistics of the remaining control variables used in the analysis are provided in Table 2, Panel A. Panel B presents OLS coefficient estimates and *t*-statistics (in parentheses) based on robust standard errors clustered by firm. The main explanatory variable of interest is *PRE_DQ*. In Column (5), we control for *ΔENFORC*. This table includes Campbell (1996) industry fixed effects. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. All variables are defined in Appendix 2, and continuous variables are winsorized at the 1st and 99th percentiles on annual basis.

TABLE 10
Controlling for time-varying country factors

Panel A: Controlling for time-varying country factors in the first step

VARIABLES	(1)	(2)	(3)
	Dependent variable: *DQ*		
D2005	0.016***	0.022***	0.040***
	(11.67)	(6.83)	(10.48)
D2006	0.019***	0.026***	0.044***
	(13.07)	(7.78)	(11.02)
D2007	0.012***	0.018***	0.037***
	(7.44)	(5.31)	(8.86)
PC1		–0.000	0.002***
		(–0.41)	(2.58)
PC2		0.000	–0.009***
		(0.67)	(–11.15)
PC3		–0.006***	0.008***
		(–15.16)	(7.18)
PC4		–0.005***	–0.017***
		(–11.16)	(–19.00)
CONTROLS	YES	YES	YES
INDUSTRY F.E.	YES	YES	YES
COUNTRY F.E.	NO	NO	YES
N	9,662	9,662	9,662
Adj. R^2	19.1%	24.5%	39.5%

Panel B: Controlling for time-varying country factors in the second step

VARIABLES	(1)	(2)	(3)	(4)
	Ln(PRC_IMPACT)		*Ln(BASPRD)*	
	2002–2005		2002–2005	
POST	–0.074	–0.231*	–0.243***	0.060
	(–1.32)	(–1.85)	(–10.51)	(0.67)
ΔDQ_POS	–0.088	–0.128	–0.075**	–0.075**
	(–0.89)	(–1.29)	(–2.19)	(–2.16)
POST × ΔDQ_POS	–0.282***	–0.139*	–0.081***	–0.083***
	(–4.24)	(–1.95)	(–2.89)	(–2.75)
$ZRDAYS_{t-1}$	4.810***	4.805***	2.646***	2.648***
	(11.88)	(11.86)	(16.27)	(16.28)
$SIZE_{t-1}$	–0.753***	–0.751***	–0.291***	–0.291***
	(–21.88)	(–21.82)	(–21.47)	(–21.46)
$Ln(RET\_VOL)_{t-1}$	0.860***	0.864***	0.166***	0.166***
	(10.81)	(10.87)	(5.89)	(5.90)
ΔPC1	0.943***	0.949***	0.061	0.044
	(5.16)	(5.16)	(1.36)	(0.98)
ΔPC2	0.642***	0.673***	–0.120***	–0.106***
	(6.48)	(6.75)	(–3.21)	(–2.80)
ΔPC3	–0.948***	–0.965***	0.059	0.051
	(–6.51)	(–6.63)	(1.61)	(1.40)
ΔPC4	–0.442**	–0.453**	–0.097**	–0.087**
	(–2.08)	(–2.13)	(–2.28)	(–2.01)
POST × ΔPC1		–0.031		0.076***
		(–1.20)		(3.26)
POST × ΔPC2		–0.121***		–0.042***
		(–5.26)		(–3.49)
POST × ΔPC3		0.071**		0.035*
		(2.46)		(1.96)
POST × ΔPC4		0.034		–0.018
		(1.35)		(–1.55)
COUNTRY F.E.	YES	YES	YES	YES
YEAR F.E.	YES	YES	YES	YES
N	4,833	4,833	4,169	4,169
Adj. R^2	69.6%	69.8%	69.9%	69.9%

Notes: This table presents robustness tests by controlling for time-varying country factors suggested by Isidro et al. (2020). Panel A reports the estimates from the first-step tests after controlling for *PC1–PC4* together with other control variables used in Eq. (2). Panel B reports the estimates from the second-step tests after controlling for *ΔPC1–ΔPC4* together with other control variables used in Eq. (3) ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively. Coefficient estimates and *t*-statistics (in parentheses) are based on robust standard errors clustered by firm. All variables are defined in Appendix 2, and continuous variables are winsorized at the 1st and 99th percentiles on annual basis.