EURASIAN JOURNAL OF BUSINESS AND MANAGEMENT

www.eurasianpublications.com

EVIDENCE FROM SOUTH AFRICAN CONSTRUCTION AND INDUSTRIAL TRANSPORTATION BUSINESSES ON ASSET REVALUATION

Zenzele Mzimela
University of KwaZulu Natal, South Africa
Email: zenzelem@isiquaccountants.co.za

Mabutho Sibanda (iD)
Corresponding Author: University of KwaZulu Natal, South Africa
Email: Sibandam@ukzn.ac.za

Bomi Nomlala (iD)
University of KwaZulu Natal, South Africa
Email: Nomlalabc@ukzn.ac.za

Hlengiwe Ndlela
University of KwaZulu Natal, South Africa
Email: hle.ndlela@gmail.com

Abstract

This study examines the relationship between asset revaluation and accounting and economic factors among firms listed on the Johannesburg Stock Exchange (JSE). It employs a quantitative model using seven explanatory variables, namely, leverage, operating cash flow, firm size, return on equity, return on assets, Tobin's q, and common share ownership. The study covers South African companies listed on the Johannesburg Stock Exchange (JSE) that applied asset revaluation at least once during the period 2006 to 2017. The findings of the study reveal that: (1) leverage does not have a significant impact on the revaluation decisions of the sampled firms, (2) macro-economic policy environment could significantly influence revaluation decisions, (3) the size of firms is one of the most important factors that have a significant effect on firm performance, (4) leverage has a significant impact on firm performance, while the other variables show a negative or inverse relationship with the revalued asset. The results of this study will fill a gap in understanding the variables identified by this research study which has justified with most relevant literature that motivates management of South African firms to choose the revaluation model to measure fixed assets. This study contributes to the current body of knowledge and further offers insight into the effect of the revaluation of fixed assets on firm performance, the characteristics of firms that revalue their fixed assets, and whether or not fixed asset revaluation decisions are influenced by the firm's leverage. This study has also provided a very robust plan for future researchers.

Keywords: Fixed Assets, Revaluation, Leverage, Firm Performance, IFRS

1. Introduction

On 1 January 2005, the Johannesburg Stock Exchange (JSE) announced that all listed companies should adopt the International Financial Reporting Standards (IFRS) as a financial reporting framework (SAICA, 2021). This is strengthened by the provisions of the Companies Act of 2008, which stated that all listed companies should implement the IFRS (Deloitte, 2018). For the first time in South Africa, a statutory corporate financial reporting framework existed as a reference point. Furthermore, the Financial Reporting Standards Council (FRSC) eventually withdrew the use of Statements of South African Generally Accepted Accounting Practice (GAAP) as per the recommendations of the Accounting Practice Board (APB) and the FRSC for financial years commencing on or after 1 December 2012. While companies with a public interest score of below 350 were permitted to apply SA-GAAP, small to medium enterprises (SMEs) were directed to convert to IFRS with effect from 1 January 2013 (Deloitte, 2018; PwC, 2020).

The International Financial Reporting Standards Foundation and the International Accounting Standards Board issued the IFRS with the aim of promoting understandability, comparability, and the reliability and relevance of the financial information presented in the financial statements (Horno-Bueno *et al.* 2022). IFRS are based on fair value accounting. Although the treatment of Property, Plant and Equipment (PPE) in the IFRS is similar to that in the Statements of South African GAAP and IFRS for SMEs, firms tended to shy away from measuring their non-financial assets using the fair value model (Razak and Stainbank, 2019; SAICA, 2021). International Accounting Standard 16 states that firms should initially measure their PPE at cost and subsequently measure using either the fair value or the historical cost model (IASB, 2022).

The harmonization process culminated in the issuing of duel numbering of the standards comprising of either IAS or the IFRS shadowed by a bracketed appropriate South African AC number (SAICA, 2004). The JSE announcement in 2005 that all companies listed on the exchange should apply the IFRS, was effective from the financial year commencing on or before 1 January 2005 (Missonier-Piera, 2021). Subsequently, the arrangements for standard-setting underwent a complete revamp. The APB was decommissioned and all its roles and mandates were transferred to the FRSC, which was formed in 2011. Furthermore, on 12 March 2012, the APB and FRSC issued a joint statement to the effect that the SA-GAAP and its provisions would be discontinued effective from 1 December 2012 (PwC, 2020).

IAS16, Property, Plant and Equipment, offers managers the option of subsequent measurement of assets using a historical cost or revaluation method (IASB, 2022). This has resulted in much debate on which is the better route and why (IASB, 2022). It is our belief that managers do not select a particular option at random but base their choice, as well as when to implement it, on certain reasons (Jaggi and Tsui, 2021; Jin *et al.* 2022). Proponents of conservative accounting, such as Hussain *et al.* (2022) and Cho *et al.* (2021) support the historical cost model as all the information on the measurement of an asset can be verified back to the date of acquisition. In contrast, those that support the fair market value measurement of fixed assets, e.g., Barlev *et al.* (2007) and Jin *et al.* (2022) believe that value relevance issues are more important to decision-makers. Salehabadi and Mehrani (2022) further argue that historical cost measurement of fixed assets that appreciate in value, like property, could mislead the users of financial statements and investors. In the same light, the IFRS advocate for fair value accounting (IASB, 2022).

This study focuses on the construction and industrial transportation sectors within the JSE because these sectors comprise firms with large investments in fixed assets. The aim is to understand the economic and non-economic motives for the selection of either the historical cost or fair value model by South African listed firms to measure their PPE, as a choice provided by the IFRS. The findings will assist investment analysts in understanding firms' financial accounting behaviour as well as contribute to policy formulation and review of accounting standards in South Africa and beyond.

The remainder of the paper is structured as follows. The following section provides a critical discussion of the existing literature on the revaluation of assets. Section three outlines the

methodology employed to conduct the study and section four presents and discusses the results. The final section provides an overall conclusion.

2. Literature review

The conceptual framework for the study was premised on the fact that "an asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity"(IASB, 2022). The future economic benefit could be considered as contributing to the operating activities of a particular entity (IASB, 2022). Thus, all assets have the potential to provide future benefits or services (van Zijl and Hewlett, 2022). Assets are normally catergorized into current assets and non-current assets. The former are typically called fixed assets or, in the current financial reporting standards, named PPE. Two conditions must be satisfied in order to recongnize an asset as a fixed asset. Firstly, it is used in normal business operations, rental, and administration of goods and services; and secondly, it is intended to be held and used for more than one period (van Zijl and Hewlett, 2022). Fixed assets comprise land, buildings, structures, motor vehicles, furniture, and equipment.

When a firm decides to embrace the cost model, an asset class is recorded at cost and adjusted for the decrease in its value through the use of asset or impairment losses (Salehi, 2022). On the other hand, the revaluation model calls for PPE to be measured at fair market value. This is defined as an exit price when selling an asset in an arms-length transaction or orderly transaction (IASB, 2022). The IAS 16 does not state how frequently revaluation should occur but recommends occasional revaluation with the goal of limiting the difference between the carrying value and the fair value of an asset (Salehi, 2022). The revaluation model must be applied to the whole class of fixed assets, but the revaluation amount should be calculated for each individual asset (IASB, 2022). For instance, when the market shows that the current value of an asset exceeds its carrying value or amount, the firm will undertake an upward revaluation.

Revaluation of assets results in both the statement of the financial position being impacted through the increase in the fixed asset values, as well as the statement of financial performance through the increased depreciation expense (Carlin, 2018). While asset revaluation can be undertaken by an independent appraiser, the issue of subjectivity does not entirely disappear as managers have full control of the whole process (Carlin, 2018). Managers generally have the discretion to determine the useful economic lives of fixed assets, the timing of asset revaluation, residual value and the amount depreciated (Barlev *et al.* 2007; Carlin, 2018). Earlier investigations found that manipulating financial results through fixed asset revaluation can negatively impact organizations' future operating results (Carlin, 2018; Jaggi and Tsui, 2021).

Management's choice of accounting policies depends on the company's size and leverage since the agency theory holds that these are vital cogs in the contractual relationship between shareholders, creditors and managers (Skinner, 2019; Watts, 2019). High agency costs will prompt managers to endeavour to maximize the firm's value by selecting policies that are to their advantage (Jensen and Meckling, 2019).

According to Diehl (2020), firms tend to favour the historical cost basis, except for those in the financial sector that measure their non-financial assets using the fair value model. However, Allini *et al.* (2021) examined the usage of fair value measurement against the historical cost model by firms in the UK and Germany and found that firms in both countries were reluctant to use the fair value model to measure their non-financial assets. Firms are more likely to use the fair value measurement model for investment property and fixed property, and managers are inclined to apply the fair value model when it enhances the performance measurement of the firm (Allini *et al.* 2021).

In analyzing firm characteristics, Khalil *et al.* (2018) established that firms that revalue fixed assets had higher average debt costs, equity costs and the weighted average cost of capital than those that did not revalue their assets. Further findings by Khalil *et al.* (2018) were that revaluers tended to experience a reduction in equity capital costs from year negative one to positive year one, compared with non-revaluers. Khalil *et al.* (2018) also found that fair value accounting promotes efficiency in the capital market, thus decreasing the cost of equity capital. Their study revealed that fair value reporting could promote the provision of more relevant

information and reduce information asymmetry among market participants, thus resulting in a more effective capital markets (Rahman and Hossain, 2020). Solikhah *et al.* (2019) similarly, found that larger, successful, and debt-dependent US-based foreign firms were most likely to measure their non-financial assets using the fair value model, particularly for performance enhancement. In addition, firms that were not sufficiently profitable with a high debt-equity ratio and high levels of investment in assets were likely to opt for revaluation (Hlaing and Pourjalali, 2017).

3. Research methodology

This study uses 12-year annual data sourced from McGregor's BFA database, the Bloomberg database and the integrated annual reports of the sampled companies. The asset measurement model is disclosed in the financial statements by way of the accounting policy and is also reflected in the note to the financial statements. The sample firms are examined to ascertain whether they have opted for the revaluation model and the firms are then categorized as revaluers or non-revaluers. In line with previous studies on the revaluation of non-financial assets, the frequency of information utilized by this study is on an annual basis (Baek and Lee, 2016; Hlaing and Pourjalali, 2012; Paik, 2009). Low-frequency data is used as previous studies confirm that the inputs on asset revaluation are observable on an annual basis.

Razak and Stainbank (2018) note high levels of reluctance among South African firms to revalue their assets. It is thus anticipated that not all South African firms would have embraced the revaluation model as a measurement model and a spurious factor is introduced in this study that proxies the application of a revaluation model. The study population comprised all organizations listed on the JSE that implemented the revaluation model for at least one financial year for the study period of 2006 to 2017. The sampling process involved all construction and industrial transportation firms listed on the JSE between 2006 and 2017. All firms with full available data listed for a minimum of six years within the study period are selected. In line with Kwenda and Holden (2014), companies missing some financial statements between 2006 and 2017 are excluded in order to produce a balanced panel. A sample of eight industrial transportation and nine construction companies are finally chosen based on the above criteria. Three companies per sector implemented revaluations. The observations per panel data set ultimately equals 192. Gujarati (2009) maintains that panel data enriches empirical analysis in many ways because it is capable of thoroughly measuring effects that cannot be measured through pure cross-sectional or pure time-series data. This study includes delisted and listed firms to counteract survival bias errors.

A panel data analysis approach is used and the study adopts the ordinary least square, fixed effects and random effects and Hausman test estimating techniques in the model. The Hausman test is required for the selection of the most appropriate model. Based on the nature of the data and the results of the Hausman test, the results from random effects (within) regression are reported. The following variables of interest are used in the regression model.

3.1. Revaluation decision

Where the revaluation model is applied, assets should be revalued infrequent periods, if there is a reason to believe that there is a substantial gap between the current fair value and the carrying amount of the fixed asset. Following previous studies, this study applies dummy 'binary or boolean' variables, which represents 1 for the revaluation model and 0 if the assets are not revaluated, as previously applied by Seng and Su (2010).

3.2. Liquidity

This study assumed a negative correlation between liquidity and fixed assets revaluation decisions. When firms experience cash shortages or liquidity issues, that is, if they need cash to fulfil their current obligations, asset revaluation can assist by securing loans from financial institutions (Cho *et al.* 2021).

3.3. Cash flow from operating activities (CFO)

CFO was also used to measure the firms' liquidity. CFO is the outcome of the primary revenue-generating activities of the company, that is, sales, investment income and payments made to creditors and suppliers.

3.4. Shared ownership and acquisition (**OWN**)

An organization with a large common shareholding will, in general, have more capacity to openly select the revaluation model, with revaluation utilized to increase the asset at the dimension of market value through acquisitions (Aboody *et al.* 2016). A positive correlation between control and asset revaluation decisions was assumed in this study.

3.5. Leverage

The use of debt and equity may have different implications for a firm's level of financial risk (Tabari and Adi, 2018). A firm with a higher Debt/Equity Ratio (DER) and Debt/Total Assets (DTA) ratios might be closer to a contravention of a creditor's contract. DER is a measure of the proportion of a firm's gearing, which is funded by external creditors compared to the owners' equity (Jaggi and Tsui, 2021). In contrast, DTA is a measurement of dependence on debt funding for investment in assets Brown *et al.* (1992). Revaluation of assets is utilized as a strategy to reduce the costs associated with debt contracting. This study projected a positive correlation between leverage and the revaluation decision.

3.6. Company size

To decrease political expenses, an organization might reduce its size to avoid reporting high earnings and being charged with higher taxation. An asset revaluation policy provides an avenue to explore this strategy (Barlev *et al.* 2007; Brown *et al.* 1992; Choi *et al.* 2013; Lin and Peasnell, 2000; Seng and Su, 2010). This study projects a positive association between company size and revaluation decisions. Company size is measured by total investment in assets, i.e., total assets, sales and operating income. Size, *it* is defined as the natural logarithm of total assets held by company *i,t*, where total assets are measured using the sum of current assets and long term assets held by a business as it is shown in the balance sheet on its historical cost. It is calculated by: Size = log (total assets *i, t*) where: *i* refers to the company and t refers to respective time or period.

3.7. Cost of debt (CoD)

The cost of debt is the cost that the organization expects as a consequence of borrowing from creditors. It is appropriate to show the interest cost in term t + 1 associated with the asset revaluation in the t term.

3.8. Cost of equity (CoE)

The Capital Asset Pricing Model (CAPM) in the equation below was used by Odobašić *et al.* (2014) to examine asset pricing in the evaluation of the CoE in connection with the methodical risks of equity CoE is measured as follows:

$$CoE_t = E(R_i) = Rf + \beta_i[E(R_m) - Rf] \tag{1}$$

where: COE_t= cost of equity, E(Ri) = expected rate of return on stock i, Rf = risk-free rate of return, βi = systematic risk of stock *i*, and E(Rm) = expected rate of return on the market portfolio

The model seeks to establish the effects of revlautio by the following equation:

$$REV_{it} = \beta_0 + \beta_1 OWN_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 OCF_{it} + \beta_5 ROA_{it} + \beta_6 INF_{it} + \beta_7 TQ_{it} + \beta_8 EXR_{it} + \varepsilon_{it}$$ (2)

where REV represents the dependent variable, which is the decision to revalue = asset revaluation is represented by one and if there was no revaluation model adopted, is represented by 0; OWN = Ownership; share ownership and acquisition; LEV = Leverage (which is measured by DER = Total Debts or Liabilities / Total Equity and DTA = Total Debts or Liabilities / Total Assets): SIZE = Size: total assets, sales and operating income; OCF = Operating Cash Flow: Net income + Noncash Expenses + Changes in Working Capital; INF = Inflation: measured by the consumer price index; EXR = Exchange Rate (local currency units relative to the U.S. dollar).

$$ROE = Revalued + \beta_0 + \beta_1 COD_{it} + \beta_2 LNREV_{it} + \beta_3 LNSIZE_{it} + \beta_4 LEV_{it} + \beta_5 CoE_{it} + \beta_6 CFO_{it} + \beta_7 TQ_{it} + \varepsilon_{it}$$ (3)

where Revalued = an indicator variable that is represented by 1 if firm i revalued in year *t* and 0 if there was no revaluation; CoD = cost of debt; REV – total revenue; SIZE = total assets; LEV = total debt/equity; CoE = cost of equity; CFO = cash flow from operating activities/average total assets; TQ = Tobin's q = (total stock capitalization = book value of total assets/book value assets).

Due consideration was taken to the signs of the coefficients and their statistical significance. Statistical significance was tested at the conventional levels of 1%, 5% and 10%. The analysis was conducted using the EViews statistical package.

4. Results and discussion

The analysis of the impact of leverage on revaluation starts with descriptive statistics. The summary of statistics and correlation matrix is presented. The analysis begins with a summary of statistics and the results are presented in Table 1.

Table 1. Descriptive statistics for the impact of leverage on revaluation

Variables	Observations	Mean	Standard Deviation	Minimum	Maximum
REVALUED	72	0.0732	0.2613	0	1
OWN	169	36.262	23.5313	0	100
LEV	192	1.7891	2.6000	0.0014	25.3261
INSIZE	192	7.7015	1.5344	2.3018	10.3413
CFO	185	0.1151	0.1461	-0.6234	0.6027
ROA	182	0.0615	0.0966	-0.3389	0.5069
TQ	184	0.7672	1.1682	-0.9332	5.7826
COE	192	5.5521	1.9673	2.0628	10.0552
COD	192	8.9733	2.4835	6.3593	14.7096

Source: Author's computation

Table 1 shows that the mean and the standard deviations of revalued assets are 0.0732 and 0.2613, respectively. The figures are closer to the minimum limit than the maximum limit which is an indication that there is not much variation across the firms in terms of the asset revaluation exercise. The mean also is relatively small and closer to the minimum, which also shows that revaluation activities might be relatively less pronounced among the firms. For leverage, the mean and the variance are 1.7891 and 2.6000 which are also closer to the minimum than the maximum. The debt-to-equity ratio of the firms appears to be relatively low and the data is not widely dispersed in terms of its variation.

Table 2 indicates the correlation matrix shows the results between each of the variables included in the model. The correlation coefficient for the two variables of interest, which are revalued and leveraged is 0.0583. This shows that there is a positive relationship between the

two, but it is not significant. The other variables that exhibit positive or direct relationships with revalued are LnSize, which is the firm size while the other variables show a negative or inverse relationship with the revalued asset.

Table 2. Correlation matrix for the impact of leverage on revaluation

Variables	REVALUED	OWN	LEV	INSIZE	CFO	ROA	TQ	COE	COD
REVALUED	1.0000								
OWN	-0.1931	1.0000							
LEV	0.0583	-0.0868	1.0000						
INSIZE	0.2473	-0.4629	0.2436	1.0000					
CFO	-0.1434	0.3170	0.0341	0.1004	1.0000				
ROA	-0.1285	0.2907	-0.2973	-0.0567	0.5964	1.0000			
TQ	-0.2191	0.4197	-0.0856	-0.2821	0.5667	0.5559	1.0000		
COE	-0.1400	-0.0755	0.0290	0.0377	0.1278	0.0436	-0.1056	1.0000	
COD	0.0223	-0.2135	0.0911	0.0669	-0.2683	-0.3838	-0.1622	0.1449	1.0000

Source: Author's computation

This study applied fixed and random effects to establish the level of consistency in the panel outcomes as well as to determine the approach that was more appropriate to the nature of the data. A Hausman test was thus conducted. The test showed that the chi square probability is insignificant at 5% level. This is an indication that the null hypothesis is accepted, and the alternative hypothesis is rejected. The implication of these results is that random effects is preferable for this study; hence, we interpret the results of the random effects model. The random effects results are depicted in Table 3 below.

Table 3. Random effects results of the impact of leverage on revaluation of asset

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.033885	0.205479	-0.164905	0.8692
OWN	-0.000467	0.001167	-0.400106	0.6896
LEV	-0.000640	0.010595	-0.060438	0.9519
LNSIZE	0.039539	0.019647	2.012411	0.0459
OCF	-0.123223	0.212003	-0.581233	0.5619
ROA	0.020679	0.310435	0.066614	0.9470
TQ	-0.028846	0.027819	-1.036927	0.3014
INF	-0.023916	0.012562	-1.903784	0.0488
EXR	-0.001109	0.009222	-0.120253	0.9044

Note: R.sq: 0.103337; Adjusted R.sq:0.056145; Prob>F= 0.031146.

Source: Author's computation

The results of the random effects show that the leverage coefficient is -0.000640 but the value is not significant at 5%. The implication is that leverage does not have significant impact on assets revaluation of the sampled firms within the period under review. Other variables which are considered as shift factors of asset revaluation were included in the model as independent variables. These include ownership, size of the firm, organizational cash flow, return on assets, and book value of assets as captured by Tobin's q. Exchange and inflation rate are included as a macro-economic variable and uncontrollable policy variable that can affect asset revaluation.

Of all the variables used as control variables, only inflation rate and firm size are statistically significant. The coefficient of inflation rate is -0.023916. This is an indication that there is an inverse relationship between asset revaluation and inflation rate. In other words, if the inflation rate is rising it will have a significant negative impact on revaluation. The results also show that the size of the firm has a coefficient of 0.039539. The implication is that firm size has a significant positive relationship with the revaluation of asset decision. However, apart from size of the firm and inflation rate, other variables included in the model do not have a significant impact on the decision of the sampled firms to revalue their assets during the period under review.

The second model on the impact of revaluation on firm performance followed the same approach as the one on the impact of leverage on firm revaluation. The Hausman Tests preferred the use of random effects. Table 4 below shows the model results.

Table 4. Random effects results of the impact of revaluation on firm performance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.2592	0.1381	-1.88	0.061
LNREV	-0.0067	0.0189	-0.35	0.724
CoE	0.0002	0.0011	0.19	0.849
COD	-0.0015	0.0016	-0.99	0.320
INSIZE	0.0426	0.0169	2.51	0.012
LEV	-0.0446	0.0075	-5.92	0.000
CFO	0.6601	0.1383	4.77	0.000
TQ	0.1078	0.0224	4.81	0.000

Note: R.sq: within = 0.4427; R.sq: between = 0.6821; Overall R.sq: 0.5107. Prob>F= 0.0000.
Source: Author's computation

The random effects results show that four variables have a significant impact on ROE, namely, LnSize, LEV, CFO, and TQ. LnREV failed to have a significant impact on the firms' ROE. The results also show that the size of the firm is one of the most important factors that has a significant impact on firm performance. The coefficient LnSize in the random effects estimated model is 0.0426 and it is significant at 5%. This implies that there is a direct or positive relationship between the size of the firms and their performance. Hence the bigger the firm, the better the performance.

The coefficient of Lev in the random effects estimated model is -0.0446. It should be noted that leverage is one of the variables that has a significant impact on firm performance. This result implies that there is an inverse and significant relationship between leverage and firm performance. Furthermore, the result shows that as the leverage of the firms decreases, their performance improves. The coefficient of CFO in the random effects model is 0.6601 and it is also significant at 5%, indicating that cash flow is very germane to firm performance. It is evident from the results that there is a positive and direct relationship between cash flow and firm performance. Thus, cash flow has a significant impact on firms' performance.

Another variable with a significant impact on firm performance is the Tobin's q. The Tobin's q measures the book value of total assets. According to the random effects estimated model, the coefficient is 0.1078, showing that the book value of the assets of the firms has a positive significant impact on firm performance. In addition, leverage which indicates the debt to equity ratio of the firms has a coefficient of -0.0446 which is significant at 1%. This indicates that the volume of debt to equity ratio as shown by the leverage ratio has a significant inverse relationship with firm performance.

However, the revaluation variable which is our major variable of interest, failed to have a significant impact on the firms' performance in the estimated random effects model. The coefficient is negative, but it does not have a significant impact since it fails the statistical test of significance at 5%. This result is an indication that revaluation of assets among the sampled firms will not have a significant impact on their performance.

The study's results both support and contradict the existing literature on revaluation and firm performance. Firstly, the results show that leverage does not have a significant impact on the revaluation decisions of the sampled firms. This is in line with Poerwati *et al.* (2020), who conclude that revaluation does not have any significant relationship with leverage. However, numerous studies have established a significant relationship between revaluation and leverage. These studies conclude that highly levered firms have a keener appetite to revalue their assets than less levered firms (Brown *et al.* 1992; Hlaing and Pourjalali, 2017). The reason for the difference in the results might be connected to the samples used. Most of the studies that established a significant relationship between leverage and revaluation used financial firms that have a formal code of conduct. Furthermore, they were conducted in countries other than South Africa. The current study demonstrates that the macro-economic policy environment can significantly influence

revaluation decisions. The fact that countries where leverage has been found to have a significant relationship with revaluation have different macro-economic policy environments (inflation and exchange rate behaviours), could explain the difference in the results. The current study's findings are supported by some studies that found that the general price level influences the revaluation of assets (Allini *et al.* 2021).

This study also found that firm size is an important factor that has a significant impact on revaluation. This finding enjoys overwhelming support in the literature and is an indication that the findings of this study are consistent with the situation across the globe. There is near consensus in the literature that bigger firms are more motivated to adopt revaluation than smaller firms (Rahman and Hossain, 2020; Seng and Su, 2010). According to Seng and Su (2010), many do so to avoid political costs. Some authors also believe that big firms are quicker to revalue their assets than smaller firms because of their indebtedness. They will be able to liquidate some of their heavy debt once the value of their assets appreciates after revaluation (Poerwati *et al.* 2020; Watts, 2019).

This study found that there is an insignificant relationship between firm performance and revaluation. This position is also overwhelmingly supported in the literature (Biswas, 2020; Sellhorn and Stier, 2019; Standish and Ung, 2020). Return on equity was used as a proxy for firm performance in this study and the results show that revaluation does not have a significant impact on firm performance. Toluwa and Power (2019) concluded that performance ratios, like the profitability ratio, return on assets and equity, liquidity ratios, asset turnover ratios, debt ratios and capital market ratios, are insensitive to revaluation.

Furthermore, the study confirmed that, despite the fact that revaluation has an insignificant impact on firm performance, the size of the firm significantly affects such performance. The findings showed that bigger firms have a tendency to perform better than smaller firms. In the same vein, leverage that failed to influence revaluation significantly was found to have a significant impact on firm performance (Razak and Stainbank, 2019). It should be noted that leverage measures the debt-to-equity ratio; hence, like previous studies, this study showed that a high leverage ratio would have a significant negative impact on the performance of firms (Solikhah *et al.* 2019; Watts, 2019). Another variable that was used as a control variable under the firm performance model was the operating cash flow of firms and this was also shown to have a significant impact on firm performance. This suggests that a firm with low operating cash flow might not perform very well and vice versa.

In conclusion, this study makes an original contribution to the literature by confirming that countries' macro-economic policy environment, such as the inflation rate, is very germane to firms' decisions to revalue assets. This has not been used by many of the previous studies on revaluation. It is also confirmed that the macro-economic policy environment affects the decision to revalue assets in South Africa more than leverage. The study shows that the size of the firms is very important with regard to revaluation. While revaluation itself is not found to have any significant connection with firm performance in South Africa, the size of the firm, leverage ratio, and operating cash flow are important factors that affect firm performance more than revaluation. This position is also overwhelmingly supported in the literature (Biswas, 2020; Sellhorn and Stier, 2019; Standish and Ung, 2020).

Hussain *et al.* (2022) conclude that performance ratios, like the profitability ratio, return on assets and equity, liquidity ratios, asset turnover ratios, debt ratios and capital market ratios, are insensitive to revaluation. The study shows that the size of the firm is very important with regard to revaluation. While revaluation itself is not found to have any significant connection with firm performance in South Africa, the size of the firm, leverage ratio, and operating cash flow are important factors that affect firm performance more than revaluation. However, Ibhagui and Olokoyo (2018) establish a significant relationship between revaluation and leverage. Similarly, Iqbal and Usman (2018) conclude that highly levered firms are more likely to revalue their assets than less levered firms. The results of the current study support the results of prior research studies that found a significant relationship between macro-economic policy environment, revaluation decisions, (3) the size of firms and firm performance (Abbas *et al.* 2019; Azmi and Ali, 2019; Lopes, 2016).

5. Conclusion

This study sought to determine the economic and non-economic motives behind the selection of the historical cost or fair value model (the options set out in the IFRS) by South African listed firms to measure their PPE. It found that leverage does not have a significant impact on asset revaluation among the sampled firms during the period under review. Other variables, which are considered shift factors of asset revaluation, were included in the model as independent variables. The study found an insignificant relationship between firm performance and revaluation. Finally, this study makes an original contribution to the literature by confirming that a country's macro-economic policy environment is very germane to firms' decisions to revalue assets. This was not included in previous studies on revaluation. The study also confirmed that, in South Africa, the macro-economic policy environment affects the decision to revalue assets more than leverage and that a firm's size is very important when it comes to revaluation. While revaluation itself was not found to have any significant connection with firm performance in South Africa, the size of the firm, leverage ratio, and operating cash flow are important factors that affect firm performance.

Comparative studies should be conducted using a more balanced sample of firms that revalue their assets (revaluers) and those that do not favour the revaluation of their assets (non-revaluers). This will only be possible if more JSE-listed companies embrace the revaluation model to measure their assets. Such comparative studies could be further stratified into the following categories to understand the effects of revaluation on firm performance: large versus small firms; South African operating firms versus international operating firms; old firms versus newly-incorporated firms; pre and post-evaluation and service versus manufacturing firms. There is also a need for research that combines qualitative and quantitative techniques. This would include interviews with the CFOs of the sampled firms to solicit their views on the factors they consider in selecting a measurement model for their company's fixed assets. These interviews would be useful to complement the quantitative study conducted and offer more clarity on this issue.

References

Abbas, S. K., Fazal, A., Ali, S. R., and Faisal, N. 2019. Revaluation of fixed assets and future firm performance: evidence from cement sector of Pakistan. *Journal of Computational and Theoretical Nanoscience*, *16*(5-6), pp. 2233-2236. https://doi.org/10.1166/jctn.2019.7878

Aboody, D., Barth, M. E., and Kasznik, R., 2016. Revaluations of fixed assets and future firm performance: Evidence from the UK. *Journal of Accounting and Economics*, *26*(1-3), pp. 149-178. https://doi.org/10.1016/S0165-4101(98)00040-8

Allini, A., Spanò, R., Du, N., and Ronen, J., 2021. Fair value accounting from the users' perspective: an experiment on how financial analysts rely on fair value estimates in their decisions. *Meditari Accountancy Research,* 30(6), pp. 1493-1513. https://doi.org/10.1108/MEDAR-11-2020-1096

Azmi, A. F., and Ali, S., 2019. Fixed assets revaluation and future firm performance: empirical evidence from Indonesia. *The Indonesian Journal of Accounting Research*, 22(3), pp. 419-448. https://doi.org/10.33312/ijar.454

Baek, H., and Lee, D., 2016. Motives for and effects of asset revaluation: An examination of South Korean data. *Emerging markets finance and Trade*, *52*, pp. 2808-2817. https://doi.org/10.1080/1540496X.2016.1209360

Barlev, B., Fried, D., Haddad, J., and Livnat, J., 2007. Reevaluation of revaluations: A cross-country examination of the motives and effects on future performance. *Journal of Business Finance & Accounting*, 34(7-8), pp. 1025-1050. https://doi.org/10.1111/j.1468-5957.2007.02019.x

Biswas, M. R., 2020. Historical cost versus current cost basis of accounting in preparing financial statements.

Brown, P., Izan, H., and Loh, A., 1992. Fixed asset revaluations and managerial incentives. *ABACUS*, *28*(1), pp. 36-57. https://doi.org/10.1111/j.1467-6281.1992.tb00268.x

Carlin, T. M., 2018. Debating the impact of accrual accounting and reporting in the public sector. *Financial Accountability & Management*, *21*(3), pp. 309-336. https://doi.org/10.1111/j.0267-4424.2005.00223.x

Cho, H., Chung, J. R., and Kim, Y. J., 2021. Fixed asset revaluation and external financing during the financial crisis: Evidence from Korea. *Pacific-Basin Finance Journal*, 67, 101517. https://doi.org/10.1016/j.pacfin.2021.101517

Choi, T., Park, S., and Song, Y., 2013. Asset revaluations: Motives and choice of items to revalue. *Asia-Pacific Journal of Accounting & Economics*, *20*(2), pp. 144-171. https://doi.org/10.1080/16081625.2012.719858

Deloitte, 2018. The assurance market of sustainability reports: What do accounting firms do? *Journal of Cleaner Production*, *139*, pp. 1128-1137. https://doi.org/10.1016/j.jclepro.2016.08.157

Diehl, K. A., 2020. Scandinavia v. the Baltic: whose trend in financial statements reporting of property, plant, and equipment will prevail, and what are the strategic consequences? *Organizacijø Vadyba: Sisteminiai Tyrimai*(56), 21.

Gujarati, D. and Porter, D., 2009. *Basic econometrics.* 5th eds. Boston: McGraw-Hill.

Hlaing, K. P., and Pourjalali, H., 2017. Economic reasons for reporting property, plant, and equipment at fair market value by foreign cross-listed firms in the United States. *Journal of Accounting, Auditing & Finance*, *27*(4), pp. 557-576. https://doi.org/10.1177/0148558X11423681

Hlaing, K., and Pourjalali, H., 2012. Economic reasons for reporting property, plant and equipment at fair market value by foreign cross-listed firms in the United States. *Journal of Accounting, Auditing and Finance*, *27*(4), pp. 557-576. https://doi.org/10.1177/0148558X11423681

Horno-Bueno, M. P., Licerán-Gutiérrez, A., and Bautista-Mesa, R., 2022. Capital markets and valuation models of investment properties. A pre and post crisis analysis: Mercados de capitales y modelos de valoración de inversiones inmobiliarias. Un análisis pre y post-crisis. *Revista de Contabilidad-Spanish Accounting Review*, *25*(2), pp. 233-243. https://doi.org/10.6018/rcsar.431411

Hussain, S., Hoque, M. E., Susanto, P., Watto, W. A., Haque, S., and Mishra, P., 2022. The quality of fair revaluation of fixed assets and additional calculations aimed at facilitating prospective investors' decisions. *Sustainability*, *14*(16), 10334. https://doi.org/10.3390/su141610334

Ibhagui, O. W., and Olokoyo, F. O., 2018. Leverage and firm performance: New evidence on the role of firm size. *The North American Journal of Economics and Finance*, *45*, pp. 57-82. https://doi.org/10.1016/j.najef.2018.02.002

Iqbal, U., and Usman, M., 2018. Impact of financial leverage on firm performance: Textile composite companies of Pakistan. *SEISENSE Journal of Management*, *1*(2), pp. 70-78. https://doi.org/10.33215/sjom.v1i2.13

Jaggi, B., and Tsui, J., 2021. Management motivation and market assessment: revaluations of fixed assets. *Journal of International Financial Management & Accounting*, *12*(2), pp. 160-187. https://doi.org/10.1111/1467-646X.00070

Jensen, M. C., and Meckling, W. H., 2019. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics,* 3, pp. 305-360. http://dx.doi.org/10.1016/0304-405X(76)90026-X

Jin, Y., Niu, F., and Sheng, L., 2022. Fair value accounting for property, plant & equipment: Impact of IFRS 1 adoption. *Journal of International Accounting Research*. https://doi.org/10.2308/JIAR-2021-084

Khalil, R., Asad, M., and Khan, S., 2018. Management motives behind the revaluation of fixed assets for sustainability of entrepreneurial companies. *International Journal of Entrepreneurship*, 22(Special), pp. 1-9.

Kwenda, F., and Holden, M., 2014. Determinatnts of working capital investment in South Africa: Evidence from selected JSElisted firms. *Journal of Economics and Behavioral Studies*, 6(7), pp. 569-580. https://doi.org/10.22610/jebs.v6i7.518

Lin, Y., and Peasnell, K., 2000. Fixed asset revaluation and equity depletion in UK. *Journal of Business Finance and Accounting*, 27(3-4), pp. 359-394. https://doi.org/10.1111/1468-5957.00317

Lopes, A. B., 2016. Empirical evidence on the relation between revaluations of fixed assets and the future performance of firms in Brazil. *International Accounting*, 169.

Missonier-Piera, F., 2021. Motives for fixed-asset revaluation: An empirical analysis with Swiss data. *The International Journal of Accounting*, 42(2), pp. 186-205. https://doi.org/10.1016/j.intacc.2007.04.006

Odobašić, S., Tolušić, M., and Tolušić, Z., 2014. The application of the CAPM model on selected shares on the Croatian capital market. *Ekonomski vjesnik: Review of Contemporary Entrepreneurship, Business, and Economic Issues, 27*(2), pp. 297-311.

Paik, G., 2009. The value relevance of fixed asset revaluation reserves in International accounting. *International Management Review*, *5*(2), 73-80, 108-109.

Poerwati, R. T., Hardiningsih, P., Srimindarti, C., and Sundari, R. I., 2020. Does the company's scale, fixed asset intensity and operating cash flow affect asset revaluation? *Jurnal Analisis Bisnis Ekonomi*, *18*(1), pp. 1-13. https://doi.org/10.31603/bisnisekonomi.v18i1.3342

PwC, 2020. *Adoption of international financial reporting standard for small and medium entities as a financial reporting framework; a case study of the Greater Kampala Metropolitan Area.* Makerere University.

Rahman, M., and Hossain, S. Z., 2020. Does fixed asset revaluation create avenues for financial numbers game? Evidence from a developing country. *Journal of Asian Finance, Economics and Business (JAFEB)*, *7*, pp. 293-304. https://doi.org/10.13106/jafeb.2020.vol7.no9.293

Razak, M., and Stainbank, L., 2019. Fair value accounting by listed South African companies in the non-financial sector. *South African Journal of Accounting Research*, *32*(1), pp. 1-24. https://doi.org/10.1080/10291954.2017.1342348

SAICA, 2004. Status and Effective dates of statements of Generally Accepted Accounting Practice (GAAP) and Interpretations of GAAP, June 2004. *SAICA, Circular 7/2004*.

SAICA, 2021. *The characterisation for South African taxation purposes of gains and losses arising from the use of equity financial derivative instruments.*

Salehabadi, R., and Mehrani, K., 2022. Fair value: Criticisms and challenges from critical accounting perspective. *Accounting and Auditing Review*, *29*(2), pp. 359-403.

Salehi, A. K., 2022. Critical review of the role of accounting in the decision-making process. *Journal of Islamic Accounting and Business Research* (ahead-of-print). https://doi.org/10.1108/JIABR-12-2021-0310

Sellhorn, T., and Stier, C., 2019. Fair value measurement for long-lived operating assets: Research evidence. *European Accounting Review*, *28*(3), pp. 573-603. https://doi.org/10.1080/09638180.2018.1511816

Seng, D., and Su, J., 2010. Managerial incentives behind fixed asset revaluations: Evidence from New Zealand firms. *Department of Accountancy and Business Law, Working Paper Series*, *3*.

Skinner, D. J., 2019. The investment opportunity set and accounting procedure choice: Preliminary evidence. *Journal of Accounting and Economics*, *16*(4), pp. 407-445. https://doi.org/10.1016/0165-4101(93)90034-D

Solikhah, B., Hastuti, S., and Budiyono, I., 2019. Fixed assets revaluation to increase value relevance of financial statement. *Journal of Critical Reviews*, *7*(5), pp. 589-594.

Standish, P. E., and Ung, S.-I., 2020. Corporate signaling, asset revaluations and the stock prices of British companies. *Accounting Review*, pp. 701-715.

Tabari, N. Y., and Adi, M., 2018. Factors affecting the decision to revaluation of assets in listed companies of Tehran stock exchange (TSE). *International Journal of Scientific Management and Development*, 2(8), pp. 373-377.

Toluwa, O., and Power, O. J., 2019. Fair value accounting: a conceptual approach. *International Journal of Academic Research in Business and Social Sciences*, 9(6), pp. 683-696. https://doi.org/10.6007/IJARBSS/v9-i6/5982

van Zijl, W., and Hewlett, V., 2022. An analysis of the extent and use of fair value by JSE top 40 companies. *South African Journal of Accounting Research*, 36(2), pp. 81-104. https://doi.org/10.1080/10291954.2020.1860484

Watts, R. L., 2019. Conservatism in accounting part I: Explanations and implications. *Accounting Horizons*, 17(3), pp. 207-221. https://doi.org/10.2308/acch.2003.17.3.207