




Regulation and valuation of non-International Financial Reporting Standards disclosures



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Orientation: Globally, non-International Financial Reporting Standards (non-IFRS) disclosures have gained prominence. The International Accounting Standards Board (IASB) is in the process of deciding on the appropriate degree of regulation over such disclosures.

Research purpose: This study investigated the value relevance and the extent of regulation required for non-IFRS disclosures.

Motivation for the study: Non-IFRS disclosures may be prone to opportunistic use.

Research approach/design and method: This study used panel regression to compare two categories of non-IFRS disclosures: voluntary disclosures and disclosures required by regulations other than accounting standards (mandatory disclosures), with the equivalent IFRS disclosures. This study was limited to the mining sectors that were identified as the most significant contributors to non-IFRS disclosures. Earnings disclosures were used as a proxy because of their prominence in the market.

Main findings: All forms of disclosures, IFRS, voluntary and mandatory disclosures, were found to be value relevant. The empirical findings further suggest that voluntary disclosures were the most value relevant of these disclosures.

Practical/managerial implications: This study supports a careful approach to further regulation over voluntary disclosures so as not to impair its value relevance. There is, however, an opportunity for reporting jurisdictions to implement local regulatory measures based on the identification of common voluntary disclosures among companies within the same sector.

Contribution/value-add: This study contributes towards the future standard setting of voluntary disclosures and uniquely compares the value relevance of IFRS earnings disclosures and non-IFRS earnings disclosures from a South African perspective.

Keywords: earnings; non-IFRS; voluntary disclosures; mandatory disclosures; regulation; standards; value relevance.

Introduction

The objective of general-purpose financial statements, prepared in accordance with International Financial Reporting Standards (IFRS), is to provide useful information (International Accounting Standards Board [IASB] 2021a). Non-International Financial Reporting Standards (non-IFRS) disclosures can either be voluntarily provided or mandated by local regulation. For the purpose of this study, voluntary disclosures are those that are not required to be reported by either the financial reporting framework or other local regulatory requirements (Marques 2017). The term 'mandatory disclosure' therefore describes those disclosures that are not required by the financial reporting framework but are required by other regulations, for example, those required by section 30(4) of the *Companies Act, 71 of 2008*, regarding the disclosure of directors' remuneration.

PricewaterhouseCoopers (2021) reported that at least 94% of companies listed on the Standard and Poor's 500 Index disclosed at least one non-IFRS measure in 2020, an increase from 59% in 1996. Prior research suggests that voluntary earnings disclosures are value relevant and pertinent for users of financial statements (Bhattacharya et al. 2003; Chittenden 2018; Guillamon-Saorin, Isidro & Marques 2017). A common concern cited in the literature is that voluntary earnings disclosures are prone to opportunistic exploitation as such disclosure is subjected to weaker forms of regulatory intervention (Doyle, Jennings & Soliman 2013; Walker & Louvari 2003). Voluntary earnings are more flexible but easier to manipulate for self-interest purposes.

In response to an increased focus on non-IFRS disclosures, the IASB is working on a project that considers the inclusion of certain non-IFRS earnings disclosures within the scope of IFRS. The project was undertaken because of concerns raised by users regarding the lack of comparability and transparency of non-IFRS disclosures (IASB 2019). The new IFRS is expected to be published in the first half of 2024. In deciding on the degree of regulation that is required, it is important to determine whether the added regulation yields the added benefits without compromising on the value relevance or usefulness.

Earnings disclosures have been used as a proxy for all disclosures within this study as they have maintained a sense of prominence in the perception of financial statement users, are considered key metrics in assessing company performance and form the basis of key management compensation packages (Brown 1994; Deegan 2019; Hoogervorst 2016).

Research purpose and objectives

The objective of this study was to compare the value relevance of IFRS earnings disclosures and non-IFRS earnings disclosures (mandatory and voluntary), in order to contribute to the literature that informs future standard setting and regulatory decisions. As a secondary objective, this study aimed to identify the more commonly used voluntary earnings disclosures.

In contrast to voluntary disclosures, mandatory disclosures have the benefit of being less susceptible to manipulation for opportunistic goals. Mandatory disclosures are easier to implement on a local level because of local legislative mandates being the same for all businesses. Such information is of relevance to standard setters and regulators when considering whether to include certain earnings disclosures within the ambit of the accounting standards and additional disclosure regulations, respectively.

Literature review

According to Nelson (2003), rules, within accounting standards, provide rigid and specific courses of action that must be followed in a particular situation. Principles are defined as being less rigid and more widely accepted actions based on beliefs and common practice. Applying this definition to the accounting standards, rules will result in specific accounting outcomes given a specific fact pattern. Wüstemann and Wüstemann (2010) suggested that corporate scandals have resulted in accounting standards evolving from being rules-based to an inclusion of a greater degree of principles. The consistent application of principles is considered easier to achieve in multiple jurisdictions with unique jurisdictional requirements. The application of accounting principles transcends jurisdictional rules and results in consistent accounting (Tweedie 2007). The application of further regulation will result in a greater degree of rules being applied to financial reporting and may be contrary to the principles-based approach engrained

within IFRS (Donelson, McInnis & Mergenthaler 2012; Martucheli & Filho 2021; Nelson 2003). Instead of prescribing a rigid formula of how financial reports should be prepared, IFRS provide principles that seek to achieve a fair presentation of the reporting entity's financial affairs.

The IASB published an exposure draft in 2019, ED/2019/7 – *General Presentation and Disclosure* (ED/2019/7), which included potential changes to the accounting standards that impact the disclosures of non-IFRS information. ED/2019/17 includes requirements that supersede those already included in International Accounting Standard (IAS) 1 – *Presentation of Financial Statements* (IAS 1). International Accounting Standard 1 sets out the requirements that describe the overall structure of financial statements (IASB 2021b). The standard provides guidance for the minimum content of information that should be included within financial statements and information that should be excluded from financial statements or clearly distinguished from IFRS information. ED/2019/7 includes a section on non-IFRS disclosures which has been termed *management performance measures*. The IASB defined management performance measures as subtotals that are published outside the boundary of the financial statements but complement those disclosures included within the financial statements (IASB 2019). Such disclosures portray management's view of an aspect of company performance and are, therefore, unique to the specific reporting entity. After studying the feedback received on ED/2019/7 following public consultations by the IASB, Tien (2021) stated:

Management performance measures are one of the most concerning requirements. Without additional guidance and narrowing down the scope of the legal terms, the definition would be confusing and increase a gap between the role of auditors and the expectation of users. (p. 35)

Bertoni, De Rosa and Rossi (2020) analysed the primary changes proposed in ED/2019/7 regarding the structure of financial statements. Their analysis concluded that the proposals would increase the value relevance of financial information and reduce the risk of opportunistic behaviour by management. However, their study also highlighted concerns with management performance measures. The concerns focused on the limitation of such measures to items of income and expenses only, rather than to other disclosures based on the statement of financial position or the statement of cash flows. An additional concern highlighted by the study was that the exposure draft requires that earnings before interest, tax, depreciation and amortisation (EBITDA) be disclosed in a note to the financial statements rather than in the statement of comprehensive income, because of a failure to reach consensus on what constitutes EBITDA. Bertoni et al. (2020) believed that the IASB as a standard setter should be empowered to provide clarity and direction to reach a consensus.

A feedback summary document published by the IASB in 2020 summarises all the feedback received through public

exposure of ED/2019/7 (IASB 2020). Most respondents expressed similar concerns to that of Tien (2021) regarding the definition of management performance measures. Regarding the role of the audit, there was concern around the practicality of auditing such information without a rigid reporting framework, which was related to the flexibility that is provided to preparers over management performance measures.

The exposure draft proposes to formalise many of the regulatory measures already introduced by various jurisdictions. In addition to a formal definition for management performance measures, the requirements proposed are primarily to increase transparency and consistency on the related disclosures. The flexibility provided retains much of the risk for opportunistic behaviour by management. The proposals may worsen the effect of such opportunistic behaviour by formally including such matters within the bounds of IFRS. Users may inappropriately place further reliance on such disclosures as the inclusion will extend to the annual assurance engagement, thereby providing users with the perception that management performance measures are now more rigorous as they comply with IFRS. However, this sense of increased rigour may not be justified as the proposals provided by the exposure draft do not sufficiently address the relevance and validity of management performance measures, and instead only require further transparency and consistency.

Global implementation of standards and rules calls for flexibility as a matter of practicality (Martucheli & Filho 2021; Sikwivhilu 2015). The degree of regulation over voluntary disclosures, globally, remains limited to that of rules that require increased transparency (Marques 2017). Such regulation can be described as a light-touch approach (Bratton & Cunningham 2009). The light-touch approach to regulating non-IFRS disclosures retains the element of flexibility on the part of management. Such flexibility facilitates the development of bespoke disclosures for unique circumstances experienced by each reporting entity. In her study, Marques (2017) analysed research on the approach of various international jurisdictions towards non-IFRS disclosures. The study included the following countries: Australia, Canada, the European Union, France, Germany, Ireland, New Zealand, the United Kingdom, the USA and South Africa. South Africa was identified as the only country that included a mandatory non-IFRS disclosure in the form of Headline Earnings per Share (HEPS), which is subjected to an external audit. Therefore, it is worth discussing in detail the regulatory approach adopted in the South African environment when considering whether further regulatory measures are needed on a global scale.

The requirement to disclose HEPS has been made mandatory since the year 2000 through the Johannesburg Stock Exchange (JSE) Listing Requirements (Venter, Emanuel & Cahan 2014). The degree of regulatory requirements over the calculation and disclosure of HEPS has not been identified in any of the

other jurisdictions that have been reviewed by this study. Headline Earnings per Share is rigidly defined, and there are rules on what can and cannot be included in this non-IFRS earnings disclosure. According to the South African Institute of Chartered Accountants (SAICA) (2019), investors have called for an alternative to the IFRS-based earnings measure, in order to perform valuations of underlying companies based on earnings multiples. Traditional IFRS earnings are prone to distortions because of once-off remeasurements of assets or liabilities or omissions because of recognition of some transactions directly in equity. Headline Earnings per Share was therefore introduced to improve consistency in company valuations by standardising the adjustments processed to IFRS-based earnings to remove those transactions that may distort a company's underlying performance (SAICA 2019; Venter et al. 2014).

Previous studies have researched the value relevance of non-IFRS earnings disclosures in the South African environment. These studies focused on a single category of non-IFRS disclosure, either voluntary or mandatory disclosures. Timol (2012) and Chittenden (2018) studied the relationship between voluntary earnings disclosures and operating cash flows and found that such disclosures are value relevant. Ruddy (2006) studied the propensity of companies to manipulate HEPS disclosures and found that large companies are more likely to perform downward HEPS adjustments compared to smaller companies, which tend to manipulate HEPS upwards. Venter et al. (2014) assessed the value relevance of HEPS using publicly available share prices and found such mandatory earnings disclosures to be value relevant.

To the best of the authors' knowledge, this is the first study that compared the value relevance of mandatory and voluntary disclosures. This study compared the value relevance of voluntary earnings disclosures and mandatory earnings disclosures, on a per share basis, to determine whether the benefits of mandatory disclosures, that is, increased credibility through regulation, outweigh the benefits of voluntary disclosures, that is, increased levels of flexibility to provide more bespoke disclosures.

Research design

Ball and Brown (1968) pioneered the use of value relevance research in the field of accounting. Their study showed that earnings influence share price movements, concluding that accounting information is value relevant. There have been numerous studies that have applied value relevance research to the field of accounting (e.g. Dechow 1994; Guillamon-Saorin et al. 2017; Venter et al. 2014). Value relevance, in the context of capital markets research, can be described as a measurement of the utility of information (Deegan 2019; Holthausen & Watts 2001). The value placed on shares by financial statement users is influenced by the information available at the time of performing the valuation (Aboody, Barth & Kasnik 2004). Hence, the degree of change in share

prices can be used to correlate to information contained within the financial statements to determine the amount of value relevance attributed to the contents of such information.

Value relevance research routinely makes use of regression models, where share prices or share returns are designated as the dependent variables and published accounting information is designated as the independent variable. The research methodology can be applied by correlating share prices with accounting information such as earnings or cash flows (Chittenden 2018; Dechow 1994).

The Ohlson (1995) model is one such regression model used within value relevance research. The model generally has a high correlation coefficient (Lo & Lys 2000) and was described by Stober (1999) as a rigorous conceptual foundation for empirical work. Clinch, Tarca and Wee (2018) made use of the Ohlson model to determine the value relevance of IFRS earnings totals, subtotals and non-Generally Accepted Accounting Practice (GAAP) performance measures. Similar to Clinch et al. (2018), Goodwin, Ahmed and Heaney (2007) also applied the Ohlson model in their study which analysed the differences between Australian GAAP and IFRS disclosures. Both of these studies regressed share prices on IFRS equity, IFRS earnings and the differences between the respective non-GAAP disclosures. Consistent with these prior studies, this study was based on a derivative of the Ohlson model, where share prices were regressed on earnings disclosures.

The Ohlson model can be expressed as follows:

$$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 BEPS_{it} + \varepsilon_{it} \quad [\text{Eqn 1}]$$

where the following variables are represented at time t ,

- P is the share price
- BV is the book value of equity per share
- $BEPS$ represents basic earnings per share as defined per IAS 33 (IASB 2021a)
- ε represents the error term
- i represents cross-sections (companies)
- t represents time-series (annual reporting periods).

All variables were publicly available and obtained through platforms such as the annual financial reports of listed companies, which were sourced through internet search engines such as Google and company share price history, which was sourced through the website ShareData. The dependent variable, P , was extracted from ShareData online. Share prices were collected 4 months after the end of the financial year of each company. Such a time delay allowed for sufficient time for the accounting information to impact the share prices, has been used in prior studies (Venter et al. 2014) and represented the maximum time allowed by the JSE for listed issuers to publish audited financial statements as per Section 3.19 of the Listing Requirements (JSE 2019). All variables were based in South African Rands. For companies

that report in foreign currencies, the respective earnings disclosures were converted to the South African Rand equivalent by using the exchange rates for the relative period. Historical exchange rates were obtained from the South African Reserve Bank (SARB) website (SARB 2022).

To cater for the effects of scale, the number of shares outstanding, as calculated for the earnings per share disclosures that are required by IFRS, was used as a deflator for variables that are not presented on a per share basis. These variables included the BV and voluntary earnings. This approach was consistent with studies by Aboody et al. (2004) and Venter et al. (2014). To derive models that incorporate both voluntary and mandatory earnings disclosures (non-IFRS disclosures), IFRS-based earnings have been disaggregated into their relevant components to take into consideration those adjustments applied to derive the non-IFRS disclosures. Management voluntarily applies adjustments to IFRS earnings to arrive at voluntary earnings disclosures. Such adjustments can be expressed as follows:

$$VEPS = BEPS + VEPSADJ$$

where $VEPS$ represents voluntary earnings per share and $VEPSADJ$ represents adjustments applied to IFRS-based earnings per share, $BEPS$, to arrive at $VEPS$. Combining (Eqn 1) and the disaggregation of $BEPS$ into $VEPS$ and $VEPSADJ$ provides a derivative of the Ohlson model which is used to measure the value relevance of voluntary earnings disclosures:

$$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 VEPS_{it} + \alpha_3 VEPSADJ_{it} + \varepsilon_{it} \quad [\text{Eqn 2}]$$

To arrive at $HEPS$, management must apply those adjustments stipulated by Circular 1/2019 – Headline Earnings (SAICA 2019). This has been expressed as follows:

$$HEPS = BEPS + HEPSADJ$$

where $HEPS$ represents headline earnings per share and $HEPSADJ$ represents adjustments applied to IFRS-based earnings, $BEPS$, to arrive at $HEPS$. Combining (Eqn 1) and the disaggregation of $BEPS$ into $HEPS$ and $HEPSADJ$ provides an alternative view of the Ohlson model which is used to measure the value relevance of mandatory earnings disclosures:

$$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 HEPS_{it} + \alpha_3 HEPSADJ_{it} + \varepsilon_{it} \quad [\text{Eqn 3}]$$

To compare multiple regression models, this study focused on the adjusted R^2 which is a measure of model fit (Karch 2020). The use of the adjusted R^2 to distinguish between the explanatory power of different regression models is consistent with prior studies (Dechow & Ge 2006; Dechow, Richardson & Sloan 2008, Venter et al. 2014). Such studies generally yielded adjusted R^2 results in excess of 30%. An alternative measure for comparing regression models is the Akaike information criterion (AIC), which is applicable to a

wide selection of modelling frameworks (Cavanaugh & Neath 2018). The lower the AIC score, the better the model prediction. This study has considered both the AIC and adjusted R^2 in evaluating the various regression models.

Our study used data observations, share prices and earnings disclosures, for companies across time periods in the form of panel regression. The panels were considered to be balanced as the same companies were used throughout the period of study. This study used the most recent 5-year period, which prevented significant overlap with prior studies and is consistent with the time periods that have been previously adopted by such studies (Chittenden 2018; Howard 2016). The period covered by this study includes financial year-ends for the 5-year period beginning in 2017 and ending in 2021. It was anticipated that the impact of the global pandemic would distort the data from the year 2020 onwards. This was as a result of the World Health Organization's (WHO) announcement of coronavirus disease 2019 (COVID-19) as a public health emergency of international concern on 30 January 2020 (WHO 2022). However, the data were still considered necessary to analyse as they may have provided insights for periods of heightened uncertainty. Because of the significance of this event, separate analyses were performed on the following panels:

- Panel A – full sample: annual reporting periods for 2017–2021.
- Panel B – annual reporting periods for 2017–2019.
- Panel C – annual reporting periods for 2020–2021.

The following hypothesis was used to test the value relevance of non-IFRS disclosures:

- H_0 : Mandatory earnings disclosures are less value relevant than voluntary earnings disclosures

Should the null hypothesis be rejected, this would highlight the potential for further regulation to be applied to voluntary earnings disclosures. This is because of mandatory earnings disclosures being more influential than voluntary earnings disclosures and including a greater degree of regulation. The failure to reject the null hypothesis implies that regulation may be detrimental to the value placed on voluntary disclosures by financial statement users. This scenario supports a cautious approach to implementing further regulatory measures over voluntary disclosures.

A secondary objective was to identify commonly used voluntary earnings disclosures. Commonly used voluntary disclosures within a market sector highlight the idiosyncrasies among sectors. Previous studies have shown a mixed selection of voluntary earnings disclosures (Chittenden 2018; Howard 2016). However, the samples in those studies covered various sectors of the market. The selection of limited sectors, which contain companies that are exposed to similar macroeconomic risks and operate in a similar fashion, may result in the preference for a similar type of voluntary disclosure. Common voluntary disclosures have an implication on the forms of regulation that could be

considered, and hence, the possibility for regulatory measures to be implemented at a market sector level may be feasible. Some studies have limited the sample selection to the JSE's Top 40 Index to focus on those entities that contribute most significantly to overall market capitalisation (Chittenden 2018; Robbette, De Villiers & Harmse 2017). However, the nature of the operations of the individual companies within the JSE's Top 40 Index varies considerably. Chittenden (2018) cited this as a reason for the large variability identified in his study. Our study attempted to narrow the focus to a specific sector to control for confounding variables. The mining sector was identified by Howard (2016) as the sector that published non-IFRS disclosures on the most frequent basis. Therefore, in order to prevent variability in the results and to ensure a focus on companies that most frequently present voluntary disclosures, we selected companies from the mining sector.

At the time of this study, two sectors, the Industrial Metals and Mining and the Precious Metals and Mining sectors, included all the mining companies that are listed on the JSE. A total of 35 companies are included within these sectors (ShareData 2022), of which 16 companies have been excluded because of the non-publication of non-IFRS earnings disclosures throughout the sample period.

Panel data are regressed through the adoption of one of the following models: the pooled ordinary least squares model (POLS), the fixed effects model (FEM) or the random effects model (REM). The use of POLS without consideration of the FEM and REM may result in inappropriate results being obtained. Pooled ordinary least squares model ignores differences between cross-sections and, therefore, has a single intercept and a single slope (Brooks 2008). The choice between the FEM and REM is determined through the application of the Hausman test (Hausman 1978). The Hausman test is used to determine whether the exogeneity assumption is breached. Exogeneity refers to whether independent variables are correlated with the error term (Amini et al. 2012; Hausman 1978). The level of correlation will influence model specification as follows: if the p -value obtained is less than 0.05, the FEM should be used; and if the p -value obtained is greater than 0.05, the REM should be used. For Panel A, the p -values obtained were less than 0.05 for all three regression models, and therefore, the FEM approach was used consistently across the models. However, for Panel B, the REM was used for model 2 (voluntary earnings disclosures), and for Panel C, the REM was used for model 1 (IFRS earnings disclosures). The rest of the models in Panels B and C followed the FEM approach.

Statistical analysis

To alleviate the impact of extreme outliers, the study winsorises 1% of observations of each variable, consistent with prior studies (Barton, Hansen & Pownall 2010; Choi et al. 2007; Venter et al. 2014). The data consist of 87 observations in a balanced panel subsequent to the data being winsorised.

The standard deviations according to Table 1 are in line with those reported in prior studies that focused on multiple sectors of the South African market (Chittenden 2018; Howard 2016; Venter et al. 2014). This suggests that the spread of reporting experienced within the mining sectors was comparable to other major sectors in the market. The relationship between the standard deviations and means for P and BV is comparable. This is consistent with the correlation analysis performed, as per Table 2, showing the strongest correlation between P and BV.

The minimum values reflect losses for all forms of earnings disclosures that highlight the poor economic conditions during which such companies operated, including the effect of lockdowns as imposed because of the COVID-19 pandemic. However, none of the sampled companies were technically insolvent as is evident by the minimum BV that was positive. Therefore, the financial performance and health of the mining sector could be described as resilient or stable during the

sampled period, and this has the positive impact of reduced volatility on the regression analysis. This is primarily because of the lack of volatility in the correlation analysis when comparing variables that have positive values, as opposed to comparing variables that have positive and negative values.

Consistent with prior studies (Bhattacharya et al. 2003; Chittenden 2018; Dichev 2008; Entwistle, Feltham & Mbagwu 2010), voluntary earnings disclosures were higher, on average, than earnings disclosures required by the relevant financial reporting frameworks and regulation. Mandatory earnings disclosures (HEPS) were higher, on average, than IFRS earnings across all data panels. Headline Earnings per Share removes those adjustments that are considered non-recurring in nature, that is, re-measurements (SAICA 2019). Re-measurements that resulted in positive adjustments were applied during the period 2017–2021. The difference between the means of HEPS and HEPSADJ was higher than that of the difference between the means of VEPS and VEPSADJ.

TABLE 1: Descriptive statistics.

Statistics	P	BV	BEPS	VEPS	VEPS ADJ	HEPS	HEPS ADJ
Panel A							
Mean	9,070.0	56.6	544.4	1,863.8	1,319.4	676.2	131.8
Standard Error	1,429.3	8.7	131.6	300.9	250.0	131.3	34.2
Median	3,415.0	21.3	64.1	600.8	479.7	104.0	4.9
Standard Deviation	13,331.6	80.8	1,227.3	2,806.8	2,332.3	1,224.2	319.3
Min	64.0	0.1	(1,145.0)	(42.2)	(2,062.2)	(230.00)	(1,001.3)
Max	65,833.0	386.8	6,464.0	14,281.7	14,210.6	6,688.0	1,283.1
Count	87	87	87	87	87	87	87
Panel B							
Mean	7,659.5	53.2	199.7	1,419.0	1,219.3	385.8	186.1
Standard Error	1,568.8	10.4	132.3	285.4	266.6	117.6	53.5
Median	2,485.0	16.3	27.2	329.2	440.2	56.4	3.5
Standard Deviation	11,844.4	78.2	998.9	2,154.5	2,012.6	887.9	404.1
Min	37.0	0.1	(1,486.0)	(57.8)	(325.8)	(299.0)	(1,001.3)
Max	46,470.0	348.9	4,058.1	10,419.5	10,368.7	3,957.4	1,350.5
Count	57	57	57	57	57	57	57
Panel C							
Mean	14,376.8	68.9	1,321.8	3,089.5	1,767.7	1,386.8	65.0
Standard Error	3,142.4	16.8	351.7	750.2	684.5	351.2	56.2
Median	6,363.5	26.7	555.8	1,338.2	663.4	592.2	7.7
Standard Deviation	19,371.0	103.6	2,168.3	4,624.5	4,219.2	2,164.7	346.4
Min	64.0	0.1	(236.7)	(91.0)	(5,988.2)	(185.0)	(1,361.0)
Max	71,324.0	447.0	10,238.4	20,132.0	20,028.4	10,348.4	1,283.1
Count	38	38	38	38	38	38	38

Note: P, Share price 4 months post-financial year-end.

BV, book value; BEPS, basic earnings per share; VEPS, voluntary earnings per share; VEPSADJ, voluntary earnings per share adjustments (to arrive at BEPS); HEPS, headline earnings per share; HEPSADJ, headline earnings per share adjustments (to arrive at BEPS); Max, maximum; Min, minimum.

TABLE 2: Correlation analysis.

Variable	P	BV	BEPS	VEPS	VEPS ADJ	HEPS	HEPS ADJ
P	1	-	-	-	-	-	-
BV	0.838	1	-	-	-	-	-
BEPS	0.550	0.710	1	-	-	-	-
VEPS	0.815	0.673	0.573	1	-	-	-
VEPSADJ	0.691	0.437	0.163	0.902	1	-	-
HEPS	0.569	0.739	0.966	0.600	0.214	1	-
HEPSADJ	0.067	0.106	-0.140	0.101	0.195	0.121	1

Note: P, Share price 4 months post-financial year-end.

BV, book value; BEPS, basic earnings per share; VEPS, voluntary earnings per share; VEPSADJ, voluntary earnings per share adjustments (to arrive at BEPS); HEPS, headline earnings per share; HEPSADJ, headline earnings per share adjustments (to arrive at BEPS).

This implies a greater level of adjustments being applied to VEPS when compared to BEPS.

Voluntary earnings per share consistently retained the highest mean among all earnings disclosure variables and across all data panels. Furthermore, within the panel A data set, there were 27 negative BEPS observations. This compares to 18 negative HEPS and 5 negative VEPS observations. The adjustments applied within VEPSADJ were therefore, on average, greater than those applied for HEPS. This is indicative of positive adjustments being applied to portray an improved performance through the disclosure of voluntary earnings. These results support the argument that voluntary disclosures are more prone to opportunistic behaviour by management (Doyle et al. 2013; Walker & Louvari 2003).

Ethical considerations

Ethical clearance to conduct this study was obtained from the University of Johannesburg School of Accounting Research Ethics Committee (SAREC). (No. SAREC20220316/01).

Results

Correlation analysis

The correlation coefficients per Table 2 indicated that, from the earnings disclosures provided, VEPS has the strongest relationship with share price (P), indicating that investors place more relevance on voluntary earnings disclosures. Book value has the highest correlation with the dependent variable (P). The correlations are consistent with prior studies that have shown high correlations between voluntary disclosures and share price performance (Bhattacharya et al. 2003; Chittenden 2018; Guillamon-Saorin et al. 2017). Headline earnings per share has a stronger correlation compared to BEPS, which is consistent with results obtained by Venter et al. (2014).

Regression results

The adjusted R^2 values for IFRS earnings disclosures (model 1) of 0.891 and voluntary earnings disclosures (model 2) of 0.897, per Table 3, are within the ranges of outcomes obtained in prior studies that have utilised derivatives of the Ohlson models (Barth et al. 2014; Clinch et al. 2018; Goodwin et al. 2007). The adjusted R^2 values among the eight countries studied by Clinch et al. (2018), for example, ranged from 62.3% to 95% for voluntary earnings disclosures and from 51.0% to 89.8% for IFRS and/or GAAP earnings disclosures.

Among the eight regions studied by Clinch et al. (2018), namely, Australia, France, Germany, Hong Kong, Italy, Singapore, Sweden and the United Kingdom, only two (the United Kingdom and Hong Kong) had results that did not favour voluntary earnings disclosures. The regression results for these two countries showed adjusted R^2 values that were

TABLE 3: Regression results for Panel A data.

Panel A	Model (1)	Model (2)	Model (3)
R^2	0.916	0.922	0.917
Adjusted R^2	0.891	0.897	0.891
SE	4399.442	4270.082	4406.947
F -statistic	36.186	36.823	34.382
Prob (F -statistic)	0.000	0.000	0.000
Akaike info criterion	19.823	19.771	19.834
Coefficients			
C (constant)	-5057.580	-4299.773	-4600.330
BV	246.038	198.620	227.911
BEPS	0.400	-	-
VEPS	-	0.643	-
VEPSADJ	-	0.714	-
HEPS	-	-	0.936
HEPSADJ	-	-	1.153

Note: Dependent variable, P; Method, Panel least squares; Sample period: 2017–2021; Periods included, 5; Cross-sections, 87.

BV, book value; BEPS, basic earnings per share; VEPS, voluntary earnings per share; VEPSADJ, voluntary earnings per share adjustments (to arrive at BEPS); HEPS, headline earnings per share; HEPSADJ, headline earnings per share adjustments (to arrive at BEPS).

higher for the models that incorporated only IFRS measures. Possible reasons for the two deviations provided by the authors included the variability in the nature and size of entities reporting voluntary disclosures and the extent of guidance offered by local regulatory authorities.

Consistent with the majority of the prior studies, the adjusted R^2 value of the model containing voluntary earnings disclosures (0.897) exceeded those of the models containing IFRS and/or GAAP-based disclosures (0.891). This is interpreted as voluntary earnings (model 2) having a greater ability to predict share price movements than IFRS earnings (model 1). Alternatively, financial statement users within the mining sector place greater value on voluntary earnings disclosures when compared to IFRS-based earnings disclosures that are required by the adopted financial reporting framework.

Regarding mandatory disclosures (model 3), Venter et al. (2014) was the only study identified in the literature review which used the Ohlson model to evaluate the value relevance of headline earnings disclosures and found a stronger link between HEPS and share prices than that between BEPS and share prices. However, that study was different from this study as it did not limit the sample to a specific market sector, and the time period analysed was from 2002 to 2009. Furthermore, this study differentiates between the need to use the FEM, REM or POLS regression models based on the results obtained from the Hausman tests. All models within Panel A, for example, have been based on the FEM. As per Table 3, the study shows an adjusted R^2 of 0.891, showing a strong link between share prices and HEPS (model 3) and BEPS (model 1) for the mining sector in more recent years (2017–2021).

Table 4 presents the results for the period leading up to the COVID-19 global pandemic. The results suggest that the most powerful predictor of share price movements was HEPS (model 3), with an adjusted R^2 of 0.845. This compares

TABLE 4: Regression results for Panel B data.

Panel B	Model (1)	Model (2)	Model (3)
R^2	0.882	0.795	0.903
Adjusted R^2	0.816	0.783	0.845
SE	5074.663	5154.030	4656.122
F -statistic	13.453	68.412	15.589
Prob (F -statistic)	0.000	0.000	0.000
Akaike info criterion	20.179	-	20.014
Coefficients			
C	4847.285	-257.377	4186.714
BV	40.170	68.417	-9.856
BEPS	3.381	-	-
VEPS	-	2.474	-
VEPSADJ	-	0.629	-
HEPS	-	-	9.833
HEPSADJ	-	-	1.022

Note: Dependent variable, P; Method, Panel least squares; Sample period: 2017–2019; Periods included, 3; Cross-sections, 57.

BV, book value; BEPS, basic earnings per share; VEPS, voluntary earnings per share; VEPSADJ, voluntary earnings per share adjustments (to arrive at BEPS); HEPS, headline earnings per share; HEPSADJ, headline earnings per share adjustments (to arrive at BEPS); SE, standard error.

to an adjusted R^2 of 0.816 and 0.783 for models 1 and 2, respectively. The significance placed on mandatory earnings disclosures was more easily detectable in panel B data. Panel B is potentially more descriptive of general economic conditions and therefore may hold more significance than the entire sample period (Panel A). Once the economic shocks of the COVID-19 preventative measures subside, it is anticipated that the value relevance of HEPS would ultimately increase over that of VEPS.

Table 5 presents the results for the period 2020 to 2021. The results show a change in trend, driven primarily by the COVID-19 environment and the perceived impact of the lockdowns on company performance. Based on the results, it appears that financial statement users placed the most emphasis on voluntary disclosures provided by management, as model 2 produced the highest adjusted R^2 of 0.989. Mandatory earnings disclosures were still highly perceived as model 3 produced an adjusted R^2 of 0.975, which was greater than that produced by model 1 of 0.670. Although the data for panel C was limited because of the timing of the study, the results are significant for regulators as it highlights market participant behaviours in times of heightened economic uncertainties.

Model diagnostics – Multicollinearity, autocorrelation and stationarity

The variance inflation factor (VIF) is a measure of tolerance of the multicollinearity within a regression model. Tolerance values obtained that exceed 5 are indicative of the presence of multicollinearity (Daoud 2017; Howard 2016). The highest VIFs obtained were 2.28 for HEPS and 2.29 for BEPS. The Durbin Watson statistic was calculated for all models, and the results were within the range of 0–4, close to 2, indicating that there was not a concern of autocorrelation in the data. Panel data regression requires the underlying variables to be stationary, that is, the data set must not contain seasonality effects or trends. The presence of a unit root indicates non-

TABLE 5: Regression results for Panel C data.

Panel C	Model (1)	Model (2)	Model (3)
R^2	0.688	0.995	0.989
Adjusted R^2	0.670	0.989	0.975
SE	2936.822	2073.496	3033.848
F -statistic	38.557	153.012	71.068
Prob (F -statistic)	0.000	0.000	0.000
Akaike info criterion	-	18.405	19.166
Coefficients:			
C	3132.460	7599.276	5634.269
BV	167.530	145.608	142.162
BEPS	-0.224	-	-
VEPS	-	-0.197	-
VEPSADJ	-	-1.496	-
HEPS	-	-	-0.619
HEPSADJ	-	-	-2.955

Note: Dependent variable, P; Method: Panel least squares; Sample period, 2020–2021; Periods included, 5; Cross-sections, 38.

BV, book value; BEPS, basic earnings per share; VEPS, voluntary earnings per share; VEPSADJ, voluntary earnings per share adjustments (to arrive at BEPS); HEPS, headline earnings per share; HEPSADJ, headline earnings per share adjustments (to arrive at BEPS); SE, standard error.

stationarity, which may lead to spurious results being obtained (Chen 2006). This study made use of the Fisher Augmented Dickey Fuller (Fisher-ADF) unit root test. According to Brooks (2008), the Fisher-ADF test is widely used in the field of econometrics and is, therefore, considered appropriate when analysing the effects of share price movements. A 95% confidence level is assumed, and therefore, to reject the null hypothesis, the p -values obtained must be less than 0.05. For all variables, the p -values obtained were below 0.05. Therefore, the null hypothesis was rejected, and the data were determined to be stationary.

Discussion

To supplement the analysis of the regression results, the AIC has been presented in each of the regression output tables. The results between the adjusted R^2 and AIC are consistent. A comparison of the various adjusted R^2 values across the panels of data in this study shows values that are materially in excess of 30%. Therefore, the models have a high measure of fit when attempting to predict the dependent variable.

Panel A showed that model 2 (VEPS) was the best in terms of goodness of fit. Model 3 (HEPS), however, includes mandatory earnings disclosures, and therefore, the study fails to reject the null hypothesis. Even though the voluntary earnings disclosures are statistically more value relevant than both the mandatory and IFRS earnings disclosures, users do place value on all three forms of earnings disclosures. Based on the findings, it appears that despite mandatory disclosures being subjected to regulatory measures, which add assurance to such disclosures, the value attributed to voluntary disclosures by financial statement users is greater. This implies a greater risk of opportunistic use of voluntary disclosures to inappropriately create the perception of better financial performance. However, it also implies that voluntary disclosures may be better placed at capturing unique user requirements because of increased flexibility in designing such disclosures.

The disaggregation of data into Panels B (2017–2019) and C (2020–2021) provides an overview of the perceptions of financial statement users in times of heightened economic uncertainty. Panel B removes the effect of a significant economic event and therefore possibly provides a sustainable view of operations. Panel B shows that HEPS is attributed a greater degree of value by financial statement users with the adjusted R^2 being 0.845 compared to that of BEPS at 0.816 and VEPS at 0.783. Venter et al. (2014) studied the value relevance of HEPS as a comparison to BEPS and found that HEPS was more value relevant. Our study extended the comparison by including an additional category of non-IFRS disclosure, voluntary earnings per share (VEPS). Excluding the effect of significant economic events, the result of this study concurs with Venter et al. (2014) in that HEPS has a higher degree of value relevance than the IFRS-based equivalent (BEPS).

The results show that in times of economic uncertainty (Panel C), users place additional reliance on voluntary disclosures and even less reliance on those disclosures stipulated by the financial reporting framework. This could be because of the perception that the standard IFRS disclosures are insufficient to cater for economic shocks. This finding supports increased regulatory measures being applied during times of heightened economic uncertainty, to prevent against opportunistic behaviour by preparers. However, the types of regulatory measures adopted need to be balanced against the risk of taking away from the value relevance of voluntary disclosures, as over an extended period of time it appears that this category of non-IFRS disclosure achieves the highest value relevance as measured by share prices (Panel A).

Practical implications

The secondary objective of the study was to identify common voluntary earnings disclosures. EBITDA was the most common non-IFRS earnings disclosure presented, with 16 out of the 19 companies reporting a form of such earnings disclosure. Out of the 16 EBITDA disclosures, 10 companies have presented unadjusted EBITDA disclosures and 6 companies have presented adjusted EBITDA numbers. The study may, therefore, be useful to jurisdictional regulatory authorities as the use of common voluntary disclosures at a market sector level may provide support for the introduction of jurisdictional regulatory measures. Local or jurisdictional regulators may, therefore, adapt local regulatory measures to mitigate against the jurisdictional-specific risks inherent in voluntary disclosures.

In its latest draft proposals of the direction of standard setting, the IASB has confirmed that elements of voluntary disclosures (management performance measures) are to be included within the ambit of the IFRS (IASB 2019). This study adds to the literature that supports the careful consideration of the degree of regulation that needs to be included over voluntary disclosures as there is a trade-off between value relevance and increased user protection. The approach adopted by the IASB can be viewed as a balanced approach

when considering the negative impact such regulatory measures could have on the value attributed to disclosures by financial statement users. There are no rigidly defined calculations of disclosure requirements. Similar to the regulatory measures adopted by international jurisdictions, as described by Marquez (2017), the IASB has chosen an approach that balances the need for value relevance, as well as reliability of information to be disclosed.

The findings suggest that locally regulated disclosures (HEPS) are most favoured by investors, other than in times of heightened economic uncertainty (such as the period following the announcement of the national COVID-19 lockdowns). Such a regulatory approach, therefore, presents an opportunity to be replicated in other jurisdictions, to mitigate against the risk of opportunistic use of voluntary disclosures.

Limitations and recommendations

Because of the focus on a single market sector, the results obtained may not be relevant to all sectors of the market. Therefore, future studies may focus on different market sectors to identify those voluntary disclosures that are preferred by the respective companies within such market sectors.

The sample period of the study has been limited to the most recent 5-year period, which does not significantly overlap with previous studies, such as those performed by Venter et al. (2014) and Chittenden (2018). Future studies may attempt to cover a longer sample period to identify whether results are consistent across such periods and to fully consider the impact of COVID-19 on financial reporting.

Conclusion

The topic of non-IFRS disclosures has increased in popularity among key stakeholders of the financial reporting value chain as these disclosures have gained prominence in the market. The primary objective of the study was to identify the need for regulation over voluntary disclosures, in the form of either local regulatory measures or the incorporation of such voluntary disclosures within the ambit of the prescribed financial reporting standards. Our study uniquely explored the value relevance of two categories of non-IFRS disclosures, mandatory and voluntary earnings disclosures, in order to consider whether increased regulatory measures over voluntary disclosures would affect their value relevance.

The results of our study suggest that voluntary earnings disclosures are perceived to be the most value relevant compared to other forms of disclosures, in line with previous studies. However, the results also show that all forms of earnings disclosures, IFRS, voluntary and mandatory earnings disclosures, are attributed a significant amount of value as represented through company share prices. Our study provides support for a careful approach to further

regulatory intervention over voluntary disclosures so as not to impair the value attributed to such disclosures. Regulatory intervention should, however, be balanced against the benefits that voluntary disclosures have, such as the flexibility to provide disclosures unique to a reporting entity's operations.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

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