Financial statement comparability in the extractive industry

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ABSTRACT:

Purpose ─ We investigate financial statement comparability in the extractive industry. We focus on the extractive industry, because International Financial Reporting Standards (IFRS) contain limited guidance on the accounting treatment for exploration and evaluation (E&E) costs and IFRS 6 ─ *Exploration for and Evaluation of Mineral Resources* allowed firms to continue with existing divergent accounting treatment of E&E costs.

Design / methodology / approach ─ We use data from Australia, a country that adopted IFRS in 2005 with a large extractive industry. We compare changes in cross-country comparability around the IFRS adoption date between Australian firms and adopters relative to Australian firms and non-adopters to better isolate changes in comparability that are attributable to the adoption of IFRS from other sources that are not related to the adoption of IFRS. We measure comparability consistent with De Franco *et al.* (2011) where financial statements are comparable when two firms produce similar accounting amounts for similar economic events.

Findings ─ For non-extractive industry firms we find the comparability of financial statements of Australian firms increased with other adopters and that this increase was relatively greater than the increase with non-adopter firms. This evidence is consistent with comparability benefits associated with the adoption of IFRS. However, for extractive industry firms, we do not find a significantly greater increase in the comparability of financial statements of Australian firms with adopters relative to the increase with non-adopters, suggesting that the increase is likely not associated with the adoption of IFRS. In additional analysis, we find that following IFRS adoption non-extractive Australian firms have greater within-country comparability relative to extractive Australian firms, while there was no difference in the pre-adoption period.

Originality / value ─ Our evidence suggests that the divergent practices for E&E costs under IFRS 6 and the lack of an accounting standard that deals with matters relating to the extractive industry hinder the comparability of financial statements in this industry.

Keywords: Extractive industry; comparability; IFRS; adoption; exploration and evaluation costs

1.   INTRODUCTION

The business of extracting natural resources such as oil, gas and minerals are of global, political, economic, and strategic importance. Since financial reports inform the resource allocation decisions of providers of financial capital, the reports of extractive firms are important to the functioning of the economy. Since the global move towards the adoption of International Financial Reporting Standards (IFRS) in 2005, many firms in the extractive industry prepare their financial statements in accordance with these standards. Since standard setters assert that comparability of financial statements is one of the most important reasons that accounting standards are needed (IASB, 2010), researchers have focused on the changes in financial statement comparability around IFRS adoption.[1] While this literature generally documents an increase in financial statement comparability following the adoption of IFRS, it considers on-average effects across numerous industries and ignores industry-specific features. We investigate financial statement comparability in the extractive industry following the adoption of IFRS.

We focus on the extractive industry, because IFRS contains limited guidance on the accounting treatment for exploration and evaluation (E&E) costs ─ arguably one of the most important items in evaluating the performance and prospects of an extractive firm. Historically, firms in the extractive industry applied a variety of accounting treatments to E&E costs, ranging from full expensing to full capitalisation (PWC, 2012). In 2004, the International Accounting Standards Board (IASB) issued IFRS 6 ─ *Exploration for and Evaluation of Mineral Resources*, effective 1 January 2006. The IASB intended for IFRS 6 to be a temporary standard until they completed more comprehensive work on extractive activities (IASB 2004). In essence, IFRS 6 not only allows the existing divergent accounting treatments of E&E costs to continue but also codifies it (Cortese *et al.*, 2009; IASB, 2004). In addition, IFRS does not require firms to disclose information regarding reserves – generally the most valuable economic resource of an extractive firm (Gray *et al.*, 2018). As a result, various national reserve disclosure practices exist.[2] Despite these shortcomings of IFRS for E&E costs and reserve disclosure, the IFRS suite of standards addresses the accounting recognition, measurement and disclosure of various other extractive and non-extractive economic events and transactions, which also apply to extractive firms. While the divergent treatment of E&E costs and reserves

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[1] See Barth *et al.* (2012), Cascino and Gassen (2015), Neel (2017) and Yip and Young (2012).
[2] Mining firms in Australia are required to disclose the value of their reserves in accordance with the Joint Ore Reserve Committee (JORC) Code; in the United Kingdom, industry bodies provide recommendations regarding best practice disclosures; in the United States proved oil and gas reserves are subject to mandatory disclosure (Gray *et al.*, 2018).

could hinder comparability, the application of the rest of IFRS could increase comparability. Hence, it remains an empirical question whether financial statement comparability increased for extractive firms following the adoption of IFRS.

Australia provides a suitable setting for our study. Australia adopted IFRS in 2005 and is one of the leading producers of mineral raw materials (Yongvanicha and Guthrie, 2005). It also has the most extractive firms listed on its stock exchange of all countries that adopted IFRS in 2005.[3] In addition, Australia was the only country that had a local accounting standard for the extractive industry prior to the adoption of IFRS (Cortese *et al.*, 2009).

Our study includes all Australian firms listed on the Australian Securities Exchange (ASX) with available data in the pre- and post-adoption periods on the Thomson Reuters Datastream database (including Worldscope). We separate these firms into two different samples ─ the one sample consists of firms in the extractive industry and the other sample consists of firms from all other industries. Providing evidence on both samples allows us to document differences in comparability across industries.

Comparability can be determined between firms of the same country ("within-country comparability") or between firms of different countries ("cross-country comparability") (Yip and Young, 2012). We focus on cross-country comparability, because this has been a major impetus of standard setters and regulators. For example, the IASB states on its website:[4]

> *"Modern economies rely on cross-border transactions and the free flow of international capital. Investors seek diversification and investment opportunities across the world, while companies raise capital, undertake transactions or have international operations and subsidiaries in multiple countries. In the past, such cross-border activities were complicated by different countries maintaining their own sets of national accounting standards. IFRS Standards contribute to economic efficiency by helping investors to identify opportunities and risks across the world, thus improving capital allocation."*

We determine the cross-country comparability of financial statements of Australian firms with matching firms from both mandatory IFRS adopting countries and non-adopting countries for both samples. We compare changes in comparability between Australian firms and adopters relative to Australian firms and non-adopters to better isolate changes in comparability that are attributable to the adoption of IFRS from other sources that are not related to the adoption of IFRS.

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[3] Based on a review of the data on Thomson Reuters Datastream.
[4] Refer to https://www.ifrs.org/use-around-the-world/why-global-accounting-standards/

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We measure comparability consistent with De Franco *et al.* (2011) where financial statements are comparable when two firms produce similar accounting amounts for similar economic events. Based on this idea, our comparability measure uses stock returns as a proxy for economic events and earnings as a summary measure of accounting amounts (De Franco *et al.*, 2011; Cascino and Gassen, 2015; Neel, 2017; Yip and Young 2012).

For non-extractive firms we find that the cross-country comparability of financial statements increased significantly more between Australian firms and adopters than between Australian firms and non-adopters. Although we find a significant increase in comparability between Australian extractive firms and adopters, that increase is not significantly greater compared to the increase with non-adopters. Since there was a significantly greater increase for firms in the non-extractive industries, it could suggest the lack of specific guidance in IFRS 6 and an accounting standard that deals with all matters relating to the extractive industry negatively affects the comparability of financial statements in this industry.

We perform additional analysis to examine changes in the within-country comparability of Australian extractive firms relative to Australian non-extractive firms. Within-country comparability could increase (decrease) if IFRS is associated with higher (lower) accounting quality relative to local GAAP (Yip and Young, 2012). In the pre-adoption period, we find no significant difference in the comparability between Australian extractive firms relative to the comparability between non-extractive firms. However, in the post-adoption period the comparability between non-extractive firms is significantly greater than the comparability between Australian extractive firms. This evidence suggests that the application of general IFRS requirements to economic events and transactions that are unique to the extractive industry as opposed to the specific guidance contained in local Australian GAAP is associated with lower comparability between Australian extractive firms relative to Australian non-extractive firms.

Our study contributes to the growing body of knowledge on the effects of IFRS adoption. Furthermore, our study extends previous comparability studies by focusing on a single industry with unique requirements (Barth *et al.*, 2012; Cascino and Gassen, 2015; Neel, 2017; Yip and Young, 2012). The results of our study could be useful to standard setters as it highlights the need for a more comprehensive extractive industry standard under IFRS that could enhance international comparability in arguably one of the most global industries in the world.

The remainder of this study is organised as follows. Section 2 provides background on E&E costs. Section 3 discusses prior literature and develops the predictions. Section 4 explains the research design. Section 5 describes the sample and descriptive statistics. Section 6 presents

our results. Section 7 contains additional analysis, while Section 8 offers a summary and concluding remarks.

2. BACKGROUND: E&E COSTS

Prior to the issuance of IFRS 6 by the IASB, IFRS did not establish the accounting treatment for the exploration and evaluation of mineral resources as these items are specifically excluded from IAS 16 – *Property, Plant and Equipment* and IAS 38 – *Intangible Assets* and not addressed by any other standard (IASB, 2013: IFRS 6.IN1). Consequently, several methods to account for E&E costs have developed of which the full cost method and the successful efforts method are applied most commonly (Cortese *et al.*, 2009). All costs relating to E&E are capitalised according to the full cost method, while only costs relating to successful projects can be capitalised and the remainder is expensed according to the successful efforts method (Bryant, 2003). Given this diversity, a steering committee of the International Accounting Standards Committee (IASC) stated that '[t]hese factors make it difficult for users to compare financial statements issued by mining and petroleum enterprises in different countries, or by such enterprises and other enterprises in the same country' (IASC, 2000: 4).[5]

The IASB issued IFRS 6 in December 2004, and it became effective for reporting periods on or after 1 January 2006. However, early adopters could have applied it from 2005 (IASB, 2013: IFRS 6.26) and would likely have applied it at the same time as the adoption of IFRS.

The IASB intended IFRS 6 to be a temporary standard until 'the Board completes its comprehensive review of accounting for extractive activities' (IASB, 2004: BC2). Consequently, IFRS 6 requires firms to continue with their existing accounting policies for E&E costs and allows firms to change their accounting policies relating to E&E costs only if doing so will result in financial statements that are more relevant, and not less reliable, or more reliable, and not less relevant to users of financial statements (IASB, 2013: IFRS 6.13). The purpose of IFRS 6 is to assist extractive firms to claim full compliance with IFRS, despite the diversity in the accounting for E&E costs.

Despite IFRS 6 being a temporary standard, the IASB has not made progress on the accounting for extractive activities since the release of IFRS 6. The IASB is currently collecting evidence to determine whether they should embark on a project to develop an accounting standard that could replace IFRS 6 (IASB, 2019). As such, the diverse accounting practices for E&E costs that existed prior to IFRS 6 continue to this day.

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[5] The IASC was the predecessor of the IASB.

Australia is the only country that developed a separate standard for E&E costs as part of its local GAAP (Cortese *et al.*, 2009). Prior to switching to IFRS, Australian extractive firms applied AASB 1022 – *Accounting for the extractive industries*, which required firms to apply the area of interest method, which is a derivative of the successful efforts method.[6]

AASB 6 – *Exploration for and evaluation of mineral resources* became applicable for Australian firms for reporting periods beginning on or after 1 January 2005 (AASB, 2004: AASB 6.Aus2.2). AASB 6 is identical to IFRS 6 with the exception of additional paragraphs added and identified with the prefix 'Aus' (AASB, 2004: AASB 6). Paragraph Aus 7.1 of AASB 6 limits Australian extractive firms to apply only the area of interest method.

In addition, AASB 1022 was an industry standard that covered all aspects of extractive activities, whereas AASB 6 only covers the exploration and evaluation of mineral resources. As a result, after the adoption of IFRS, Australian extractive firms have to refer to other accounting standards for activities previously covered in AASB 1022. These activities include activities that precede exploration and evaluation of mineral resources, development and construction costs, amortisation of capitalised costs, inventories, revenue recognition and restoration costs.

3. RELATED LITERARE AND PREDICTIONS

Several studies have suggested that comparability benefits are associated with the mandatory adoption of IFRS. While these studies did not measure comparability benefits directly, they argue that their findings on investor behaviour (Armstrong *et al.*, 2010; Joos and Leung, 2012), analyst following (Tan *et al.*, 2011), analyst forecast accuracy (Horton *et al.*, 2013), cross-border information transfers (Wang, 2014; Yip and Young, 2012) and capital market effects (Daske *et al.*, 2008; Li 2010) is consistent with the increased comparability of financial statements following the adoption of IFRS.

Studies that directly measured the comparability consequences after the mandatory adoption of IFRS are Barth *et al.* (2012), Cascino and Gassen (2015), and Yip and Young (2012). Barth *et al.* (2012) document that the comparability of financial statements of mandatory IFRS adopters and US firms increased in the post-adoption period. Cascino and Gassen (2015) examined countries from across the world and found a marginal increase in comparability after mandatory IFRS adoption, while Yip and Young (2012) provide evidence that the

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[6] AASB 1022 was preceded by Australian Accounting Standard 7 (AAS 7) which also required the application of the area of interest method.

comparability between firms in the European Union increased after the mandatory adoption of IFRS.

The abovementioned studies evaluated changes in comparability of financial statements across several countries covering various industries. However, the possibility exists that the effects may be more or less pronounced in certain industries. Although Barth *et al.* (2012) examined this possibility further, they only considered the three largest industries in their sample namely manufacturing, services, and finance, insurance and real estate. They found increases in comparability for manufacturing and services firms but not for finance, insurance and real estate firms (Barth *et al.*, 2012). This suggest that comparability changes around the time of IFRS adoption could be different across industries. Similar to firms included in the finance, insurance and real estate industry, extractive firms are subject to industry and country specific regulation and accounting standards that could affect comparability (IASC 2000).

Research relating to the financial reporting of firms in the extractive industry following the adoption of IFRS is limited (Gray *et al.*, 2018). Some research focus on the standard setting process relating to IFRS 6 and how the process has been politicised to some extent (Cortese *et al.*, 2009, 2010). Karapinar *et al.* (2012) and Abdo (2016) evaluated the IFRS 6 disclosures and concluded that a number of firms comply with the requirements. However, since the standard allows different policies, compliance with the standard will not necessarily change the comparability of the financial statements.

We are interested in whether cross-country comparability of financial statements increased for Australian extractive firms following the mandatory adoption of IFRS by that country in 2005. To provide context, we firstly evaluate changes in the comparability of financial statements of firms from non-extractive industries. We expect to find an increase in the comparability of financial statements of Australian firms with those of other IFRS adopters after the adoption of IFRS in 2005 for at least two reasons. Firstly, we expect comparability to increase as the local GAAP used by both Australian firms and other adopters across the world differed before the adoption of IFRS. After the adoption of IFRS, these firms prepare financial statements in terms of the same accounting standards. Secondly, a number of countries have made enforcement changes at the same time as adopting IFRS, which could positively affect the comparability of financial statements (Leuz and Wysocki, 2016).

Arguably, the reasons mentioned above also work to affect the cross-country comparability of the financial statements of Australian extractive firms. However, given that divergent practices for the accounting of E&E costs continue after the adoption of IFRS, it remains an

empirical question whether the financial statements of extractive firms are more comparable after the adoption of IFRS.

4. RESEARCH DESIGN

4.1 Estimation equation

Our research design is based on Smith *et al.* (2019). We evaluate whether the cross-country comparability of financial statements of Australian firms changed following the mandatory adoption of IFRS in 2005, by estimating the following equation (firm and period subscripts omitted),

$$Comp = \beta_0 + \beta_1(Post) + \beta_2(Adopter) + \beta_3(Post \; x \; Adopter) + \Sigma\beta_i(Controls) + \varepsilon \qquad (1)$$

where *Comp* refers to a firm-country measure of comparability (refer Section 4.2 below); *Post* is an indicator variable that is coded one for the post-IFRS adoption period (2006 to 2008), and zero otherwise (2002 to 2004);[7] and *Adopter* equals one if the comparable firm is from an IFRS-adopting country and zero otherwise.

The intercept, β_0, captures the average comparability between Australian firms and non-adopters in the pre-adoption period, while a positive and significant coefficient for β_1 (*Post*) suggests that comparability increased between Australian firms and non-adopters from the pre- to the post-adoption period. Using comparability with non-adopters as a control group provides an opportunity to separate the effect of IFRS adoption from other market changes not related to the adoption of IFRS (Li, 2010).

The coefficient, β_2 (*Adopter*), measures any difference in the comparability of Australian firms with adopters relative to non-adopters in the pre-adoption period. A significant positive coefficient for β_3 (*Post x Adopter*) suggests that Australian firms experienced a greater increase in the comparability of their financial statements with those of mandatory adopters from the pre- to the post-adoption periods, relative to the increase in the comparability of financial statements of Australian firms with those of non-adopters.

In an attempt to control for other factors that could possibly influence comparability, we include additional variables in Equation (1). We include a variable *Size ratio*, measured as the mean size ratio of all firm-pairs included in the firm-country comparability measure, where the size ratio of each firm-pair is measured as the proportion of the smallest firm's total assets to the largest firm's total assets at the end of 2005 (Yip and Young, 2012). This variable is included to control for differences in size between two matched firms. To control for

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[7] We exclude 2005 as some firms would have reported under IFRS (December year-end) and others local GAAP.

differences in the institutional environments of two matched firms, we include *Legal*, an indicator variable that equals one if the comparable firm are from a country with the same legal origin as Australia, which is common law (Yip and Young, 2012). We include the mean book-to-market differences, *BTM diff*, of all firm-pairs included in the firm-country comparability measure where the book-to-market differences of each firm-pair is measured as the absolute value of the difference in the book-to-market ratio of the two firms in the firm-pair at the end of 2005 (De Franco *et al.*, 2011).

We include industry fixed effects when we evaluate changes in comparability for firms in non-extractive industries. Since an Australian firm can be included in more than one firm-country observation, we cluster standard errors by Australian firm.[8] We winsorize our continuous variables at the top and bottom one percent to reduce the effect of outliers.

4.2 Comparability measure

Conceptually comparability is based on the idea that financial statements of two firms are comparable if they produce similar accounting amounts for similar economic events (Barth *et al.*, 2012). De Franco *et al.* (2011) was the first to operationalise this notion of comparability in an output-based measure. Their proxy measures the closeness of the estimated accounting amounts produced by two firms' separate accounting systems when they face the same economic events. Since De Franco *et al.* (2011), the literature relies extensively on variants of their comparability proxy.[9] We follow suite.

De Franco *et al.* (2011:899) define an accounting system as 'a mapping from economic events to financial statements', which they illustrated as follows:

$$\textit{Financial statements}_i = f_i(\textit{Economic Event}_i) \tag{2}$$

Equation (2) shows firm i produces a set of financial statements conditional on the economic events faced by the firm through its accounting system, represented by $f_i()$. Two firms have comparable financial statements if their accounting systems produce similar accounting amounts conditional on the same economic events.

Consistent with De Franco *et al.* (2011), we use stock return as the proxy for economic events. Stock return is often used as a summary measure for the net effects of a firm's economic events (Barth *et al.*, 2012). We measure stock return (*Return*) as the percentage change in the

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[8] Reducing data into pre- and post-adoption periods decreases serial correlation issues that can result in inconsistent standard errors in difference-in-differences analysis (Bertrand *et al.*, 2004). Similar to Cascino and Gassen (2015), we do not cluster standard errors by year.

[9] See for example Barth *et al.* (2012), Cascino and Gassen (2015), Chen *et al.* (2018), Lin *et al.* (2019), Neel (2017), Yip and Young (2012), and Zhang (2018).

share price (adjusted for dividends, share splits, and consolidations) from nine months before the financial year-end to three months after the financial year-end.[10]

We use earnings — a summary measure of the income statement — as our proxy for the financial statements of a firm (Barth *et al.*, 2012; De Franco *et al.*, 2011). We measure *Earnings* as the net income before extraordinary items for the financial year, deflated by the market value of common shareholders' equity nine months before the financial year-end. Based on Equation (2), we estimate firm *i*'s accounting function as follows:

$$Earnings_{it} = \alpha^i + \beta^i Return_{it} + \varepsilon_{it} \qquad (3)$$

The accounting function of firm *i* is represented by α^i and β^i, and similarly the accounting function of firm *j* is represented by α^j and β^j. If we apply the accounting functions of both firm *i* and firm *j* to the same economic event ($Return_{it}$), the estimated earnings will be similar if the two accounting systems are comparable. Consequently, smaller differences in the estimated amounts are consistent with more comparable accounting systems.

To create our comparability sample, we match Australian firms with both IFRS adopters and non-adopters. We select the adopters and non-adopters from countries that form part of the G20.[11] We use size (total asset value measured in US dollars on 31 December 2005),[12] industry (based on the two-digit SIC code) and similar year-ends as matching criteria. We match on size and industry to reduce the effect that differences in cost of capital and other differences that are unrelated to financial reporting can have on economic outcomes (Barth *et al.*, 2012). Similar to Yip and Young (2012), a match is valid if the total assets of the smaller firm is at least 50% of the total assets of the largest firm.[13] We match on the same year-end to ensure that each firm-pair is compared over the same period (Yip and Young, 2012).

We construct our comparability measures using four steps.

Step 1: Estimation of accounting function

Consistent with Yip and Young (2012), we estimate each firm's accounting function with ordinary least squares regression using Equation (3). Using annual firm data, we estimate the

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[10] Because we examine comparability of financial statements, we use the share price that would likely reflect the financial statement information. Our return window is consistent with Barth *et al.* (2012) and Neel (2017) who examined comparability around the mandatory adoption of IFRS globally.

[11] The G20 consists of 19 countries and the European Union. The G20 members are the largest advanced and emerging economies globally and account for 75% of international trade (G20, 2015). Australia is a G20 member (G20, 2015).

[12] We use total assets on 31 December 2005, a date between our pre- and post-adoption periods, as a measure for the size of the firms in both periods.

[13] De Franco *et al.* (2011) created firm-pairs by randomly selecting 10% of the possible firm *i-j* pairs. Yip and Young (2012) only included one match, based on size, industry and year-end, for each firm in their sample. We match each firm with all possible foreign firms that comply with the matching criteria of size, industry and year-end.

accounting functions separately for the pre- and the post-adoption periods for each firm.[14] We obtain the coefficients α and β for each firm for both the pre- and the post-adoption periods from this process which represent the accounting function of each firm in the relevant period.

Step 2: Estimation of financial statement effect

Following the estimation of Equation (3), we calculate Equations (4) to (7) for each firm in the pre- and the post-adoption periods. We calculate the estimated earnings (*E(Earnings)*) based on the firm's own accounting function and the accounting function of its matched firm for each firm included in a firm-pair and each firm-year (t).

$$E(Earnings_{it}^i) = \alpha^i + \beta^i Return_{it} \tag{4}$$

$$E(Earnings_{it}^j) = \alpha^j + \beta^j Return_{it} \tag{5}$$

$$E(Earnings_{jt}^j) = \alpha^j + \beta^j Return_{jt} \tag{6}$$

$$E(Earnings_{jt}^i) = \alpha^i + \beta^i Return_{jt} \tag{7}$$

Step 3: Calculation of differences

For each firm pair and each year, we calculate the absolute difference between Equations (4) and (5) and Equations (6) and (7). The mean of these two differences is the comparability measure, *CompPair_t*, for the pair for the year. Values closer to zero represent more comparable accounting amounts. We multiply all these values by negative one so that greater values represent greater comparability. To calculate our comparability measure for the pair in each of the pre- and post-adoption periods (periods p), *CompPair_p*, we calculate the mean of *CompPair_t* for the three years in the pre- and post-adoption periods, respectively.

Step 4: Calculation of Firm-country Comparability Measure

The three steps above create a firm-pair measure of comparability, where our firm-pairs are matched similar to De Franco *et al.* (2011). Although each firm-pair is unique, individual firms can be included in more than one pair. This could increase dependence between observations and inflate the effect of outliers. Consequently, we calculate a firm-country measure of comparability, because financial reporting standards vary across countries and the decision to adopt IFRS is made at a country level.[15] We measure comparability for each Australian firm with all matched peers in each country. For each period (p), we calculate *Comp* as an Australian

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[14] De Franco *et al.* (2011) used quarterly data in the US setting, but quarterly data is not available in an international setting. Consequently, we use annual data, consistent with Barth *et al.* (2012), Cascino and Gassen (2015) and Neel (2017). In supplementary analyses, Cascino and Gassen (2015) and Neel (2017) show that their inferences remain unaffected by using semi-annual data instead of annual data for a reduced sample.

[15] The literature contains various methods for combining and aggregating firm-pairs to calculate firm-level comparability measures (Cascino and Gassen, 2015; De Franco *et al.*, 2011; Neel, 2017). We use combinations of these methods to create our firm-country measure of comparability.

firm's comparability with a specific country calculated as the mean *CompPair$_p$* of all matches made between that Australian firm and all matched firms in that specific country.

5.   SAMPLE AND DESCRIPTIVE STATISTICS

5.1 Sample Overview

We obtain our Australian sample from the Thomson Reuters Datastream database (including Worldscope). We restrict our sample to firms with a primary listing on the ASX and with a 'market' reflecting 'Australia'. We require firms to have data available for all three years in both the pre- (2002 to 2004) and the post-adoption (2006 to 2008) periods. We exclude firms that changed their year-ends during the sample period to ensure that financial reporting periods remain constant throughout our sample period.

For the Australian and IFRS adopter firms, we are only interested in firms that mandatorily adopted IFRS in 2005 (year-ends beginning on or after 1 January 2005). We exclude all voluntary adopters and firms that continued to use local GAAP, as reported in the Worldscope database, after the required IFRS adoption date. For non-adopters, we exclude all firms that did not report under the same non-IFRS accounting standards for the entire period of our study (2002 to 2008). For both adopters and non-adopters we exclude any firms with missing accounting standards data.

The process generates 797 unique Australian firms listed on the ASX, 2 331 firms from other IFRS adopting countries and 9 527 from non-adopting countries.

5.2 Sample

To generate our firm-country sample, we match the 797 Australian firms with all possible adopter and non-adopter firms based on size, industry and year-end. A total of 4 921 unique firm-pair matches were made of which 1 357 were between Australian firms and other IFRS adopting firms and 3 564 between Australian firms and non-IFRS adopting firms. From these we calculate a firm-country measure of comparability for each Australian firm with each country. We then exclude observations from countries that did not have an observation in both the extractive industry and the non-extractive industries. This process generated 1 510 unique firm-country observations in each of the pre- and the post-adoption. Of these, 575 are matches with firms from other IFRS adopting countries and 935 are matches with firms from non-IFRS adopting countries. As there is an observation in each of the pre- and the post-adoption periods the total firm-country observations are 3 020. Of these, 902 are firm-country observations in the extractive industry and 2 118 are from non-extractive industries.

5.3 Descriptive Statistics

Table 1 reports the mean comparability (*Comp*) values in the pre- and the post-adoption periods between Australian firms and firms from countries that have adopted IFRS and those that have not. We also report the mean *Comp* in aggregate for the adopter and non-adopter groups. We find no significant difference (-0.0020, *p*-value=0.9752) between the comparability of the financial statements of Australian firms and adopters (-0.7409), relative to the comparability of the financial statements of Australian firms and non-adopters (-0.7389) in the pre-adoption period. However, in the post-adoption period Australian firms' financial statements are significantly more comparable (0.1606, *p*-value=<0.0001) to those of adopter firms (-0.3462) relative to those of non-adopters (-0.5068). Based on these univariate results we find a significant increase in comparability for Australian firms with both groups. We find a statistically significant increase in comparability with adopters of 0.3947 (*p*-value=<0.0001) and with non-adopters of 0.2321 (*p*-value=<0.0001). Australian firms show a significant increase in comparability with four of the adopter countries, namely France, Ireland, South Africa and the United Kingdom and with one of the non-adopter countries, the United States. There is a significant decrease with one of the non-adopter countries, China. The significant increases in comparability is mostly between Australian firms and firms from common law countries (except for France), which is consistent with the findings of Barth *et al.* (2012). There is no significant difference (0.0005, *p*-value=0.9075) in the mean *Size ratio* of Australian firms and adopters (0.7274) compared to Australian firms and non-adopters (0.7269). Similarly, the mean *BTM diff* between Australian firms and adopters (0.8832) and that of Australian firms and non-adopters (0.8346) do not differ significantly (0.0486, *p*-value=0.3127).

In Table 2, Panel A, we report descriptive statistics for various variables used in estimating Equation (1). *Comp* has a mean (median) value of -0.5927 (-0.2466); 38 percent of the observations are between Australian firms and adopting countries; 65 percent of the observations are based on matches between Australian firms and common law countries. The Spearman (Pearson) correlations for the dependent and control variables are contained above (below) the diagonal in Table 2, Panel B. In both the Spearman and the Pearson correlations *Comp* is negatively and significantly correlated with *BTM diff*. The negative correlation with *BTM diff* is as expected, because firms with larger differences in economic characteristics are expected to be less comparable. The significant negative correlation between *Comp* and *Legal* suggests, contrary to what is expected, that firms in Australia (a common law country) are more comparable to firms in code law countries. The lack of a significant correlation between *Comp*

and *Size* could be due to the matching of firms based on size. Despite these univariate correlations, we base our inference on the multivariate tests in the next section.

6. MAIN RESULTS

Table 3 reports the multivariate regression results for Equation (1) for our two different samples ─ the first sample includes firm-country observations from all industries, excluding the extractive industry, and the second sample only includes firm-country observations from the extractive industry. Panel A reports the coefficients with *t*-statistics in parentheses.

In Table 3, Panel A, we find a significant negative coefficient for *BTM diff* in our non-extractive industries sample indicating that firms with higher book-to-market differences tend to be less comparable. The coefficient for *Legal* and *Size ratio* is not significant in any of our samples.

We use the results for *Intercept*, *Post*, *Adopter*, *Post x Adopter* reported in Panel A to prepare Panels B and C of Table 3. We discuss our results with reference to Panels B and C. In Table 3, Panel B, the results for the non-extractive industries sample show a significant increase in comparability from the pre- to the post-adoption periods between Australian firms and both adopter (difference = 0.3944; *F*-statistic = 22.26) and non-adopter firms (difference = 0.2459; *t*-statistic = 3.65). We further find a significantly greater increase in comparability between the financial statements of Australian firms and those of mandatory adopters, relative to the change in comparability between the financial statements of Australian firms and those of non-adopters (difference-in-differences = 0.1485; *t*-statistic = 1.95). Table 3, Panel B, further indicates that the financial statements for Australian firms are significantly more comparable to those of adopters than to those of non-adopters following the adoption of IFRS (difference = 0.2330; *F*-statistic = 20.61). There was no significant difference in the pre-adoption period (difference = 0.0845; *t*-statistic = 1.51).

Taken together, the above results are consistent with our prediction that, on average, comparability between the financial statements of Australian firms and those of firms in other mandatory IFRS adopting countries in all industries, excluding the extractive industry, increased after the mandatory adoption of IFRS. The significant increase with non-adopters could suggest that either other market changes around the time of IFRS adoption or alternatively the global convergence of accounting standards resulted in more comparable financial statements globally. Nevertheless, the significantly higher increase in comparability between Australian firms and adopters relative to non-adopters suggests comparability benefits associated with the mandatory adoption of IFRS by Australian firms.

In Table 3, Panel C, the results for the extractive industry sample show a significant increase in comparability between Australian firms and both adopter (difference = 0.3958; F-statistic = 13.72) and non-adopter firms (difference = 0.2052; t-statistic = 2.48). Yet, we do not find a significant difference in the increase in comparability between the financial statements of Australian extractive firms and those of mandatory adopters, relative to the increase between the financial statements of Australian extractive firms and those of non-adopters (difference-in-differences = 0.1906; t-statistic = 1.54). Table 3, Panel C, further suggests that the financial statements of Australian extractive firms are significantly more comparable to those of adopters than to those of non-adopters in the post-adoption period (difference = 0.1287; F-statistic = 3.34). There was no significant difference in the pre-adoption period (difference = -0.0618; t-statistic = -0.60).

The insignificant difference-in-differences of 0.1906 (t-statistic = 1.54), suggests Australian extractive firms experienced a similar increase in comparability with both adopters and non-adopters following the switch to IFRS. Hence, this suggests that the increase in comparability is not related to IFRS adoption but to other concurrent changes. These concurrent changes could include other regulatory changes, changes in technology, increased globalisation or other market shocks (Barth *et al.*, 2012; Leuz and Wysocki, 2016).

Hence, while Australian firms from the non-extractive industries experienced an increase in comparability that is at least in part attributable to the adoption of IFRS (difference-in-differences = 0.1485; t-statistic = 1.95), this effect is not evident for extractive firms. This evidence suggests that the disparate accounting practices of extractive firms are limiting their comparability benefits relative to what non-extractive firms are experiencing.

7.   ADDITIONAL ANALYSIS

Increased cross-country comparability following the adoption of IFRS may be influenced by the accounting standards of countries converging and / or IFRS resulting in higher quality accounting amounts relative to local GAAP. Yip and Young (2012) argue that an increase in both cross-country and within-country comparability is consistent with both convergence and higher accounting quality. An increase in cross-country comparability without an increase in within-country comparability is consistent only with convergence and not increases in accounting quality.

To examine within-country comparability for Australian firms we match the 797 Australian firms with all possible Australian firms based on size, industry and year-end. Similar to our cross-country comparability measure, we calculate within-country comparability for each

Australian firm based on the average comparability of all matches made between that Australian firm and all matched firms in Australia.

We estimate the following equation:

$$Comp = \beta_0 + \beta_1(Post) + \beta_2(Extractive) + \beta_3(Post\ x\ Extractive) + \Sigma\beta_j(Controls_j) + \varepsilon \quad (8)$$

where all variables are defined as before, except for *Extractive*, which is an indicator variable coded one for firms in the extractive industry, and zero otherwise. We do not include *Legal* as a control variable as the sample includes only Australian firms.

The intercept, β_0, captures the average within-country comparability of non-extractive Australian firms in the pre-adoption period, while a positive and significant coefficient for β_1 (*Post*) suggests that comparability between Australian non-extractive firms increased from the pre- to the post-adoption period.

The coefficient, β_2 (*Extractive*), measures any difference in the comparability between Australian extractive firms relative to the comparability between non-extractive firms in the pre-adoption period. A significant positive coefficient for β_3 (*Post x Extractive*) suggests that the comparability between the financial statements of Australian extractive firms increased more from the pre- to the post-adoption periods, relative to the increase in the comparability between the financial statements of Australian non-extractive firms.

The regression results are contained in Table 4, Panel A. We use the results for *Intercept*, *Post*, *Extractive*, *Post x Extractive* reported in Panel A to prepare Panel B of Table 4. We discuss our results with reference to Panel B. As is evident from Panel B, the within-country comparability between Australian extractive firms increased from the pre- to the post-adoption period (difference = 0.2974; *F*-statistic = 23.19). Australian non-extractive firms also show an increase in their within-country comparability (difference = 0.3837; *t*-statistic = 6.42). While the increase in comparability is larger for non-extractive firms relative to extractive firms (difference-in-differences = -0.0863; *t*-statistic = -1.00), the *t*-statistic is not statistically significant (*p*-value = 0.3154).

In the pre-adoption period the within-country comparability between firms in the extractive industry (-0.3910) is similar to the within-country comparability between firms in the non-extractive industry (-0.3782) (difference = -0.0128; *t*-statistic = -0.18). However, in the post-adoption period the comparability between Australian extractive firms (-0.0936) is lower than the comparability between Australian non-extractive firms (0.0055) (difference = -0.0991; *F*-statistic = 4.40). Hence, Australian extractive firms have not benefited to the same extent as non-extractive firms from the adoption of IFRS.

The lower within-country comparability for extractive firms relative to non-extractive firms in the post-adoption period cannot be attributable to divergent treatment of E&E costs, because all Australian firms continued to apply the area of interest method in terms of AASB 6. One possible explanation for the within-country comparability of Australian extractive firms being lower than the within-country comparability of Australian non-extractive firms in the post-adoption period is that Australian extractive firms no longer have an industry specific IFRS standard, as was the case with AASB 1022 in the pre-adoption period. In the absence of an industry specific IFRS standard, extractive firms are required to apply a set of general principles in IFRS to economic transactions and events that are unique to the extractive industry. This could result in divergent interpretation between firms of the accounting requirements for similar economic events and transactions, which could impair within-country comparability.

8. CONCLUSION

The objective of this study is to determine whether the continued use of different accounting policies in the extractive industry influence the objective of improving comparability through the adoption of IFRS globally. We investigate whether the comparability of the financial statements of firms in the extractive industry changed following the mandatory adoption of IFRS by a number of countries in 2005. Our study focuses on Australia, one of the largest producers of mineral raw materials that adopted IFRS in 2005 and the only country worldwide that applied a local accounting standard for the extractive industry prior to the adoption of IFRS.

We use the output-based measure of comparability developed by De Franco *et al*. (2011). This measure is often used in the literature to measure changes in comparability and is based on an association between accounting amounts and stock returns. (Barth *et al.*, 2012; De Franco *et al.*, 2011; Neel, 2017; Yip and Young, 2012).

For our empirical analysis, we measure the cross-country comparability of the financial statements of Australian firms with firms from both other IFRS adopting countries and from non-adopting countries. We do this separately for firms in the extractive industry and for firms in all other industries. For firms in non-extractive industries we find that comparability between the financial statements of Australian firms and those of firms in other mandatory IFRS adopting countries increased after the mandatory adoption of IFRS and that this increase was significantly greater relative to the increase in comparability with non-adopter firms. This

finding suggests, consistent with prior literature, that comparability increased after the adoption of IFRS (Barth *et al.*, 2012, Yip and Young, 2012; Cascino and Gassen, 2015).

Our results for the extractive industry also suggest an increase in comparability, however the increase in comparability of financial statements with adopters is not greater than the increase with non-adopters, indicating that the increase is likely not attributable to the adoption of IFRS. Since we find an increase in comparability of financial statements for firms in all other industries that is likely attributable to the adoption of IFRS, our evidence suggests that the divergent practices for E&E costs under IFRS 6 and the lack of an accounting standard that deals with matters relating to the extractive industry negatively impacts on the comparability of financial statements in this industry.

In additional analysis, we find that in the pre-adoption period the within-country comparability between Australian extractive firms was similar to the comparability between non-extractive firms. In the post-adoption period, the comparability between non-extractive firms is significantly greater than the comparability between Australian extractive firms. This evidence suggests that repealing the local guidance contained in AASB 1022 for economic events and transactions that are unique to the extractive industry may have negatively affected within-country comparability between Australian extractive firms.

Our study contributes to the growing body of knowledge on the effects of IFRS adoption and the comparability of financial statements. Specifically, our study extends previous comparability studies by focusing on a single industry with unique requirements (Barth *et al.*, 2012; Yip and Young, 2012; Cascino and Gassen, 2015; Neel, 2017). Our study highlights the need for accounting standards specific to extractive activities that are not currently addressed elsewhere. This evidence could assist the IASB in their deliberations on whether they should embark on a project to develop an accounting standard that could replace IFRS 6.

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TABLE 1

Sample distribution and country-level descriptive statistics

| Matched country | Legal | n | Comp | | | | Size ratio | BTM diff |
			Pre-adoption	Post-adoption	Diff	*t*-test		
Comparability between Australia and:								
Adopters								
Belgium	Code	16	-0.7228	-0.3641	0.3587		0.7203	1.1782
Finland	Code	20	-0.3787	-0.4396	-0.0608		0.7170	0.5646
France	Code	87	-0.7281	-0.3712	0.3569	***	0.7042	0.5184
Greece	Code	37	-0.2845	-0.5010	-0.2164		0.7149	0.8551
Ireland	Common	28	-0.5697	-0.0982	0.4715	**	0.7972	0.4526
Poland	Code	11	-0.4599	-0.5147	-0.0548		0.7141	0.4357
South Africa	Common	218	-1.0001	-0.3350	0.6651	***	0.7406	1.2164
Sweden	Code	27	-0.5057	-0.3978	0.1079		0.7060	0.6189
United Kingdom	Common	131	-0.6131	-0.3161	0.2970	***	0.7175	0.7756
Adopters (i)		**575**	**-0.7409**	**-0.3462**	**0.3947**	***	**0.7274**	**0.8832**
Non-adopters								
Argentina	Code	34	-0.8685	-1.1679	-0.2994		0.7323	0.8174
Canada	Common	186	-0.6258	-0.4905	0.1353		0.7244	0.6651
China	Code	47	-0.1979	-0.5633	-0.3654	**	0.7589	1.0080
Indonesia	Code	50	-0.6341	-0.5165	0.1176		0.7327	1.5766
Japan	Code	137	-0.4425	-0.4829	-0.0404		0.7169	0.6135
Mexico	Code	12	-0.5180	-1.1506	-0.6326		0.7282	1.0365
South Korea	Code	46	-0.5649	-0.5110	0.0539		0.6901	1.0936
United States	Common	423	-0.9720	-0.4424	0.5296	***	0.7305	0.8412
Non-Adopters (ii)		**935**	**-0.7389**	**-0.5068**	**0.2321**	***	**0.7269**	**0.8346**
		1 510						
(i) - (ii)			**-0.0020**	**0.1606**	***		**0.0005**	**0.0486**

*, **, *** denotes significance at the 10%, 5% and 1% levels, respectively, all two-tailed.

Table 1 reports the sample distribution of all firm-country matches, by country, made between Australian firms and firms from IFRS and non-IFRS adoption countries as well as the country-level descriptive statistics for our *Comp* dependent variables and the independent variables. The table also indicates the legal tradition of each country based on prior literature (La Porta *et al.*, 1998; Leuz *et al.*, 2003; Barth *et al.*, 2012) or as indicated in The World Factbook (Central Intelligence Agency, n.d.). The *t*-test determines whether the mean *Comp* values between the pre- and the post-adoption periods differ significantly from each other.

Comp is a measure of comparability based on returns as the proxy for economic events and earnings as the proxy for financial statements; *Size ratio* is the mean size ratio of all firm-pairs included in the firm-country comparability measure, where the size ratio of each firm-pair is measured as the proportion of the smallest firm's total assets to the largest firm's total assets; *BTM diff* is the mean book-to-market differences of all firm-pairs included in the firm-country comparability measure where the book-to-market differences of each firm-pair is measured as the absolute value of the difference in the book-to-market ratio.

All continuous variables are winsorized at the top and bottom one percent.

TABLE 2

Descriptive statistics

Panel A: Descriptive statistics

Variable (n = 3 020)	Mean	Standard deviation	Lower quartile	Median	Upper quartile
Comp	-0.5927	1.0073	-0.5681	-0.2466	-0.1094
Post	0.5000	0.5001	0.0000	0.5000	1.0000
Adopter	0.3808	0.4857	0.0000	0.0000	1.0000
Legal	0.6530	0.4761	0.0000	1.0000	1.0000
Size ratio	0.7271	0.1236	0.6353	0.7196	0.8125
BTM diff	0.8531	1.1800	0.2245	0.4706	0.9610

Panel B: Correlations

Variable (n=3 020)	*Comp*	*Legal*	*Size ratio*	*BTM diff*
Comp	1	**-0.0925**	-0.0029	**-0.2580**
Legal	**-0.0474**	1	**0.0502**	0.0238
Size ratio	0.0012	**0.0517**	1	-0.0158
BTM diff	**-0.3509**	0.0211	0.0083	1

*, **, *** denotes significance at the 10%, 5% and 1% levels, respectively, all two-tailed.
Table 2 reports the descriptive statistics for our *Comp* dependent variable and the independent variables. Panel A reports the firm-country descriptive statistics for all variables. Panel C reports the Spearman (Pearson) correlations above (below) the diagonal for the dependent and control variables. Significant correlations at the 1% level appear in bold.
Comp is a measure of comparability based on returns as the proxy for economic events and earnings as the proxy for financial statements; *Post* is an indicator variable equal to one for the post-adoption period, and zero otherwise; *Adopter* is an indicator variable equal to one if the matched country adopted IFRS in 2005, and zero otherwise; *Legal* is an indicator variable equal to one if the matched country's legal origin is common law, and zero otherwise; *Size ratio* is the mean size ratio of all firm-pairs included in the firm-country comparability measure, where the size ratio of each firm-pair is measured as the proportion of the smallest firm's total assets to the largest firm's total assets; *BTM diff* is the mean book-to-market differences of all firm-pairs included in the firm-country comparability measure where the book-to-market differences of each firm-pair is measured as the absolute value of the difference in the book-to-market ratio.
All continuous variables are winsorized at the top and bottom one percent.

TABLE 3

Results

$$Comp = \beta_0 + \beta_1(Post) + \beta_2(Adopter) + \beta_3(Post \times Adopter) + \Sigma \beta_j(Controls_j) + \varepsilon \quad (1)$$

Panel A: Regressions

	Non-extractive Industries (n=2 118)		Extractive Industry (n=902)	
Intercept	-0.7468		-0.8168	
	(-2.64)	***	(-4.43)	***
Post	0.2459		0.2052	
	(3.65)	***	(2.48)	**
Adopter	0.0845		-0.0618	
	(1.51)		(-0.60)	
Post x Adopter	0.1485		0.1906	
	(1.95)	*	(1.54)	
Legal	-0.0789		0.0178	
	(-1.63)		(0.23)	
Size ratio	-0.0480		0.1715	
	(-0.30)		(0.81)	
BTM diff	-0.3297		0.0085	
	(-11.57)	***	(0.24)	
Fixed effects	Industry		None	
F-statistics				
Overall model	19.16	***	4.04	***
Post + Post x Adopter = 0	22.26	***	13.72	***
Adopter + Post x Adopter = 0	20.61	***	3.34	*
Adjusted R^2	0.2130		0.0199	

Panel B: Non-extractive industries sample ─ Comp (n=2 118)

Comparability between:	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference	
Australia and adopters (n=440)	-0.6623	-0.2679	0.3944 (22.26)	***
Australia and non-adopters (n=619)	-0.7468	-0.5009	0.2459 (3.65)	***
Difference	0.0845 (1.51)	0.2330 (20.61) ***	0.1485 (1.95)	*

Panel C: Extractive industry sample ─ Comp (n=902)

Comparability between:	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference	
Australia and adopters (n=135)	-0.8786	-0.4828	0.3958 (13.72)	***
Australia and non-adopters (n=316)	-0.8168	-0.6115	0.2052 (2.48)	**
Difference	-0.0618 (-0.60)	0.1287 (3.34) *	0.1906 (1.54)	

*, **, *** denotes significance at the 10%, 5% and 1% levels, respectively, all two-tailed.

Table 3 reports the multivariate regression results for Equation (1). Panel A reports the regression coefficients for Equation (1) for both the extractive industry sample and the non-extractive industries sample. *t*-statistics are reported in parentheses for the coefficient estimates. Standard errors are clustered by Australian firm. Panel B and C report the difference-in-differences results for the two samples. These tables were prepared using the coefficients as reported in Panel A. The amounts in parentheses are either the *t*-statistics or *F*-statistics as per Panel A. *Comp* is a measure of comparability based on returns as the proxy for economic events and earnings as the proxy for financial statements; *Post* is an indicator variable equal to one for the post-adoption period, and zero otherwise; *Adopter* is an indicator variable equal to one if the matched country adopted IFRS in 2005, and zero otherwise; *Post x Adopter* is an interaction term between the two indicator variables, *Post* and *Adopter*; *Legal* is an indicator variable equal to one if the matched country's legal origin is common law, and zero otherwise; *Size ratio* is the mean size ratio of all firm-pairs included in the firm-country comparability measure, where the size ratio of each firm-pair is measured as the proportion of the smallest firm's total assets to the largest firm's total assets; *BTM diff* is the mean book-to-market differences of all firm-pairs included in the firm-country comparability measure where the book-to-market differences of each firm-pair is measured as the absolute value of the difference in the book-to-market ratio.

All continuous variables are winsorized at the top and bottom one percent.

TABLE 4

Within-country comparability

$$Comp = \beta_0 + \beta_1(Post) + \beta_2(Extractive) + \beta_3(Post \times Extractive) + \Sigma \beta_j(Controls_j) + \varepsilon \quad (8)$$

Panel A: Regressions

	(n=1 226)
Intercept	-0.3782
	(-1.77) *
Post	0.3837
	(6.42) ***
Extractive	-0.0128
	(-0.18)
Post x Extractive	-0.0863
	(-1.00)
Size ratio	-0.3641
	(-1.22)
BTM diff	-0.2332
	(-4.56) ***
Fixed effects	None
F-statistics	
Overall model	17.31 ***
Post + Post x Extractive = 0	23.19 ***
Extractive + Post x Extractive = 0	4.40 **
Adjusted R²	0.0744

Panel B: Within-country comparability sample ─ Comp (n=1 226)

Comparability between:	Pre-adoption (2002 - 2004)	Post-adoption (2006 - 2008)	Difference	
Australian extractive firms (n=252)	-0.3910	-0.0936	0.2974 (23.19)	***
Australian non-extractive firms (n=361)	-0.3782	0.0055	0.3837 (6.42)	***
Difference	-0.0128 (-0.18)	-0.0991 (4.40) **	-0.0863 (-1.00)	

*, **, *** denotes significance at the 10%, 5% and 1% levels, respectively, all two-tailed.

Table 4 reports the multivariate regression results for Equation (8). Panel A reports the regression coefficients for Equation (8) for within-country comparability in Australia. *t*-statistics are reported in parentheses for the coefficient estimates. Panel B reports the difference-in-differences results for the within-country comparability sample. This table was prepared using the coefficients as reported in Panel A. The amounts in parentheses are either the *t*-statistics or *F*-statistics as per Panel A.

Comp is a measure of comparability based on returns as the proxy for economic events and earnings as the proxy for financial statements; *Post* is an indicator variable equal to one for the post-adoption period, and zero otherwise; *Extractive* is an indicator variable equal to one for extractive firms, and zero otherwise; *Post x Extractive* is an interaction term between the two indicator variables, *Post* and *Extractive*; *Size ratio* is the mean size ratio of all firm-pairs included in the firm-country comparability measure, where the size ratio of each firm-pair is measured as the proportion of the smallest firm's total assets to the largest firm's total assets; *BTM diff* is the mean book-to-market differences of all firm-pairs included in the firm-country comparability measure where the book-to-market differences of each firm-pair is measured as the absolute value of the difference in the book-to-market ratio.

All continuous variables are winsorized at the top and bottom one percent.