

Abnormal ownership concentration and the value-relevance of accounting information

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Abstract

Purpose – Ownership of a firm might be concentrated (i.e. a small number of large shareholders) or dispersed (i.e. a large number of small shareholders). Differences in ownership structure can affect the amount and quality of public information about a firm and moderate the value-relevance of reported financial information. We investigate how ownership concentration moderates the value-relevance of book values and earnings.

Design/methodology/approach – Inferences are derived from a multivariate regression approach, using 361 listed South African firms reporting from 1 January 2010 to 31 December 2019.

Findings – More concentrated ownership is associated with lower value-relevance of high-quality earnings. More importantly, ownership concentration that deviates from expectations (abnormal ownership concentration) is associated with lower value-relevance of high-quality earnings and higher value-relevance of book values, irrespective of whether ownership concentration is abnormally high or abnormally low.

Research limitations/implications – Abnormal ownership concentration weakens the association between high financial reporting quality and capital market outcomes. Therefore, optimising ownership structure deserves attention equal to increasing financial reporting quality.

Originality/value – The key insight of this paper is that the absolute level of ownership concentration matters less than its deviation from expected levels.

Keywords Value-relevance, Ownership, Concentration, High-quality, Earnings

Paper type Research article

1. Introduction

Agency theory reflects an inherent conflict between shareholders (the principals) and managers (the agents). In a seminal paper, [Jensen and Meckling \(1976\)](#) use agency theory to explain the extent to which large shareholders dominate the ownership structure of firms (ownership concentration). For example, large shareholders can use private information to monitor managers, reducing agency cost to the benefit of all shareholders ([Fan and Wong, 2002](#)). However, concentrated ownership can also create a conflict of interest between shareholders, if large shareholders use their informational advantage to expropriate outside investors ([Zhao and Millet-Reyes, 2007](#); [Tigero et al., 2023](#)). Large shareholders therefore have access to private information and incentives to limit the extent to which this information becomes public ([Fan and Wong, 2002](#)). Consequently, different ownership structures could result in divergent financial reporting outcomes ([Firth et al., 2007](#)).

Investor perceptions of accounting information reflect as value-relevance, namely the association between accounting information and market value of equity ([Barth et al., 2001](#)). Theoretically, if ownership concentration results in accounting information that primarily serves the needs of large shareholders, its value-relevance should decrease because the information needs of other shareholders are ignored ([Firth et al., 2007](#)). Alternatively, large shareholders might influence firms to improve value-relevance through higher financial reporting quality, as this maximises the value of their own shareholding ([Fan and Wong, 2002](#); [Edmans, 2009](#)).



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Existing empirical evidence is inconclusive. Several prior studies reflect that high ownership concentration is associated with lower earnings value-relevance in different countries (Fan and Wong, 2002; Zhao and Millet-Reyes, 2007). However, there is also evidence that high ownership concentration supports pricing during crisis periods (Mitton, 2002; da Cunha and Bortolon, 2016; Rao et al., 2022) and that high ownership concentration is associated with higher value-relevance in China (Ma et al., 2010) and the United Kingdom (Donnelly and Lynch, 2002). It is also possible that high ownership concentration does not moderate the value-relevance of all accounting information in the same way. For example, high ownership concentration increases the use of private communication, reducing demand for quality earnings with high value-relevance (Firth et al., 2007). Therefore, concentrated ownership could be associated with a decrease in earnings value-relevance. Less decision-useful earnings cause investors to make greater use of other information, such as book values (Zhao and Millet-Reyes, 2007; Barth et al., 2023). High ownership concentration could therefore moderate the value-relevance of earnings and book values in opposite directions. The objective of this study is to deepen our understanding of the relationship between ownership concentration and the value-relevance of earnings and book values.

Laws and regulations offering legal redress to minority shareholders lower expropriation risk and the agency cost associated with high ownership concentration (Tigero et al., 2023). Lower expropriation risk and reduced agency cost increase firm value and the value-relevance of accounting information (Firth et al., 2007). Our South African research setting reflects strong protection of minority shareholders during our sample period of 2010–2019 (World Bank, n.d.), mitigating expropriation opportunities of high ownership concentration [1]. Furthermore, although sophisticated, the South African equity market comprises a relatively small number of firms, increasing the probability of common shareholdings between investors (Titley, 2019; Hendrickse, 2022). Common shareholdings reduce the potential for monopolistic profits (Münster and Walther, 2021) and decrease the returns of concentrated ownership. These characteristics weaken the role of ownership concentration, and we find that ownership concentration does not moderate the value-relevance of earnings. However, both concentrated and dispersed ownership are associated with higher value-relevance of book values, suggesting that extreme ownership structures are associated with lower decision-usefulness of earnings (i.e. lower earnings quality).

We further investigate an earnings quality explanation by using unique South African regulatory requirements, which require listed firms to report “headline earnings” in addition to complying with International Financial Reporting Standards (IFRS). Headline earnings exhibit the characteristics of high-quality earnings, being smoother, more persistent, more value-relevant and more predictable than IFRS earnings (Stainbank and Harrod, 2007; Venter et al., 2013, 2014). However, unlike other non-GAAP earnings measures, headline earnings are prescribed and audited (Badenhorst and von Well, 2023a). Headline earnings are therefore less subject to management discretion than other non-GAAP earnings measures (Badenhorst and von Well, 2023a) [2]. Using headline earnings to separate IFRS earnings into high-quality and low-quality components reveals that concentrated ownership is associated with lower value-relevance of high-quality earnings but that dispersed ownership has no moderation effect. Therefore, an earnings quality explanation does not fully explain the higher value-relevance of book values associated with both ownership structures.

However, Jensen and Meckling (1976) argue that an optimal level of ownership concentration minimises agency costs for a specific firm. We therefore posit that investors have broad consensus on an optimal level of ownership concentration for a firm and that deviations from this level (“abnormal ownership concentration”) convey decision-useful information. For example, large investors might use their informational advantage to avoid firms with a weak performance outlook or low reporting quality, influencing decisions of investors with fewer resources. Although prior research identifies firm characteristics associated with ownership concentration (Callen et al., 2010; Wang, 2013), we are the first to our knowledge to employ firm characteristics to derive a measure of abnormal ownership

concentration and investigate its association with the value-relevance of accounting information.

Abnormal ownership concentration is conceptually akin to abnormal (discretionary) accruals pioneered by Jones (1991). We apply a similar methodological approach and measure abnormal ownership concentration as the residual from an initial regression. Results show that abnormal ownership concentration is generally associated with higher value-relevance of book values. Although abnormal high ownership concentration does not moderate the value-relevance of IFRS earnings, both abnormally high and abnormally low ownership concentration are associated with lower value-relevance of high-quality earnings.

We contribute to the existing literature in several ways. Firstly, we present evidence that deviations of ownership concentration from expected levels reveal more about its association with value-relevance than absolute levels thereof. This reconciles prior research findings that both concentrated ownership (Fan and Wong, 2002; Firth *et al.*, 2007) and dispersed ownership (Mitton, 2002; Ma *et al.*, 2010; da Cunha and Bortolon, 2016) could be associated with lower value-relevance of accounting information, by revealing that any level of ownership concentration can be detrimental if it deviates from what firm characteristics dictate that it should be. Secondly, we find evidence that abnormal ownership concentration is associated with lower value-relevance of high-quality earnings. This explains why prior research finds that concentrated ownership can both support reporting quality (Dou *et al.*, 2018) and detract from it (Saha *et al.*, 2019). The relationship between ownership concentration and financial reporting quality is therefore nuanced and deviations from expectations matter more than actual ownership structures. Thirdly, our findings collectively provide empirical support for the theoretical construct of Jensen and Meckling (1976), namely that optimal ownership concentration, which minimises agency costs, is unique to every firm. This provides a potential framework to better understand the role of ownership concentration in other contexts, such as operational performance.

Our findings have implications for markets with similar institutional characteristics, such as high investor protection and a low number of listed firms. They suggest, for example, that abnormal ownership concentration hampers the ability of higher financial reporting quality to improve capital market outcomes. Investors and preparers aiming to maximise firm value will therefore be interested in our findings, which show that optimising ownership structure deserves attention equal to increasing financial reporting quality. Value-relevance and ownership concentration researchers will also be interested in our findings which introduce the concept of abnormal ownership concentration and deepens our understanding of the association between ownership concentration and decision-useful information.

The next section of this paper contains the background, literature review and hypotheses development. This is followed by a discussion of the research methodology and data in two separate sections. Detailed findings are presented thereafter, while the final section summarises and concludes the paper.

2. Background, literature review and hypotheses development

2.1 Theory and background

In various theoretical models, agency theory explains differences in ownership structures (Jensen and Meckling, 1976) and relationships between shareholders (Shleifer and Vishny, 1986). Large shareholders have access to private information and could choose to use this in their own interest, thus expropriating outside investors (Zhao and Millet-Reyes, 2007; Tigger *et al.*, 2023). They therefore have incentives to keep certain information out of the public domain (Fan and Wong, 2002). Concentrated ownership could cause financial reporting to focus on the needs of a few shareholders, with the result that the information needs of other shareholders are ignored and value-relevance decreases (Firth *et al.*, 2007). Several studies present empirical evidence consistent with this theoretical expectation for countries in Europe (Clark and Wójcik, 2005), Asia (Fan and Wong, 2002; Firth *et al.*, 2007) and North America (Ghosh and Moon, 2010).

However, large shareholders also use private information to monitor managers (Shleifer and Vishny, 1986). The theoretical model of Shleifer and Vishny (1986) predicts that large shareholders could act to maximise firm value to compensate for bearing monitoring costs, which actions could include making information public to increase the attractiveness of the firm as a takeover target. Therefore, large shareholders could pressure firms to release more value-relevant information to maximise the value of their own holdings (Fan and Wong, 2002; Hu and Izumida, 2008). Consistent with this counterargument, prior research finds that concentrated ownership is associated with higher firm value in China (Ma et al., 2010) and higher earnings response coefficients in the UK (Donnelly and Lynch, 2002). Moreover, high ownership concentration supports value-relevance during crisis periods (Mitton, 2002), including macroeconomic shocks (da Cunha and Bortolon, 2016) and extreme rainfall patterns (Rao et al., 2022). Consequently, both theoretical models and empirical evidence lacks consensus on whether large shareholders use their influence to benefit only themselves or to benefit all shareholders.

2.2 Literature review and hypothesis development

When large shareholders exercise their influence for their own benefit, they limit the amount of information that becomes public (Fan and Wong, 2002). Information asymmetry increases and the value-relevance of accounting information decreases (Firth et al., 2007). In contrast, when large shareholders pressure firms to make information public to increase firm value, information asymmetry decreases and the value-relevance of accounting information increases (Rao et al., 2022; Barth et al., 2023).

The characteristics of a research setting determine research expectations (Firth et al., 2007; Konijn et al., 2011), as ownership concentration varies based on country-level institutional factors (La Porta et al., 1999; Richter and Weiss, 2013). Some characteristics of our South African setting suggest limited benefits from high ownership concentration, irrespective of large shareholders' motivations. Firstly, strong protection of minority shareholder rights in South Africa during our sample period (World Bank, n.d.) reduces the likelihood that large shareholders can expropriate minorities for their own benefit. Secondly, ownership concentration affects value-relevance through information asymmetry (Shleifer and Vishny, 1986; Rao et al., 2022). Firms headquartered in main financial centres (i.e. with head offices in main financial centres) have greater analyst coverage, resulting in lower information asymmetry (Farooq and Zarouali, 2016). This places smaller and larger shareholders on a more equal footing, and Farooq and Zarouali (2016) find that ownership concentration is not associated with firm value in India for firms headquartered in main financial centres. As a far smaller country, South African firms are all headquartered in or close to the two main financial centres (Cape Town and Johannesburg), potentially negating any moderating effect of ownership concentration on the value-relevance of accounting information [3]. Thirdly, the South African equity market comprises a small number of firms. Large, sophisticated investors reduce firm-specific risk by investing in multiple firms, even if these firms operate in the same industry (Titley, 2019; Hendrickse, 2022). Common shareholdings in the same industry decrease the potential for monopolistic profits (Münster and Walther, 2021), reducing the returns (benefits) of high ownership concentration.

However, although these characteristics imply that the ownership of many South African firms will be concentrated amongst shareholders with larger holdings (due to the low number of investable firms), they also result in ownership structures without dominating shareholders (due to attempts to diversify). Greater dispersion of large shareholders is associated with lower firm value as a greater number of large shareholders imply more conflicting interests (Konijn et al., 2011). These conflicts also lower value-relevance of accounting information. Nel et al. (2021) find that high ownership concentration for South African firms is associated with lower dividends, which suggests that large shareholders prefer to extract private benefits of control rather than following a policy which would benefit all shareholders equally.

Therefore, whether and to which extent ownership concentration might moderate the value-relevance of accounting information in South Africa is unclear. While most prior research on the moderating effect of ownership concentration focuses on earnings value-relevance (Fan and Wong, 2002; Firth *et al.*, 2007; Ghosh and Moon, 2010), book values represent alternative summary accounting information. In related research, Zhao and Millet-Reyes (2007) conclude that family control decreases the demand for timely information about firm performance. They find that the value-relevance of earnings, a timelier measure, decreases in this context, but that the value-relevance of book values increases. This is consistent with findings that other sources of information compensate when the decision-usefulness of earnings declines (Callao *et al.*, 2016; Barth *et al.*, 2023). Therefore, we state our first (related) hypotheses in the null form as follows:

H1a. Actual ownership concentration does not moderate the value-relevance of earnings.

H1b. Actual ownership concentration does not moderate the value-relevance of book values.

While agency theory potentially explains the volume of information that firms with concentrated ownership make public, it can also explain reporting quality differences. When larger investors use private communication for their own benefit, their need for high-quality public information reduces (Firth *et al.*, 2007). For example, Velury and Jenkins (2006) find that high ownership concentration detracts from earnings quality, Saha *et al.* (2019) show that the financial reports of firms with high ownership concentration frequently lack important disclosures and Grassa *et al.* (2021) conclude that higher ownership concentration reduces the quality of risk disclosures for banks in Islamic countries. The quality of financial reporting affects the value-relevance of accounting information (Stainbank and Harrod, 2007; Venter *et al.*, 2014). Relatedly, Callao *et al.* (2016) find that high ownership concentration exacerbates weak value-relevance of low-quality earnings.

In contrast, large shareholders may seek to enforce high reporting quality to maximise the value of their own interest (Fan and Wong, 2002; Hu and Izumida, 2008). Furthermore, prior research posits that dispersed owners find it more difficult to enforce high reporting quality (Edmans, 2009; Dou *et al.*, 2018). These studies present evidence that large shareholders are associated with higher financial reporting quality, provided that the threat of exiting their shareholding is realistic. Arguably, the small number of listed firms in South Africa limits alternatives and reduces the likelihood of a complete exit by large shareholders. Therefore, it appears less probable that high ownership concentration will be associated with more decision-useful earnings. Consequently, our second hypothesis (in alternative form) is:

H2. Actual ownership concentration is associated with lower value-relevance of high-quality earnings.

Jensen and Meckling (1976) argue that an optimal level of ownership concentration exists at which agency costs for a specific firm is minimised. Moreover, several researchers identify firm characteristics associated with cross-sectional differences in ownership concentration (Bushee, 2001; Callen *et al.*, 2005, 2010; Banghøj and Plenborg, 2008; Wang, 2013). Similar to the manner in which specific firm characteristics are associated with a normal (expected) level of accruals (Jones, 1991), we argue that firm characteristics predict what the normal (expected) level of ownership concentration of a specific firm should be. Deviations from this expectation (abnormal ownership concentration) could contain decision-useful information. For example, lower than expected ownership concentration indicates a lack of interest from large investors, reflecting concerns such as misleading disclosures, lack of growth opportunities or financial distress. Other investors might value the opinions of arguably the most knowledgeable investors, weakening the relationship between accounting information and firm value (i.e. resulting in lower value-relevance). However, although abnormally high ownership concentration could reflect enthusiasm from large investors, it also increases the

risk of expropriation for minorities (Bae and Jeong, 2007). Therefore, the direction in which abnormal ownership concentration could moderate value-relevance is unclear and our third (related) hypotheses are stated in null form:

H3a. Abnormal ownership concentration does not moderate the value-relevance of earnings and book values.

H3b. Abnormal ownership concentration does not moderate the value-relevance of high-quality earnings.

3. Research methodology

3.1 Value-relevance of earnings and book values

We follow prior research (Venter *et al.*, 2014; Rainsbury *et al.*, 2015) and base our value-relevance investigations on a simplified Ohlson (1995) model. After including variables for ownership concentration (full definitions of variables are in the Appendix), the model is as follows (firm and year subscripts have been suppressed) [4]:

$$P = \alpha_0 + \beta_1 BPS + \beta_2 EPS + \beta_3 NEG + \beta_4 OWN + \beta_5 OWN * BPS + \beta_6 OWN * EPS + \varepsilon \quad (1)$$

where P is share price, three months after reporting date to allow for the information dissemination process [5]; BPS is book value per share and EPS is basic earnings per share. Variables are determined as per-share variables, as this reliably compensates for scale effects in financial data (Barth and Clinch, 2009; Aledo Martinez *et al.*, 2020). As firms with negative earnings are priced differently from firms with positive earnings (Hayn, 1995), we follow prior research (Rainsbury *et al.*, 2015; Badenhorst and von Well, 2023b) and include NEG as a control variable.

Following prior research (Banghøj and Plenborg, 2008; Elshandidy, 2014; Münster and Walther, 2021), we measure ownership concentration as the total percentage strategic shareholding ($NOSHST$) on LSEG Workspace [6]. $NOSHST$ accumulates the shareholding of every party (including management, institutional investors, other firms and individuals) who holds more than 5% of a firm's shares. As the impact of ownership concentration inflects at very high or low levels (Fan and Wong, 2002; da Cunha and Bortolon, 2016), we sort sample firm-years into quintiles based on the ranking of $NOSHST$. We first analyse quintiles one to four, where OWN is set to one if ownership concentration falls into quintile one and zero otherwise. Thereafter, we analyse quintiles two to five, where OWN is set to one if ownership concentration falls into quintile five and zero otherwise. This ensures a consistent base sample (quintiles two to four) against which the impact of dispersed ownership concentration (quintile one) and concentrated ownership (quintile five) is evaluated. The variables of interest are the interactions of OWN with BPS and EPS , which reflect the moderating effect of ownership concentration on the value-relevance of accounting information.

3.2 Value-relevance of high-quality earnings

Outsiders to a firm use proxies to measure high-quality earnings, which are fraught with measurement error (Dou *et al.*, 2018). Furthermore, earnings quality is a complex construct, as high-quality earnings should be smooth, persistent, have predictive power and be value-relevant (Dichev and Tang, 2008, 2009; Ribeiro *et al.*, 2019). However, firms listed on the JSE are required to report headline earnings in addition to complying with IFRS (Venter *et al.*, 2014; Howard *et al.*, 2019). The calculation and disclosure requirements for headline earnings adjustments are prescribed in a circular issued by the South African Institute of Chartered Accountants (SAICA, 2019), which is regularly updated for changes in IFRS [7]. Unlike other non-GAAP earnings measures, the content of headline earnings is therefore prescribed (firms are not permitted to

deviate from the circular) and audited (Venter *et al.*, 2014; Howard *et al.*, 2019). Audited numbers are of higher quality (Lennox and Pittman, 2011; Ball *et al.*, 2012) and, combined with regulation, this ensures that headline earnings are calculated consistently over time and between firms (Venter *et al.*, 2014). Consequently, headline earnings do not reflect the unique reporting incentives of an individual firm. Although all earnings measures incorporate management discretion, headline earnings, as a regulated earnings measure, do not permit greater management discretion than the IFRS earnings from which headline earnings are derived.

Headline earnings are high-quality earnings, being smoother, more persistent, more value-relevant and more predictable than IFRS earnings (Stainbank and Harrod, 2007; Venter *et al.*, 2014). As a disclosure prepared by the firm (in accordance with the prescriptions of the circular), headline earnings are also free from confounding effects that arise when investors attach greater weight to measures that they calculate themselves (Nelson and Tayler, 2007). Therefore, headline earnings provide a meaningful measure of high-quality earnings.

To investigate the association between ownership concentration and high-quality earnings, we decompose IFRS earnings into two components, namely headline earnings (high-quality earnings) and the difference between IFRS earnings and headline earnings (low-quality earnings). The resultant model reflects as follows:

$$P = \alpha_0 + \beta_1 BPS + \beta_2 HEPS + \beta_3 APS + \beta_4 NEG + \beta_5 OWN + \beta_6 OWN * BPS + \beta_7 OWN * HEPS + \beta_8 OWN * APS + \varepsilon \quad (2)$$

where *HEPS* is headline earnings per share and *APS* is the adjustment (difference) between *EPS* and *HEPS*. We follow prior value-relevance research (Venter *et al.*, 2014; Rainsbury *et al.*, 2015) and specify *HEPS* and *APS* so that the sum of the two variables adds up to *EPS*. All other variables are as previously defined.

3.3 Abnormal ownership concentration

Abnormal ownership concentration is conceptually similar to the abnormal accruals of Jones (1991). Therefore, we similarly measure abnormal ownership concentration as a residual from the following regression (full definitions of variables are included in the Appendix):

$$NOSHST = \alpha_0 + \beta_1 LIQ + \beta_2 VOL + \beta_3 LEV + \beta_4 MTB + \beta_5 BETA + \beta_6 AGE + \beta_7 AR + \beta_8 AF + \beta_9 DY + \beta_{10} SIZE + \beta_{11} MAR + \beta_{12} \Delta EPS + \beta_{13} NEG + \varepsilon \quad (3)$$

where *NOSHST* is the total percentage strategic shareholding; *LIQ* is the liquidity of shares traded during the reporting period (Bushee, 2001; Callen *et al.*, 2005); *VOL* controls for information asymmetry (Firth *et al.*, 2007); *LEV* is financial gearing (Bushee, 2001; Callen *et al.*, 2005; Banghøj and Plenborg, 2008); *MTB* controls for intangible intensiveness and growth opportunities (Donnelly and Lynch, 2002; Firth *et al.*, 2007) [8]; *BETA* is a measure of risk (Callen *et al.*, 2005, 2010; Banghøj and Plenborg, 2008); *AGE* is firm age (Wang, 2013); *AR* is the analyst rating for the firm if available (Callen *et al.*, 2005); *AF* reflects whether a firm has attracted an analyst following; *DY* is the dividend yield (Callen *et al.*, 2005); *SIZE* is firm size (Firth *et al.*, 2007; da Cunha and Bortolon, 2016); *MAR* controls for price momentum (Bushee, 2001; Callen *et al.*, 2005); ΔEPS controls for firm performance (Bushee, 2001; Callen *et al.*, 2010); and *NEG* is as earlier defined.

As actual ownership concentration (*NOSHST*) is the dependent variable, the residual of model (3) is the ownership concentration which is not predicted by these firm characteristics and therefore represents unexpected (i.e. abnormal) ownership concentration. By construction, the residual of a regression does not correlate with the dependent variable. Therefore, abnormal ownership concentration does not correlate with ownership concentration.

Ownership concentration is affected by institutional characteristics of the research setting (Konijn *et al.*, 2011), which endure over long periods of time. Furthermore, the number of

firms per industry is low. We therefore run model (3) on the whole sample to derive firm-year residuals. To control for differences across firms and years, we include firm and year fixed effects in models (1) and (2) [9]. As the effect of ownership concentration inflects at very high or low levels (Fan and Wong, 2002; da Cunha and Bortolon, 2016), we again rank the residuals into quintiles to measure abnormal ownership concentration (*OWN_AB*). Thereafter, we substitute *OWN* with *OWN_AB* in models (1) and (2) for analyses.

4. Sample and data

The preliminary sample for this study is all JSE tickers (dead and live) on LSEG Workspace with reports from 1 January 2010 to 31 December 2019. Recession events confound value-relevance results (Kane *et al.*, 2015). Therefore, this sample period simultaneously avoids the 2007–2008 financial crisis and the global pandemic that started in 2020 (Badenhorst and von Well, 2023b). Data for all variables are obtained from LSEG Workspace, apart from basic earnings and headline earnings which are hand-collected (as reported) from results announcements. Where applicable, data is downloaded in South African rand (ZAR). Where the reporting currency is not ZAR, we follow Howard *et al.* (2019) and convert hand-collected data using the exchange rate on the database.

Following prior research (Choi *et al.*, 2007; Barton *et al.*, 2010; Venter *et al.*, 2014), we reduce the impact of outliers by trimming observations at the 1% and 99% levels [10]. The sample reconciliation in Panel A of Table 1 shows that, after trimming, the final sample consists of 2026 firm-years (361 unique firms). Panel B reveals that no single industry dominates the sample, while Panel C reflects an even distribution across sample years. Table 1 also includes general descriptive statistics in Panel D. With a mean (median) of 2.817 (0.926) per share, headline earnings per share (*HEPS*) is higher than basic earnings per share (*EPS*), which has a mean (median) of 2.767 (0.902) per share. Notably, the mean (median) adjustment from IFRS earnings to headline earnings (*APS*) is small at 0.050 (0.000) per share. This arguably reflects the effectiveness of prescribing the headline earnings calculation. Furthermore, the distribution of *APS* is comparable to statistics reported in Venter *et al.* (2014). Finally, sample firms are generally profitable as only 14.8% of firm-years reflect a basic loss per share. Strategic ownership appears to be evenly distributed, as the mean (48.6%) and median (48.0%) of *NOSHST* are close together.

5. Detailed findings

A Hausman test is significant and we therefore include firm and year fixed effects (Onali *et al.*, 2017). We evaluate significance in regressions with reference to robust standard errors clustered by firm and year, corrected for the nestedness of fixed effects (Petersen, 2009; Cameron *et al.*, 2011).

5.1 General value-relevance

We start by evaluating whether our sample exhibits expected value-relevance characteristics. The first column in Panel A of Table 2 shows that book value and earnings are both positive and significant at the 1% level. Consistent with prior research (Hayn, 1995; Venter *et al.*, 2014), this panel also reveals differences between firms with positive and negative earnings, where earnings are not significant when a firm reports a loss ($p = 0.172$). In the interest of brevity, the text that follows discusses results which include all sample firms (the “full sample”), although results are also separately tabulated for firm-years with positive earnings and those with negative earnings. Panel A shows that the coefficient of book value is reasonably close to one as predicted by theory and prior research (Barth *et al.*, 2001; Aledo Martinez *et al.*, 2020). The coefficient of earnings is far greater than one, which is similarly consistent with the expectation that earnings represent a proxy for unrecognised assets (Barth *et al.*, 2001; Aledo Martinez *et al.*, 2020).

Table 1. Sample reconciliation, sample distribution and descriptive statistics

Panel A: sample reconciliation		
Description	Firm-years	Unique firms
Initial sample	3,125	444
Firms not listed for the full year, suspended or results announcement not available ^a	(393)	(40)
No information about the percentage strategic shareholding on the database	(108)	(3)
Incomplete coverage of strategic shareholding on the database ^b	(228)	(5)
Steinhoff International Holdings NV ^c	(6)	(1)
Sample before trimming	2,390	395
Impact of trimming outliers at the 1% and 99% levels	(364)	(34)
Final sample for analyses	2026	361

Panel B: sample distribution by industry		
Industry	Number of firm-years	% of firm-years
Alternative energy	2	0.1
Automobiles and parts	12	0.6
Banks	38	1.9
Beverages	8	0.4
Chemicals	40	2.0
Construction and materials	170	8.4
Education	15	0.7
Electricity	1	0.1
Electronic and electrical equipment	24	1.2
Financial services	162	8.0
Fixed line telecommunications	58	2.9
Food producers	118	5.8
Food and drug retailers	45	2.2
Forestry and paper	22	1.1
General industrials	103	5.1
General retailers	132	6.5
Health care equipment and services	39	1.9
Household goods and home construction	2	0.1
Industrial engineering	27	1.3
Industrial metals and mining	45	2.2
Industrial transportation	66	3.3
Leisure goods	12	0.6
Life insurance	48	2.4
Media	37	1.8
Mining	173	8.5
Nonlife insurance	22	1.1
Oil and gas producers	8	0.4
Personal goods	8	0.4
Pharmaceuticals and biotechnology	32	1.6
Real estate investment trusts	179	8.8
Real estate investment and services	59	2.9
Software and computer services	120	5.9
Support services	101	5.0
Technology hardware and equipment	11	0.5
Travel and leisure	87	4.3
<i>Total</i>	<i>2026</i>	<i>100.0</i>

(continued)

Table 1. Continued

Panel C: sample distribution by year

Sample year	Number of firm-years	% of firm-years
2010	198	9.8
2011	209	10.3
2012	210	10.4
2013	208	10.3
2014	204	10.0
2015	190	9.4
2016	198	9.8
2017	212	10.4
2018	203	10.0
2019	194	9.6
<i>Total</i>	2026	100.0

Panel D: descriptive statistic for scaled variables

Variable ^d	Mean	Median	Standard deviation	Minimum	Maximum
P	43.675	13.990	68.215	0.030	473.649
BPS	21.711	9.459	31.603	0.004	226.938
EPS	2.767	0.902	4.867	-7.274	38.297
HEPS	2.817	0.926	4.675	-3.621	37.312
APS	-0.050	0.000	1.524	-16.062	24.276
NEG	0.148	0.000	0.355	0.000	1.000
NOSHST	48.638	48.000	22.255	0.000	99.000
N	2026				

Note(s): ^aSuspended shares are excluded from the sample, as market values are no longer updated to reflect investors' perceptions of current accounting information. Firms that were not listed for a full year are excluded from the sample, as the calculation of some of the firm characteristic variables requires at least 12 months of trading data. ^bThree data items relating to strategic shareholding exist on the database (NOSHST, NOSHSP and NOSHTSA). As a quality filter for the level and continuity of coverage, only firm-years with information for at least two of the three data items are included in the sample. ^cHistorical accounting information for Steinhoff International Holdings NV has been amended on the database to reflect restated accounting information after corporate fraud. As such, the historical market value data no longer reflects investors' perceptions of the accounting information available on the database. ^dVariables are defined in the [Appendix](#)

Source(s): Authors' own work

Thereafter, we also consider the value-relevance of headline earnings. We code the variables so that headline earnings (*HEPS*) plus the adjustment (*APS*) equal IFRS earnings (*EPS*). If headline earnings represent the most value-relevant earnings measure, any *incremental* adjustment to this amount should not be value-relevant ([Venter et al., 2014](#); [Rainsbury et al., 2015](#)). Consistent with this expectation, *APS* is insignificant in Panel B of [Table 2](#). Similar to [Rainsbury et al. \(2015\)](#), we find that book value is insignificant when a non-GAAP earnings measure is included. However, as expected, *HEPS* is positive, has a coefficient far greater than one and is significant at the 1% level. These findings are consistent with [Ball et al. \(2020\)](#), who find that book values have explanatory power for firm value (returns) when they compensate for earnings volatility. As headline earnings are smoother and more persistent than IFRS earnings ([Venter et al., 2014](#)), book values no longer play a compensatory role and their value-relevance declines.

We also use a [Vuong \(1989\)](#) test to evaluate the *relative* value-relevance of headline earnings and IFRS earnings. Results are presented in Panel C of [Table 2 \[11\]](#). Consistent with

Table 2. General value-relevance

Panel A: IFRS earnings			
Variable	All firms	Positive earnings	Negative earnings
BPS	0.605*** (0.003)	0.555*** (0.009)	0.704*** (<0.001)
EPS	4.328*** (<0.001)	4.810*** (<0.001)	3.332 (0.172)
NEG	5.825*** (0.007)		
Fixed effects:			
- Firm	Yes	Yes	Yes
- Year	Yes	Yes	Yes
<i>N</i>	2026	1727	299
Within <i>R</i> ²	25.4%	25.0%	13.2%

Panel B: Headline earnings

Variable	All firms	Positive earnings	Negative earnings
BPS	0.361 (0.131)	0.296 (0.209)	0.289*** (0.004)
HEPS	6.544*** (<0.001)	7.047*** (<0.001)	8.786*** (0.003)
APS	0.658 (0.550)	0.768 (0.480)	0.382 (0.836)
NEG	4.013* (0.094)		
Fixed effects:			
- Firm	Yes	Yes	Yes
- Year	Yes	Yes	Yes
<i>N</i>	2026	1727	299
Within <i>R</i> ²	31.6%	30.8%	53.1%

Panel C: relative value-relevance

Description	All firms	Positive earnings	Negative earnings
Vuong test between Panel A and Panel B as above	-3.828*** (<0.001)	-3.665*** (<0.001)	-1.456 (0.147)
Vuong test between Panel A and Panel B when the models only include EPS and HEPS (i.e. APS is omitted from the second model)	-3.826*** (<0.001)	-3.655*** (<0.001)	-1.432 (0.153)

Note(s): The dependent variable for all models is *p*. Variables are defined in the [Appendix](#). For multivariate regression results, two-tailed *p*-values based on robust standard errors clustered by firm and year ([Petersen, 2009](#); [Cameron et al., 2011](#)) are reported in brackets, with a correction where the covariance matrix is not positive semi-definite. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively. The Vuong test ([Vuong, 1989](#)) is directional, so that a negative test statistic indicates that the second model is superior to the first

Source(s): Authors' own work

[Venter et al. \(2014\)](#), these results indicate a preference for headline earnings ($p < 0.001$) and this preference remains ($p < 0.001$) if only the competing earnings measures are included in the models (i.e. APS is omitted from the second model).

From these investigations, we conclude that our sample reflects expected value-relevance characteristics. Higher quality earnings are expected to have higher value-relevance ([Venter](#)

et al., 2014; Ribeiro *et al.*, 2019) and these results therefore add further evidence that headline earnings are an appropriate measure of high-quality earnings.

5.2 Results with actual ownership concentration

We first sort firms into quintiles of ownership concentration based on actual ownership concentration. Panel A of Table 3 shows that, on average, strategic shareholders own 18.9% of the bottom quintile of firms, which increases to 80.8% for the top quintile. All the firm characteristics associated with ownership concentration included in model (3) differ significantly between firms in the bottom and top quintiles.

The impact of ownership concentration on value-relevance is further explored in Panel B. If large shareholders use superior access to private information to expropriate outside shareholders, high ownership concentration should be associated with lower earnings value-relevance (Fan and Wong, 2002; Tigero *et al.*, 2023). However, agency theory suggests that widely dispersed shareholders struggle to monitor management, which could also detract from the decision-usefulness of accounting information (Shleifer and Vishny, 1986; Konijn *et al.*, 2011). Therefore, the variables of interest are the interaction variables, which alternatively reflect the association of low (bottom quintile) and high (top quintile) ownership concentration with the value-relevance of accounting information. Both dispersed ownership ($p = 0.015$) and concentrated ownership ($p = 0.027$) are associated with higher value-relevance of book values. However, the earnings interactions are insignificant. When the value-relevance of book values increases, this suggests that the decision-usefulness of earnings has decreased (Zhao and Millet-Reyes, 2007; Barth *et al.*, 2023). The results could therefore imply that extreme ownership structures reflect less decision-useful (lower quality) earnings.

Deeper investigations into a potential earnings quality explanation are reflected in Panel C. These show that, when IFRS earnings are replaced with headline earnings, inferences for book value interactions are unchanged. However, while concentrated ownership significantly detracts from the value-relevance of headline earnings ($p = 0.005$), dispersed ownership concentration does not impact on the value-relevance of headline earnings ($p = 0.303$). This is consistent with prior research findings that large shareholders use private information for their own benefit, reducing demand for high-quality public information (Firth *et al.*, 2007; Callao *et al.*, 2016). Concentrated ownership therefore does not moderate overall earnings value-relevance, but is associated with lower value-relevance of high-quality earnings. As the high-quality component of earnings is more decision-useful, this increases the possibility that investors use accounting fundamentals suboptimally.

5.3 Results with abnormal ownership concentration

However, agency theory also suggests that an optimal ownership structure exists for each firm whereby large shareholders are compensated for the additional monitoring costs that they bear (Jensen and Meckling, 1976; Shleifer and Vishny, 1986). Therefore, concentrated ownership (and greater use of private information) could be optimal for specific firms. We first measure abnormal ownership concentration as the residual from model (3). In untabulated results we find significance for several of these firm characteristics with an adjusted R^2 of 25.9% ($F = 55.53, p < 0.001$). While R^2 should be compared across studies with caution (Gu, 2007), it is noteworthy that the explanatory power falls within the 4.8%–30.7% range reported by Bushee (2001) for different types of large shareholders. It is also higher than the 6.1% documented by Richter and Weiss (2013) for the explanatory power of firm-level characteristics for ownership concentration [12].

After ranking firms into quintiles based on abnormal ownership concentration, Panel A of Table 4 shows that strategic shareholders own an average of 22.7% of bottom quintile firms (where ownership concentration is much lower than expected) and 76.4% of top quintile firms (where ownership concentration is much higher than expected). However, this is the only

Table 3. Results when using actual ownership concentration

Panel A: comparison of quintile means			
Variable	Ownership concentration		Difference
	Bottom quintile	Top quintile	
NOSHST	18.877	80.807	-61.930*** (<0.001)
LIQ	13.865	60.186	-46.320*** (<0.001)
VOL	5.012	20.621	-15.609*** (<0.001)
LEV	3.800	2.916	0.884** (0.010)
MTB	0.057	0.008	0.049*** (<0.001)
BETA	0.020	0.039	-0.019*** (<0.001)
AGE	0.211	0.176	0.034*** (<0.001)
AR	2.818	1.678	1.141*** (<0.001)
AF	0.534	0.393	0.140*** (<0.001)
DY	18.925	15.000	3.925*** (<0.001)
SIZE	1.926	0.739	1.187*** (<0.001)
MAR	0.728	0.270	0.459*** (<0.001)
Δ EPS	0.036	0.027	0.009*** (<0.001)
NEG	16.218	14.245	1.972*** (<0.001)
N	416	404	

Panel B: ownership concentration and IFRS earnings

Variable	OWN = 1 for bottom quintile			OWN = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
BPS	0.469** (0.014)	0.460*** (0.005)	0.813 (0.163)	0.504*** (0.006)	0.400** (0.016)	0.404*** (0.001)
EPS	4.570*** (0.001)	4.942*** (0.002)	1.262 (0.425)	4.952*** (0.001)	5.549*** (0.001)	0.794 (0.569)
NEG	5.098** (0.048)			6.348*** (0.009)		
OWN	-0.352 (0.906)	0.073 (0.985)	4.242** (0.028)	-0.989 (0.589)	-1.659 (0.644)	0.401 (0.310)
OWN*BPS	0.300** (0.015)	0.335** (0.019)	0.997 (0.249)	0.082** (0.027)	-0.038 (0.879)	0.167 (0.318)
OWN*EPS	-0.711 (0.366)	-0.979 (0.416)	6.660 (0.224)	-1.181 (0.499)	-0.487 (0.789)	0.152 (0.862)
Fixed effects:						
- Firm	Yes	Yes	Yes	Yes	Yes	Yes

(continued)

Table 3. Continued

Panel B: ownership concentration and IFRS earnings						
Variable	OWN = 1 for bottom quintile			OWN = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
- Year	Yes	Yes	Yes	Yes	Yes	Yes
N	1,622	1,392	230	1,610	1,357	253
Within R ²	24.5%	22.8%	22.0%	26.5%	27.1%	18.5%

Panel C: ownership concentration and headline earnings						
Variable	OWN = 1 for bottom quintile			OWN = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
BPS	0.137 (0.528)	0.092 (0.644)	0.302** (0.012)	0.172 (0.412)	0.077 (0.701)	0.284 (0.303)
HEPS	7.999*** (<0.001)	8.472*** (<0.001)	1.888 (0.416)	7.875*** (<0.001)	8.278*** (<0.001)	0.318 (0.844)
APS	0.670 (0.350)	0.375 (0.640)	0.815 (0.715)	1.315* (0.056)	1.236 (0.123)	1.064 (0.591)
NEG	3.355 (0.186)			5.283** (0.015)		
OWN	0.798 (0.804)	1.762 (0.654)	-0.684 (0.589)	-2.284 (0.303)	-3.116 (0.423)	1.080* (0.071)
OWN*BPS	0.283*** (0.008)	0.334** (0.048)	0.074 (0.811)	0.483*** (0.001)	0.390 (0.158)	0.074 (0.780)
OWN*HEPS	-1.680 (0.303)	-2.147 (0.259)	10.566*** (<0.001)	-3.337*** (0.005)	-2.606*** (0.005)	3.379 (0.578)
OWN*APS	-1.745 (0.176)	-1.676 (0.321)	2.668*** (<0.001)	1.804 (0.501)	3.536* (0.065)	-0.460 (0.716)
Fixed effects:						
- Firm	Yes	Yes	Yes	Yes	Yes	Yes
- Year	Yes	Yes	Yes	Yes	Yes	Yes
N	1,622	1,392	230	1,610	1,357	253
Within R ²	33.9%	31.5%	60.0%	32.5%	33.1%	19.6%

Note(s): Ownership concentration for this table was sorted into quintiles based on actual strategic shareholding. The dependent variable for all regression models is *p*. Variables are defined in the [Appendix](#). The impact of actual ownership concentration is determined with reference to the middle quintiles as the base sample. For multivariate regression results, two-tailed *p*-values based on robust standard errors clustered by firm and year ([Petersen, 2009](#); [Cameron et al., 2011](#)) are reported in brackets, with a correction where the covariance matrix is not positive semi-definite. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively

Source(s): Authors' own work

significant difference between the bottom and top quintile, implying that abnormal ownership concentration is randomly distributed through the sample (i.e. abnormal ownership concentration is uncorrelated with the firm characteristics from which it is derived). This also suggests that any ownership structure (i.e. dispersed or concentrated) can deviate substantially from the theoretically optimal level for a specific firm.

Panel B of [Table 4](#) shows that abnormal concentrated ownership is associated with higher value-relevance of book values, but the association for abnormal dispersed ownership is insignificant. Abnormal dispersed ownership is mildly associated with lower earnings value-relevance ($p = 0.102$), but the interaction for abnormal concentrated ownership is not significant ($p = 0.253$). Panel C contains results when high-quality and low-quality earnings

Table 4. Results when using abnormal ownership concentration

Panel A: comparison of quintile means			
Variable	Abnormal ownership concentration		Difference
	Bottom quintile	Top quintile	
NOSHST	22.704	76.351	-53.647*** (<0.001)
LIQ	0.025	0.025	0.001 (0.706)
VOL	0.029	0.029	-0.000 (0.872)
LEV	0.191	0.185	0.006 (0.473)
MTB	1.923	2.029	-0.106 (0.317)
BETA	0.470	0.481	-0.010 (0.687)
AGE	15.760	16.213	-0.452 (0.372)
AR	1.276	1.227	0.049 (0.498)
AF	0.469	0.459	0.010 (0.691)
DY	0.031	0.030	0.001 (0.660)
SIZE	15.162	15.026	0.136 (0.179)
MAR	-0.006	0.007	-0.013 (0.493)
Δ EPS	-0.064	-0.283	0.219 (0.108)
NEG	0.150	0.148	0.002 (0.889)
N	405	405	

Panel B: Abnormal ownership concentration and IFRS earnings

Variable	OWN_AB = 1 for bottom quintile			OWN_AB = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
BPS	0.462** (0.042)	0.449** (0.028)	1.435* (0.076)	0.538*** (0.003)	0.487** (0.012)	1.278** (0.039)
EPS	5.099*** (0.001)	5.729*** (0.002)	9.403* (0.076)	5.525*** (<0.001)	5.847*** (0.001)	9.306* (0.088)
NEG	5.086** (0.039)			8.257*** (0.002)		
OWN_AB	1.749 (0.500)	2.147 (0.457)	-3.104 (0.360)	-1.472 (0.602)	-0.793 (0.833)	-1.608 (0.501)
OWN_AB*BPS	0.216 (0.333)	0.557*** (0.010)	-0.798*** (0.003)	0.325*** (<0.001)	0.226 (0.105)	-0.914 (0.162)
OWN_AB*EPS	-2.094 (0.102)	-3.823** (0.014)	-11.997 (0.106)	-1.647 (0.253)	-1.179 (0.451)	-10.807 (0.114)
Fixed effects:						
- Firm	Yes	Yes	Yes	Yes	Yes	Yes

(continued)

Table 4. Continued

Panel B: Abnormal ownership concentration and IFRS earnings

Variable	OWN_AB = 1 for bottom quintile			OWN_AB = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
- Year	Yes	Yes	Yes	Yes	Yes	Yes
N	1,621	1,382	239	1,621	1,383	238
Within R ²	22.9%	23.0%	35.6%	28.3%	27.5%	34.9%

Panel C: abnormal ownership concentration and headline earnings

Variable	OWN_AB = 1 for bottom quintile			OWN_AB = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
BPS	0.076 (0.763)	0.063 (0.792)	0.606** (0.036)	0.175 (0.381)	0.122 (0.551)	0.425 (0.357)
HEPS	8.805*** (<0.001)	9.088*** (<0.001)	13.690*** (0.001)	9.122*** (<0.001)	9.393*** (<0.001)	13.533*** (0.001)
APS	-0.066 (0.965)	0.721 (0.509)	1.488 (0.587)	0.220 (0.857)	0.306 (0.807)	1.109 (0.665)
NEG	3.055 (0.163)			6.275** (0.015)		
OWN_AB	3.145 (0.240)	3.820 (0.222)	-5.344* (0.065)	-1.341 (0.642)	-0.678 (0.863)	-2.545 (0.125)
OWN_AB*BPS	0.504*** (<0.001)	0.692*** (0.001)	0.325*** (0.004)	0.553*** (<0.001)	0.432** (0.020)	-0.089 (0.802)
OWN_AB*HEPS	-4.664*** (<0.001)	-5.462*** (0.001)	-15.339*** (0.008)	-3.697*** (0.001)	-2.986*** (0.006)	-11.152** (0.049)
OWN_AB*APS	1.052 (0.629)	-2.611 (0.160)	-2.906* (0.097)	1.850 (0.168)	2.251*** (<0.001)	-0.588 (0.792)
Fixed effects:						
- Firm	Yes	Yes	Yes	Yes	Yes	Yes
- Year	Yes	Yes	Yes	Yes	Yes	Yes
N	1,621	1,382	239	1,621	1,383	238
Within R ²	33.4%	31.7%	66.6%	37.6%	36.5%	69.9%

Note(s): Ownership concentration for this table was sorted into quintiles based on abnormal strategic shareholding. The dependent variable for all regression models is *p*. Variables are defined in the [Appendix](#). The impact of abnormal ownership concentration is determined with reference to the middle quintiles as the base sample. For multivariate regression results, two-tailed *p*-values based on robust standard errors clustered by firm and year ([Peterson, 2009](#); [Cameron et al., 2011](#)) are reported in brackets, with a correction where the covariance matrix is not positive semi-definite. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively

Source(s): Authors' own work

components are distinguished. It shows that, when the earnings coefficient is permitted to vary, abnormal dispersed ownership and abnormal concentrated ownership are both associated with higher value-relevance of book values ($p < 0.001$). Furthermore, in both cases, the interaction with high-quality earnings is significantly negative ($p < 0.010$). Consequently, abnormal ownership concentration is associated with lower value-relevance of high-quality earnings and higher value-relevance of book values. As [Jensen and Meckling \(1976\)](#) predict in their agency theory model, deviations from the optimal ownership structure for a firm are detrimental for decision-making irrespective of whether the structure is concentrated or dispersed. In other words, abnormal ownership concentration (suboptimal ownership structures) hinder market

participants' ability to evaluate the quality of earnings, which is associated with greater likelihood that accounting fundamentals are perceived incorrectly.

5.4 Additional analyses

As abnormal ownership concentration is associated with lower value-relevance of high-quality earnings, we expect that headline earnings will have the highest value-relevance for firms where ownership concentration is closest to being optimal (i.e. where abnormal concentration is lowest) [13]. Consistent with this prediction, when we code *OWN_AB* to equal one for firm-years in the middle quintile and zero otherwise, Table 5 reflects higher value-relevance of headline earnings for these firm-years ($p = 0.005$). Interestingly, the value-relevance of IFRS earnings is also higher ($p = 0.052$). Finally, investors appear to rely less on book values for these firms, with *OWN_AB*BPS* negative and significant ($p < 0.050$) in both analyses. This is consistent with theoretical expectations that an optimal ownership structure

Table 5. Results where ownership concentration is closest to expectation

Variable	Abnormal ownership concentration and IFRS earnings			Abnormal ownership concentration and headline earnings		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
BPS	0.649*** (0.001)	0.589*** (0.003)	0.663*** (0.003)	0.408* (0.069)	0.341 (0.115)	0.284 (0.208)
EPS	4.074*** (<0.001)	4.612*** (<0.001)	3.107 (0.350)			
HEPS				6.248*** (<0.001)	6.780*** (<0.001)	8.422*** (0.004)
APS				0.690 (0.564)	0.942 (0.444)	-0.653 (0.751)
NEG	6.087*** (0.005)			4.488* (0.081)		
OWN_AB	0.671 (0.743)	0.678 (0.804)	-2.778 (0.116)	-0.765 (0.590)	-1.356 (0.330)	-4.873* (0.060)
OWN_AB*BPS	-0.223** (0.046)	-0.181** (0.039)	0.246 (0.627)	-0.261*** (<0.001)	-0.266*** (0.005)	0.685** (0.025)
OWN_AB*EPS	1.618* (0.052)	1.353* (0.064)	-1.092 (0.755)			
OWN_AB*HEPS				2.612*** (0.005)	2.725** (0.032)	-9.931*** (0.008)
OWN_AB*APS				0.203 (0.790)	-0.128 (0.900)	1.594 (0.687)
Fixed effects:						
- Firm	Yes	Yes	Yes	Yes	Yes	Yes
- Year	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	2026	1727	299	2026	1727	299
Within <i>R</i> ²	25.8%	25.3%	14.0%	32.5%	31.7%	59.1%

Note(s): Ownership concentration for this table was sorted into quintiles based on abnormal strategic shareholding and *OWN_AB* equals 1 when abnormal ownership falls into the middle quintile and zero otherwise. The dependent variable for all regression models is *p*. Variables are defined in the Appendix. The impact of abnormal ownership concentration is determined with reference to the full sample. For multivariate regression results, two-tailed *p*-values based on robust standard errors clustered by firm and year (Petersen, 2009; Cameron *et al.*, 2011) are reported in brackets, with a correction where the covariance matrix is not positive semi-definite. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively

Source(s): Authors' own work

distributes the agency cost fairly amongst shareholders (Jensen and Meckling, 1976; Shleifer and Vishny, 1986).

In the main analyses, we ranked the signed (i.e. positive/negative) residual into abnormal dispersed ownership (the bottom quintile) and abnormal concentrated ownership (the top quintile). However, it might be that the size of abnormal ownership deviation matters more than the sign. We therefore also present results in Table 6 where the absolute value of the residual is ranked into quintiles. Here, the bottom quintile represents firms with the lowest abnormal ownership concentration. Consistent with the main regression results, these firms reflect lower value-relevance for book values ($p < 0.050$) and higher value-relevance for both IFRS ($p = 0.025$) and high-quality earnings ($p < 0.001$). For firms with the highest absolute abnormal ownership concentration, most interactions are insignificant. However, we detect an increase in the value-relevance of book values ($p = 0.088$) in Panel B, but also an increase in value-relevance for low quality earnings ($p = 0.036$). These findings suggest that the sign of abnormal ownership concentration matters more than its size.

In untabulated results, we also consider whether smaller differences in both actual and abnormal ownership concentration could explain value-relevance differences, by ranking firm-years above and below the median. Although we continue to note some cross-sectional differences, results are generally much weaker and often insignificant. It therefore appears, consistent with prior research (Fan and Wong, 2002; da Cunha and Bortolon, 2016), that the impact of ownership concentration inflects at very high or very low levels.

5.5 Endogeneity

All empirical papers are affected by endogeneity concerns (Chenhall and Moers, 2007). Endogeneity should be primarily addressed through theory and logic, and econometric techniques should only be implemented when their use is clearly appropriate (Chenhall and Moers, 2007; Larcker and Rusticus, 2007; Gow and Ding, 2024). Importantly, no econometric approach exists which can eliminate endogeneity concerns (Chenhall and Moers, 2007; Larcker and Rusticus, 2007). However, research findings still have value even when endogeneity limits causal inferences (Chenhall and Moers, 2007).

In respect of one type of endogeneity, namely omitted variable bias, we include firm and year fixed effects which control, to some extent, for unobserved (omitted) firm characteristics (Breuer and deHaan, 2024). In robustness tests, we also include control variables for additional firm characteristics, namely gearing (*LEV*), intangible intensiveness and growth opportunities (*MTB*), firm size (*SIZE*), dividend yield (*DY*), firm age (*AGE*) and whether a firm has an analyst following (*AF*) in all regressions. For brevity, only the interaction terms of the various investigations are displayed in Table 7 and reflect that, despite small differences, inferences remain qualitatively unchanged.

Another type of endogeneity that could affect our results is simultaneity bias, as firm value (our dependent variable) is a potential determinant of ownership concentration levels (Donnelly and Lynch, 2002). Simultaneity bias is sometimes addressed through an instrumental variable approach. One such instrumental variable technique is generalised method of moments (GMM). GMM requires no formal identification of instruments but uses a dynamic estimation approach to include lags of the dependent variable as instruments. We therefore reperform earlier regressions using GMM [14]. For brevity, only the interaction terms of the various investigations are reported in Table 8. Although we note some differences across the various panels, our broader inferences remain qualitatively unchanged. In brief, high actual ownership concentration is associated with lower earnings value-relevance, while this is also true for both low and high abnormal ownership concentration. Findings for absolute abnormal ownership concentration are stronger than those reported earlier. We omit results for subsamples of firms reporting negative earnings from Table 8, as the number of instruments render these estimations infeasible in many instances.

Table 6. Results when using absolute abnormal ownership concentration

Panel A: absolute abnormal ownership concentration and IFRS earnings						
Variable	OWN_AB = 1 for bottom quintile			OWN_AB = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
BPS	0.667*** (0.006)	0.699*** (0.005)	0.648 (0.281)	0.678*** (<0.001)	0.664*** (0.001)	1.001*** (0.004)
EPS	4.058*** (<0.001)	4.156*** (0.001)	6.570 (0.184)	4.108*** (0.001)	4.460*** (0.002)	7.026 (0.156)
NEG	5.569** (0.024)			6.182** (0.034)		
OWN_AB	0.714 (0.743)	0.567 (0.850)	-5.048* (0.086)	-0.139 (0.914)	-0.224 (0.900)	-1.551 (0.784)
OWN_AB *BPS	-0.218** (0.025)	-0.231*** (0.009)	0.038 (0.953)	0.104 (0.241)	0.002 (0.993)	-1.116*** (0.003)
OWN_AB *EPS	1.818** (0.025)	1.940* (0.066)	-4.900 (0.337)	0.199 (0.801)	0.985 (0.447)	-7.747* (0.080)
Fixed effects:						
- Firm	Yes	Yes	Yes	Yes	Yes	Yes
- Year	Yes	Yes	Yes	Yes	Yes	Yes
N	1,621	1,388	233	1,621	1,383	238
Within R ²	25.5%	24.7%	22.9%	27.2%	28.0%	37.8%

Panel B: absolute abnormal ownership concentration and headline earnings						
Variable	OWN_AB = 1 for bottom quintile			OWN_AB = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
BPS	0.371 (0.153)	0.402 (0.131)	0.770 (0.250)	0.428* (0.056)	0.432* (0.054)	0.449* (0.051)
HEPS	6.594*** (<0.001)	6.563*** (0.001)	10.018*** (0.001)	6.115*** (<0.001)	6.233*** (0.001)	11.017*** (0.001)
APS	-0.351 (0.728)	-0.442 (0.645)	1.797 (0.614)	-0.199 (0.865)	0.016 (0.988)	2.686 (0.486)
NEG	2.964 (0.112)			3.361 (0.249)		
OWN_AB	-0.786 (0.616)	-1.811 (0.297)	-5.298* (0.067)	-1.000 (0.493)	-1.251 (0.522)	0.827 (0.509)
OWN_AB *BPS	-0.242*** (0.005)	-0.311*** (<0.001)	0.547 (0.166)	0.238* (0.088)	0.072 (0.777)	-0.588*** (0.002)
OWN_AB *HEPS	2.783*** (<0.001)	3.381*** (<0.001)	-14.856*** (0.002)	-0.384 (0.721)	0.962 (0.605)	-3.873 (0.296)
OWN_AB *APS	0.939 (0.119)	1.119 (0.329)	-0.869 (0.856)	1.916** (0.036)	1.917* (0.088)	-3.874 (0.448)
Fixed effects:						
- Firm	Yes	Yes	Yes	Yes	Yes	Yes
- Year	Yes	Yes	Yes	Yes	Yes	Yes
N	1,621	1,388	233	1,621	1,383	238
Within R ²	33.8%	32.4%	59.6%	33.0%	32.9%	70.0%

Note(s): Ownership concentration for this table was sorted into quintiles based on absolute abnormal strategic shareholding. The dependent variable for all regression models is *p*. Variables are defined in the [Appendix](#). The impact of absolute abnormal ownership concentration is determined with reference to the middle quintiles as the base sample. For multivariate regression results, two-tailed *p*-values based on robust standard errors clustered by firm and year (Petersen, 2009; Cameron *et al.*, 2011) are reported in brackets, with a correction where the covariance matrix is not positive semi-definite. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively

Source(s): Authors' own work

Table 7. Interaction terms when adding additional control variables

Panel A: actual ownership concentration (main results in Table 3)

Variable	OWN = 1 for bottom quintile			OWN = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
<i>With IFRS</i>						
OWN*BPS	0.340** (0.016)	0.351** (0.013)	1.100 (0.166)	0.117*** (<0.001)	0.009 (0.973)	0.156 (0.203)
OWN*EPS	-0.630 (0.375)	-0.716 (0.486)	5.963 (0.153)	-1.222 (0.451)	-0.650 (0.690)	-0.080 (0.940)
<i>With headline</i>						
OWN*BPS	0.310*** (0.006)	0.334** (0.043)	0.170 (0.403)	0.460*** (0.007)	0.362 (0.185)	0.057 (0.810)
OWN*HEPS	-1.430 (0.341)	-1.690 (0.333)	10.098*** (0.002)	-3.066*** (0.005)	-2.396*** (<0.001)	3.483 (0.558)
OWN*APS	-1.780 (0.175)	-1.677 (0.321)	1.889 (0.307)	1.206 (0.635)	2.618 (0.170)	-0.782 (0.626)

Panel B: Abnormal ownership concentration (main results in Table 4)

Variable	OWN_AB = 1 for bottom quintile			OWN_AB = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
<i>With IFRS</i>						
OWN_AB *BPS	0.245 (0.200)	0.545*** (0.004)	-0.786*** (0.003)	0.334*** (0.001)	0.236* (0.082)	-0.955 (0.156)
OWN_AB *EPS	-2.149** (0.034)	-3.594*** (0.004)	-12.642 (0.112)	-1.609 (0.213)	-1.109 (0.402)	12.453 (0.115)
<i>With headline</i>						
OWN_AB *BPS	0.506*** (0.002)	0.662*** (<0.001)	0.277 (0.118)	0.519*** (<0.001)	0.406** (0.025)	-0.081 (0.863)
OWN_AB *HEPS	-4.513*** (<0.001)	5.074*** (<0.001)	-15.229*** (0.007)	-3.354*** (0.001)	-2.669*** (<0.001)	-13.405** (0.027)
OWN_AB *APS	1.027 (0.603)	-2.034 (0.307)	-4.037** (0.014)	1.394 (0.247)	1.877*** (<0.001)	-1.918 (0.425)

Panel C: results where ownership concentration is closest to expectation (main results in Table 5)

Variable	Abnormal ownership concentration and IFRS earnings			Abnormal ownership concentration and headline earnings		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
OWN_AB*BPS	-0.253*** (0.010)	-0.205*** (<0.001)	0.243 (0.617)	-0.287*** (<0.001)	-0.278** (0.029)	0.670** (0.031)
OWN_AB *EPS	1.678*** (0.005)	1.314*** (0.002)	-1.406 (0.698)			
OWN_AB *HEPS				2.592** (0.018)	2.518* (0.080)	-9.443*** (<0.001)
OWN_AB *APS				0.302 (0.621)	0.048 (0.958)	1.059 (0.766)

(continued)

Table 7. Continued

Variable	OWN_AB = 1 for bottom quintile			OWN_AB = 1 for top quintile		
	All firms	Positive earnings	Negative earnings	All firms	Positive earnings	Negative earnings
<i>With IFRS</i>						
OWN_AB *BPS	-0.252*** (0.003)	-0.252*** (<0.001)	0.004 (0.995)	0.040 (0.700)	-0.060 (0.769)	-1.116*** (0.002)
OWN_AB *EPS	1.816*** (<0.001)	1.764*** (0.006)	-5.719 (0.272)	0.193 (0.800)	0.986 (0.394)	-8.503* (0.069)
<i>With headline</i>						
OWN_AB *BPS	-0.272*** (<0.001)	-0.320*** (0.002)	0.490 (0.225)	0.163 (0.226)	0.005 (0.985)	-0.618*** (0.005)
OWN_AB *HEPS	2.682*** (<0.001)	3.000*** (0.007)	-14.213*** (<0.001)	-0.362 (0.720)	0.888 (0.590)	4.447* (0.081)
OWN_AB *APS	0.980* (0.064)	1.270 (0.282)	-1.895 (0.654)	1.827** (0.033)	2.052* (0.054)	-5.105 (0.365)

Note(s): Ownership concentration for this table was sorted into quintiles as described in the earlier tables. The dependent variable for all regression models is P. Firm and year fixed effects are included in all regressions as well as the following firm characteristic variables: *LEV*, *MTB*, *SIZE*, *DY*, *AGE* and *AF*. Variables are defined in the Appendix. Two-tailed *p*-values based on robust standard errors clustered by firm and year (Petersen, 2009; Cameron *et al.*, 2011) are reported in brackets, with a correction where the covariance matrix is not positive semi-definite. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively

Source(s): Authors' own work

Although formal tests show that most specifications in Table 8 are not significantly affected by endogeneity, the tests are inconclusive in limited instances. However, endogeneity tests frequently produce unreliable results (Gow and Ding, 2024), which include both false positives and false negatives. Furthermore, improving the GMM specifications would require the identification of an explicit exogenous instrument. This is highly unlikely when the dependent variable is firm value (Hentschel and Kothari, 2001; Larcker and Rusticus, 2007; Cahan *et al.*, 2009; Gow and Ding, 2024). In addition, lagged variables are frequently invalid instruments outside of the dynamic estimation approach of GMM (Larcker and Rusticus, 2010; Chen *et al.*, 2023). Therefore, given the lack of plausible theory to identify explicit exogenous instruments for further GMM analysis, we do not extend the use of an instrumental variable approach further [15].

However, several other research design elements reduce simultaneity concerns around ownership concentration. Firstly, we use ranked variables throughout. Ranked variables control for simultaneity bias, as crude cut-offs capture the level of a variable, but not the firm-induced variations (simultaneity) around that level (Hentschel and Kothari, 2001; Cahan *et al.*, 2009) [16]. Secondly, *abnormal* ownership concentration reflects the error term which, by construction, represents the ownership concentration that is *not* explained by the firm characteristics of model (3). By extension, abnormal ownership concentration is independent of these firm characteristics and their association with market value of equity. Panel A of Table 4 supports this conclusion, showing that firm characteristics are randomly distributed when stratifying based on abnormal ownership concentration. Therefore, although no empirical paper can completely rule out endogeneity concerns (Chenhall and Moers, 2007; Larcker and Rusticus, 2007), it appears unlikely that endogeneity significantly impacts our inferences.

5.6 Other limitations and suggestions for future research

Our sample period excludes distress periods as these confound value-relevance results (Kane *et al.*, 2015). However, prior research shows that distress periods can often provide additional

Table 8. Interaction terms under generalised method of moments (GMM) estimation

Panel A: Actual ownership concentration (main results in Table 3)

Variable	OWN = 1 for bottom quintile		OWN = 1 for top quintile	
	All firms	Positive earnings	All firms	Positive earnings
<i>With IFRS</i>				
OWN*BPS	0.523*** (0.001)	0.814*** (<0.001)	1.297*** (<0.001)	1.578*** (<0.001)
OWN*EPS	-1.781 (0.174)	-2.694* (0.089)	-7.421*** (<0.001)	-7.914*** (<0.001)
<i>With headline</i>				
OWN*BPS	0.307* (0.061)	0.488*** (0.010)	1.368*** (<0.001)	1.319*** (<0.001)
OWN*HEPS	0.501 (0.716)	0.911 (0.561)	-8.793*** (<0.001)	-7.457*** (<0.001)
OWN*APS	-7.760*** (0.002)	-9.834*** (0.003)	-5.262 (0.103)	-17.705*** (0.001)

Panel B: Abnormal ownership concentration (main results in Table 4)

Variable	OWN = 1 for bottom quintile		OWN = 1 for top quintile	
	All firms	Positive earnings	All firms	Positive earnings
<i>With IFRS</i>				
OWN_AB *BPS	0.609*** (0.002)	1.318*** (<0.001)	1.132*** (<0.001)	1.160*** (<0.001)
OWN_AB *EPS	-4.583*** (0.005)	-11.089*** (<0.001)	-8.405*** (<0.001)	-8.728*** (<0.001)
<i>With headline</i>				
OWN_AB *BPS	0.875*** (<0.001)	1.057*** (<0.001)	1.260*** (<0.001)	1.097*** (<0.001)
OWN_AB *HEPS	-5.594*** (0.001)	-6.700*** (0.004)	-10.643*** (<0.001)	-9.546*** (<0.001)
OWN_AB *APS	-2.822 (0.317)	-8.264*** (0.008)	-1.704 (0.628)	-3.021 (0.523)

Panel C: results where ownership concentration is closest to expectation (main results in Table 5)

Variable	Abnormal ownership concentration and IFRS earnings		Abnormal ownership concentration and headline earnings	
	All firms	Positive earnings	All firms	Positive earnings
OWN_AB*BPS	-0.581*** (0.002)	-0.683*** (0.001)	-0.533*** (0.003)	-0.686*** (0.001)
OWN_AB *EPS	5.183*** (0.001)	6.343*** (0.001)		
OWN_AB *HEPS			5.917*** (<0.001)	7.394*** (<0.001)
OWN_AB *APS			-1.048 (0.773)	-0.245 (0.952)

(continued)

Table 8. Continued

Panel D: absolute abnormal ownership concentration (main results in Table 6)

Variable	OWN_AB = 1 for bottom quintile		OWN_AB = 1 for top quintile	
	All firms	Positive earnings	All firms	Positive earnings
<i>With IFRS</i>				
OWN_AB *BPS	-0.470* (0.066)	-0.310 (0.266)	0.918*** (<0.001)	0.811*** (<0.001)
OWN_AB *EPS	5.216** (0.015)	5.345** (0.028)	-5.620*** (<0.001)	-4.594*** (0.001)
<i>With headline</i>				
OWN_AB *BPS	-0.448* (0.094)	-0.496* (0.082)	1.232*** (<0.001)	0.865*** (<0.001)
OWN_AB *HEPS	6.218*** (0.006)	7.705*** (0.002)	-7.808*** (<0.001)	-4.532*** (0.002)
OWN_AB *APS	0.959 (0.832)	-2.651 (0.613)	0.033 (0.991)	-4.684 (0.267)

Note(s): Ownership concentration for this table was sorted into quintiles as described in the earlier tables. The dependent variable for all regression models is p . Results are from dynamic panel estimation with firm as the cross-sectional variable and year as the time variable. Given the number of instruments, estimation was made feasible by limiting the number of instruments to ten. Separate estimations for subsamples of firms that reported losses have been omitted from this table as estimations were rendered unfeasible in certain instances even when limiting the number of instruments to ten. Variables are defined in the Appendix. Two-tailed p -values are reported in brackets. ***, ** and * denote significance at the 1%, 5% and 10% levels respectively

Source(s): Authors' own work

insights about longitudinal and cross-sectional variation in the role of ownership concentration (Mitton, 2002; da Cunha and Bortolon, 2016; Rao *et al.*, 2022). It is also possible that distress at firm level could induce cross-sectional variation in the role of ownership concentration. Therefore, different levels of distress, both at macroeconomic level and firm level, could cause cross-sectional variations in inferences around abnormal ownership concentration. However, these and other research questions we leave for future research.

6. Summary and conclusion

There is a lack of consensus in existing literature on the association between ownership concentration and the value-relevance of accounting information, with evidence that both concentrated ownership (Ghosh and Moon, 2010) and dispersed ownership (Donnelly and Lynch, 2002) are associated with lower value-relevance. We show that high ownership concentration is associated with weakened earnings value-relevance, particularly in the case of high-quality earnings. However, the key contribution of this paper is the evidence that ownership concentration that deviates abnormally from expected levels is associated with increased value-relevance of book values and lower value-relevance of high-quality earnings. In other words, as the theoretical model of Jensen and Meckling (1976) predicts, any level of ownership concentration can detract from the value-relevance of high-quality earnings if it deviates from what firm characteristics dictate that it should be.

Prior research findings on the relationship between ownership concentration and reporting quality are also inconsistent (Dou *et al.*, 2018; Saha *et al.*, 2019). Our findings show that the moderation effect of abnormal ownership concentration differs between earnings and book values. Combined with our findings for high-quality earnings, we therefore conclude that earnings quality is the main channel through which abnormal ownership concentration moderates the pricing of accounting information. Therefore, our study offers a unifying theory

and evidence that abnormal ownership structure is associated with lower value-relevance of high-quality earnings and higher value-relevance of book values of equity.

Our research setting in South Africa reflects strong protection of minority shareholders (World Bank, n.d.) in a deep market represented by a relatively low number of firms. While ownership concentration findings can differ significantly between countries, especially emerging markets (Wang and Shailer, 2015; Iwasaki and Mizobata, 2020), our findings could have implications for many markets across the globe with similar institutional characteristics. Our findings suggest, for example, that abnormal ownership concentration could hamper the ability of higher financial reporting quality to improve capital market outcomes. Investors and preparers that aim to maximise firm value will therefore be interested in our findings, which show that optimising ownership structure deserves attention equal to increasing financial reporting quality.

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Appendix

Table A1. Variable definitions

Variable	Definition
<i>AF</i>	An indicator variable, set to one if an analyst rating is available and zero otherwise
<i>AGE</i>	The number of years since the firm was first listed
<i>APS</i>	The adjustment between <i>EPS</i> and <i>HEPS</i> , calculated so that $EPS = HEPS + APS$
<i>AR</i>	The analyst rating for the firm if available
<i>BETA</i>	A measure of risk, measured using up to 36 prior monthly returns as per LSEG Workspace
<i>BPS</i>	Book value per share
<i>DY</i>	Dividend yield
<i>EPS</i>	Basic earnings per share
ΔEPS	The change in <i>EPS</i> compared to the previous period
<i>HEPS</i>	Headline earnings per share
<i>LEV</i>	Total debt to total assets
<i>LIQ</i>	The liquidity of shares traded during the reporting period calculated as the average monthly trading volume divided by the average number of shares outstanding
<i>MAR</i>	12-month market-adjusted return, calculated as the total return of the firm relative to the index return
<i>MTB</i>	Market-to-book ratio
<i>NEG</i>	An indicator variable, set to one if <i>EPS</i> is negative and zero otherwise
<i>NOSHST</i>	The total percentage strategic shareholding from LSEG Workspace. <i>NOSHST</i> comprises the total shareholding of all parties (including management, institutional investors, other firms and individuals) who hold more than 5% of the shares in issue
<i>OWN</i>	An indicator variable, set to one if ownership concentration falls into a particular quintile based on <i>NOSHST</i> and zero otherwise
$ OWN_{AB} $	An indicator variable, set to one if abnormal ownership concentration falls into a particular quintile based on the absolute value of the residual from regressing model (3) and zero otherwise
<i>OWN_AB</i>	An indicator variable, set to one if abnormal ownership concentration falls into a particular quintile based on the residual from regressing model (3) and zero otherwise
<i>p</i>	Share price, three months after reporting date, calculated by adjusting the share price at reporting date with a firm-specific total return index which allows for corporate actions
<i>SIZE</i>	The natural log of total assets
<i>VOL</i>	The standard deviation of daily share price returns over the reporting period

Notes

1. The minority investor protection score for South Africa was 40/50 from 2013 to 2019, ahead of the United States (36) and slightly behind the United Kingdom (42) (World Bank, n.d.). The index captures legal measures to protect minority investors, such as legal rights of redress for decisions and related party transactions that are not in the best interest of minorities.
2. Earnings prepared under a regulated accounting framework are still subject to management discretion. Therefore, headline earnings could be affected by opportunistic reporting decisions. However, as a regulated and audited earnings measure, headline earnings are subject to the *same level* of management discretion that is present in IFRS earnings (from which headline earnings are derived in a prescribed manner).
3. Some cross-listed firms are headquartered outside of South Africa. Cross-listed firms have lower information asymmetry than other firms (Bris *et al.*, 2012). In addition, these firms are generally headquartered in main financial centres of other countries such as London, Zurich or New York. Therefore, the lower information asymmetry for these firms also weighs against finding a moderation effect for ownership concentration.
4. A value-relevance model may be specified as a levels (price) or change (returns) model. The most appropriate model specification depends on the research question (Barth *et al.*, 2001). A levels model is best suited to investigate *whether* information impacts firm value, while a returns model is best suited to investigate *when* information impacts firm value (Barth *et al.*, 2001). As we are primarily interested in whether ownership concentration impacts on firm value, rather than the timeliness of that impact, we use a levels (price) model.
5. Our measurement of p reflects a *cum* dividend value to measure it consistently with the accounting variables.
6. LSEG Workspace is the brand name used for the Datastream/Worldscope databases at the time of writing.
7. The broad objective of headline earnings is to better reflect a firm's operating results (SAICA, 2019). Examples of items excluded from headline earnings include impairment adjustments for non-financial assets, gains on disposal of non-financial assets and gains on bargain purchase.
8. Prior research identifies research and development intensity (intangible intensiveness) as an important explanatory factor of strategic shareholding (Bushee, 2001; Callen *et al.*, 2005). However, firms with high intangible intensiveness have a high market-to-book ratio (Clausen and Hirth, 2016), so that this ratio is a reliable alternative measure of intangible intensiveness.
9. We do not include firm and year fixed effects when we derive abnormal ownership concentration (OWN_AB) in model (3) to ensure that OWN_AB is measured consistently with the database and hand-collected variables. As the industry on the database does not change for any firm during the sample period, industry membership is a firm fixed effect.
10. To trim observations, we do not include indicator variables (NEG , AF and OWN), $NOSHST$ (which is converted to an indicator variable for analyses) or Age . Moreover, we calculate APS after trimming. All other variables included in analyses are used to trim observations.
11. A Vuong (1989) test is directional, so that a negative sign indicates a preference for the second model over the first model.
12. The total explanatory power for the cross-country sample in Richter and Weiss (2013) peaks at 28.5% when firm-level, industry-level and country-level characteristics are included. Of these, industry-level factors explain minimal variance in ownership concentration levels.
13. Some may argue that we should use predicted values to represent a firm's optimal ownership concentration level. However, predicted values exist only as a research concept and do not change firm characteristics or reporting outcomes. Consequently, using predicted ownership concentration would not provide insight into how optimal ownership structures might alter reporting outcomes. Moreover, unlike residuals, predicted values are correlated with actual outcomes and induce statistical bias when included in a second stage regression (Larcker and Rusticus, 2010; Chen *et al.*, 2023). For these reasons, inferences from using predicted values are likely to (1) be similar to those using actual ownership concentration and (2) suffer from statistical bias. As these cannot be

disentangled, we choose to assess the impact of optimal ownership concentration with reference to those firms whose actual ownership concentration most closely resembles optimal levels (i.e. where abnormal ownership concentration is the lowest).

14. We thank an anonymous reviewer for this suggestion.
15. An important implication is that the derivation of abnormal ownership concentration need not be exogenous.
16. Ranked residuals do not induce statistical bias when included in a second stage regression (Chen *et al.*, 2023).

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