

The Value Relevance Of Straight-Lining Lease Expenses

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ABSTRACT

The International Accounting Standards Board envisions the global acceptance of International Financial Reporting Standards (IFRS). Despite attempting convergence with IFRS, some national accounting standard setters, such as in India allow for certain carve-outs in their own accounting standards so as to meet country-specific requirements for fair presentation. Indian Accounting Standards allow for operating leases with fixed inflationary linked escalations to be accounted for on an as-incurred basis in contrast to the existing requirement in IFRS to straight-line such leases. This study explores whether operating lease expenses with fixed inflationary linked escalations and accounted for on a straight-line basis provide incremental value relevance beyond the as-incurred basis.

This study exploits an occurrence in South Africa, where listed companies that previously accounted for operating leases with fixed inflationary-linked escalation clauses on an as-incurred basis, were required to straight-line those leases. Using the Ohlson (1995) valuation model this empirical study investigates the incremental value relevance of the straight-line basis over the as-incurred basis.

Results show a significant change in the association between property-related operating lease expenses and market value indicators after the effect of straight-lining is introduced. This suggests that the straight-line basis provide investors with more value relevant information than when accounting for the expense as-incurred.

Findings from this study prompt national accounting setters that allow for operating leases with fixed inflationary linked escalations to be accounted for on an as-incurred basis to consider first whether the straight-line basis do not provide more relevant information. Limiting the choice of accounting treatment may enhance comparability of financial statements.

Keywords: Indian Accounting Standards; IFRS; Lease Expense; Value Relevance; Straight-Line

INTRODUCTION

At the beginning of 2015 the Ministry of Corporate Affairs in India notified the Companies (Indian Accounting Standards) Rules, 2015. This followed India's commitment at the G20 summit in 2009 to converge its Indian Accounting Standards (Ind AS) with International Financial Reporting Standards (IFRS). However, in limited circumstances Ind AS allows for a different accounting treatment to that in IFRS when transactions and events apply specifically to the Indian economic environment.

One of the key differences is the manner in which operating lease expenses are accounted for. Ind AS 17 *Leases* (Ind AS 17) allows for the lease expense to be recognised on a contractually as-incurred basis if the lease payments are structured to increase with expected general inflation (Ministry of Corporate Affairs, 2016). IAS 17 *Leases* (IAS 17), requires that such lease payments be recognised on a straight-line basis over the term of the lease (IASB, 2012b). Although a new IFRS on leases, IFRS 16 has been issued at the beginning of 2016, it will only be effective for reporting periods beginning on or after 1 January 2019. Since the Accounting Standards Board (ASB) has given no indication if, or to what extent IFRS 16 will be adopted as an Ind AS, this study focusses on IAS 17 and its relation to Ind AS 17 as the latter remains pertinent in India.

The question of whether or not the straight-lining of operating lease expenses, specifically pertaining to lease agreements with fixed inflationary-linked escalations, faithfully represents the economics of the underlying lease

transaction had previously also been considered in South African. In 2005/6, many South African companies listed on the Johannesburg Stock Exchange (JSE) mandatorily changed their accounting treatment of operating leases with fixed escalation clauses from an as-incurred basis to a straight-line basis, to meet the requirement in IAS 17. This occurrence provides an ideal opportunity to investigate whether or not investors view information provided by straight-lining operating lease expenses, differently to that provided by the as-incurred basis. To the author's knowledge, this is the first empirical study to do so.

Using price and returns OLS regressions, this study investigates whether or not the association between property-related operating lease expenses and both the market value of equity and share returns changed, following South African companies' change to straight-line operating lease expenses. This study investigates property-related leases as these normally extend over longer periods and the effect of straight-lining is expected to be more material than for other assets. Results indicate that the change in accounting treatment to straight-line property-related operating lease expenses provide incremental value relevant information beyond that provided by the as-incurred basis. This suggests that investors find lease expenses recognised on the straight-line basis as more value relevant than when recognised as-incurred. All regressions control for industry and year fixed effects and are robust for a variety of sensitivity checks.

As the focus of the study is on South African listed companies, it is not the intention to generalise the findings to a similar setting in India, but rather to question whether the exception in Ind AS 17 to recognise inflationary linked lease payments as-incurred, is necessary to provide relevant and faithfully represented information. The findings may be of interest to the ASB when possibly reviewing Ind AS 17 in its attempt to fully converge with IFRS.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Accounting for Operating Lease Expenses: Indian GAAP, IFRS And Ind AS

Prior to the adoption of Ind AS, Indian-listed companies are required to apply existing Indian GAAP (Deloitte, 2015). In terms of para. 23 of Accounting Standard (AS) 19, the Indian GAAP standard on leases, companies are required to straight-line operating lease expenses unless another systematic is more representative of the time pattern of a user's benefit (ICAI, 2014). This treatment is almost identical to that in IAS 17 para. 33 (IASB, 2012b) and has been retained in Ind AS 17 para. 33 (Ministry of Corporate Affairs, 2016), except that the latter also provides the further exception of recognising lease payments that are structured to increase with general inflation, on an as-incurred basis. By including the exception, it appears that under Ind AS the recognition of lease payment related to general inflation increases on an as-incurred basis is perceived to provide more value relevant information than when straight-lining those lease payments.

As-Incurred Versus Straight-Lined Operating Lease Expenses In South Africa

Many South African companies previously applied an as-incurred basis when accounting for operating leases with fixed escalation clauses, perceiving the increase in cash flows as resulting from the increase in benefits obtained from the leased asset (SAICA, 2006). Doing so, those companies concluded that the as-incurred basis represented another systematic basis more representative of the time pattern of a user's benefit. In 2005 the South African Institute of Chartered Accountants (SAICA) informed companies that using the as-incurred basis for lease agreements with fixed escalation clauses, does not meet the requirements of IAS 17. This followed a submission by SAICA to the standards interpretation committee of the International Accounting Standards Board (IASB), the IFRIC. The IFRIC concluded that inflationary adjustments represent adjustments for the time value of money, do not reflect the time pattern of the user's benefit and should be straight-lined (IASB, 2012b). This necessitated JSE-listed companies to restate their financial statements to straight-line all fixed escalations in lease agreements (SAICA, 2006). The United States Financial Accounting Standards Board (FASB) also had to address this issue and concluded that leases with fixed escalations should be straight-lined as the lease expense better reflects the physical usage of the property (FASB, 1985).

In contrast, Hattingh (2005) and Stainbank, Oakes and Razak (2012) posit that operating leases with fixed inflationary-related escalations should not be straight-lined, as doing so will detract from the faithful representation of the underlying lease transaction. Hattingh (2005) argues that in an inflationary environment, such as South Africa,

inflation will affect the time pattern during which the benefits from a lease contract arise. Another submission to the IFRIC also raised the concern that "...for longer term leases recognising the lease expense on a straight-line basis can seriously distort the expense pattern recognised over the term of the lease" (IASB, 2008, para. 4). The IFRIC again rejected the submission in favour of straight-lining.

Based on these divergent views, it is not clear if investors view accounting information provided by straight-lining lease expenses as providing incremental value relevance beyond that of operating lease expenses recognised on an as-incurred basis.

Prior Studies on Leases

In line with the IASB's and FASB's view that operating leases create assets and liabilities (IASB, 2013), a large body of prior research focusses on unrecognised liabilities and assets resulting from operating leases. Research that investigate the value relevance of operating leases from the income statement perspective is scarce.

One line of research examines the impact that constructive capitalisation of operating lease assets and liabilities has on key financial ratios used in financial analysis (e.g., Beattie, Edwards & Goodacre, 1998; Bennett & Bradbury, 2003; Durocher, 2008; Imhoff, Lipe & Wright, 1991; Imhoff, Lipe & Wright, 1997).

Another line of research analyses the association between measures of equity risk and the omitted operating lease assets and liabilities (e.g., Ely, 1995; Imhoff, Lipe & Wright, 1993).

Following the adoption of the US Statement of Financial Accounting Standard on leases, SFAS 13, which requires committed long-term leases to be capitalised, Cheng and Hsieh (2000) investigates the incremental value relevance that a change in accounting treatment from operating leases to finance leases has on the income statement.

Contributing to literature that examines whether or not capital market participants treat information disclosed in the notes to financial statements different to that on the face of the financial statements, Bratten, Choudhary and Schipper (2013) examine if operating lease liabilities can be measured reliably from the lease information disclosed in the notes to the financial statements.

Addressing concerns pertaining to the first exposure draft (ED) preceding IFRS 16 *Leases*, Jennings and Marques (2013) investigates the method proposed by the IASB to separately recognise interest on the lease liability and amortisation on the right-of-use asset. More specifically, they compare the straight-line method of amortising the right-of-use asset to a present value method. They find evidence suggesting that the present value amortisation more faithfully represents estimated future cash flows and better reflects how investors implicitly value the assets. The present value method results in a total lease expense amount recognised as-incurred, but only in the absence of fixed escalations in lease payments. Although the impact of leases with fixed escalations is not addressed in their study, their findings suggest that investors prefer a lease expense that more closely represents actual cash flow.

Only one study investigates the difference in the value relevance between straight-lined and as-incurred operating lease expenses. Following the mandatory adoption of IFRS in Australia, Goodwin, Ahmed and Heaney (2008) examine the incremental value relevance of adjustments made to conform to IFRS. Using OLS regressions for both price and returns specifications they find no evidence that the earnings adjustment resulting from straight-lining provide incremental value relevance. In contrast, they find evidence that the book value of equity adjustment resulting from straight-lining provide incremental value relevance. However, they combined operating lease income and expenses in their regressions which make inferences unclear.

Hypothesis Development

Taken as a whole, prior research focus extensively on the information on operating lease expenses, as disclosed in the notes to the financial statements. Evidence suggest that investors find lease expense information based on the contractual as-incurred basis as relevant, as the as-incurred basis provide information that more closely relates to actual cash flows. No studies provide evidence that investors find lease expenses accounted for on a straight-line basis

as providing incremental value relevance beyond the as-incurred basis. This lack of prior literature is perhaps surprising considering the difference in the lease expense recognised, when applying the straight-line basis instead of the as-incurred basis, has a direct impact on the bottom-line earnings of a company. This in turn will affect financial statement ratios, such as the price-earnings ratio that is used by investors to value companies (Cascino, et al., 2013).

In terms of IAS 17, the IASB contends that operating lease expenses accounted for on a straight-line basis provides useful information. For South African companies there were no change in the requirement to disclose minimum lease payments between the periods in which property-related operating lease expenses were accounted for on an as-incurred basis and the straight-line basis. This means that investors had information about expected future cash flows from operating leases, which they could impound in their share valuations, available throughout. In the event that investors perceived information from the straight-line basis as not relevant it is expected that they would have ignored the income statement information (i.e. the recognised operating lease expense) and relied solely on the note-disclosed information when estimating future cash flows.

The research question this study explores, is whether the recognised operating lease expenses, from leases with fixed escalation clauses, provide investors with information which they value differently to when those leases are accounted for on an as-incurred basis. Finding no change in the value relevance of the operating lease expense when accounted for on a straight-line basis will suggest that investors disregard straight-lined lease expense information in favour of as-incurred information. The main hypothesis stated in the alternative form is:

H₁: The value relevance of operating lease expenses accounted for on a straight-line basis differs to the value relevance of operating lease expenses accounted for on an as-incurred basis.

RESEARCH DESIGN AND METHOD

Value Relevance

Value relevance research is described by Barth, Beaver and Landsman (2001, p. 88) as “designed to provide evidence to accounting standard setters that can update their prior beliefs about how accounting amounts are reflected in share prices and, thus, can be informative to their deliberations on accounting standards.” Francis and Schipper (1999) describe an accounting amount as being value relevant if it has a statistical association with an entity’s market price or returns and it is therefore measured by the ability of financial statements to summarise or capture information that is reflected in share values. Information can therefore be value relevant, even if it is not new information. As an association test with market value of equity or returns, value relevance studies focus on the information needs of investors (Barth et al., 2001). Although not the only users of financial statements, investors form a large class of financial statement users and their information requirements are seen as important to standard setters. The IASB views them as one of the primary groups of users of financial statements (IASB, 2012a). The Indian Framework for the Preparation and Presentation of Financial Statements shares this view by stating that financial statements that meet the needs of investors will also meet most of the needs of other users (ICAI, 2001).

Price Specification

To operationalise the research design, a measure of value, as well as a valuation model that relates accounting information to the measure of value, is required. The most commonly used measure of a company’s value is share prices or market value of equity, even in instances where the market is not totally efficient in processing publicly available information, as it will still reflect the consensus beliefs of investors (Barth, 2000). The valuation model developed by Ohlson (1995), where the market value of a company is a linear function of its book value of equity and earnings, is commonly used to relate the accounting information to the market value. In such a case market value of equity (or share price) is a summary measure of information relevant to investors and the model depicts the ability of accounting information to explain this measure. The basic model for the price specification is:

$$MVE_{it} = a_0 + a_1BVE_{it} + a_2EARN_{it} + e_{it}. \quad (\text{Model 1})$$

where:

MVE is the market value of equity, i.e., the price per ordinary share of company *i*, three months after the end of reporting period *t* times number of outstanding shares.

BVE is the book value of equity of company *i* at the end of reporting period *t*.

EARN is the net profit of company *i* for reporting period *t*.

From prior research, a_1 and a_2 are both expected to be positive (Ossip, 2011). Consistent with Goodwin et al. (2008), Hellström (2006) and Oliveira, Rodrigues and Craig (2010) a three-month lagged price per ordinary share is used to determine market value of equity. The use of lagged prices provides sufficient time for information to be in the public domain and for the market to react thereto. Net profit can be seen as a proxy for assets and liabilities that have not been recognised in the financial statements, as the market's expectations about the company's future cash flows are unobservable (Barth, 2000).

An approach similar to Davis-Friday, Eng and Liu (2006), Giner and Rees (1999) and Oliveira et al. (2010) is used in applying the price specification. In Model (2), property-related operating lease expenses are disaggregated from net profit and an indicator variable and interaction term are added to test the incremental value relevance of the effect of straight-lining of property-related operating lease expenses. The change in value relevance can also be examined by disaggregating book value of equity into the prepaid or accrued operating lease expense components that originate upon straight-lining. In terms of IFRS, companies are not required to disclose this information and as a result this information is not available to be included in the regression models. Model (2) is stated as follows:

$$MVE_{it} = b_0 + b_1POST + b_2BVE_{it} + b_3EARNexLS_{it} + b_4LS_{it} + b_5POST*LS_{it} + e_{it} \quad (\text{Model 2})$$

where variables are as defined above, except as follows:

POST is an indicator variable that equals one if company *i* accounted for property-related operating lease expenses on a straight-line basis in reporting period *t* and zero otherwise.

EARNexLS is the net profit, after adding back the property-related operating lease expense, of company *i* for reporting period *t*.

LS is the property-related operating lease expense of company *i* for reporting period *t*.

*POST*LS* is the interaction term between the indicator variable *POST* and the independent variable *LS*.

As above, b_2 and b_3 are expected to be positive. b_4 represents the value relevance of the property-related lease expense when accounted for on an as-incurred basis and is expected to be significantly different from zero. Regardless of whether the straight-line basis or as-incurred basis is applied to recognise the lease expense, both assume the expense is recognised in the year in which the related benefit is received. In line with the general expectation that expenses are negatively correlated with share price and returns (Ohlson & Penman, 1992), b_4 is expected to be negative. By using the indicator variable *POST*, the intercept and the coefficient on operating lease expense are allowed to vary between the periods before and after straight-lining had been applied.

The coefficient of interest, b_5 , indicates the incremental explanatory power of the property-related operating lease expense when accounted for on a straight-line basis. If b_5 does not significantly differ from zero, it would indicate that investors did not find lease information from straight-lining as incrementally more or less value relevant than when accounted for as-incurred. A positive (negative) coefficient b_5 suggests an increase (decrease) in value relevance of the accounting information (Oliveira et al., 2010). If the accounting information conveyed by straight-lining the property-related operating lease expense was considered to be more value relevant, b_5 is expected to be significantly positive, thus indicating that investors attached a greater valuation weight to this information than before. In line with Hattingh (2005), if investors view the change to straight-line as decreasing the value relevance of lease expense information, b_5 is expected to be significantly negative.

Scale effects, resulting from the differences in company size, and specifically the influence that the largest companies may have on the regression model may lead to incorrect inferences due to heteroscedasticity and influential observations (Easton & Sommers, 2003). Company size does not necessarily lead to inference problems and may just reflect the different economics of companies, but existing methods of determining the presence of scale effects are ineffective and a more general remedy to mitigate scale effects is preferred (Barth & Clinch, 2009). Barth and Clinch (2009) find that the use of undeflated or share-deflated specifications work best to mitigate scale effects. Using OLS, models (1) and (2) are first estimated by using variables in undeflated form. To test the robustness of findings in Model (2), which includes the main variables of interest, Models (2) is then re-estimated by deflating all variables, except POST, by the number of ordinary shares in issue. Industry and year fixed effects are included in both models (1) and (2).

Returns Specification

Because the price specification suffers from econometrical problems, especially with regards to heteroskedasticity and omitted-variable-bias, Kothari and Zimmerman (1995) also advocates the use of the returns specification to provide more definitive inferences. The returns specification does not measure investors' use of the accounting information in setting share prices, but rather the extent to which the accounting information provides a summary of the events that affected a company's share price during a period (Easton, 1999).

The returns specification employed is a first-difference version of the price specification (see e.g., Barth & Clinch, 1998). Following Barth, Elliott and Finn (1999) an indicator variable and interaction term are used to determine whether the value relevance of the property-related operating lease expense changed, following the straight-lining requirement. Model (3) depicts the returns specification as follows:

$$RET = c_0 + c_1POST + c_2EexL_{it} + c_3\Delta EexL_{it} + c_4\Delta L_{it} + c_5POST*\Delta L_{it} + e_{it} \quad (\text{Model 3})$$

where:

RET is $(P_{it} + dividends_{it} - P_{it-1})/P_{it-1}$. P_{it} is the price per ordinary share of company i , three months after the end of reporting period t . $dividends_{it}$ are the ordinary dividends of company i for reporting period t .

POST is an indicator variable as previously defined.

EexL is the net profit per share before property-related operating lease expense, of company i for reporting period t , deflated by P_{it-1} .

$\Delta EexL$ is the change in net profit per share before property-related operating lease expense, of company i for reporting period t , deflated by P_{it-1} .

ΔL is the change in the property-related operating lease expense per share of company i for reporting period t , deflated by P_{it-1} .

POST ΔL* is the interaction term between the indicator variable *POST* and the independent variable ΔL .

Multicollinearity is present in Model (3) when including the level of property-related lease expense, L . When included, the tolerance statistic for L is 0.094. This is below the critical threshold of 0.1, thereby indicating that multicollinearity is present (Field, 2005). The independent variables L and *POST* L* are therefore excluded from Model (3). This treatment is in line with Barth and Clinch (1998) and Easton, Edey and Harris (1993). Furthermore, the change in the accounting treatment to straight-line lease expenses, results in an adjustment to the total operating lease expense. The effect of this adjustment may be better reflected in the change variable ΔL than in the levels variable L .

In line with prior literature, both c_2 and c_3 are expected to be significantly positive. For the period before straight-lining, coefficient c_4 reflects the association between the surprise element in the annual change in the property-related operating lease expense and returns. Reflecting its expense nature c_4 is expected to be negative as increases in the lease

expense is expected to be associated with a decrease in share price, but no expectation is made of its significance. The coefficient of interest is c_5 . If c_5 is significantly different from zero, it would suggest that investors changed the manner in which they impound lease information into companies' share prices after straight-lining. No expectation is made of its sign.

SAMPLE AND STATISTICS

All data are collected from the INET BFA database (INET BFA, 2014). The initial sample includes 271 JSE-listed companies that disclosed operating lease expenses in their consolidated financial statements for the reporting periods ended 2005 or 2006. This is because companies were required to apply the straight-line accounting treatment from 2005 or 2006, depending on their financial year-ends. All non-mining companies in the INET BFA database that disclosed line items 01090301 (lease charge land and buildings) and 01090302 (lease charge other) and all mining companies that disclosed line items 03090301 (lease charge land and buildings) and 03090302 (lease charge other) were selected. Companies still listed in 2012, as well as companies that delisted prior to 2012 are included to limit survivorship bias. Surviving companies are more stable and have a higher accounting quality, and hence a higher value relevance of accounting information is expected (Hellström, 2006). A further 56 companies in the following JSE super-sectors are excluded: banking (8 300), insurance (8 500), real estate (8 600) and financial services (8 700). This follows earlier literature (Oliveira et al., 2010; Rees, 1997; Giner & Reverte, 1999), which posit that the relation between the share price of companies in these sectors and their accounting amounts differ from other sectors included in the sample.

119 companies which did not explicitly state in either their 2005 or 2006 financial statements that they had made a restatement owing to the change in accounting treatment of operating lease expenses, are excluded. Nine companies that had made a restatement, but which disclosed that the change was not material, are also excluded. For the remaining 87 companies, 956 company years of data are collected for all financial reporting periods ending 28 February 2001 to 31 December 2012. Companies whose financial years commenced on or after 1 March 2000 were required to straight-line their operating lease expenses (SAICA, 2006, para. 10), but all 87 companies accounted for operating leases with fixed escalation clauses on an as-incurred basis until 2005/2006, before changing to the straight-line basis. 31 company years with missing data on market value of equity, book value of equity, net profit and property-related operating lease expenses are excluded. Consistent with earlier studies (Marquardt & Wiedman, 2004; Oliveira et al., 2010), four companies with negative equity values are also excluded. In line with Rees (1997), 17 company years where the reporting period is equal to 12 months are excluded, but differences in financial reporting period-ends are ignored. The final sample size is 904 company years.

Table 1, Panel A provides descriptive statistics and Panel B the correlation coefficients on the sample. The minimum values for EARN in Panel A of Table 1 indicate that some companies incurred net losses in certain years. Panel B of Table 1 shows both the Pearson and Spearman correlation coefficients, respectively above and below the line. All variables are significantly correlated with MVE at the 1% level. The correlation of POST*LS with MVE provides preliminary evidence of increased value relevance of operating leases when straight-lined. The difference in the Pearson and Spearman correlation coefficients between MVE and LS, respectively 0.4251 and 0.7193, indicates the existence of possible outliers. To mitigate the effect that outliers may have on inferences, observations with absolute studentized residuals greater than two are deleted for each regression model (Belsey, Kuh, & Welsch, 1980).

Table 1. Descriptive statistics and correlations (N=904)

Panel A: Descriptive statistics (all values in South African Rand, rounded to nearest R'000)				
Variable	Mean	Std. Dev.	Minimum	Maximum
<i>MVE</i>	9 171 147	26 100 000	1 709.05	304 000 000
<i>BVE</i>	3 354 143	8 522 545	79	92 900 000
<i>EARN</i>	675 332.6	2 215 014	-1 010 849	37 500 000
<i>EARNexLS</i>	827 449.8	2 347 191	-994 394	37 900 000
<i>LS</i>	152 117.3	289 551.7	86	2 395 281

Panel B: Pearson (Spearman) correlation coefficient above (below) the line

	<i>MVE</i>	<i>POST</i>	<i>BVE</i>	<i>EARN</i>	<i>EARNexLS</i>	<i>LS</i>	<i>POST*LS</i>
<i>MVE</i>		0.1438	0.8474	0.7250	0.7366	0.4251	0.4387
<i>POST</i>	0.2496		0.1566	0.1346	0.1490	0.1788	0.3285
<i>BVE</i>	0.8501	0.2108		0.8153	0.8286	0.8286	0.4831
<i>EARN</i>	0.8161	0.1871	0.8797		0.9936	0.4047	0.4094
<i>EARNexLS</i>	0.8216	0.1903	0.8905	0.9844		0.5053	0.5025
<i>LS</i>	0.7193	0.1737	0.7895	0.7409	0.8213		0.9410
<i>POST*LS</i>	0.5018	0.8686	0.4802	0.4552	0.4872	0.5410	

All correlations significant at $p < 0.01$

Variables: *MVE* is the market value of equity of company *i*, three months after the end of reporting period *t*. *POST* is an indicator variable that equals one if company *i* accounted for property-related operating lease expenses on a straight-line basis in reporting period *t* and zero otherwise. *BVE* is the book value of equity (McGregor BFA line item 02010013) of company *i* at the end of reporting period *t*. *EARN* is the net profit (McGregor BFA line item 02020100) of company *i* for the reporting period *t*. *EARNexLS* is the net profit after adding back the property-related operating lease expense of company *i* for the reporting period *t*. *LS* is the property-related operating lease expense (McGregor BFA line item 01090301) of company *i* for the reporting period *t*. *POST*LS* is the interaction term between the indicator variable *POST* and the independent variable *LS*.

RESULTS AND ANALYSIS

Price Specification

Table 2 provides the OLS regression results of the un-deflated price specification models (1) and (2). Both models control for industry and year fixed-effects, but for sake of brevity is not tabulated. The regression on Model (1) is performed to test the empirical validity of the Ohlson (1995) model for the selected sample. Outliers, classified as observations with absolute studentized residual values exceeding two, are deleted. The *t*-statistics reported for models (1) and (2) are calculated using standard errors clustered by company and year (Gow, Ormazabal & Taylor, 2010). The *F* test for analysis of variance indicates overall validity of both models (1) and (2) with *p*-values < 0.01. The adjusted R^2 for models (1) and (2) is 0.9172 and 0.9230 respectively, indicating that Model (2) provided marginally improved explanatory power over Model (1).

Consistent with prior expectations, the coefficients a_1 and a_2 in Model (1) are both positive and significant (*p*-values < 0.01). This indicates that both the book value of equity and net profit are value relevant and provide support for the validity of the use of the Ohlson (1995) model in this study. The results for Model (2) show that the coefficients on the book value of equity ($b_2 = 1.65814$, *t*-statistic = 6.4773) and net profit after adding back property-related operating lease expenses ($b_3 = 3.76165$, *t*-statistic = 3.3375) remain positive and significant at the same significance levels as in Model (1). b_4 , the coefficient on the property-related operating lease expense is -8.23235 (*t*-statistic = -2.4522) and significantly negative as expected (*p*-value < 0.05). This finding suggests that in the period before straight-lining, investors found as-incurred operating lease expense information as value relevant.

The coefficient of interest is positive and significantly positive at 1% level ($b_5 = 11.25724$, *t*-statistic = 3.9848). This finding rejects the null hypothesis and suggests that investors found operating lease expense-information obtained from applying the straight-line basis as more value relevant than when recognised as-incurred. Regardless of whether or not the as-incurred basis or straight-line basis is applied, contractual future minimum lease payments are still disclosed on the notes to the financial statements, thereby ensuring that investors have sufficient cash flow information to value the lease liability (Bratten et al., 2013). Therefore, the increased value relevance of the straight-lined lease expense information suggests that investors perceive the straight-line basis as proving a better reflection of the time pattern in which benefits from the lease asset are consumed.

Addressing potential issues of scale, Model (2) is re-performed by deflating all variables, except *POST*, by number of outstanding shares (Barth & Clinch, 2009). Except for improved significance of *LS* (p -value < 0.01), untabulated results indicate that deflation does not change the signs nor significance of any coefficients in Model (2). Since *Post* is already time variable, Model (2) is also performed without controlling for year fixed-effects. All reported inferences remain unchanged.

Table 2. OLS regression results for the price specifications

	Model 1 (N = 878)		Model 2 (N = 878)	
	Coefficient	t-statistic	Coefficient	t-statistic
<i>POST</i>			-566 000	-1. 7539
<i>BVE</i>	1.69360***	6.8506	1.65814***	6.4773
<i>EARN</i>	4.16620***	3.6303		
<i>EARNexLS</i>			3.76165***	3.3375
<i>LS</i>			-8.23235**	-2.4522
<i>POST*LS</i>			11.25724***	3.9848
R^2	0.9195		0.9254	
Adjusted R^2	0.9172		0.9230	
<i>F</i> test	106.96***		104.49***	

Key: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Variables: *MVE* is the market value of equity of company *i*, three months after the end of reporting period *t*. *POST* is an indicator variable that equals one if the operating lease expense was accounted for on a straight-line basis in a reporting period and zero otherwise. *BVE* is the book value of equity (McGregor BFA line item 02010013) of company *i* at the end of reporting period *t*. *EARN* is the net profit (McGregor BFA line item 02020100) of company *i* for the reporting period *t*. *EARNexLS* is the net profit after adding back the property-related operating lease expense of company *i* for the reporting period *t*. *LS* is the property-related operating lease expense (McGregor BFA line item 01090301) of company *i* for the reporting period *t*. *POST*LS* is the interaction term between the indicator variable *POST* and the independent variable *LS*.

Returns Specification

Table 3 sets out the OLS regression results of the returns specification of Model (3). As in models (1) and (2), *t*-statistics reported are calculated using standard errors clustered by company and year (Gow et al., 2010) and observations with absolute studentized residual values exceeding two are deleted as outliers. Industry and year fixed-effects are also included. Reported inferences remain unchanged when year fixed-effects are excluded. Due to the manner in which the variables of the returns specification are calculated with reference to prior year data, the lack of data for some observations results in a decrease in sample size. The *F* test supports validity of Model (3) (p -value < 0.01) and the adjusted R^2 is 0.2629.

Results from the returns model corroborates some of the findings from the price specification. c_2 and c_3 are both significantly positive as expected. This indicates that net profit before property-related operating lease expenses are contemporaneous with returns, which suggest that investors find the information as value relevant and timely. c_4 , representing the association between the surprise element in the property-related lease expense and returns, is not significantly different from zero. Since the results in Table 2 suggest that property-related operating lease information is value relevant, the fact that c_4 does not significantly differ from zero suggests that the lease information was not timely; i.e. the change in the property-related lease expense was not contemporaneous with the change in returns, which may suggest that the lease information was already impounded in returns a previous period. However, c_5 , the main coefficient of interest in Model (3) is significantly negative (t -statistic = -3.4410, p -value < 0.01). This further corroborates the findings in the price specification of Model (2) in Table 2, that following the change to straight-line a change occurred in the value relevance of the property-related operating lease expense.

Table 3. OLS regression results for the returns specification

Model (3): $RET = c_0 + c_1POST + c_2EexL_{it} + c_3\Delta EexL_{it} + c_4\Delta L_{it} + c_5POST*\Delta L_{it} + e_{it}$		
Model 3 (N = 856)		
	Coefficient	t-statistic
<i>POST</i>	-0.18734***	-19.5522
<i>EexL</i>	0.08982**	2.0170
$\Delta EexL$	0.16915***	3.8320
ΔL	-0.26697	-0.6198
<i>POST</i> * ΔL	-0.76509***	-3.4410
R^2	0.2870	
Adjusted R^2	0.2629	
<i>F</i> test	12.07***	

Key: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Variables: *RET* is $(P_{it} + dividends_{it} - P_{it-1})/P_{it-1}$. P_{it} is the price per ordinary share of company *i*, three months after the end of reporting period *t*. $dividends_{it}$ are the ordinary dividends for reporting period *t*. *POST* is an indicator variable as previously defined. *EexL* is the net profit per share before property-related operating lease expense, of company *i* for reporting period *t*, deflated by P_{it-1} . $\Delta EexL$ is the change in net profit per share before property-related operating lease expense, of company *i* for reporting period *t*, deflated by P_{it-1} . ΔL is the change in the property-related operating lease expense per share of company *i* for reporting period *t*, deflated by P_{it-1} . *POST** ΔL is the interaction term between the indicator variable *POST* and the independent variable ΔL .

Robustness

In order to test whether or not the findings from the price and returns specifications in models (2) and (3) are robust, various control variables are introduced.

Loss-making companies exhibit smaller pricing multiples on net profit (Collins, Pincus, & Xie, 1999). *NEGNI*, an indicator variable equalling one if a company experienced a net loss and zero otherwise, is introduced into Models (2) and (3). In the price specification *POST***LS* (coefficient b_5 in Model (2)) remains positive and statistically significant (t -statistic = 3.9542, p -value < 0.01). The coefficient on *POST** ΔL (c_5) in the returns specification of Model (3) remains negative and statistically significant (t -statistic = -3.0693, p -value < 0.01).

The size of a company could be seen as a proxy for risk and various other economic phenomena, including accounting practices (Barth, Beaver & Landsman, 1998). Since the sample in this study consists only of companies that changed their accounting treatment from as-incurred to straight-lining it was not expected that by controlling for size would alter inferences on *POST***LS* in Table 2 or *POST** ΔL in Table 3. In line with Marquardt and Wiedman (2004), the indicator variable *SIZE* is introduced in models (2) and (3). *SIZE* equals one for companies with a market capitalisation exceeding sample median and zero otherwise. Inferences on *POST***LS* in Model (2) remains unaltered (t -statistic = 4.2261, p -value < 0.01). The coefficient on *POST** ΔL in the returns specification of Model (3) remains negative and statistically significant (t -statistic = -3.4213, p -value < 0.01).

Companies that enjoy good financial health tend to have higher coefficients on earnings and lower coefficients on equity relative to companies that are less financially healthy (Barth et al., 1998). Following Marquardt and Wiedman (2004), a control variable for leverage, defined here as total liabilities to total equity, is included as a proxy for financial health. *LEVERAGE* is an indicator variable that equals one for companies with a sample debt-to-equity ratio exceeding the median. In the price specification the coefficient *POST***LS* remains significantly positive (t -statistic = 3.9747, p -value < 0.01). The coefficient on *POST** ΔL in the returns specification of Model (3) remains negative and statistically significant (t -statistic = -3.4898, p -value < 0.01).

As a whole, after controlling for loss-making companies, company size and financial health, inferences from the primary models remain unaltered.

CONCLUSION

The research question this study investigates is whether or not property-related operating lease expenses that are accounted for on the straight-line basis provide investors with incremental value relevant information, beyond that provided by recognising the property-related operating lease expense on an as-incurred basis. The analysis, covering

the period from 2001 to 2012, is based on a sample of JSE-listed South African companies that recognised their operating lease expenses on an as-incurred basis until 2005/6, after which those companies revised their accounting treatment to account for operating lease expenses on a straight-line basis. Using the Ohlson (1995) model, OLS regressions are performed for both price and returns specifications. All regressions control for industry and year fixed effects and standard errors are clustered by company and year. Results from the price regression show that the association between property-related operating lease expenses and market value of equity changed in the period after 2005/6 when companies straight-lined their operating lease expenses. These results are corroborated by the results from the returns regression, which shows that the association between the annual change in the property-related operating lease expense and share returns changed after companies revised their accounting treatment to straight-line operating lease expenses. Results from the price regression indicate that the change was associated with increased market value. Finally, results from both price and returns regressions are robust when controlling for loss-making companies, risk and financial health.

Overall, results suggest that investors find property-related operating lease expense accounted on the straight-line basis, incrementally more relevant than when accounted for on an as-incurred basis. Since investors are able to reliably measure the lease liability from the minimum lease payments disclosed in the notes to the financial statements (Bratten et al., 2013), results from this study suggest that the straight-lined expense information provide investors with a better reflection of the time pattern in which the benefits from the lease asset is consumed and matched to related income, than when the lease expense is recognised on an as-incurred basis.

The convergence strategy of the ASB is to adopt IFRS as Ind AS without amendments, unless it is perceived not to be in the public interest (ICAI, 2006). The ASB is of the view that this will only occur in rare circumstances to take into account local Indian conditions. Recognising operating leases payments that increase due to expected general inflation on an as-incurred basis and not a straight-line basis as required by IAS 17, is one such exception. Findings from this study may be of interest to the ASB when possibly revising Ind AS 17 in future as well as other national accounting standard setters that allow for operating leases with fixed inflationary escalations to be accounted for on an as-incurred basis.

Certain final comments should be considered. Firstly, as noted by Hellström (2006), testing for value relevance cannot distinguish between the incremental value relevance due to accounting regulation (i.e. the value relevance which increases as the market perceived a control mechanism was working to ensure the quality of the accounting information) and the value relevance due to the requirement of the accounting standard itself (i.e. that the straight-line accounting treatment led to this increase). This could be explored further. Secondly, inferences made during the course of the study pertain to companies listed on the South African stock exchange and extrapolation should be done with care.

AUTHOR BIOGRAPHY

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