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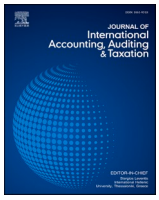

The effect of the new revenue recognition principle (IFRS 15) on financial statement comparability: Evidence from Korea

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ABSTRACT

This study investigates the initial impact of International Financial Reporting Standards (IFRS) 15 by comparing the financial statement comparability of the effective years of its implementation with those of the pre-IFRS 15 periods. Given that private firms are exempt from the IFRS 15 amendment, we use them as the control group for public firms. Specifically, we use Korean firms from 2015 to 2020 and employ a difference-in-differences approach. This study finds an increase in financial statement comparability for public firms after the IFRS 15 application relative to the change of private firms that are not subject to the IFRS 15. We interpret that the enhancement in financial statement comparability is caused by the following two aspects of IFRS 15: discretion reduction effect and harmonization of multiple standards effect. Furthermore, an increase in comparability is greater for firms that are clients of industry-specialist auditors and those that operate in less-competitive industries, unlike their counterparts. We also find that discretionary revenues are lower in the post-IFRS 15 period than in the pre-IFRS 15 period. Overall, the results of this study suggest that IFRS 15 can deliver the outcomes aimed for by regulators, at least during its initial implementation.

1. Introduction

This study investigates whether the new revenue recognition standard, International Financial Reporting Standards (IFRS) 15, *Revenue from Contracts with Customers*, has an impact on financial statement comparability. As IFRS 15 primarily aims to enhance accounting comparability (International Accounting Standards Board (IASB), 2014, 2015), which is a key factor to gain economic benefits when adopting new accounting standards (Barth et al., 2008; Yip & Young, 2012; Neel, 2017; Lin et al., 2019), this study focuses on comparability. We also examine cross-sectional auditor and industry characteristics that may affect the effective implementation of IFRS 15.

Revenue is an essential metric to explain a firm's key performance. However, the former IFRS revenue recognition standard was criticized as lacking enough details. Moreover, the requirements of IFRS and United States (US) Generally Accepted Accounting Principles (GAAP) were inconsistent, resulting in different reports for similar transactions (McConnell, 2014). To address these issues by fully converging the requirements for both IFRS and US-GAAP, the IASB issued a new revenue recognition standard on May 28, 2014, which is a product of working with the Financial Accounting Standards Board (FASB). The new standard is a comprehensive standard for revenue recognition and replaces former International Accounting Standards (IAS) 18, *Revenue*, IAS 11, *Construction Contracts,* and related IFRS Interpretations Committee (IFRIC) pronouncements. The IASB predicted that the revenue recognized by applying IFRS 15 would provide a more faithful depiction of a firm's performance.

Several differences exist between IFRS 15 and the previous revenue recognition standards. We classify these differences into two types of effect. First, one key difference is that IFRS 15 views revenue recognition from a contractual perspective (Jones & Pagach, 2013). Thus, a transaction is analyzed at the contract level rather than at the individual obligation levels, such as selling goods or rendering services. Unlike previous standards that did not provide specific guidance for identifying and separating performance obligations, IFRS 15 requires the identification and distinction of each type of performance obligation in a contract. For instance, in the past standards, specific guidance was insufficient for contracts including two performance obligations: goods and services. However, IFRS 15 applies common and consistent guidance on the basis of a contractual perspective. Consequently, revenue recognition from contracts with complex performance obligations should become clearer. IFRS 15 provides more detailed guidance than

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old revenue recognition standards, so it may lead to discretion reduction when recognizing revenue (the *discretion reduction effect*). Therefore, accounting information produced by IFRS 15 should be more comparable than before. Second, IFRS 15 requires every firm to apply the five-step revenue recognition model. Previously, revenue recognition guidance was distributed separately in various standards, causing confusion to practitioners when applying these standards. As IFRS 15 harmonizes multiple standards into a uniform standard applied to all firms in all industries (the *harmonization of multiple standards effect*), the IASB expects enhancement in accounting comparability.[1] So far, no study has directly investigated the effect of IFRS 15 application on financial statement comparability. Furthermore, the prior literature sees the need for future research to investigate the effectiveness of IFRS 15, especially in Asian countries (Kabureck, 2019).

However, ex-ante, contradicting views emerge that IFRS 15 may not enhance or might even worsen financial statement comparability. First, the success of IFRS 15 depends on the comparability induced by the previous revenue standard. Prior research indicates that if a prior standard is more prescriptive than the new one, the implementation may be less effective (Atwood et al., 2011; Gordon et al., 2018). Thus, if the existing revenue recognition standard tends to impose more restrictions and less discretion than the new standard, IFRS 15 may not increase accounting comparability. Second, applying the five-step model is required for all industries, although it is not suitable in some cases. Therefore, different interpretations (e.g., managerial discretion) can be applied when following the new revenue recognition model. Third, practical references and examples in the early stage of adoption are lacking. In the transition period, limited evidence exists of whether applying the new IFRS 15 standard reduces comparability. Previous studies report a similar issue that firms encounter difficulties when adopting IFRS for the first time (Atwood et al., 2011; Cascino & Gassen, 2015). In fact, auditors and practitioners are concerned regarding the initial application of IFRS 15 (IASB, 2015; Lim et al., 2015). Therefore, an empirical investigation is required to determine whether IFRS 15 improves comparability.

This study further explores the cross-sectional factors that might affect the relationship between the IFRS 15 application and financial statement comparability. Specifically, the factors that affect the quality of accounting information are closely related to comparability (Neel, 2017). Moreover, the IASB suggests that two important objectives of accounting standards are improving accounting quality and comparability. Therefore, examining how accounting quality relates to the consequences from applying the new revenue standard is intuitively necessary.

In empirical tests, we first investigate whether specialist auditors' clients have systematically different results regarding comparability, when compared with those of non-specialist auditors. As high-quality audits enforce the IFRS implementation (Stokes & Webster, 2010) and accounting comparability is associated with audit services (Francis et al., 2014; Zhang, 2018; Chen et al., 2020), audit quality can be expected to have a moderator effect on the IFRS 15 application. This study focuses on industry-specialist auditors because the implementation of IFRS 15 highly depends on industry-specific knowledge (Jones & Pagach, 2013; McConnell, 2014; Napier & Stadler, 2020).

Second, previous studies found that industry competition affects a firm's financial reporting (Datta et al., 2013; Laksmana & Yang, 2014; Majeed et al., 2018). They argue that firms in industries with high levels of competition would have incentives to boost their revenues. Additionally, the harmonization of multiple standards, which is a core attribute of IFRS 15, may unintentionally result in a lack of guidance for a specific industry. Applying homogeneous standards, regardless of industry characteristics, can increase the revenue recognition discretion in competitive industries that are likely to raise profits. Prior research that examined implementing IFRS 15 assumes that this effect may vary by industry (Gordon et al., 2018; Napier & Stadler, 2020). Therefore, we consider this industry-specific factor in our analyses.

We use data on Korean public firms required to apply IFRS 15. To capture the treatment effect arising from implementing IFRS 15, we also use private firms that are exempted from IFRS 15 as a control group. We then employ a difference-in-differences research design to identify the treatment effect. As private firms have quite different characteristics from public firms, we match public and private firms on the basis of their size. Using a large sample of 26,526 observations from 2015 to 2020, we find that the level of financial statement comparability is higher after applying IFRS 15. IFRS 15 application incrementally enhances the comparability of public firms, while there is no significant change in comparability among the private firms not subject to this standard. Specifically, a positive effect of IFRS 15 on comparability is observed when comparability proxies estimated from observations within the same industry-year are used, thereby supporting the *discretion reduction effect* of IFRS 15. Furthermore, we document similar results when the comparability proxies estimated from observations across different industries in the same year are used, which supports the *harmonization of the multiple standards effect*. These results are consistent when full private and public firms are used without matching and when a firm-pair-based comparability proxy is used, rather than a firm-year-based proxy. We also conduct propensity score matching (PSM) tests. PSM is performed using variables that affect Initial Public Offering (IPO) evaluations, such as size, leverage, and profit. The results from the PSM samples are consistent, supporting the robustness of our results.

The results of the cross-sectional tests indicate that the increase in financial comparability due to IFRS 15 is more pronounced for firms that are industry-specialist auditors' clients and those that operate in less-competitive industries. Hence, the increase in accounting comparability is experienced more by the clients of industry-specialist auditors than by clients of non-specialist auditors. Moreover, as firms that operate in less-competitive industries face lower pressure to manipulate revenue, the new standard is more effective for industries with lower competition levels. These findings are robust when alternative proxies for auditors' industry expertise and industry competition are used.

In additional tests, we show that discretionary revenues estimated following Stubben's (2010) models are lower in the post-IFRS 15 period than that in the pre-IFRS 15 period for public firms. Thus, this supports the discretion reduction effect of IFRS 15. Lastly, the increase in financial statement comparability is more pronounced in the subsequent years (2019, 2020) than that in the initial effective year (2018).

This study contributes to the literature in several ways. First, it is an early study to provide empirical evidence of the effectiveness of IFRS 15 on accounting information.[2] As our study documents results consistent with the IASB's prediction, it provides practical insight into regulatory bodies. Our study also suggests that regulators need to discuss ways to have standards more effectively applied and enforced. Second, an increase in accounting comparability is more pronounced for firms with a specialist auditor and firms operating in a less-competitive industry. This suggests that how IFRS 15 is applied depends on the characteristics of the firms and the industries. This insight may help accounting practitioners and companies to implement IFRS 15 efficiently. Third, the impact of IFRS on accounting quality is debatable. Most studies have

[1] We appreciate the anonymous reviewer for commenting on these two effects.

[2] Gordon et al. (2018), Lin et al. (2019), and Napier and Stadler (2020) are related to our study, but these studies do not directly examine the effects of IFRS 15 on financial statement comparability - which is our main topic. Lin et al. (2019) test the overall impact of IFRS adoption and not the effect of IFRS 15 implementation on accounting comparability. Gordon et al. (2018) and Napier and Stadler (2020) examine IFRS 15 directly but do not focus on accounting comparability; and they instead suggest that the application of IFRS 15 entails costs and has limited effectiveness.

examined the overall effect of IFRS on earnings quality metrics (Kwon et al., 2019; Key & Kim, 2020) or capital raising costs (Choi & Lee, 2015; Kim & Ryu, 2018). However, they rarely investigate the impact of individual standards under IFRS. This study fills this gap by testing the effect of IFRS 15 on accounting comparability. Fourth, a primary purpose of adopting IFRS is to enhance financial statement comparability (IFRS Foundation, 2022). Furthermore, comparability is a key factor that helps mandatory IFRS adopters derive economic benefits from adoption (Neel, 2017). Thus, it is important to have research that investigates comparability when analyzing the effect of accounting standards on firm outcomes.

The remainder of this paper is organized as follows. Section 2 provides the background of IFRS 15 implementation, the literature review, and the hypotheses development. Section 3 and Section 4 describe the study's research design. Section 5 presents the empirical results. Finally, Section 6 discusses the conclusions.

2. Background of IFRS 15, literature review, and hypotheses development

2.1. Background of IFRS 15

In May 2014, the IASB issued IFRS 15 as a new revenue recognition principle to provide guidance on when and how much revenue should be recognized. It replaces prior standards, such as IAS 18 (*Revenue*) and IAS 11 (*Construction Contracts*), and related IFRIC standards. The standard was effective January 1, 2018, with earlier adoption being allowed.

Korea adopted IFRS in 2011. On October 26, 2018, following the IASB's instruction, the Korea Accounting Institute released IFRS 15, which is classified as K-IFRS (Korean-IFRS) 1115. All listed firms in the Korean stock market are required to report their revenues based on this standard in their annual reports beginning at the end of 2018.

The key difference between the former revenue recognition standard and IFRS 15 is that the latter provides a new revenue recognition model. This model aims to provide a robust framework that can be applied to every type of revenue-incurring transaction. The assumptions for this new model have some key differences when compared to the preceding standards. First, IFRS 15 views revenue recognition from a contractual perspective (Jones & Pagach, 2013). For instance, a seller has an obligation to transfer goods or services while having the right to recognize customer revenue. The seller can only recognize revenue if its performance obligation is satisfied. Second, no specific guidance in the previous standards exists for identifying and separating performance obligations in a contract (McConnell, 2014). In contrast to this, IFRS 15 provides detailed interpretations and examples for the identification of obligations. For instance, under IFRS 15 the contract for communication services comprises monthly payments for network services and purchasing mobile phones. A service firm should allocate the transaction prices of each performance obligation on the basis of its relative standalone selling prices.[3] Third, when determining the transaction price, if the amount of consideration is variable, a seller should estimate it based on the expected value or the most likely amount. No explicit provision exists for variable considerations in the former standards. Overall, the new principle brings discipline to the revenue recognition process (Jones & Pagach, 2013). This discipline intends to enhance accounting comparability.

So far, only two studies have tested the effect of IFRS 15: Napier and Stadler (2020) and Gordon et al. (2018). Napier and Stadler (2020) investigate the effect of IFRS 15 on key audit matters, accounting numbers, number of pages in the notes regarding revenue, and audit fees. They document that the IFRS 15 implementation does not significantly affect the reporting practices of key audit matters or accounts, such as retained earnings or revenue. They find that the average number of pages of notes related to revenue almost doubled in the implementation year compared to the prior year. What is interesting is that most of these increased disclosures explain why the new revenue model does not improve revenue recognition. Furthermore, based on comment letters and interviews from their sample companies, Napier and Stadler (2020) conclude the minimal impact of IFRS 15 implementation for most firms. Gordon et al. (2018) examine the market reaction to event dates and dates related to the issuance of the new revenue standard. They show that investors react negatively to US-GAAP firms, but positively to IFRS firms. Particularly, the negative reaction to US-GAAP firms is more pronounced in industries with high litigation risk. Overall, their study concludes that IFRS 15 imposes costs on US-GAAP firms.

2.2. Studies on IFRS adoption and financial statement comparability

Financial statement comparability is a qualitative characteristic of accounting information under the *Conceptual Framework for Financial Reporting*. The FASB (2010) and IASB (2018)[4] have an identical definition of comparability: *comparability is the qualitative characteristic that enables users to identify and understand similarities in, and differences among, items*. Both boards expect that comparable financial reporting may reduce users' acquisition costs for interpreting and evaluating information.

Several studies have documented the impact of IFRS adoption on financial statement comparability. For instance, Yip and Young (2012) examine whether accounting comparability changed after IFRS adoption for European firms. In a cross-country analysis, they report more comparability in the post-IFRS period than in the pre-IFRS period. Moreover, they compare common law and code law countries and find that firms with the same legal origin experience an increase in comparability after IFRS adoption. Conversely, Cascino and Gassen (2015) argue that the effect is limited. This study finds weak evidence of IFRS impacting comparability. They interpret this limited evidence as due to weak compliance, indicating that firms fail to adequately reflect the new accounting standards' requirements in financial statements. They also report that IFRS-adopted listed firms show lower comparability than the unlisted firms following local GAAP. Finally, using the circumstances in Germany, where US-GAAP and IFRS were selectively applicable prior to the introduction of IFRS, Lin et al. (2019) compare the effects of convergence and adoption on accounting comparability. Since all firms were making convergence efforts, the incremental effect of IFRS adoption can be identified by examining the newly IFRS-adopted firms' post adoption period. Particularly, when the firms that continued to apply IFRS and firms that switched from US-GAAP to IFRS are compared, the results indicate that convergence has a positive impact on comparability. However, they find that IFRS adoption itself does not have a significant effect on comparability that exceeds using US-GAAP.

Overall, IFRS adoption is related to the comparability of financial statements, but its effects vary depending on the country, capital market, and the level of compliance.

2.3. IFRS adoption and the consequences in Korea

This section introduces prior research related to the introduction of IFRS in Korea and the consequences. While this study examines the effects of the IFRS 15, it is helpful to understand the adoption of IFRS in the Korean capital market.

[3] For instance, SK Telecom, which is the largest telecommunication company in Korea, states in its 2020 annual report that "if we provide cell phone device sales and wireless communication services to the same customer, the transaction price distributed to the device is recognized as revenue at the time of the device's sale, and the transaction price distributed to the wireless communication service is recognized as revenue over the contract period.".

[4] In 2018, the IASB issued a comprehensive set of the revised *Conceptual Framework for Financial Reporting* that replaces the previous version of the *Conceptual Framework* in 2010.

A few studies have investigated the relationship between IFRS introduction and accounting quality. For instance, Kwon et al. (2019) find that both accruals and real earnings management are reduced after IFRS adoption. They also document an increase in both audit fees and hours in the post-IFRS period. Similarly, Key and Kim (2020) show a decrease in earnings management and an increase in accounting conservatism in the post adoption period. These results suggest that IFRS has contributed to improving accounting quality.

Some other studies document the impact of IFRS adoption on the Korean capital market environment. Cho et al. (2021) find a reduction in the gap between a firm's value and price after the IFRS adoption. Their study observes that the Korea discount slackened in the post-IFRS period, and it is more salient for previously undervalued firms. Kim and Ryu (2018) provide evidence of a cost of equity capital reduction in the post-IFRS period. Similarly, Choi and Lee (2015) document a decrease in cost of debt for firms that received IFRS non-audit consulting services from their auditors. The above studies show that the information environment improved and that the costs of capital have lowered since the introduction of IFRS.

In contrast, Cho et al. (2015) find no significant difference in the negative relationship between reporting quality and information asymmetry before and after the adoption of IFRS.

To summarize, mostly positive effects of IFRS adoption are observed in previous studies. However, these are generally focused on the impact of introducing the IFRS itself. This approach has the disadvantage of not considering the offsetting effects of individual accounting standards. Therefore, it is meaningful to examine whether the application of IFRS 15 affects the quality of revenue recognition, in that it shows the effectiveness of applying the specific accounting standard on a single accounting item.

2.4. Hypotheses development

IFRS 15 aims to provide a single standard applied across all firms, industries, and capital markets. IFRS 15 complements the related standards in the following ways and is, therefore, expected to produce comparable accounting information.

First, IFRS 15 views revenue recognition from a contractual perspective (Jones & Pagach, 2013) whereas past standards recognize revenue for each individual performance obligation, such as selling goods or rendering services. Because the standards applied for the obligations of goods and services were different in the past, how revenue should be recognized for transactions that include both obligations remained unclear. In contrast, IFRS 15 requires a transaction to be analyzed at the contract level, and not at the obligation level. Moreover, IFRS 15 provides a comprehensive framework on revenue recognition that can be used in all types of contracts (McConnell, 2014). If a common standard is applied to a contract, it should become clear in the revenue recognition process, even for contracts with mixed performance obligations.[5] Since IFRS 15 is more prescriptive and provides more detailed guidance than previous IFRS revenue recognition standards, a recognition process should be straightforward and opportunistic behavior such as reporting manipulated earnings through discretionary revenue recognition should decrease. We define this perspective as the *discretion reduction effect* of IFRS 15. Therefore, accounting information under IFRS 15 that has less discretion in revenue recognition should be more comparable than before.

Second, the guidance for revenue recognition was distributed separately in various standards, causing inconvenience to practitioners when standards are applied to financial reporting. To overcome these concerns, IFRS 15 combines multiple standards into a uniform standard applied to all firms in all industries. Hence, the overall comparability of accounting information should be enhanced. Moreover, IFRS 15 provides a five-step revenue-recognition model. This model provides more uniformity in revenue recognition and, consequently, should ensure that the amount and timing of revenue recognition are the same for economically similar transactions. We call this aspect of IFRS 15 the *harmonization of multiple standards effect*.

The discretion reduction effect and the harmonization of multiple standards effect may lead to the expectation of an increase in accounting comparability after applying IFRS 15. However, contradicting views emerged that IFRS 15 may not enhance comparability. We summarize them as follows.

First, although IFRS 15 is predicted to enhance accounting comparability, its success depends on whether the comparability level increases over that induced by the prior revenue standard. Prior research shows that discretion allowed in the prior standard determines the effectiveness of adopting a new standard (Atwood et al., 2011; Gordon et al., 2018). For example, Atwood et al. (2011) find that earnings persistence and its association with future cash flows reported under IFRS are less than those under US-GAAP. Gordon et al. (2018) highlight that IFRS 15 may have less impact on US-GAAP firms' comparability if the revenue recognition of US-GAAP is more prescriptive than that of IFRS 15. If existing revenue recognition standards tend to impose more restrictions than the new standards, allowing less discretion of managers, IFRS 15 would be less effective.[6]

Second, the application of a five-step model is required for all industries. If an industry is not suitable for adopting the new revenue model, comparability will decrease. For example, the construction industry followed its revenue recognition standard (IAS 11), allowing the use of the percentage completion method. In IFRS 15, a firm operating in the construction industry can only apply the percentage of completion method if it can reasonably estimate the percentage based on the input and output measures. Thus, different interpretations can be applied when estimating progress using the new revenue-recognition model. This concern is not restricted to the construction industry. For example, by investigating the telecommunications industry, Kohler et al. (2021) argue that the five-step revenue recognition model is more difficult to apply and involves more audit effort than the existing model.

Third, limited compliance restricts the positive effect of the new accounting standard on financial statement comparability (Cascino & Gassen, 2015). If there are companies that choose to meet the new standard and others follow it relatively less (Napier & Stadler, 2020), the induced heterogeneity in the application of the new recognition model will limit the IFRS 15 effect on comparability.

Finally, firms suffer from a lack of examples in practice when first applying IFRS 15. In this transition period, limited evidence of applying a new standard reduces the effectiveness of IFRS 15. For example, the results of previous IFRS studies indicate that firms face difficulties in the first year of IFRS adoption (Atwood et al., 2011; Cascino & Gassen, 2015). Consequently, auditors and practitioners are concerned about the application of IFRS 15, especially in the early stages of introduction (IASB, 2015; Lim et al., 2015).

[5] Previous standards did not allow firms to recognize revenue for partially completed obligations unless all performance obligations were completed. Conversely, firms can recognize revenues by determining the calculation of variable prices and the fulfillment of performance obligations from a contractual perspective. For example, consider a business that sells mobile phones and provides communication services. In the previous standards, revenues were recognized when mobile phones were sold or telecommunication services were recognized over the service period. In contrast, in the new standard, revenues are distributed and recognized according to the relative transaction prices of mobile phones and telecommunication services throughout the service period.

[6] If we recall the previous mobile phone case, because mobile phone sales and telecommunication services are affected by numerous types of information, such as contract periods, combination of products and services, and subsidies, practitioners can still argue that considerable discretions exist in applying the new revenue recognition.

Overall, ex-ante, whether IFRS 15 enhances financial statement comparability remains unclear. This may be due to the nature of the new and old principles, difficulties in implementing the new principle, or heterogeneity in the application of the new standard. Therefore, this research question requires empirical investigation. As both directions can be expected when predicting the effect of IFRS 15 application on comparability, this study sets the following bidirectional hypothesis:

Hypothesis 1: The application of IFRS 15 is related to the level of financial statement comparability.

This study further explores the factors that might affect the relationship between the application of IFRS 15 and financial statement comparability. Revenue is the largest component of earnings and is subject to manipulation of a firm's performance (Stubben, 2010). Moreover, the quality of accounting information and comparability are closely related for several reasons. The two most important objectives of the accounting standards established by the IASB are to improve accounting quality and comparability (Neel, 2017). Therefore, examining how accounting quality is related to its effects on comparability becomes intuitive. For instance, Neel (2017) suggests that while the enhancement in comparability due to IFRS adoption is the most important factor that can explain the increase in a firm's value, the improvement of reporting quality is a secondary effect. However, Neel (2017) also predicted that in Asian countries where capital markets are less developed, the quality of financial reporting will be a more pronounced determinant of a firm's economic performance. Thus, testing whether reporting quality is expected to have a moderator effect on Hypothesis 1 is important in our Korean setting..[7] Because prior literature reports that auditors' industrial expertise (Reichelt & Wang, 2010) and industry competition (Datta et al., 2013; Laksmana & Yang, 2014; Majeed et al., 2018) are closely related to accounting quality, we include these factors in our models.

First, we test whether a high-quality auditor is an important determinant in the relationship between IFRS 15 and comparability. Prior research reports that high-quality audits enforce IFRS implementation (Stokes & Webster, 2010). Furthermore, accounting comparability is associated with audit services (Francis et al., 2014; Zhang, 2018; Chen et al., 2020). Most importantly, auditors play a pivotal role in helping client firms properly apply new accounting standards. Kohler et al. (2021) show that auditors serve as intermediaries between regulators establishing accounting standards and those applying them in the telecommunications industry. That finding suggests that auditors should play a decisive role in the communication between the IASB and firms when IFRS 15 is adopted.

To test the auditor's role when applying IFRS 15, we use an industry specialist auditor as a proxy for auditor quality. This is because implementing IFRS 15 depends highly on industry-specific knowledge (Jones & Pagach, 2013; McConnell, 2014). For instance, Napier and Satdler (2020) report that auditors with expertise in revenue recognition regard IFRS 15 as a useful standard in handling complex revenue transactions. Thus, specialist auditors' clients should more effectively apply the new principle than non-specialist auditors' clients because of specialist auditors' deep understanding of the industry and knowledge transfer inside an accounting firm.[8]

Second, Datta et al. (2013) found that firms in less-competitive industries have lower incentives to manipulate earnings. Conversely, firms operating in industries with greater competition face higher pressure to maintain a certain level of earnings that should be higher than that of their rivals.[9] Even though IFRS 15 may reduce discretion in revenue recognition, it will probably be less pronounced in competitive industries that are likely to overstate profits. As a result, relatively less decreased discretion in revenue recognition may harm accounting comparability (Bordeman, 2022). Thus, we suggest that the positive effect of IFRS 15 on accounting comparability is less pronounced in industries with higher competition.[10]

Overall, the above discussions show that the relationship between IFRS 15 and comparability might be affected by various cross-sectional factors, such as auditor industry expertise and industry competition. Thus, we formulated the second hypothesis as follows:

Hypothesis 2: Auditor industry expertise and industry competition affect the relationship between the application of IFRS 15 and financial statement comparability.

3. Methodology

3.1. Sample

Sample selection procedure began by including all firms in the Korean stock market from 2015 to 2020. Korean listed firms have adopted the IFRS since 2011, and IFRS 15 become effective in 2018. As the pre-IFRS 15 period is 7 years and post-IFRS period is 3 years, we use observations from 2015 to 2020 to construct a balanced sample period. Financial statement and stock return data were collected from the TS2000 and KIS-VALUE databases provided by the Korea Listed Companies Association and NICE Information Service, respectively.

Table 1 presents the sample-selection procedure. The initial sample from 2015 to 2020 consisted of 16,357 firm-years. Listed firms in this study include KOSPI, KOSDAQ, and KONEX firms.[11] In addition, as this study uses both listed and unlisted firms, the unlisted period of listed firms is also included in the analysis if they disclose financial statements data. Observations that operated in financial industries (318) were excluded. Next, firm-years with non-December year ends (253) were deleted. Those with missing controls, discretionary accruals (2,503), and financial statement comparability data (20) were excluded. Selection criteria yielded 13,263 firm-year observations for listed companies.

To more precisely capture the treatment effect from implementing IFRS 15, we use private firms as a control group because they do not adopt IFRS 15 as they are exempt from IFRS adoption in Korea. We then employ a difference-in-differences research design to identify the treatment effect.

[7] The effort to meet international accounting standard has always been an important issue in Korea. This is due to the perception that the low accounting quality leads to the undervaluation of Korean companies, called the Korea discount (Cho et al., 2021).

[8] In practice, auditors actually attract clients by emphasizing their expertise in IFRS 15 with their release of industry-specific guidelines. For instance, see the following recent publications by PwC regarding this issue: https://www.pwc.com/gx/en/services/audit-assurance/assets/ifrs-15-for-the-software-industry-in-brief.pdf andhttps://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-15/ifrs-15-solutions-retail-consumer-industry-pwc.pdf.

[9] However, we admit that contradicting empirical evidence exists that lower competition induces more earnings management (Laksmana & Yang, 2014) and greater competition improves accounting comparability (Majeed et al., 2018). Therefore, as the effectiveness of IFRS 15 differs among various industries (Gordon et al., 2018; Napier & Stadler, 2020), an empirical question is whether and if so in what direction does industry competition affects the relationship between IFRS 15 and comparability.

[10] Prior research examining the effect of implementing IFRS 15 assumes that the effect may differ by industry. For instance, Gordon et al. (2018) assume that industries having more uncertainty, such as healthcare, telecommunications, and computer technology, would be more affected by the new standard. Napier and Stadler (2020) also argue that firms in the telecommunication and technology industries report more key audit matters related to IFRS 15. These industries are also highly competitive industries having more uncertainty in their revenue recognition.

[11] There are three listed markets in Korea. The large-scale market is the KOSPI market, and relatively small companies are listed on the KOSDAQ. The KONEX is the most recently established market, where venture companies are mainly listed.

Table 1
The sample selection procedure.

Criteria	Number of firm-years
Initial public (listed) firm observations	16,357
Less:	
Financial industries	(318)
Non-December year ends	(253)
Missing data to measure control variables including discretionary accruals	(2,503)
Missing data to measure financial statement comparability	(20)
Public (listed) firm observations	13,263
Add:	
Size-matched private (unlisted) firm observations	13,263
Final sample	26,526

As unlisted firms have different characteristics from listed firms, and as applied regulations also differ, matching between these two firms is conducted to alleviate this issue. Prior research comparing listed and unlisted companies after matching the two groups uses firm size as an important determinant (Ball & Shivakumar, 2005; Hope et al., 2013).[12] From a practical perspective, company size is also important when comparing between listed and unlisted companies. The quality of the disclosure required for listed and unlisted Korean companies, including the mandatory appointment of external auditors, is largely determined by asset size. For example, companies with 12 billion Korean won (approximately $9.84 million) or more must appoint external auditors regardless of whether or not they are listed. Therefore, we use firm size when matching public and private firms. Specifically, listed and unlisted firms in the same industry-year and within ± 10 % of the firm size are matched one-to-one. As a result, 13,263 unlisted firms are matched, and the final sample consists of 26,526 firm-year observations.

3.2. Measuring the financial statement comparability

We follow Francis et al.'s (2014) accrual-based accounting comparability measures for the main tests for two reasons. First, because this study uses private firms as a control group for public firms, other comparability measures such as earnings-return relationship-based proxies are not applicable to private firms. Second, stock returns would reflect the totality of economic transactions that occur regardless of their relevance to revenue information. Given that IFRS 15 would be ineffective for certain types of market participants (Napier & Stadler, 2020), whether stock returns would capture the impact of IFRS 15, distinct from other value-relevant information, becomes suspicious.

Accrual-based comparability measures are estimated following Francis et al. (2014) and Chen et al. (2020). First, we estimate comparability using discretionary accrual differences. We construct the differences of discretionary accruals (*DA*) and performance-matched discretionary accruals (*PMDA*) between the matched firm pairs in the same two-digit industry-year.[13] The absolute values of the differences are then calculated as expressed in Equations (1a) and (1b).

$$DA\_Diff_{ijt} = Absolute(DA_{it} - DA_{jt}) \quad (1a)$$

$$PMDA\_Diff_{ijt} = Absolute(PMDA_{it} - PMDA_{jt}) \quad (1b)$$

Francis et al. (2014) use firm-pair differences. However, because our study uses firm-year data, the proxy of firm-pair based comparability is converted to a firm-year level. Hence, we calculate the average of firm i-j combinations.[14] We generate two proxies of accrual comparability, *COMP_DA* and *COMP_PMDA*, based on the differences in discretionary accruals and performance-matched discretionary accruals. The value is multiplied by a negative one to indicate an increase in comparability as the absolute values of differences between two firms' *DA* or *PMDA* decrease. Moreover, we construct the comparability proxy from different industries in the same year to capture the harmonization effect of IFRS 15. For example, in the same year, a firm i belonging to the manufacturing industry is paired with a firm j belonging to the service industry to estimate comparability. Therefore, our tests report results using the following two comparability proxies: 1) estimated within the same industries in the same year, and 2) estimated across different industries in the same year, to test the discretion reduction effect and the harmonization of the multiple standards effect, respectively.

In additional tests, we use other comparability proxies. First, we use De Franco et al.'s (2011) measure of accounting comparability. Economic events are proxied by stock returns, and the accounting system is represented by the function of reflecting these economic events in accounting earnings. Specifically, Equation (2a), based on firm-quarter data, is estimated using the previous eight quarters of each firm.[15]

$$Earnings_{it} = \alpha_i + \beta_i Return_{it} + \varepsilon_{it} \quad (2a)$$

In Equation (2a), $Earnings_{it}$ denotes firm i's quarterly earnings. $Return_{it}$ is the stock return for that quarter. As noted by De Franco et al. (2011), the coefficients of α_i and β_i from Equation (2a) denote the accounting system of firm i. Similarly, firm j's accounting system can be estimated from the same equation. This holds for all other firms.

Next, we modify the approach of De Franco et al. (2011). As our focus is on the impact of IFRS 15 on accounting comparability, we use revenue

[12] For instance, when comparing the level of accounting conservatism of public and private firms, Ball and Shivakumar (2005) match both groups within the same industry-year using the size (total assets) variable.

[13] To generate *PMDA*, first, discretionary accruals (*DA*) are calculated from the modified Jones model (Dechow et al., 1995). Specifically, discretionary accruals are residuals from the following equation:$Accruals = \alpha_0 + \alpha_1(\Delta Sales - \Delta REC) + \alpha_2 PPE + \varepsilon$,The definition of each variable is as follows: *Accruals* equals net income minus cash flow from operations; *ΔSales* equals the change in sales, *ΔREC* equals the change in accounts receivables; and *PPE* equals the net property, plant, and equipment. All variables are deflated by lagged total assets. To address the effect of extreme performance on *DA* calculation, we use *PMDA* following Kothari et al. (2005). Particularly, we subtract corresponding discretionary accruals of firm j matched on the basis of the closest return on assets of the same industry–year to obtain a performance-matched discretionary accruals of firm i.

[14] We use all firm-pairs (instead of a few selected firm-pairs) to offset firm-specific idiosyncrasies in accruals. We appreciate the anonymous reviewer for suggesting this approach. Additionally, rather than taking average of all firm i-j pairs, we use the average value of four highest comparability combinations and find the similar results.

[15] The past eight quarters are used in estimation to minimize the impact of the accounting system in the period prior to IFRS 15 on the comparability of subsequent periods. When estimation was made using the past 16 quarters as suggested by De Franco et al. (2011), the results are not different. We appreciate anonymous reviewer's suggestion on this issue. Additionally, we report results using current four quarters, which have no contamination of the measure from mixing pre-IFRS 15 data with post-IFRS 15 data.

as an alternative to earnings when estimating comparability.[16] As expenses follow the revenue under the matching principle, sales revenue is linked to earnings. Therefore, the relationship between sales revenue and stock price returns is justified. As expressed in Equation (2b-1), we replace earnings with revenue. Moreover, because earnings are expressed as revenue minus expenses, as shown in Equation (2b-2), we use the coefficient of expenses in addition to returns, as expressed in Equation (2b-3).[17]

$$Revenue_{it} = \alpha_i + \beta_i Return_{it} + \varepsilon_{it} \quad (2b\text{-}1)$$

$$Earnings_{it} = Revenue_{it} - Expenses_{it} \quad (2b\text{-}2)$$

$$Revenue_{it} = \alpha_i + \beta_i Return_{it} + \gamma_i Expenses_{it} + \varepsilon_{it} \quad (2b\text{-}3)$$

If firm j reports similar earnings to firm i for the same economic event ($Return_i$), then the two firms' earnings are comparable. The earnings expected by the given $Return_i$ or $Expenses_i$ for firm i is $E(earnings)_{iit}$. The earnings expected by the same $Return_i$ or $Expenses_i$ for firm j are $E(earnings)_{ijt}$. Pairwise comparability between firms i and j is then generated by taking the mean value of the absolute difference between expected earnings. The value is multiplied by a negative one to indicate an increase in comparability as the difference between the two expected earnings decreases. The proxy for financial statement comparability is estimated for each firm i–j pair for firm i within each industry–year. For each firm i, all matched firm j combinations are ranked from highest to lowest. Our proxy is the average of four highest comparability combinations following De Franco et al. (2011).[18] Therefore, we estimate *COMP_EARN*, *COMP_REV1*, and *COMP_REV2* based on Equations (2a), (2b-1), and (2b-3), respectively. The results of these alternatives are reported in the additional tests section.

4. Research model

To limit the impact of changes in accounting comparability resulting from the initial IFRS adoption in Korea, we restrict the sample to the post-IFRS period. We use 3 years of pre- and post-IFRS 15 periods to balance the observations. We use private firms to serve as a control group for public firms. This difference-in-differences approach is frequently used to address endogenous concerns (Roberts & Whited, 2013), such as the endogeneity implied in the relationship between accounting comparability and application of IFRS 15. Therefore, we run the following difference-in-differences Equation (3):

$$COMP = \alpha_0 + \alpha_1 IFRS15 + \alpha_2 PUBLIC + \alpha_3 IFRS15{*}PUBLIC + CONTROLS + INDUSTRY\ FE + \varepsilon \quad (3)$$

In the Equation 3 regression model, the dependent variable (*COMP*) is the proxy for financial statement comparability. *IFRS15* equals 1 if it pertains to the years following the implementation of IFRS 15 (e.g., 2018, 2019, and 2020) and 0 if otherwise. *PUBLIC* equals 1 if it is a listed firm and 0 if otherwise. Thus, coefficient α_1 captures the effect of IFRS 15 on private firms' financial statement comparability compared to those of the other pre-IFRS 15 years. Coefficient α_2 presents public firms' comparability in the pre-IFRS 15 years. The variable of interest is *IFRS15*PUBLIC*. Coefficient α_3 captures the incremental change in comparability of public firms beyond the private firms in post IFRS 15 period. The positive (negative) significant coefficient α_3 indicates an increase (decrease) in the financial statement comparability of public firms in the post-IFRS 15 period owing to IFRS 15 amendment, relative to the changes of private firms.

As no widely accepted theoretical guidance for control variables explaining financial statement comparability can be found (Francis et al., 2014), our study includes factors known to affect comparability, as identified in recent empirical studies. First, to capture unobservable firm characteristics, the natural logarithm of total assets (*SIZE*) is included. We include the following variables to control for financial structure, cash flow, and growth rate: total liabilities divided by total assets (*LEV*), operating cash flow divided by total assets (*CFO*), and sales growth rate (*SALESGRW*). *ASSET_TURNOVER* controls for the effect of asset management on comparability. To control for liquidity, we include *CURR_RATIO*, which is calculated as current assets divided by current liabilities. To control for high-quality audit services (Francis et al., 2014; Zhang, 2018), the auditor size variable (*BIG4*) is included. *BIG4* equals 1 if the client uses one of the four largest international auditing firms. *MOD_OPINION* equals 1 for modified audit opinion and 0 otherwise and is included to control auditor-perceived client risk. *LOSS* is included to control for the financial constraints of less-profitable firms. We include industry fixed effects (*INDUSTRY FE*). The model does not include the year fixed effects as it creates multicollinearity concerns with the *IFRS15* variable. All our reported regression statistics are adjusted for firm-level clustering.

5. Empirical results

5.1. Descriptive statistics

Panel A of Table 2 provides the descriptive statistics of the variables. 51.7 % of observations belong to the post-IFRS 15 application period. The average value of the *PUBLIC* is 0.5 because public and private firms are one-to-one matched. Financial statement comparability proxies (*COMP_DA* and *COMP_PMDA*) present mean values of − 0.022 and − 0.021. The other control variables show descriptive statistics similar to those reported in previous studies. Unlike in the US or other developed markets, Big 4 auditors do not dominate Korea's audit market and here audit only 42 % of companies. For *AUDIT_SPEC*, about 22.6 % of observations are clients of industry specialist auditors. The *COMPETITION*, Herfindahl-Hirschman Index multiplied by negative one, shows a mean value of −0.082.

Panel B of Table 2 presents univariate mean comparison tests for public and private firms separately for the pre- and post-IFRS 15 periods. For public firms, the levels of the two comparability proxies (*COMP_DA* and *COMP_PMDA*) increase in the post-IFRS 15 period compared with the pre-IFRS 15 period, significant at the 10 % or higher level. Conversely, the comparability of private firms is not significant (*COMP_DA*) or decreases (*COMP_PMDA*) after IFRS 15. This finding suggests that the positive effect of IFRS 15 on comparability is limited to public firms (at least in univariate tests). Several other control variables also showed significant differences between the two periods. Discretionary revenue proxy does not differ significantly between the pre-IFRS 15 period and post-IFRS 15 periods for public firms. By contrast, the level of discretionary revenue for private firms increased after IFRS 15.

Panel C of Table 2 presents the Pearson correlations. The correlations between *IFRS15* and *COMP* (*COMP_DA* and *COMP_PMDA*) are not significant. We are cautious when interpreting this correlation because it does not distinguish between private and public firms. *SIZE* and *LOSS* are positively associated with *IFRS15*. Conversely, *CFO*, *SALESGRW*, *ASSET_TURNOVER*, and *BIG4* are negatively associated with *IFRS15*.

5.2. Results of hypotheses tests

This section investigates whether financial statements become comparable in post-IFRS 15 periods. Table 3 reports estimated coefficients from multivariate regressions. Models (1) and (2) use

[16] De Franco et al. (2011) admit that using earnings as a single proxy of financial statement is problematic: "our empirical measure of comparability relies on reported earnings as a key financial reporting metric. This is not to say that earnings is the only important metric.".

[17] We appreciate the anonymous reviewer for suggesting this equation.

[18] De Franco et al. (2011) also use the median values of these combinations. Although un-tabulated, the results of using comparability proxies from these median values are qualitatively similar to the results of using the mean values.

Table 2
Descriptive statistics and correlation matrix.

Panel A. Descriptive statistics

Variables	N	Mean	STD	1 %	Median	99 %
IFRS15	26,526	0.517	0.500	0.000	1.000	1.000
PUBLIC	26,526	0.500	0.500	0.000	0.500	1.000
COMP_DA	26,526	−0.022	0.054	−0.363	−0.004	0.000
COMP_PMDA	26,526	−0.021	0.052	−0.346	−0.004	0.000
SIZE	26,526	25.580	1.393	22.466	25.472	29.670
LEV	26,526	0.442	0.253	0.036	0.433	0.990
CFO	26,526	0.051	0.105	−0.324	0.049	0.382
SALESGRW	26,526	0.118	0.526	−0.688	0.031	3.621
ASSET_TURNOVER	26,526	0.899	0.628	0.022	0.763	3.305
CURR_RATIO	26,526	2.685	3.599	0.127	1.505	23.638
BIG4	26,526	0.420	0.494	0.000	0.000	1.000
MOD_OPINION	26,526	0.025	0.156	0.000	0.000	1.000
LOSS	26,526	0.266	0.442	0.000	0.000	1.000
AUDIT_SPEC	26,526	0.226	0.418	0.000	0.000	1.000
COMPETITION	26,526	−0.082	0.067	−0.289	−0.055	−0.012
COMP_EARN	9,497	−0.007	0.012	−0.080	−0.003	−0.001
COMP_REV1	9,497	−0.023	0.036	−0.229	−0.010	−0.002
COMP_REV2	8,359	−0.009	0.012	−0.081	−0.005	−0.001
COMP_DA_PAIRS	3,948,214	−0.136	0.157	−0.939	−0.086	−0.001
COMP_PMDA_PAIRS	3,948,214	−0.136	0.157	−0.940	−0.086	−0.001
DIS_REV1	26,521	−0.005	0.057	−0.137	−0.007	0.147
DIS_REV2	25,323	−0.004	0.057	−0.136	−0.004	0.144
FIRM_AGE	26,521	3.007	0.715	0.693	3.045	4.094

Panel B. Univariate mean differences

Variables	Public firms			Private firms		
	(1) Post-IFRS 15	(2) Pre-IFRS 15	(1)-(2) t-value	(3) Post-IFRS 15	(4) Pre-IFRS 15	(3)-(4) t-value
COMP_DA	−0.024	−0.026	1.98**	−0.019	−0.018	−0.97
COMP_PMDA	−0.024	−0.025	1.67*	−0.019	−0.017	−1.96*
SIZE	25.683	25.511	6.96***	25.646	25.469	7.45***
LEV	0.395	0.400	−1.23	0.484	0.490	−1.46
CFO	0.036	0.041	−2.66***	0.060	0.067	−3.74***
SALESGRW	0.097	0.139	−4.55***	0.110	0.127	−1.84*
ASSET_TURNOVER	0.752	0.846	−9.96***	0.973	1.030	−4.81***
CURR_RATIO	3.044	2.955	1.34	2.419	2.315	1.82*
BIG4	0.368	0.457	−10.48***	0.414	0.445	−3.57***
MOD_OPINION	0.013	0.013	−0.07	0.036	0.038	−0.55
LOSS	0.353	0.279	9.10***	0.235	0.192	6.03***
AUDIT_SPEC	0.191	0.238	−6.59***	0.223	0.257	−4.66***
COMPETITION	−0.079	−0.087	6.80***	−0.079	−0.087	6.80***
DIS_REV1	−0.006	−0.006	−0.00	−0.003	−0.005	2.47**
DIS_REV2	−0.005	−0.005	0.40	−0.002	−0.005	2.84***

Panel C: Pearson correlation matrix

Variable	*1.*	*2.*	*3.*	*4.*	*5.*	*6.*	*7.*	*8.*	*9.*	*10.*	*11.*	*12.*	*13.*
1. IFRS15	1.000												
2. PUBLIC	0.000	1.000											
3. COMP_DA	0.005	**−0.055**	1.000										
4. COMP_PMDA	0.000	**−0.058**	**0.968**	1.000									
5. SIZE	**0.062**	0.014	**0.121**	**0.115**	1.000								
6. LEV	−0.012	**−0.176**	**−0.136**	**−0.130**	**−0.100**	1.000							
7. CFO	**−0.028**	**−0.117**	**0.106**	**0.097**	**0.125**	**−0.142**	1.000						
8. SALESGRW	**−0.028**	−0.001	**−0.177**	**−0.179**	**−0.071**	**0.032**	**0.048**	1.000					
9. ASSET_TURNOVER	**−0.060**	**−0.162**	0.002	0.004	**−0.102**	**0.255**	**0.227**	**0.070**	1.000				
10. CURR_RATIO	0.013	**0.088**	**0.020**	**0.016**	**−0.058**	**−0.534**	−0.007	0.003	**−0.216**	1.000			
11. BIG4	**−0.061**	**−0.018**	**0.026**	**0.027**	**0.430**	**−0.069**	**0.105**	−0.004	**0.072**	−0.004	1.000		
12. MOD_OPINION	−0.003	**−0.077**	**−0.106**	**−0.107**	**−0.160**	**0.135**	**−0.045**	**0.042**	**0.043**	**−0.030**	**−0.095**	1.000	
13. LOSS	**0.066**	**0.117**	**−0.097**	**−0.091**	**−0.131**	**0.211**	**−0.393**	**−0.066**	**−0.175**	**−0.041**	**−0.063**	**0.068**	1.000

Notes: In Panel C, bold indicates significance at the 0.01 or higher level at two-tail tests. See Appendix for variable definitions.

Table 3
The effect of IFRS 15 on financial statement comparability (test results of H1).

	Comparability estimated within the same industry		Comparability estimated across the different industries	
Variable	(1) Dep. = *COMP_DA*	(2) Dep. = *COMP_PMDA*	(3) Dep. = *COMP_DA*	(4) Dep. = *COMP_PMDA*
INTERCEPT	−0.168***	−0.176***	−0.004***	−0.003***
	(−15.61)	(−14.13)	(−7.04)	(−5.81)
IFRS15	−0.001	−0.002**	−0.000*	−0.000
	(−1.50)	(−2.28)	(−1.79)	(−1.59)
PUBLIC	−0.008***	−0.009***	−0.000***	−0.000***
	(−8.11)	(−8.71)	(−5.83)	(−5.86)
IFRS15*PUBLIC	**0.002***	**0.003****	**0.000****	**0.000****
	(1.67)	**(2.07)**	**(2.03)**	**(2.08)**
SIZE	0.005***	0.004***	0.000***	0.000***
	(12.42)	(12.28)	(10.05)	(8.87)
LEV	−0.022***	−0.021***	−0.001***	−0.001***
	(−8.29)	(−8.01)	(−7.58)	(−7.15)
CFO	0.029***	0.025***	0.002***	0.002***
	(3.90)	(3.46)	(3.98)	(4.03)
SALESGRW	−0.015***	−0.015***	−0.001***	−0.001***
	(−10.19)	(−10.67)	(−9.00)	(−9.67)
ASSET_TURNOVER	0.000	0.001	0.000	0.000
	(0.53)	(0.75)	(1.52)	(1.39)
CURR_RATIO	−0.001***	−0.001***	−0.000***	−0.000***
	(−4.94)	(−4.96)	(−3.86)	(−4.48)
BIG4	−0.004***	−0.004***	−0.000***	−0.000***
	(−4.91)	(−4.63)	(−4.34)	(−3.74)
MOD_OPINION	−0.027***	−0.027***	−0.001***	−0.001***
	(−6.52)	(−6.59)	(−5.18)	(−4.77)
LOSS	−0.004***	−0.003***	−0.000*	−0.000*
	(−3.43)	(−3.28)	(−1.74)	(−1.85)
INDUSTRY FE	Included	Included	Included	Included
F-value (p-value)	50.10	50.24	8.84	9.00
	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Adj. R-Squared	0.267	0.266	0.087	0.088
N observations	26,526	26,526	26,526	26,526

Notes: T-values in parenthesis are firm-level clustered. *, **, and *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 level, respectively. See Appendix for variable definitions.

comparability proxies estimated for the same industry and year. Model (1) in Table 3 presents the results when the dependent variable is *COMP_DA*. The *IFRS15* coefficient is insignificant (coefficient = -0.001, t-value = -1.50), whereas the coefficient of *PUBLIC* is negative and significant at the 1 % level (coefficient = -0.008, t-value = -8.11).[19]

Most importantly, *IFRS15*PUBLIC* is positive and significant (coefficient = 0.002, t-value = 1.67). Overall, these coefficients show that public firms report less comparable accounting information in the pre-IFRS 15 period than private firms. By contrast, the application of IFRS 15 incrementally increases the level of comparability of public firms relative to the changes of private firms. The insignificant coefficient of *IFRS15* shows that IFRS15 is not effective for private firms. In Model (2), when using *COMP_PMDA* as the dependent variable, *IFRS15* is negative and significant. Therefore, private firms' accounting comparability decreases after IFRS 15. *PUBLIC* is also negative and significant (coefficient = -0.009, t-value = -8.71), whereas *IFRS15* PUBLIC* is positive and significant (coefficient = 0.003, t-value = 2.07).

[19] The negative coefficient of *PUBLIC* in Table 3 is different from ex-ante expectations but can be interpreted based on prior research findings. The local GAAP applied by private firms was used for decades, but the IFRS applied by public firms was used for only 4 years as of 2015. Therefore, the comparability of accounting information produced based on IFRS may not be completely established. For instance, Cascino and Gassen (2015) document that IFRS-adopted public firms become less comparable with local GAAP-following private firms. They interpret this as an unintended cost from mandatorily adopting the IFRS.

Models (3) and (4) also document the positive impact of IFRS 15 on comparability when comparability proxies are estimated across different industries and in the same year. Therefore, we argue that by adopting IFRS 15, firms face increased comparability because of both the *discretion reduction effect* and the *harmonization of the multiple standards effect* of IFRS 15. Overall, Table 3 demonstrates that using IFRS 15 incrementally enhances the financial statement comparability of public firms. This result is consistent with the IASB's prediction that the application of IFRS 15 will enhance comparability.

Control variables show plausible directions and significance, consistent with the literature. Comparability increased as *SIZE* and *CFO* increased, showing that comparability is positively associated with firm size and operating performance (De Franco et al., 2011; Francis et al., 2014). By contrast, comparability decreased as *LEV, SALESGRW, CURR_RATIO, BIG4, MOD_OPINION,* and *LOSS* increased. Thus, having a higher leverage ratio, greater volatility in operations due to a higher growth rate, higher current ratio, contracting with Big 4 auditors, receiving modified audit opinion, and reporting losses are negatively related to accounting comparability.

Tables 4 exhibits the results of testing Hypothesis 2. Models (1) and (2) of Table 4 presents the results after dividing the sample into clients with industry specialist auditors and non-specialist auditors. Expertise in industry is calculated based on auditors' market share in each industry-year (Balsam et al., 2003; Neal & Riley, 2004). Specifically, an auditor is defined as an industry specialist if it has more than 20 % of the market

Table 4
The effects of industry specialist auditor and industry competition on the relationship between IFRS 15 and financial statement comparability (test results of H2).

	Dependent variable = *COMP_PMDA*			
Variable	(1) *Specialist auditor subsample*	(2) *Non-Specialist auditor subsample*	(3) *Higher competition subsample*	(4) *Lower competition subsample*
INTERCEPT	−0.141***	−0.181***	−0.046**	−0.193***
	(−6.53)	(−14.56)	(−2.10)	(−14.95)
IFRS15	−0.004	−0.002	−0.004*	−0.002
	(−1.55)	(−1.50)	(−1.74)	(−1.51)
PUBLIC	−0.009***	−0.008***	−0.007***	−0.009***
	(−5.06)	(−7.37)	(−3.69)	(−8.04)
IFRS15*PUBLIC	**0.007****	**0.001**	**0.003**	**0.003***
	(2.16)	**(0.94)**	**(1.01)**	**(1.86)**
SIZE	0.003***	0.005***	0.002	0.005***
	(4.49)	(11.51)	(1.01)	(12.78)
LEV	−0.021***	−0.021***	−0.032***	−0.018***
	(−3.73)	(−7.29)	(−6.06)	(−6.34)
CFO	−0.001	0.030***	0.030**	0.024***
	(−0.05)	(3.66)	(2.10)	(2.90)
SALESGRW	−0.014***	−0.015***	−0.020***	−0.014***
	(−4.13)	(−10.16)	(−5.59)	(−9.41)
ASSET_TURNOVER	−0.000	0.001	0.001	0.000
	(−0.04)	(1.14)	(0.54)	(0.52)
CURR_RATIO	−0.001***	−0.001***	−0.001***	−0.000***
	(−2.74)	(−4.11)	(−4.14)	(−3.29)
BIG4	0.003	−0.005***	−0.006***	−0.003***
	(0.28)	(−4.71)	(−3.98)	(−3.08)
MOD_OPINION	−0.067***	−0.025***	−0.026***	−0.027***
	(−3.28)	(−5.94)	(−3.10)	(−5.96)
LOSS	−0.005**	−0.003**	−0.003	−0.004***
	(−2.19)	(−2.25)	(−1.29)	(−3.18)
INDUSTRY FE	Included	Included	Included	Included
F-value (p-value)	24.89	328.26	16.31	49.16
	(<0.001)	(<0.001)	(<0.001)	(<0.001)
Adj. R-Squared	0.329	0.259	0.120	0.297
N observations	6,004	20,522	6,618	19,908

Notes: T-values in parenthesis are firm-level clustered. *, **, and *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 level, respectively. See Appendix for variable definitions.

share based on client total assets in each industry-year.[20] Model (1) reports the results using industry-specialist auditors' clients. The coefficient of *IFRS15*PUBLIC* is positive and significant (coefficient = 0.007, t-value = 2.16). In contrast, in Model (2), where non-specialist auditors' clients are used, the coefficient of *IFRS15*PUBLIC* is not significant.

Overall, the results suggest that specialist auditors' clients mainly drive the increase in financial statement comparability. This finding supports the claim that high-quality audit services can mitigate the difficulty that might occur at the initial stage of applying the new accounting principle (Stokes & Webster, 2010).

Hypothesis 2 also assumes that industry competition affects IFRS 15. This study uses the Herfindahl–Hirschman index (HHI) to measure industry competition. The HHI is calculated as the sum of squares of market shares in each industry-year based on total assets. Industries were classified according to two-digit KSIC codes.[21] To classify the level of competition, we divided the sample based on the lowest quartile value of the HHI. Specifically, if the value of the HHI is smaller or equal (greater than) to the lowest quartile value, it is classified as a competitive (concentrated) industry.

Model (3) shows that the coefficient of *IFRS15*PUBLIC* is not significant when firms belong to highly competitive industries. However, the coefficient of *IFRS15*PUBLIC* is positive and significant at the 10 % level in Model (4), where firms operate industries under low competition. Overall, the results demonstrate that higher industry competition reduces the increase in comparability owing to IFRS 15. One possible interpretation is that firms manipulate earnings more when they face higher competition within the industry, leading to a smaller increase in comparability. Another interpretation is that firms in competitive industries face higher uncertainty in their revenue recognition transactions and are, thus, expected to be negatively affected by IFRS 15 (Gordon et al., 2018; Napier & Stadler, 2020).

5.3. Additional tests

5.3.1. Propensity score matching (PSM) test

We perform the PSM test and match the public and private firms. Matching is performed using variables affecting IPO evaluation (*SIZE*, *LEV*, and *ROA*) and year and industry fixed effects. Matching is conducted using 3 % caliper distance. In total, 23,476 observations are generated, including 11,738 listed and unlisted companies, respectively. Although previous studies acknowledge that firm size is an important single determinant, they also report PSM results in parallel with size-matched results (Hope et al., 2013; Lawrence et al., 2011). Following their approach, we report the PSM results for a robustness check.

Table 5 presents the results of the PSM sample. Panel A reports univariate mean differences between matched and unmatched samples. In Models (1) and (2), where private and public firms are not matched, the mean values of *SIZE*, *LEV*, and *ROA* are all significantly different in both samples. However, in Models (3) and (4), which show mean values after matching, no significant differences between the two groups in terms of *SIZE* and *LEV* variables can be found, and the significance level of *ROA* between the two groups is reduced. The area under the receiver operating characteristic (ROC) curve for the PSM model is 0.8959. Therefore, it is confirmed that matching is successful.

Next, the results in Panels B and C support Hypotheses 1 and 2. In Panel B, the *IFRS 15*PUBLIC* variable is significant in the positive direction regardless of comparability proxies. Additionally, in Panel C, the effectiveness of IFRS 15 is consistent with the previous results, as significance is observed only in the industry expert auditor subsample and in the less-competitive subsample.

Table 5
Propensity score matching analysis.

Panel A. Univariate mean differences

Variables	Before matching (1) Public Mean	(2) Private Mean	(1)-(2) t-value	After matching (3) Public Mean	(4) Private Mean	(3)-(4) t-value
SIZE	25.615	24.190	106.55***	25.466	25.491	−1.57
LEV	0.402	0.597	−75.43***	0.393	0.393	−0.17
ROA	0.005	0.039	−14.84***	0.004	0.038	−9.79***

Panel B. Test results of H1

Variable	Comparability estimated within the same industry (1) Dep. = *COMP_DA*	(2) Dep. = *COMP_PMDA*	Comparability estimated across the different industries (3) Dep. = *COMP_DA*	(4) Dep. = *COMP_PMDA*
IFRS15	−0.001	−0.001	−0.000*	−0.000
	(−1.57)	(−1.31)	(−1.77)	(−1.16)
PUBLIC	−0.008***	−0.008***	−0.001***	−0.001***
	(−7.79)	(−7.96)	(−7.03)	(−6.14)
IFRS15*PUBLIC	**0.003****	**0.002***	**0.000*****	**0.000****
	(2.19)	**(1.92)**	**(2.60)**	**(2.08)**
Controls	Included	Included	Included	Included
INDUSTRY FE	Included	Included	Included	Included
F−value	87.61	95.27	8.94	9.94 (<0.001)
(p−value)	(<0.001)	(<0.001)	(<0.001)	
Adj. R-Squared	0.277	0.279	0.087	0.092
N observations	23,476	23,476	23,476	23,476

Panel C. Test results of H2

	Dependent variable = *COMP_PMDA*			
	Industry specialist auditor		Industry competition	
Variable	(1) Specialist auditor subsample	(2) Non-Specialist auditor subsample	(3) Higher competition subsample	(4) Lower competition subsample
IFRS15	−0.002	−0.001	−0.003**	−0.000
	(−0.95)	(−0.70)	(−2.25)	(−0.32)
PUBLIC	−0.011***	−0.007***	−0.006***	−0.009***
	(−4.95)	(−6.24)	(−4.38)	(−6.97)
IFRS15*PUBLIC	**0.007****	**0.001**	**0.000**	**0.003***
	(2.39)	**(0.75)**	**(0.16)**	**(1.91)**
Controls	Included	Included	Included	Included
INDUSTRY FE	Included	Included	Included	Included
F-value (p-value)	95.96 (<0.001)	79,196.1 (<0.001)	14.95 (<0.001)	90.03 (<0.001)
Adj. R-Squared	0.349	0.264	0.096	0.298
N observations	4,916	18,560	5,800	17,676

Notes: T-values in parenthesis are firm-level clustered. *, **, and *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 level, respectively. See Appendix for variable definitions.

5.3.2. Robustness tests using full firm-pair samples

We extended our sample to include a non-matched private sample. We do not conduct size matching between public and private firms to reveal the robustness of our results. Although un-tabulated, results using the full 98,204 public and private observations demonstrate that the coefficients of *IFRS15*PUBLIC* are positive and significant in all models. Therefore, our results are not derived from the matching process.

Previous financial statement comparability measures are mean-converted from firm pairs. These choices can be arbitrary, and paired firm j may change from year to year. Thus, we provide the results using firm pairs instead of firm-year-level measures. In Table 6, 3,948,214 firm pairs are used. We find positive and significant coefficients of

[20] Defining expertise using client sales or different cut-offs of market share do not alter the results of this study.

[21] KSIC (Korean Standard Industrial Classification) codes follow classification standard of the US. Two-digit is a one-step more detailed classification than one-digit. For example, one-digit classifies industries into 21 categories, including agriculture, mining and quarrying, and manufacturing. Two-digit further subdivides this, and in the case of manufacturing, it is divided into 24 categories. This includes manufacturing of food products, chemical and chemical products, and electronic components.

Table 6
Analyses using full firm-pairs.

	Dependent variable =	
Variable	(1) *COMP_DA_PAIRS*	(2) *COMP_PMDA_PAIRS*
INTERCEPT	−0.067***	−0.079***
	(−11.50)	(−10.49)
IFRS15	−0.002***	−0.003***
	(−8.46)	(−13.23)
PUBLIC	−0.001***	−0.002***
	(−4.73)	(−7.75)
IFRS15*PUBLIC	**0.001****	**0.002****
	(2.29)	**(4.86)**
SIZE_DIFF	−0.002***	−0.002***
	(−35.16)	(−33.88)
LEV_DIFF	0.007***	0.007***
	(18.22)	(17.98)
CFO_DIFF	−0.016***	−0.015***
	(−15.81)	(−15.31)
SALESGRW_DIFF	−0.000	−0.000
	(−0.28)	(−0.32)
ASSET_TURNOVER_DIFF	−0.001***	−0.001***
	(−10.77)	(−10.23)
CURR_RATIO_DIFF	0.000***	0.000***
	(3.24)	(3.25)
BIG4	0.006***	0.006***
	(36.68)	(32.47)
MOD_OPINION	−0.092***	−0.094***
	(−130.03)	(−131.70)
LOSS	−0.031***	−0.030***
	(−154.07)	(−148.97)
INDUSTRY FE	Included	Included
F-value (p-value)	3428.60 (<0.001)	3664.91 (<0.001)
Adj. R-Squared	0.057	0.061
N observations	3,948,214	3,948,214

Notes: T-values in parenthesis are firm-level clustered. *, **, and *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 level, respectively. Control variables with *_DIFF* refer to the difference in values between firm i and firm j. See Appendix for variable definitions.

*IFRS15*PUBLIC* in Models (1) and (2). Thus, we conclude that our results are not affected by design choice when measuring financial statement comparability.

5.3.3. Robustness tests using other proxies of financial statement comparability

To add credence to our earlier findings, we further examine other proxies of financial statement comparability. Panel A of Table 7 presents the results using earnings (revenue)-return relationship-based comparability proxies. In Model (1), the earnings-return-based comparability proxy (*COMP_EARN*) is used as a dependent variable. Models (2) and (3) use revenue-return based comparability proxies (*COMP_REV1* and *COMP_REV2*). As private firms are not applicable to stock returns, we restrict our sample to public firms. Regardless of the comparability proxies, *IFRS15* is positive and significant in Models (1), (2), and (3). It is interesting that both earnings comparability and revenue comparability are higher in the post-IFRS 15 period than in the pre-IFRS 15 period. Therefore, the enhanced comparability due to the application of IFRS 15 is robust in various proxies of comparability.

Next, using the previous eight quarters when estimating comparability is not free from contamination of the measure by mixing pre-IFRS 15 data with post-IFRS 15 data. Therefore, the results of the comparability proxy estimated using the data for the current four quarters are included. As Panel B of Table 7 shows, the coefficient values of *IFRS15* are all positive and significant. Thus, we again observe an increase in accounting comparability after adopting IFRS 15.

5.3.4. Effect of IFRS 15 application on discretionary revenues

Although we examine whether accounting comparability improves after the IFRS 15 application, focusing on revenue itself might directly test the effectiveness of IFRS 15. We use discretionary revenue following

Table 7
Analyses using other proxies of financial statement comparability based on earnings and revenue – return relationships: Public firm subsample.

Panel A. Estimating comparability using previous 8 quarters

	Dependent variable =		
Variable	(1) *COMP_EARN*	(2) *COMP_REV1*	(2) *COMP_REV2*
INTERCEPT	−0.064***	−0.082***	−0.080***
	(−11.86)	(−7.82)	(−12.89)
IFRS15	**0.001*****	**0.002*****	**0.001*****
	(5.61)	**(3.61)**	**(3.92)**
SIZE	0.001***	0.001***	0.001***
	(7.36)	(3.09)	(8.11)
LEV	−0.001	0.004	−0.004***
	(−0.84)	(1.17)	(−3.91)
CFO	0.015***	0.017***	0.011***
	(5.19)	(3.41)	(4.15)
SALESGRW	−0.003***	0.002**	−0.003***
	(−5.49)	(2.19)	(−5.90)
ASSET_TURNOVER	0.002***	−0.029***	−0.002***
	(4.12)	(−9.77)	(−4.47)
CURR_RATIO	0.000	−0.000**	−0.000**
	(0.39)	(−2.25)	(−2.26)
BIG4	−0.001	−0.001	−0.001
	(−1.49)	(−1.42)	(−1.33)
MOD_OPINION	−0.013***	−0.001	−0.011***
	(−3.72)	(−0.18)	(−4.54)
LOSS	−0.003***	−0.002**	−0.005***
	(−9.17)	(−2.01)	(−14.65)
INDUSTRY FE	Included	Included	Included
F-value (p-value)	7615.12 (<0.001)	631.78 (<0.001)	1215.06 (<0.001)
Adj. R-Squared	0.321	0.559	0.530
N observations	9,497	9,497	8,359

Panel B. Estimating comparability using previous 4 quarters

	Dependent variable =		
Variable	(1) *COMP_EARN*	(2) *COMP_REV1*	(2) *COMP_REV2*
IFRS15	**0.001***	**0.002*****	**0.001*****
	(1.93)	**(3.16)**	**(2.99)**
Controls	Included	Included	Included
INDUSTRY FE	Included	Included	Included
F-value (p-value)	344.47 (<0.001)	421.01 (<0.001)	342.07 (<0.001)
Adj. R-Squared	0.362	0.579	0.632
N observations	9,907	9,907	8,320

Notes: T-values in parenthesis are firm-level clustered. *, **, and *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 level, respectively. See Appendix for variable definitions.

Stubben (2010). Specifically, discretionary revenue is estimated using the following two equations:

$$\Delta REC = \sigma_0 + \sigma_1 \Delta REV + \varepsilon \quad (4a)$$

$$\Delta REC = \sigma_0 + \sigma_1 \Delta REV + \sigma_2 \Delta REV^{*} SIZE + \sigma_3 \Delta REV^{*} FIRM\_AGE + \sigma_4 \Delta REV^{*} SALESGRW + \sigma_5 \Delta REV^{*} GM + \varepsilon \quad (4b)$$

In equation (4a), the dependent variable is the change in accounts receivable (*ΔREC*). Nondiscretionary revenues are estimated from the change in revenue (*ΔREV*) variable and its coefficient value. Thus, the residuals in the equation are discretionary revenue (*DIS_REV1*). We also use Stubben's (2010) modified cross-sectional model expressed in Equation (4b). Similar to the previous equation, the residuals from Equation (4b) are the modified discretionary revenues (*DIS_REV2*). These measures are not contaminated with noise from stock markets and are theoretically more relevant to revenue recognition standards.

Table 8 reports the results. As shown in Models (1) and (2) of Panel A where *DIS_REV1* and *DIS_REV2* are used as dependent variables, respectively, the coefficient of *IFRS15*PUBLIC* for both is negative and significant at the 10 % level. We also test the effect of IFRS 15 application on revenue discretion after dividing samples into specialist and non-specialist auditor subsamples, and higher and lower competition subsamples. Consistent to the discretion reduction effect, we document

Table 8
The effect of IFRS 15 on discretionary revenue.

Panel A. Full sample						
Variable	(1) Dep. = *DIS_REV1*			(2) Dep. = *DIS_REV2*		
IFRS15	0.003	***	(2.59)	0.003	***	(2.81)
PUBLIC	−0.000		(-0.25)	0.001		(0.47)
IFRS15*PUBLIC	**−0.003**	*	**(-1.85)**	**−0.003**	*	**(-1.86)**
CONTROLS	Included			Included		
INDUSTRY FE	Included			Included		
F-value (p-value)	7.36 (<0.001)			7.31 (<0.001)		
Adj. R-Squared	0.018			0.015		
N observations	26,521			25,323		

Panel B. The effect of industry specialist auditor						
	Dependent Variable = *DIS_REV1*					
Variable	(1) Specialist auditor subsample			(2) Non-Specialist auditor subsample		
IFRS15	0.005	**	(2.36)	0.002	*	(1.90)
PUBLIC	−0.001		(-0.54)	−0.000		(-0.15)
IFRS15*PUBLIC	**−0.004**	*	**(-1.70)**	**−0.002**		**(-1.33)**
CONTROLS	Included			Included		
INDUSTRY FE	Included			Included		
F-value (p-value)	4.29 (<0.001)			6.60 (<0.001)		
Adj. R-Squared	0.033			0.016		
N observations	6,000			20,521		

Panel C. The effect of industry competition						
	Dependent Variable = *DIS_REV1*					
Variable	(1) Higher competition subsample			(2) Lower competition subsample		
IFRS15	0.002		(1.06)	0.003	***	(2.70)
PUBLIC	−0.002		(-0.98)	−0.000		(-0.04)
IFRS15*PUBLIC	**0.000**		**(0.10)**	**−0.003**	**	**(-2.07)**
CONTROLS	Included			Included		
INDUSTRY FE	Included			Included		
F-value (p-value)	10.33 (<0.001)			5.16 (<0.001)		
Adj. R-Squared	0.027			0.019		
N observations	6,618			19,903		

Notes: T-values in parenthesis are firm-level clustered. *, **, and *** indicate two-tailed significance at the 0.10, 0.05, and 0.01 level, respectively. See Appendix for variable definitions.

that the decrease in discretion in revenue recognition is more pronounced in the specialist auditor subsample and lower competition subsample than their counterparts. In particular, in Panel B, although weak, the coefficient of *IFRS15*PUBLIC* is negative and significant only in the specialist auditor subsample. In Panel C, we find a negative and significant coefficient of *IFRS15*PUBLIC* only in the lower competition subsample.

Overall, Table 8 shows that the application of IFRS 15 reduces discretionary revenues and supports the discretion reduction effect of IFRS 15. Moreover, the results provide evidence that the clients of specialist auditors and firms in low competitive industries have less discretion in revenue recognition, thus, improving their financial statement comparability.

5.3.5. *Robustness tests using other proxies of specialist auditor and industry competition*

We next examine Hypothesis 2 using other proxies for specialist auditors and industry competition. Although not tabulated, the results of splitting the sample into specialist and non-specialist auditors where a specialist is defined based on the number of clients are similar to previous findings. The increase in comparability due to IFRS 15 is significant in the specialist subsample only. Thus, clients of industry-specialist auditors effectively implement IFRS 15. Second, when the HHI is calculated using sales rather than total assets, we also find similar evidence to previous findings. The results show that the increase in comparability due to IFRS 15 is significant in the lower-competition subsample.

5.3.6. *Other sensitivity tests*

We conduct the following untabulated additional tests: First, we compare the initial year (2018) and the subsequent years (2019, 2020) of IFRS 15 implementation to the pre-IFRS 15 period separately. We find that positive association between IFRS 15 implementation and accounting comparability is more pronounced in the years 2019 and 2020 than in 2018. Our interpretation is that the level of comparability gradually increases as the new principle is applied.

Second, rather than using subsamples, we conduct three-way interaction tests. The results show that the coefficient of *IFRS15*PUBLIC*AUDIT_SPEC* is positive and significant, as expected from Hypothesis 2. By contrast, the coefficient of *IFRS15*PUBLIC*COMPETITION* is not significant. We observe that the variance inflation factor of *IFRS15*PUBLIC*COMPETITION* is larger than the threshold, thereby leading to possible multicollinearity in this type of test.

Third, we separate the sample into construction and other industries to check whether our results are driven solely by industry. This is based on the notion that relatively more changes occur in firms in the construction industry than in other industries. Our results are not driven by the construction industry, as comparability increases after IFRS 15 application are significant in both the construction industry and other industry classifications.

Finally, Korean listed firms adopted IFRS in 2011, and IFRS 15 was effective in 2018. Previous studies found that IFRS adoption affects financial statement comparability (Wang, 2014; Neel, 2017; Lee, 2019). Therefore, using a sample consisting of firms from 2005 to 2020, we divide this full sample into three mutually exclusive groups that are pre-IFRS (2005–2010), post-IFRS and pre-IFRS 15 (2011–2017), and post-IFRS 15 (2018–2020). We then compare the effects of IFRS and IFRS 15 on accounting comparability. The results show that both the introduction of IFRS and application of IFRS 15 led to improved comparability of financial statements.

6. Conclusion

IFRS 15 provides a single principle applied across all firms. While the IASB desires to increase firms' financial statement comparability, no studies have examined the effectiveness of IFRS 15 from the perspective of accounting comparability. Thus, this study primarily evaluates whether IFRS 15 increases or decreases accounting comparability.

Using a difference-in-differences design to identify the treatment effect, we find that level of comparability is positively associated with the application of IFRS 15. The level of comparability is higher after applying IFRS 15 for public firms. While private firms do not have a significant difference or even a decrease in comparability after IFRS 15 depending on comparability proxies, applying IFRS 15 incrementally enhances level of comparability of public firms subject to this standard. These results are consistent when using firm-pair observations and full private and public firms, with and without matching. Our findings are robust when we use different proxies for accounting comparability.

Results of the cross-sectional tests show that increase in financial comparability owing to IFRS 15 is more pronounced for industry-specialist auditors' clients and firms operating in less-competitive industries. Therefore, when implementing IFRS 15, firms benefit from auditors' industry-specific knowledge. Additionally, as firms face less pressure to manipulate earnings in less-competitive industries, IFRS 15 is more effective in those industries.

Financial statement comparability is a key benefit when using financial information as it allows users of accounting information to set expectations and benchmarks for their invested firms by comparing other firms' financial outcomes. Findings of our study show a positive association between accounting comparability and IFRS 15 implementation, thereby providing policy implications. Additionally, many studies investigate the effect of IFRS on accounting quality. This study adds to this literature by testing the effect of IFRS 15 on financial

comparability. However, the difference between this study and others is that it examines one specific standard rather than the adoption of IFRS itself, thereby contributing to existing literature (Kabureck, 2019).

Nevertheless, this study has a few limitations. First, as we provide initial evidence on IFRS 15, future studies are required to expand the range and period of observations to identify whether our results are consistent over a longer period. Second, applying a new accounting standard always produces winners and losers (Brown, 2011). As this study presents the positive effect of the five-step model, this model might have a disadvantage that is not currently documented. Third, both discretion reduction effect and harmonization of the multiple standards effect might affect our results, however, it is difficult to distinguish between them. The period after the application of IFRS 15 is short, so it is necessary to continuously observe and compare the two effects. Finally, the results are based on a single developing country. The effect of IFRS 15 may differ in other countries (Gordon et al., 2018; Napier & Stadler, 2020). Thus, we are not free from generalization concerns. Further studies could extend our investigation to other jurisdictions. For instance, future studies can investigate the effects of capital market development or legal enforcement by comparing the consequences of IFRS 15 application across various countries and over different time periods.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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Appendix A. Variable definition

Variables	Definition
IFRS15	Dummy variable equals 1 for IFRS 15 implementation years (2018, 2019, and 2020), and 0 otherwise.
PUBLIC	Dummy variable equals 1 for publicly listed firms, and 0 for private firms.
COMP_DA	Proxy of financial statement comparability estimated using the difference in discretionary accruals.
COMP_PMDA	Proxy of financial statement comparability estimated using the difference in performance-matched discretionary accruals.
COMP_EARN	Proxy of financial statement comparability estimated using earnings-return relationship.
COMP_REV1	Proxy of financial statement comparability estimated using revenue-return relationship.
COMP_REV2	Proxy of financial statement comparability estimated using revenue-return-expense relationship.
DIS_REV1	Discretionary revenue estimated by following Stubben's (2010) model.
DIS_REV2	Modified discretionary revenue by following Stubben's (2010) model.
SIZE	Natural logarithm of total assets.
LEV	Total liabilities divided by total assets.
CFO	Operating cash flow divided by total assets.
SALESGRW	Sales minus lagged sales divided by lagged sales.
ASSET_TURNOVER	Sales divided by average total assets.
CURR_RATIO	Current assets divided by current liabilities.
BIG4	Dummy variable equals 1 for international Big 4 audit firm clients, and 0 otherwise.
MOD_OPINION	Dummy variable equals 1 for modified audit opinions, and 0 otherwise.
LOSS	Dummy variable equals 1 if a firm reports net losses, and 0 otherwise.
AUDIT_SPEC	Dummy variable equals 1 for industry specialist auditors' clients where auditors are defined as industry specialist if their market share based on client total assets are greater than 20 % in each industry-year, and 0 otherwise.
COMPETITION	Herfindahl-Hirschman Index based on assets multiplied by negative 1.
FIRM_AGE	Natural logarithm of a firm's age (in years).
ROA	Net income divided by total assets.
COMP_DA_PAIRS	Proxy of financial statement comparability estimated using the difference in discretionary accruals in firm-pair level.
COMP_PMDA_PAIRS	Proxy of financial statement comparability estimated using the difference in performance-matched discretionary accruals in firm-pair level.
SIZE_DIFF	The *SIZE* difference in each firm i-j pair.
LEV_DIFF	The *LEV* difference in each firm i-j pair.
CFO_DIFF	The *CFO* difference in each firm i-j pair.
SALESGRW_DIFF	The *SALESGRW* difference in each firm i-j pair.
ASSET_TURNOVER_DIFF	The *ASSET_TURNOVER* difference in each firm i-j pair.
CURR_RATIO_DIFF	The *CURR_RATIO* difference in each firm i-j pair.

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