Assessing the value relevance of fair value measurements: A South African perspective

Abstract

Purpose: This article explores whether fair value Level 1 and Level 2 measurements are more value relevant than Level 3 fair value measurement in an inactive market. Specifically, this research addresses two objectives. First, it examines the value relevance of fair value measures for each disclosure level of fair value. Second, it assesses the impact of corporate governance on the value relevance of less observable fair value disclosures (Level 2 and Level 3).

Design/Methodology: Drawing insights from agency theorising, this research adopts a quantitative approach (regression analysis) that investigates data from a less active financial market (South Africa).

Findings: Contrary to agency theory suppositions, the results show that investors in a less active market value management inputs more than market (more transparent) information. We also observe that investors pay limited interest to corporate governance structures when pricing fair value measurement, implying that they rely on factors beyond corporate governance mechanisms.

Originality/Value: Our findings offer useful evidence to standard setters and preparers of financial information. While the IASB suggests that investors value transparent financial information, the data shows that investors in inactive markets value management's inputs more than those of the market.

Keywords: Corporate governance, fair value, disclosure, agency, developing economies

1. Introduction

Globalisation has had significant implications for the accounting profession (Hopper, Lassou & Soobaroyen, 2017). Several policy interventions have sought to maximise their interaction. One of such is the International Financial Reporting Standards (IFRS) developed by the International Accounting Standard Board (IASB) to harmonise accounting standards and practices across varieties of capitalism (Gordon, Loeb & Zhu, 2012; Othman & Anas, 2015; Kabwe, Mwanaumo & Chalu, 2021). However, the adequate adoption and application of IFRS require economic and intellectual resources, which are scarce and expensive, especially in developing economies (Owolabi & Iyoha 2012; Agyei-Mensah, 2017; Mnif & Borgi, 2020). Thus, investigating the empirical relation between stock market values and accounting information, known as value relevance studies, has attracted considerable interest among accounting researchers (Barth, Beaver & Landsman, 2001; Holthausen & Watts, 2001; Ogeh-Fiador, 2013; Tshipa, Brummer, Wolmarans & Du Toit, 2018).

Fair value measurements have become a topical research area for value relevance scholars (Barth & Landsman, 1995; Hassan, 2006; Koonce, Nelson & Shakespeare, 2011; Song, Thomas & Yi, 2010). This is unsurprising given that the use of fair value measurements has drawn both praise and criticism (Khan, 2019; Khurana & Myung-Sun, 2003; Koonce *et al.*, 2011). While critics of fair value measurement question its credibility, these measurements have often been praised for being current and providing investors with robust information on forgone opportunities arising from management's decisions (Khan, 2019; Khurana & Myung-Sun, 2003; Koonce *et al.*, 2011). Another prominent argument for fair value measurements is that it exhibits greater transparency by increasing the quantity of private information brought into the public domain (McInnis, Yu & Yust, 2018; Palea & Maino, 2013). The standard governing the measurements of fair values, *IFRS 13 Fair Value Measurement* (IFRS 13), requires that fair values of assets and liabilities are disclosed hierarchically based on the valuation inputs of the fair value measurements. This approach allows researchers to compare different levels of fair value measurements (IASB, 2011). IFRS 13 demands that fair value measurements are disclosed in the following hierarchal order (IASB, 2011):

- Level 1 represents fair values determined by using quoted prices (unadjusted) in an active market.
- Level 2 fair values are determined based on inputs, other than quoted prices that are included in Level 1 that can be observed either directly or indirectly and

- Level 3 fair values based on unobservable inputs.

The unobservable inputs of Level 3 fair value measurements rely on the best information available, which might include the company's data, adjusted for assumptions that management makes about the market and potential risks (IASB, 2011). Since Level 3 fair value inputs are unobservable and lack verifiability, they trigger investors' concerns about dishonest management behaviour when using subjective inputs to compute fair values (Black, Chen & Cussatt, 2017). The shortage of an observable market creates information asymmetry between investors and managers, threatening fair values' reliability (Song *et al.*, 2010; Cormier, Ledoux, Magnan & Aerts, 2010). The information asymmetry problem is more likely to affect developing economies as most of their fair value measurements would be classed under Level 2 and Level 3 owing to limited or inactive markets for specific assets or liabilities (Fiechter & Novotny-Farkas, 2016; Kumarasiri & Fisher, 2011). This concern leads to this study's first objective: *to examine the value relevance of fair value measures for each disclosure level of fair value in a developing economy*.

Standard setters have increased additional disclosure requirements for fair value measurements based on management's inputs to address the information asymmetry concerns, but the problem persists (Song *et al.*, 2010). However, effective corporate governance structures increase the value relevance of less observable fair value measurements, shrinking investors' concerns regarding the reliability of fair value measurements informed by more subjective management's inputs (Song *et al.*, 2010). Moreover, Habib and Azim (2008) found a strong association between good governance structures and the value relevance of accounting information. In developing economies, corporate governance structures remain critical to credible financial reporting (Tshipa et al., 2018). Consequently, we articulate the second objective of this research: *to assess the impact of corporate governance on the value relevance of less observable fair value disclosures (Level 2 and Level 3) in a developing economy*.

Developing economies have added incentives to produce relevant accounting data, such as attracting foreign investments (Gordon *et al.*, 2012; Othman & Anas, 2015). However, various challenges face these economies in producing efficient accounting information (e.g., limited active markets), resulting in high information asymmetry and triggering investors' concerns over accounting data (Black *et al.*, 2017; Owolabi & Iyoha 2012). Notably, the extant literature typically focuses on developed economies with larger markets and higher frequencies of Level 1 and 2 fair values measurements (Altamuro & Zhang, 2013; Black *et al.*, 2017; Song

et al., 2010). Developed and developing markets differ, particularly in size and activity (Bhasa, 2004). Developed economies have larger active markets supporting Level 1 and Level 2 fair value measurements than developing economies that exhibit higher Level 2 and Level 3 fair value measurements (Fiechter & Novotny-Farkas, 2016; Kumarasiri & Fisher, 2011).

To broaden the literature and generate insights regarding less-studied contexts, we examine the South African business environment. The country is the largest economy on the African continent. Since 2005, its stock exchange, i.e., the Johannesburg Stock Exchange (JSE), mandates listed companies to comply with IFRS, ensuring a lengthy history of compliance with IFRS (JSE, 2020). The limited active market in the country necessitates greater use of Level 2 and Level 3 fair values (Claessens & Yurtoglu, 2013; Kumarasiri & Fisher, 2011). The limited market activity is fundamental to this study, as IFRS 13 emphasises market-based as against entity-based measurements, making the existence of a market critical to fair value measurement (Palea & Maino, 2013). Besides, South Africa is the first developing economy to develop a corporate governance code of best practice, i.e., the King Report of 1994 (Mangena & Chamisa, 2008; Masegare & Ngoepe, 2018). Claessens and Yurtoglu (2013) further document that South Africa is one of the three emerging markets with corporate governance disclosure requirements that equal or exceed those of many advanced countries. The development and constant review of corporate governance structures have enabled the country to stay abreast of international best standards (Tshipa *et al.*, 2018).

The first King Report on corporate governance, developed in 1994 by the King Committee of the Institute of Directors of South Africa (IDoSA), introduced formal corporate governance structures not only in South Africa but also in the developing world (Buertey, Sun, Lee & Hwang, 2019; Demirag, Sudarsanam & Wright, 2000; Tshipa *et al.*, 2018). The King report has developed over the years, with the most recent version being King IV, effective April 2017, emphasising transparency in business practices (Buertey *et al.*, 2019). From the "apply or explain" principle-based corporate governance approach introduced by King III in March 2012, King IV adopts an "apply and explain" policy (IoDSA, 2016) to encourage stakeholders to make informed decisions. By the listing requirements of 2005, JSE listed companies are required to disclose the extent to which they comply with the guidelines in the King Reports, failure of which results in listing suspension (Mangena & Chamisa, 2008; Tshipa *et al.*, 2018; Waweru, 2014).

Relying on the assumptions of the agency theory that agents possess information and knowledge advantage and are increasingly likely to behave in an opportunistic manner when their decisions entail judgement, the study results suggest that investors in an inactive market value management inputs more than market (more transparent) information. We note that irregular trading and/or the absence of an active market for most assets and liabilities accelerate this outcome. Contrary to widely held assumptions, our results further indicate that corporate governance structures are not crucial to investors when pricing fair value measurement. This suggests that investors rely on factors beyond corporate governance structures (e.g., IFRS 13 disclosure) when pricing fair value measurements in an inactive market. The rest of the article is organised as follows; in the next section, we review relevant theory (agency) and the literature on corporate governance, fair value measurements and value relevance, culminating in the articulation of two research hypotheses. We then present our methodology and discuss our findings. Lastly, we summarise and conclude the paper.

2. Theory and Literature Review

2.1 Agency Theory and Corporate Governance

The agency theory clarifies the relationship between shareholders and managers (Fama, 1980). According to Jensen and Meckling (1976), the agency relationship is a contractual arrangement where a party (the principal) engages another party (the agent) to perform certain services on their behalf. Such a 'contract' involves delegating decision-making power to the agent. The theory assumes that individuals are rational, motivated solely by self-interest (Dierksmeier, 2019). The agency relationship further recognises that agents possess greater information than their principals. This creates information asymmetry favouring agents, incentivising them to engage in opportunistic behaviour (Bendickson, Muldoon, Liguori & Davis, 2016; Allam, 2018). Information asymmetries emerge because principals can only monitor agents' competencies, intentions, knowledge, and actions at high costs (Bendickson *et al.*, 2016; Schauble, 2019). The hiring of professional agents exacerbates information asymmetry concerns, as principals often do not know how agents perform their tasks (Cuevas-Rodríguez, Gomez-Mejia & Wiseman, 2012). Therefore, it is unsurprising that information asymmetry is positively associated with fair value measurements, especially when based on management's internal models and assumptions, as these measurements require a level of expertise (Liao et al., 2013).

The IASB admits that the inputs of Level 3 fair values require preparers of financial statements (agents) to use the best available information. This might include using the company's data adjusted for assumptions that market participants would make when pricing specific assets or liabilities (IASB, 2011). The use of company data and management's assumptions about market participants maximises the information asymmetry between preparers (agents) and users (mainly principals) of financial information for Level 3 inputs, as the capacity to verify the information and assumptions by preparers is limited (Palea & Maino, 2013; Song *et al.*, 2010). Consistent with agency theory's information asymmetry assumptions, Hassan (2006) suggests that managers are likely to advance their interest when allowed to use their discretion to assign fair value measurements to assets and liabilities that do not have an active market (i.e., Level 2 and Level 3 fair values). To overcome problems triggered by the agency relationship, the agency theory further suggests that principals can reduce information asymmetry by implementing mechanisms to monitor agent behaviour and ensure that agents pursue the principal's goals (Cuevas-Rodríguez *et al.*, 2012).

The agency theory of corporate governance holds that unless appropriate internal corporate governance structures and controls for monitoring are established, management (agents) will act in their self-interest, stifling the growth of shareholder wealth (Jensen & Meckling, 1976). The information and knowledge asymmetries and the lack of transparency that characterise agency relationships compel principals to monitor agent's behaviour (Cuevas-Rodríguez *et al.*, 2012). Corporate governance represents an important monitoring concept that arose from asymmetries in agency relationships (L'Huillier, 2014; Esqueda & O'Connor, 2020). Claessens and Yurtoglu (2013) view corporate governance as a set of mechanisms that firms implement when ownership is separated from management exposes the central focus of corporate governance, i.e., to minimise agency conundrum.

The literature has reported that corporate governance mechanisms support effective monitoring of management's behaviour. Habib and Azim (2008) and Campa and Donnelly (2014) show that robust corporate governance structures constrain earnings management by managers, hence the accounting information from such firms are more credible and more value relevant. Aboody, Barth and Kasznik (2006) also found that option value estimates are less likely to be understated in firms with more robust corporate governance structures. In essence, while agency theory suppositions that managers prioritise their interests above those of shareholders remain compelling, corporate governance structures curtail these inclinations by aligning the interest of both parties (Buertey *et al.*, 2019). Given that corporate governance increases financial information credibility and aligns principal-agents interests (Waweru,

2014), its implementation could enhance the value relevance of unverifiable fair value measurements of Level 2 and Level 3 fair values, especially in a developing market (Habib & Azim, 2008; Buertey et al., 2019).

2.2 IFRS 13 – Fair Value

According to the IFRS Conceptual Framework for Financial Reporting, relevance is one of the two fundamental qualitative characteristics that boosts the usefulness of financial information (IASB, 2020). Financial information is relevant if it makes a difference in users' decision-making (IASB, 2020). However, the relevance of fair value information has attracted considerable debate. On the one hand, proponents of fair value information argue that financial statements measurements based on the prices that reflect current market assessment inform investors about forgone opportunities arising from management's decision to continue to hold assets or owe liabilities (Koonce et al., 2011). On the other hand, critics contend that fair value is a hypothetical value that reflects the fair conditions and positions of all market participants (Dixon & Frolova, 2013). This reduces the reliability of accounting information, particularly in the absence of an active market where fair value is measured based on inputting the best information available into an appropriate valuation technique (Procházka, 2011). Fair value measurement has often been applauded for its ability to reflect the markets' assessment of assets and liabilities and offering an improved base for prediction and thus more relevant. However, it has been criticised for its excess volatility and thus uncertainty, as any changes in expected future cash flows impact its measurement (Carroll, Linsmeier & Petroni, 2003; Khan, 2019; Liang & Riedl, 2014). Another prominent criticism against fair value is that it allows managers to use discretion. This presents openings for managers to act opportunistically to advance their interests (Hassan et al., 2006). These debates highlight the importance of the choice of fair value in accounting treatment for different assets and liabilities. Such a choice could significantly impact company valuations due to the volatility that fair value measurement produces in both the income statement and statement of financial position (Jaijairam, 2013).

In response to criticisms, the IFRS strengthened the requirement for fair value measurements of certain assets and liabilities (Khan, 2019). A central explanation for the intervention is to provide useful information for the valuation of companies, consistent with the objectives of the Conceptual Framework for financial reporting than other measurement bases for both financial assets and liabilities (IASB, 2020; Kothari, Ramanna & Skinner, 2010; Procházka, 2011). Palea and Maino (2013) and Barth (2014) contend that fair value enhances

the transparency of financial statements, which subsequently amplifies the value relevance of accounting information as users can value companies by discounting the markets' future expected cash flows. In their literature review, Barth et al. (2001) observe that fair value measurement of financial assets and liabilities positively correlates with equity market value. Jaijairam (2013) echoes similar findings, concluding that fair value accounting reflects the current value of financial assets and liabilities as of the market, hence its superiority to historical cost accounting. These conclusions, indicating that fair value measurements are more value relevant than historical costs, mirrors the views of standard setters.

The increased requirement (i.e., IFRS 13) issued in 2011 by the IASB provides the definition, framework, and detailed guidance on fair value measurement (IASB, 2011; Palea & Maino, 2013; Sundgren, Mäki & Somoza-López, 2018). IFRS 13 describes fair value as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date" (IASB, 2011). The fair value standard further requires that the market approach be employed when assessing fair value in the absence of an observable market (IASB, 2011; Palea & Maino, 2013). IFRS 13 further requires that fair value be disclosed in hierarchy levels that reflect the inputs used in determining the fair value measurements (IASB, 2011). The fair value inputs hierarchy levels disclosure attempts to enhance the consistency and comparability in fair value measurements.

The fair value hierarchy of IFRS 13 has allowed researchers to examine the value relevance of fair value when there are both active markets (Level 1 and Level 2) and inactive markets (Level 3). Existing research into this matter yields conflicting findings. Using a closed-end fund setting, Lawrence, Siriviriyakul and Sloan (2015) found insignificant differences in the value relevance of Level 1, Level 2 and Level 3 measurements. Similarly, Altamuro and Zhang (2013) found that when the market is illiquid, and there is irregular trading, the valuation of mortgage servicing rights based on management's input and expertise better reflects the underlying cash flows than valuations relying on market inputs. However, Song *et al.* (2010) found that whilst all fair value level information is value relevant, Level 3 fair values exhibit less value relevance than Level 1 and Level 2 fair values in a developed economy. When examining the influence that fair value measurement bears on financial analysts' ability to forecast earnings, Magnan, Menini and Parbonetti (2014) report that Level 3 fair values increase analysts' forecast dispersion. This suggests that managers act opportunistically in their use of inputs for measuring fair values that are not necessarily available in the market. Arora,

Richardson, and Tuna (2013) also show that Level 2 and Level 3 financial assets constitute considerable elements of short-term credit spreads and shape of general credit term structure, implying that less reliable assets increase short-term credit risk. Arora et al. (2013) conclusions are fundamental to this study, as the expected prevalence of Level 2 and Level 3 fair value assets in the developing economy could potentially contribute to high short-term credit risk, explaining the challenges faced in securing funding in these economies.

2.3 Hypotheses Development

Shareholders assume that managers are motivated by self-interest and exhibit opportunistic tendencies when presented with opportunities such as valuing fair value assets and liabilities of Level 2 and Level 3 fair values (Dierksmeier, 2019). Managers have been found to display intentional bias in their estimation when allowed to use discretion and highly subjective accounting information (Aboody *et al.*, 2006). Level 3 fair values are subject to higher information asymmetry than Level 1 and Level 2 fair values as their valuation derive from company-specific data and management's assumptions about market participants (Palea & Maino, 2013; Song *et al.*, 2010). Investors typically place less importance on fair value measurements that they perceive to possess greater uncertainty (i.e., Level 3) and higher weight on fair value measurements that could be verified easily (i.e., Level 1) (Song *et al.*, 2010). Since shareholders are believed to value financial information that is based on an active market more than financial information produced by management based on company-specific data, we articulate our first hypothesis:

H1: *The value relevance of Level 1 and Level 2 fair values is greater than the value relevance of Level 3 fair values*

As noted previously, corporate governance mechanisms help curtail managements' opportunistic behaviours and align the interests of managers to those of investors, especially in financial accounting reporting (Aboody *et al.*, 2006; Buertey *et al.*, 2019; Hassan, 2006). Investors could thus increase the importance placed on Level 3 fair value measurements for firms with robust corporate governance systems compared to companies with weak corporate governance structures (Zhang, Chong & Jia, 2020; Thesing & Velte, 2021). Therefore, we hypothesise:

H2: *Strong corporate governance mechanisms increase the value relevance of Level 3 fair values.*

3. Methodology

The study adopts a quantitative research approach to observe the market's reaction to changes in fair value hierarchy levels and corporate governance mechanisms. Besides, this approach permits the control of variables other than those explored in this study, which could trigger changes in the market's reaction. The study population comprises financial firms listed on the JSE for the 2013–2018 financial year-ends. These firms are obliged by the JSE listing requirements to comply with the IFRS and the principles of the King Report (JSE, 2020). Selecting the data from 2013 ensures consistency in fair value measurements across firms as IFRS 13 became effective from January 2013 (IASB, 2011). Additionally, the 2013–2018 timeframe enables an impact analysis of corporate governance mechanisms on fair values as outlined in King Reports III and IV, which were implemented in March 2010 and April 2017, respectively (Buertey *et al.*, 2019).

Because firms in the financial sector disclose significant amounts of assets and liabilities at fair value, the study focuses on the financial sector which is consistent with prior research (Goh, Li, Ng & Ow Yong, 2015; Siekkinen, 2016; Song *et al.*, 2010). The financial sector is divided into four industries based on the Standard Industrial Classification (SIC) codes of companies available from DataStream. The SIC codes allow for reliable standard comparisons of industries that are internationally accepted. By considering only the primary SIC listing of the JSE listed companies and SIC codes 60–67, the financial sector is grouped into four primary industries: banks (SIC 6029), financial services (SIC 6099; 6141; 6159; 6211; 6231; 6282; 6311 and 6726), insurance (SIC 6311; 6324; 6331 and 6411) and real estate (SIC 6282; 6331; 6512; 6513 and 6531).

In creating the study's unique dataset, relevant financial and corporate governance information was collected from the JSE, IRESS, DataStream and individual firms' annual reports. Information about the study's main variable, the South African Rand (ZAR) value per level of the fair value hierarchy, was hand collected from published annual reports, available on company websites. Our initial data collection procedure produced an initial sample of 103 firms in the financial sector generating 618 firm-year observations between 2013 and 2018 (see Table 1). From this initial sample, firms with no assets and liabilities measured at fair value or with insufficient data on fair value hierarchy amounts in their notes were excluded from the sample. This led to a drop of 50 firms (300 firm-year observations). On further scrutiny of the dropped

firms, we realised they are relatively small in size. The remaining 53 firms (318 observations) were matched with available data on other variables on DataStream and IRESS. This led to a further drop of 100 observations (approximately 17 firms) as these firms did not have price data on either DataStream or IRESS. The sampling process yielded a final sample of 218 unique firm-year observations for testing hypotheses H1 and H2. In summary, our choice of 218 panel observations for our analysis is due to completeness in variables measured and data availability which is consistent with prior research (e.g., Goh, Li, Ng & Ow Yong, 2015; Siekkinen, 2016; Song *et al.*, 2010). To mitigate the effects of outliers, all variables were winsorised at the 1% and 99% percentile by applying the lowest (highest) observation to the top (bottom) outliers. Table 1 summarises the final sampling across different financial industry groupings/classification.

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Table 1 about here

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The notes to the financial statements provide specific information on fair value measurement and analysis, wherein the fair value amounts of financial assets and liabilities are disclosed per hierarchy level, as prescribed by IFRS 13. Only the values for assets and liabilities measured and recognised at fair value were noted in the study's dataset. The amounts of assets or liabilities not measured at fair value but disclosed were excluded in the fair value assets (FVA) and fair value liabilities (FVL) amounts, allowing the fair value variables to only reflect the assets and liabilities measured at fair value. The disclosed fair value assets and liabilities were captured in the non-fair value assets (NFVA) and liabilities (NFVL), respectively, as these were measured on other non-fair value bases. This hand collected information is deemed reliable, and the firms compare to each other, as most of them disclose these amounts in a detailed and easily understood format. The hand collection for these variables is consistent with prior research (see for example, Goh, Li, Ng & Ow Yong, 2015; Siekkinen, 2016; Song *et al.*, 2010).

The modified Ohlson (1995) model is often used in value relevance studies, as firm value is represented as a linear function of the book value of equity. Song *et al.* (2010) contend that a significant association between accounting numbers and market value of equity indicates that the accounting numbers are relevant and reliable enough to reflect the firm value. Likewise, in examining whether accounting amounts explain cross-sectional variation in firm

value, value relevance studies employ either the price levels or returns model to assess what is reflected in firm value and what is reflected in changes in value (Barth et al., 2001). This study adopts a price model rather than a returns model to test the hypotheses as the research objective emphasise whether fair value hierarchy information is reflected in firm value.

The residual income approach or modified Ohlson (1995) model assumes that the market value of equity (MVE) equals the book value of equity (BVE) plus residual income (RI) and other information dynamics (ε). This linear relationship is expressed in the following equation:

$$MVE_{it} = \alpha_{0+} \beta_1 BVE_{it} + \beta_2 RI_t + \varepsilon_{it} \quad (1)$$

β_1 and β_2 are valuation coefficients reliant on interest rates and residual income. The model assumes perfect markets but permits imperfect product markets for a finite number of periods (Ohlson, 1995). However, in the absence of perfect and complete markets, where fair value is not unique, and management possesses private information that may affect the market price, residual income (RI) can capture these dynamics (Barth & Landsman, 1995). Consistent with Barth and Landsman (1995) and the model used by Song *et al.* (2010) and Siekkinen (2016), the book value of equity is stratified as non-fair value assets (NFVA) and liabilities (NFVL), and fair value assets (FVA1,2,3) and liabilities (FVL1,2,3) for each fair value hierarchy level and earnings (NI). In addition, to reduce the scaling effects of the Ohlson (1995) model, all variables were deflated by total assets at the reporting date (Barth & Clinch, 2009). To test for H1, the following equation is used:

$$PRC_{it} = \alpha_0 + \beta_1 NFVA_{it} + \beta_2 FVA1_{it} + \beta_3 FVA2_{it} + \beta_4 FVA3_{it} + \beta_5 NFVL_{it} + \beta_6 FVL1_{it} + \beta_7 FVL2_{it} + \beta_8 FVL3_{it} + \beta_9 NI_{it} + \varepsilon_{it} \quad (2)$$

The dependent variable, PRC_{it}, is the market price for firm *i* three months after the financial year *t,* scaled by total asset at financial year-end. At three months after the financial year-end, the market price ensures that the accounting information at year-end has been absorbed by investors (Barth, Landsman, Young & Zhuang, 2014). $FVA1_{it,}$ $FVA2_{it}$ and $FVA3_{it}$ ($FVL1_{it,}$ $FVL2_{it}$ and $FVL3_{it}$) are the fair value of assets (liabilities) scaled by total assets of firm *i* related to Levels 1, 2 and 3 of the fair value hierarchy at the end of the financial year *t.* $NFVA_{it}$ ($NFVL_{it}$) is the non-fair value of assets (liabilities) scaled by total assets of firm *i* at the end of the financial year *t.* It is computed as the difference of total assets (liabilities) obtained from DataStream and FVA_{it} (FVL_{it}) for firm *i* at the end of financial year *t.* NI_{it} is the net income, scaled by total assets, of firm *i* at the end of the financial year *t.*

Fair value assets levels ($FVA1_{it,}$ $FVA2_{it}$ and $FVA3_{it)}$ are considered value relevant if their coefficients are significantly different from zero (Siekkinen, 2016; Song *et al.*, 2010). Similarly, fair value liabilities levels ($FVL1_{it,}$ $FVL2_{it}$ and $FVL3_{it}$) are considered value relevant if their coefficients are significantly different from zero. The fair value amounts of all fair value hierarchy levels are expected to be value relevant.

The next test is to determine whether investors place different weights on the value relevance of fair values that are exposed to higher information asymmetry, Level 2 and Level 3 fair values, depending on the strength of corporate governance mechanisms. As a developing country, South Africa adopts a broader stakeholder approach to its corporate governance, thus placing the board as the focal point of the corporate governance system (Mangena & Chamisa, 2008). The focus on the board is demonstrated by recommendations by both King III and King IV (IoDSA, 2009; IoDSA, 2016) that there should be:

- a unitary board structure with a balance between executive and non-executive directors, preferably with a majority of non-executive directors, of whom a sufficient number should be independent.
- separation of the roles of the chairperson and the chief executive officer; and
- formation of at least audit and remuneration committees, dominated and chaired by independent non-executive directors, while the audit committee needs to demonstrate financial expertise.

The corporate governance pillar score (CGS) of firms available on DataStream is a good proxy for the strength of corporate governance mechanisms. This is because it holistically measures the systems and processes that ensure that board members and executives act in the best interest of their investors (Ingley & van der Walt, 2003). The construct of governance quality is thus summarised (Buertey *et al.*, 2019). The use of the holistic variable of corporate governance in this study, as opposed to multiple variables measuring the different characteristics of corporate governance, is advantageous. It provides a single measure for all the underlying corporate governance and reduces random measurement errors that exist when using individual corporate governance variables (Song *et al.*, 2010). An extension of equation 2, as below, is used to test H2:

$$PRC_{it} = \alpha_0 + \beta_1 NFVA_{it} + \beta_2 FVA1_{it} + \beta_3 FVA2_{it} + \beta_4 FVA3_{it} + \beta_5 NFVL_{it} + \beta_6 FVL1_{it} + \beta_7 FVL2_{it} + \beta_8 FVL3_{it} + \beta_9 FVA1_{it} \times CGS_{it} + \beta_{10} FVA2_{it} \times CGS_{it} + \beta_{11} FVA3_{it} \times CGS_{it} + \beta_{12} NI_{it} + \beta_{13} CGS_{it} + \varepsilon_{it} \quad (3)$$

All variables are similar to those in equation 2, with the interaction and addition of variable CGS, which is the strength of corporate governance mechanisms, obtained from DataStream, employed by firm *i* in financial year *t*. The CGS variable reflects a dummy variable of 1 for corporate governance scores of 50 and above and 0 for corporate governance scores of less than 50. As with equation 2, all variables are scaled by total assets at financial year-end, except for the CGS variable. Robust corporate governance mechanisms tend to have had a significant influence on fair value hierarchy levels if the coefficients of the fair values with and without the interactive terms are significantly different from zero. The expected result is that corporate governance measures will increase the value relevance of fair value amounts.

4. Findings and Discussion

Table 2 Panel A provides summary statistics of the variables and the relative size of fair value estimates in each category per industry. As indicated, the insurance industry recognises most of its assets (85.88%) and liabilities (50.96%) at fair value, followed by the financial services industry with a fair value asset representing 39.67% of total assets and fair value liabilities representing 31.95% of total liabilities. The banking industry recognises 28.43% of assets at fair value and 14.15% of its liabilities at fair value. Lastly, the real estate industry recognises the lowest fair values in the sample, with 14.15% of assets recorded at fair value and only 2.65% of the liabilities recognised at fair value. The majority of the fair value assets in the financial services (23.8% of 39.67%) and insurance industries (52.22% of 85.88%) are measured at Level 1 fair value hierarchy, suggesting that an active market exists for most of the fair value measurements in these industries. However, in the banking industry, most fair value assets are measured at Level 2 (13.72% of 28.43%) fair value hierarchy, implying that most of the fair value measurements in banks are based on valuation techniques using adjusted market-based inputs. The real estate industry recognises the majority of its fair value assets at the Level 3 fair value hierarchy (13.25% of 14.15%), indicating that the fair values of the real estate industry are measured by using management inputs. The high Level 3 fair value assets in real estate could be because most of the fair value assets in this industry comprise investment properties. However, the banking, financial services and the insurance industry have Level 3

fair value assets as the lowest recognised hierarchy, at 4.73%, 2.83% and 4.06%, respectively, indicating that fair value measurements based on management inputs are the least in both industries. Finally, fair value liabilities are represented mainly by Level 2 fair value measurements across all industries, suggesting a lack of an active market in liabilities.

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Table 2 about here

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Reflecting on the sample, Panel B of Table 2 suggests that the banking industry hosts the most fair value measurements of assets (liabilities), at 14.84% (7.09%) representation, followed by the financial services industry at 12.21% (7.23%) and lastly, the insurance industry at 8.42% (4.5%). The high fair value representation of the banking, financial services and insurance industries are consistent with expectations, as financial instruments constitute the primary operating structure of companies in these industries (Siekkinen, 2016). The real estate industry exhibits the lowest representation of fair value measurements, with 1.02% of fair value assets and 0.5% of fair value liabilities. The different industry representations indicate that fair value measurements have economic importance.

Table 3 provides a summary of the central tendencies of the variables used in the regressions. As expected, not all companies recognise all the levels of fair value assets and liabilities, as demonstrated by the zero minimum values (Siekkinen, 2016). Fair value asset Level 1 (FVA1) has a mean value of R0.11 per total assets, followed by fair value asset Level 2 (FVA2) at R0.12 per total assets and lastly, fair value asset Level 3 (FVA3) at R0.11 per total assets. Fair value liabilities Level 2 (FVL2) displays the highest mean value of R0.16 per total assets, followed by fair value liabilities Level 1 (FVL1), with a mean of R0.06 per total assets, and fair value liabilities Level 3 (FVL3) at a mean of R0.02 per total assets. The mean price per asset of the sample is R0.61, while the mean of NFVA per total assets, NFVL per total assets and NI per total assets are R0.67, R0.42 and R0.04, respectively.

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Table 3 about here

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Table 4 provides correlation coefficients of the main test variables. The correlation matrix allows for an analysis of the strength and direction of the relationships between the

variables. The upper diagonal illustrates Pearson correlation coefficients. The lower diagonal presents Spearman correlation coefficients. The Pearson's correlations are parametric, assuming a linear relationship between variables and using raw data, but Spearman's correlation tests are non-parametric as there is no assumption of distribution, and a monotonic relationship between variables is evaluated using ranked values (Bishara & Hittner, 2012). However, these correlations tests are complementary and thus enable a more comprehensive analysis of the correlation among the variables. The numbers in bold (Table 4) indicate significance at the 0.05 level (two-tailed test).

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Table 4 about here

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Table 4 indicates that NFVA is positively associated with PRC, although at an insignificant level, for both the Pearson and Spearman correlations. NFVL is, as expected, negative and significantly associated with PRC at a 0.05 level (two-tailed) for the Pearson and Spearman correlations. The NI has, per expectations, a significantly positive correlation in the Pearson and Spearman correlations. Fair value assets (FVA1, FVA2 and FVA3) are negatively correlated with NI and PRC in both Spearman and Pearson correlations tables, suggesting that fair value assets do not contribute to income generation. The negative correlation of fair value assets to NI and PRC could be ascribed to the fact that most of the fair value assets in the sample are represented by banks and financial services (see Table 2, Panel B) that do not derive most of their income from fair value assets. The insurance and real estate industries, in contrast, generate most of their incomes from fair value assets. Untabulated results of both the Pearson and Spearman correlations of only the insurance and real estate industries indicate positive correlations of fair value assets with NI and PRC. Also, FVL1 and FVL2 negatively correlate with PRC, at a significant level in the Spearman correlation and an insignificant level in the Pearson correlation. Although the Pearson correlation indicates an insignificant positive relationship between PRC and FVL3, the Spearman correlation indicates a significantly negative relationship between these two variables. We further note the correlation between PRC and CGS. Since robust corporate governance structures have been previously reported to increase financial information credibility and align managers' and shareholders' interests (see Buertey *et al.*, 2019 and Habib & Azim, 2008), CGS is expected to be significantly positively correlated with PRC. However, both the Pearson and Spearman correlations reveal a

statistically insignificant negative relationship between PRC and CGS, suggesting that robust corporate governance structures do not increase firm valuations.

Hypothesis 1 investigates whether the value relevance of Level 1 and Level 2 fair values are greater than the value relevance of Level 3 fair values. Table 5 presents the results of equation 2, testing whether the coefficients are significantly different from zero for fair value assets and liabilities. As expected, NFVA (t = 2.799) and NFVL (t = -6.804) are statistically significant from zero at a 0.01 level (two-tailed), and thus value relevant. Similarly, NI (t = 4.869) is also positively associated with PRC at a 0.01 significance level (two-tailed), suggesting that investors consider net income when valuing companies. The estimated coefficients for fair value assets are greater than zero, consistent with the evidence in Barth *et al.* (2001) that fair value measurements of financial assets and liabilities have a positive association with equity market value, thus offering useful information to investors. However, FVA1 (t = 1.633) is not statistically significant and thus not value relevant, whilst FVA2 (t = 3.013) and FVA3 (t = 2.716) are statistically significant at a 0.1 level (two-tailed) and thus value relevant. Fair value liabilities reflect coefficients less than zero, as expected. However, FVL1 (t = -0.775) is not statistically significant and thus not value relevant, whilst FVL2 (t = -2.895) and FVL3 (t = 2.020) are statistically significant and thus value relevant. Therefore, only FVA (FVL) Level 2 and Level 3 are value relevant.

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Table 5 about here

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The insignificant and non-relevant results of FVA1 and FVL1 are interesting as they contradict IFRS 13 and some extant literature. According to IFRS 13 and some literature (e.g., Song et al., 2010; Koonce et al., 2011; Arora et al. 2013), Level 1 fair value measurements offer the most reliable outputs of fair value that inform investors about forgone opportunities. However, our study finds that investors do not consider Level 1 fair values as relevant in an inactive market, as they are concerned with the reliability of market-based inputs due to the lack of active market prices in developing economies. This investor reaction to Level 1 fair values is consistent with Carroll et al. (2003), Liang and Riedl (2014) and Khan (2019) that fair value measurements are subject to the highest volatility and uncertainty, particularly in markets with irregular market trading, where trading is less transparent, and the conditions of

buyers and sellers are often unfair. The insignificant results of FVL1 suggest that investors do not trust markets in developing countries as they ignore market-based fair value measurements when valuing South African firms. Our findings also connect with Altamuro and Zhang (2013), who imply that investors do not consider Level 1 fair value measurements to reflect firm performance in markets with irregular trading. Our findings further suggest that despite concerns about using information in a biased manner, investors consider management's inputs to be more reliable due to their information advantage in an inactive market.

In addition, the coefficients of fair value assets and liabilities were compared to ascertain the relative value relevance of the different fair value levels. This comparison was performed using the test significance estimation method (t-test). The null hypothesis of this test is that the difference in the variables is equal to zero (e.g., FVA1 - FVA2 = 0), whereas the alternative hypothesis posits that the difference in variables is not equal to zero. The bottom section of Table 5 presents tests determining whether the variables across the different levels are equal. The results of the t-tests show that the variables across all levels of fair value levels for assets and liabilities are significantly different, indicating that they exhibit different characteristics. Consistent with the findings of Song *et al.* (2010) and the agency theory assumption of information asymmetry, investors place less weight on fair value asset Level 3 ($\beta = 1.615$) than they do for Level 2 ($\beta = 1.880$) fair value assets. Since Level 3 fair value assets possess the highest information asymmetry, this result suggests that investors prefer a mixture of both market and management input when valuing firms based in an inactive market. On the other hand, investors place less weight on Level 2 ($\beta = -0.588$) fair value liabilities than they do on Level 3 ($\beta = -0.661$) fair value liabilities, indicating that investor value managements' input more than an inactive market. Therefore, H1 is only supported by the results of Level 2 and Level 3 fair value measurements.

Hypothesis 2 examines whether strong corporate governance mechanisms are positively associated with fair value hierarchal disclosures and thus increase the value relevance of particularly fair value Level 3 measurements. The design of H2 was limited to fair value assets because the frequency of fair value assets substantially exceeds those of fair value liabilities (see Table 2, Panel B). To test the association of corporate governance structures and fair value hierarchal disclosures, the sample was split into high (CGS ranking above 50%) and low (CGS ranking below 50%) corporate governance ranking firms. Table 6 outlines the results from equation 3. The coefficients of FVA1, FVA2 and FVA3 without the interaction terms can

be interpreted as the valuation of fair value assets for firms with low corporate governance scores. The fair value assets with the interaction terms can be interpreted as the incremental benefit of having high (above a 50% ranking score) versus low (below a 50% ranking score) corporate governance mechanisms. The results indicate that similar to the results of equation 2, NFVA (t = 2.664), NFVL (t = -6.917) and NI (t = 4.708) are all statistically different from zero at a 0.01 level (two-tailed). CGS is positively associated with PRC but at an insignificant level (t = 0.271) and is therefore not value relevant. This suggests that, although investors consider corporate governance structures on their own, they are not enough to impact the pricing of South African firms. Our findings are consistent with Tshipa *et al.* (2018), which found that certain corporate governance variables do not help in increasing South African firms' valuation.

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Table 6 about here

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The results of companies with low corporate governance mechanisms indicate that FVA2 (t = 2.790), FVA3 (t = 2.741), FVL2 (-2.853) and FVL3 (t = -2.024) are statistically significant and thus value relevant. However, as with the results in Table 5, the coefficients of FVA1 (t = 1.644) and FVL1 (t = -0.607) are not statistically different from zero and thus not value relevant. The increase in the weighting of FVA3 of β = 0.067 (1.682 – 1.615) from Table 5 to Table 6 does not statistically improve the value relevance of FVA3, as the significance level remains at 0.01 (two-tailed). The insignificant change in the weight that investors put on Level 3 fair value measurements suggests that low corporate governance structures do not affect the pricing of South African firms.

In contrast, the results for firms with high corporate governance structures indicate the interaction terms of FVA1 (t = -1.045), FVA2 (t = 1.044) and FVA3 (t = -1.198) to be statistically insignificant and thus not value relevant, contrary to expectations. The results in Table 6 indicate that fair value assets lose their value relevance in a high corporate governance structures environment. Furthermore, the negative coefficients of the interaction terms of FVA1 (β = - 0.710) and FVA3 (β = -0.380) with CGS are interesting as they go against the natural theoretical prediction of the accounting equations that equity is equal to assets less liabilities. Our finding contradicts Habib and Azim (2008), which report that stronger corporate

governance mechanisms increase the value relevance of accounting information. Since investors already value Level 3 measurements without considering corporate governance structures (see results of equation 2), the insignificance of FVA coefficients in firms with robust corporate governance suggests that investors rely on other factors (e.g., additional disclosures requirements by IFRS 13 on Level 2 and Level 3 fair value measurements and audit reports) when evaluating the reliability of fair values among South African firms. The IASB could leverage these findings as they re-assess disclosure information under IFRS 13 to improve the usefulness of financial statements for users. Therefore, the results of equation 3 do not support H2.

5. Summary and Conclusion

Employing regression analysis, we test whether fair value Level 1 and Level 2 measurements are more value relevant than Level 3 fair value measurement in an inactive market. We also test whether corporate governance mechanisms increase the value relevance of fair value measurement with high information asymmetry (Level 3 fair value). We draw on the assumptions of the agency theory that agents (managers) have information and knowledge advantage compared to principals (investors) and are more likely to behave opportunistically when faced with decisions that involve judgement. We further note that investors value transparent information, as they do not trust the discretion of managers.

Contrary to the agency theory, results indicate that investors in an inactive market value management inputs more than market (more transparent) information. This could be partly due to the irregular trading and/or absence of an active market for most assets and liabilities. Furthermore, the results reveal that corporate governance structures are not essential to investors when pricing fair value measurement. This suggests that investors rely on factors other than corporate governance structures (e.g., IFRS 13 disclosure) when pricing fair value measurements in an inactive market.

Our study is informative to standard setters and preparers of financial information. We show that, despite the views of the IASB that more transparent financial information is valuable to investors, investors in inactive markets value the inputs of management more than those of the market. The IASB, in their reconsideration of useful disclosures for IFRS 13, should consider the investors in developed or active markets and how these current disclosures benefit

the valuation of companies in developing economies. Furthermore, these findings encourage preparers of financial information to increase their care and diligence when reporting and particularly disclosing fair value information in their financial reports. Though the disclosure requirement of IFRS 13 on less observable fair value measurements has been found to be costly, in an inactive market, these costs are rewarded by investors in firm valuations.

Although this research has important implications, the study has limitations that present opportunities for future research. For instance, while we find that investors do not rely on corporate governance structures when valuing fair value measurements and suggest that they rely on IFRS 13 disclosures, we did not include IFRS 13 disclosures as a variable in our regression analyses.

In addition, the study only sampled firms in the financial sector. Thus, the results may not be generalisable to other sectors. We also note that the small sample size affected the statistical power of the research and could have impacted the findings. The study results were not tested for the possible impact of confounding factors such as the size, capital ratio or other potential factors influencing the value relevance of fair values.

Finally, while the current study used a holistic corporate governance variable, future research could analyse the impact of the individual corporate governance variables to establish the specific corporate governance variables that investors consider when valuing fair value hierarchy information. A pre-and post-King IV effect of corporate governance on the value relevance of fair values is also a possible area for future research that this study did not address. Such investigation would highlight whether the investors' views of corporate governance structures changed as the country moved from King III to King IV. A pre-and post-King IV study would also inform the IDoSA of the incremental value of their efforts to enhance corporate governance structures on financial information.

Notes

Compliance with Ethical Standards

Conflict of interest

The authors of this research declare that they have no conflict of interest.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Animal Rights Statement

This article does not contain any studies with animals performed by any of the authors.

Informed Consent

This study relied on publicly available data.

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Tables

Table 1: Sample process

Process	No. of observations
Observations for all companies on the JSE (2013–2018)	618
Less: Observations with no fair value measurements and insufficient data on fair value hierarchy levels in financial statement notes	(193)
Less: Observations with no price data	(105)
Less: Observations with fair value assets higher than total assets	(102)
Sample used to test equations 2 and 3	218

Table 2: Descriptive statistics - relative size of fair value assets and liabilities

Panel A: Size of fair value assets and liabilities per industry

Variable	n	Bank	Financial Services	Insurance	Real Estate
FVA/Total Assets per industry	218	**28.43%**	**39.67%**	**85.88%**	**14.15%**
FVA1/Total Assets per industry	218	9.98%	23.82%	52.22%	0.67%
FVA2/Total Assets per industry	218	13.72%	13.03%	29.61%	0.23%
FVA3/Total Assets per industry	218	4.73%	2.83%	4.06%	13.25%
FVL/Total Liabilities	218	**15.04%**	**31.95%**	**50.96%**	**2.65%**
FVL1/Total Liabilities per industry	218	1.39%	7.07%	6.05%	0.41%
FVL2/Total Liabilities per industry	218	13.24%	24.36%	44.48%	1.91%
FVL3/Total Liabilities per industry	218	0.41%	0.51%	0.43%	0.33%

Panel B: Size of fair value assets and liabilities per industry to total sample

Variable	n	Bank	Financial Services	Insurance	Real Estate
FVA/Total Assets	**218**	**14.84%**	**12.21%**	**8.42%**	**1.02%**
FVA1/Total Assets	218	5.21%	7.33%	5.12%	0.05%
FVA2/Total Assets	218	7.16%	4.01%	2.90%	0.02%
FVA3/Total Assets	218	2.47%	0.87%	0.40%	0.96%
FVL/Total Liabilities	**218**	**7.09%**	**7.23%**	**4.50%**	**0.50%**
FVL1/Total Liabilities	218	0.65%	1.60%	0.53%	0.08%
FVL2/Total Liabilities	218	6.24%	5.51%	3.93%	0.36%
FVL3/Total Liabilities	218	0.19%	0.12%	0.04%	0.06%

Table 2 – Descriptive statistics – relative size of fair value assets and liabilities

The table above provides the descriptive statistics for all the main variables used in the regression equation for the sample period 2013–2018 resulting in 218 observations. FVA (FVL) indicates total fair value of assets (liabilities) per total assets. FVA1 (FVL1) indicates fair value of Level 1 assets (liabilities) per total assets. Similarly, FVA2, FVA3, FVL2, and FVL3 are fair values of Level 2 and Level 3 assets and liabilities per total assets. Panel A provides the descriptive statistics on the relative size of fair value assets and liabilities by Level per industry divided by the total assets in their respective industries. Panel B provides the descriptive statistics on the relative fair value levels per industry divided by total assets of the sample.

Table 3: Descriptive statistics - central tendencies

Variable	N	Mean	Std. Dev	Min	Max	Percentiles		
						25th	50th	75th
FVA1	218	0.11	0.18	-	0.72	-	0.03	0.11
FVA2	218	0.12	0.18	-	0.83	0.00	0.01	0.21
FVA3	218	0.11	0.25	-	0.99	-	0.01	0.05
FVL1	218	0.06	0.31	-	3.28	-	-	0.01
FVL2	218	0.16	0.27	-	2.02	0.00	0.01	0.24
FVL3	218	0.02	0.11	-0.45	0.98	-	-	0.00
NFVA	218	0.67	0.41	0.01	3.28	0.32	0.76	0.99
NFVL	218	0.42	0.32	-	2.02	0.13	0.37	0.72
NI	218	0.04	0.12	-1.23	0.84	0.01	0.02	0.07
PRC	218	0.61	0.63	-	4.18	0.13	0.39	0.90
CGS	218	0.23	0.42	-	1.00	-	-	-

Table 3 – Descriptive statistics – central tendencies

Table 3 provides descriptive statistics on the central tendencies of the variables used in the regressions for the sample period 2013–2018 resulting in 218 observations. FVA (FVL) indicates total fair value of assets (liabilities) per total assets. FVA1 (FVL1) indicates fair value of Level 1 assets (liabilities) per total assets. Similarly, FVA2, FVA3, FVL2, and FVL3 are fair values of Level 2 and Level 3 assets and liabilities per total assets. NI is income scaled by total assets. PRC is market price three months after year end scaled by total assets. With the exception of CGS, all other variables are scaled by total assets at year end. CGS is a dummy variable, with 1 indicating CGS ranking equal and above 50% and 0 indicating CGS ranking below 50%.

Table 4: Pearson (Spearman) correlations in upper (lower) triangle

	FVA1	FVA2	FVA3	FVL1	FVL2	FVL3	NFVA	NFVL	NI	PRC	CGS
FVA1		**0.348****	-0.163*	0.057	**0.289****	-0.078	**-0.518****	0.037	-0.105	**-0.263****	-0.043
FVA2	**0.589****		-0.165*	-0.061	**0.333****	-0.072	**-0.520****	-0.037	-0.090	-0.088	-0.085
FVA3	**0.187****	**0.319****		-0.085	0.066	-0.065	**-0.501****	**-0.190****	0.136*	0.111	0.010
FVL1	**0.554****	**0.324****	0.084		**0.616****	-0.099	**0.463****	**0.394****	-0.036	-0.044	-0.042
FVL2	**0.466****	**0.466****	**0.316****	**0.498****		-0.109	-0.056	0.116	-0.104	-0.149*	-0.084
FVL3	**0.349****	**0.339****	0.131	**0.293****	**0.357****		0.090	**-0.239****	-0.019	0.014	-0.028
NFVA	**-0.524****	**-0.636****	**-0.746****	**-0.177****	**-0.474****	-0.171*		**0.297****	-0.006	0.091	0.024
NFVL	**0.271****	**0.193****	0.055	**0.422****	0.064	0.022	0.046		**-0.196****	**-0.380****	0.095
NI	**-0.318****	**-0.241****	-0.068	**-0.374****	**-0.285****	**-0.227****	0.073	**-0.341****		**0.405****	0.012
PRC	**-0.356****	-0.138*	-0.051	**-0.401****	**-0.247****	-0.162*	0.042	**-0.450****	**0.734****		-0.036
CGS	0.054	0.043	0.019	**0.200****	0.134*	0.078	0.012	0.117	0.033	-0.050	

***, **,* indicate that the correlation is significant at the 0.01, 0.05 and 0.1 levels (two-tailed), respectively.

Table 4 – Pearson and Spearman correlations

Table 4 provides correlation coefficients among the main test variables used in the regression equation for the sample period 2013-2018 resulting in 218 observations. The upper diagonal shows Pearson correlation coefficients. The lower diagonal presents Spearman correlation coefficients. Numbers in bold indicate significance at the 0.05 level (two-tailed test). FVA (FVL) indicates total fair value of assets (liabilities) per total assets. FVA1 (FVL1) indicates fair value of Level 1 assets (liabilities) per total assets. Similarly, FVA2, FVA3, FVL2, and FVL3 are fair values of Level 2 and Level 3 assets and liabilities per total assets. NI is income scaled by total assets. PRC is market price three months after year end scaled by total assets. With the exception of CGS, all other variables are scaled by total assets at year end. CGS is a dummy variable, with 1 indicating CGS ranking equal and above 50% and 0 indicating CGS ranking below 50%.

Table 5: Value relevance of fair value hierarchy of IFRS 13

Dependent variable: Share price

$$PRC_{it} = \alpha_0 + \beta_1 NFVA_{it} + \beta_2 FVA1_{it} + \beta_3 FVA2_{it} + \beta_4 FVA3_{it} + \beta_5 NFVL_{it} + \beta_6 FVL1_{it} + \beta_7 FVL2_{it} + \beta_8 FVL3_{it} + \beta_9 NI_{it} + \varepsilon_{it}$$

	Unstandardised Coefficient		t-stat	p-value
	B	Std. Error	two tailed	two tailed
(Constant)	-0.593	0.567	-1.045	0.297
FVA1	1.135	0.695	1.633	0.104
FVA2	1.880	0.624	3.013	0.003***
FVA3	1.615	0.594	2.716	0.007**
FVL1	-0.262	0.339	-.775	0.440
FVL2	-0.588	0.203	-2.895	0.004***
FVL3	-0.661	0.327	-2.020	0.045**
NFVA	1.625	0.581	2.799	0.006***
NFVL	-0.888	0.131	-6.804	0.000***
Net Income	1.509	0.310	4.869	0.000***
N = 218	R^2=33.9%		F = 10.341	

Coefficient comparison	**T-stats**	**p-value**
Test of FVA1 = FVA2	1.8317	0.0684*
Test of FVA1 = FVA3	1.9727	0.0498**
Test of FVA2 = FVA3	1.9781	0.0492**
Test of FVL1= FVL2	1.9836	0.0486**
Test of FVL1 = FVL3	1.8029	0.0728*
Test of FVL2 = FVL3	1.9926	0.0476**

***,**,* indicate statistical significance at the 0.01, 0.05 and 0.1 levels (two-tailed) respectively.

Table 5 – Value relevance of fair value hierarchy of IFRS 13

This table provides the result of OLS regression of market prices scaled by total assets on non-fair value and fair value assets and liabilities. The sample includes 218 company year observations from 2013–2018. NFVA is non-fair value assets scaled by total assets. FVA1, FVA2, and FVA3 are fair value assets scaled by total assets from Levels 1, 2, and 3 inputs, respectively. NFVL is non-fair value liabilities scaled by total assets. FVL1, FVL2 and FVL3 are fair value liabilities scaled by total assets for Levels 1 and 2 and Level 3 inputs, respectively. NI is net income scaled by total assets.

Table 6: The impact of corporate governance scores on the value relevance of fair value hierarchy information

Dependent variable: Share price

$$PRC_{it} = \alpha_0 + \beta_1 NFVA_{it} + \beta_2 FVA1_{it} + \beta_3 FVA2_{it} + \beta_4 FVA3_{it} + \beta_5 NFVL_{it} + \beta_6 FVL1_{it} + \beta_7 FVL2_{it} + \beta_8 FVL3_{it} + \beta_9 FVA1_{it} \times CGS_{it} + \beta_{10} FVA2_{it} \times CGS_{it} + \beta_{11} FVA3_{it} \times CGS_{it} + \beta_{12} NI_{it} + \beta_{13} CGS_{it} + \varepsilon_{it}$$

	Unstandardised Coefficient		t stat	p-value
	B	Std. Error	two-tailed	two-tailed
(Constant)	-0.547	0.582	-0.940	0.348
FVA1	1.152	0.701	1.644	0.102
FVA2	1.781	0.638	2.790	0.006***
FVA3	1.682	0.614	2.741	0.007***
FVL1	-0.214	0.352	-0.607	0.544
FVL2	-0.584	0.205	-2.853	0.005***
FVL3	-0.664	0.328	-2.024	0.044**
FVA1*CGS	-0.710	0.679	-1.045	0.297
FVA2*CGS	0.887	0.849	1.044	0.298
FVA3*CGS	-0.380	0.317	-1.198	0.232
NFVA	1.583	0.594	2.664	0.008***
NFVL	-0.931	0.135	-6.917	0.000***
Net Income	1.468	0.312	4.708	0.000***
CGS	0.034	0.124	0.271	0.787
N = 218				
Adj. R^2 = 33.6%				
F = 10.261				

***,**,* indicates statistical significance at the 0.01, 0.05, and 0.1 levels (two-tailed) respectively.

Table 6 – The impact of corporate governance scores on the value relevance of fair value hierarchy information

This table provides the regression results of examining the impact of governance on the value relevance of fair value assets and liabilities from 218 observations from the year 2013–2018. NFVA is non-fair value assets scaled by total assets. FVA1, FVA2, and FVA3 are fair value assets scaled by total assets from Levels 1, 2, and 3 inputs respectively. NFVL is non-fair value liabilities scaled by total assets. FVL1, FVL2 and FVL3 are fair value liabilities scaled by total assets for Levels 1 and 2 and Level 3 inputs respectively. NI is net income scaled by total assets. CGS is a dummy variable, with 1 indicating CGS ranking equal and above 50% and 0 indicating CGS ranking below 50%.