Converting Financial Statements: Operating to Capitalised Leases

Abstract

Purpose The purpose of this paper is to examine how capitalising operating leases under IFRS 16/AASB 16 effects the financial statements and value relevance of financial information. In doing so, limitations of exiting methods are highlighted and improved upon.

Design/methodology/approach Imhoff, Lipe and Wright's (1991) constructive method for capitalising operating leases is improved and used to restate the financial statements of 165 S&P/ASX200 companies. The financial position, key ratios and value relevance are tested for significant differences.

Findings The results provide evidence that capitalising operating leases impacts upon financial statements and value relevance.

Originality/value Imhoff et al.'s (1991) constructive method is refined providing an improved method for capitalising operating leases than has been used in the past. From a practical perspective this research provides evidence which supports the 'right-of-use' method proposed by the IASB which will see previous off-balance sheet leases recognised.

Keywords Leases, Value relevance, IFRS 16, AASB 16, Australia, Accounting standards, Capitalised leases, Constructive method

Paper type Research paper

1. Introduction

The superseded International Accounting Standard for Leases (IAS 17) allows many long-term leases of substantial amounts to be classified as operating leases which need not be recognised on the balance sheet. Effectively, this provides flexibility to companies to use operating leases to undertake fixed cost capital expenditures. Given that balance sheets do not reflect operating leases which are long-term, non-cancellable and of a significant amount, some may consider that this does not give a fair representation of a company's financial position. This contentious issue may be rectified by the recently issued International Financial Reporting Standard for leases (IFRS 16), which requires all long-term leases to be recognised as leased assets and leased liabilities. This method may considerably influence the financial performance and position of a company. So far, limited research has been conducted to analyse the impact of IFRS 16 on financial statements and value relevance. This research attempts to fill this gap in the literature. By refining the constructive method (Imhoff, Lipe and Wright, 1991), we capitalise operating leases according to the notion of the 'right-of-use' method introduced in the newly issued IFRS 16. While the findings regarding the impact of capitalising leases are interesting, the methodology improvements to capitalise operating leases also provide a healthy contribution to the literature.

Past studies capitalise operating leases by assuming the lease commitments after fifth year incurred equally. In this study, Imhoff et al.'s (1991) constructive method is improved further so that the present value of lease commitments after the fifth year are more precisely estimated. We allocate the disclosed lump sum lease commitments after the fifth year following the widely accepted assumption that lease commitments are reduced progressively and apply unique discount rates (Branswijck, Longueville and Everaert, 2011; Fülbier, Silva & Pferdehirt, 2008) for each firm after considering the incremental borrowing rate which is suggested in IFRS 16.

This study provides the first Australia evidence of the impact of IFRS 16 on financial statements. We find significant changes on financial position and key financial ratios when operating leases are capitalised. In addition, the change on book value of equity as a result of capitalising operating leases is value relevant. However, the changes of current earnings do not materially affect the current market value. Given the current lack of full disclosure of lease commitments in the financial statement, this study supports the 'right-of-use' method employed in IFRS 16 to reflect operating leases on balance sheet.

The paper is structured as follows: section 2 provides background information about the development of the Australian accounting standard for leases. This is followed by a literature review in section 3 that covers methods of capitalising operating leases and value relevance studies. Section 4 and 5 describes the hypotheses and methodology used in this study. Analysis and results are presented in section 6. Section 7 concludes with a summary of findings, limitations and opportunities for further research.

2. Background – Australian accounting standard for Leases

While AASB117 has been amended several times since its introduction, there has been no major change to how leases are accounted for. Under AASB117 a distinction is made between operating and finance leases with the treatment of both being quite different. For finance leases the leased asset and liability are recognised, while operating leases are kept off the balance sheet. In 2010 the concept of the 'right-of-use' method was proposed by the International Accounting Standard Board (IASB) in Exposure Draft 1 (ED1). This essentially saw all leases recognised on the balance sheet. ED1 was superseded by Exposure Draft 2 (ED2) in May 2013. After giving consideration to feedback, a new international accounting standard IFRS 16 was issued in January 2016. Subsequently, Australia adopted IFRS 16 and issued AASB 16 in February 2016. [1] Both IFRS 16 and AASB 16 will be applicable to annual reporting periods beginning on or after 1 January 2019. The main difference between AASB 117 and AASB 16 is that substantial amounts currently classified as operating leases and not recognised on the balance sheet will now be recognised as an asset. For example, many airlines with leased aeroplanes currently do not recognise the leased assets and associated liabilities. It is considered that this situation does not give a fair representation of the companies' financial position. However, under AASB 16, all such arrangements are

[1] Australia adopted international accounting standards in 2005. Following the issue of IFRS 16, AASB 117 was superseded by AASB 16 in February 2016. This study provides Australian evidence on the impact of the changed accounting treatment of leases with the introduction of this standard. Initially, our analysis is based on the difference between ED2 and IAS 17/AASB 117. IFRS 16 and AASB 16 follow the 'right-of-use' method that was proposed in ED2. Since IFRS16 and AASB16 were issued during the time this paper was being reviewed, we updated the paper to reflect the direct comparison between IAS 17/AASB 117 and IFRS 16 / AASB 16. Hereafter, we refer to AASB for the purpose of maintaining consistency. Whenever AASB117 or AASB 16 is mentioned, it implies corresponding international lease accounting standards as well.

capitalised using the 'right-of-use' method and are reflected on the balance sheet. Subsequent amortisation costs for the leased assets and interest expense for the lease liabilities are reflected in the income statement compared to a single lease expense which we have for operating leases under AASB117.

3. Literature review

The literature review consists of two parts. We review methods for capitalising operating leases and related findings about the impact on financial statements. This is followed by a review of value relevance studies related to leases.

3.1 Operating lease capitalisation

The influence of capitalising operating leases has drawn the attention of researchers for some time with related research going back to the 1960s. Various studies have employed different methods to predict the impact of capitalisation of leases on financial statements. Imhoff et al.'s (1991) constructive, operating leases capitalisation model is the most widely cited. This method capitalises the present value of operating lease payments to determine the associated impact. There are three key assumptions in Imhoff et al.'s (1991) method: (1) the discount rate for the present value of minimum lease payments is fixed at 10%; (2) the total lease term is 30 years and the unexpired lease term is 50% of the total lease term; and (3) the unrecognised leased assets are estimated to be 70% of unrecorded leased liabilities.

Imhoff et al.'s (1991) model has been criticised in subsequent research papers. The main criticisms are that: (1) the model focuses on the balance sheet items, while the effects on the income statement are ignored (Imhoff, Lipe & Wright 1997) and (2) the three key assumptions mentioned above are less reliable and firm-specific factors are not considered (Beattie, Edwards & Goodacre 1998, Durocher 2008, Fülbier et al., 2008). Considering the above weaknesses, subsequent research implements modifications to Imhoff et al.'s (1991) method. These modifications are explained below.

Previous studies have applied various discount rates. Imhoff et al. (1991) consider the historical long-term borrowing rate for the fast food chain McDonald's as a conservative measurement. Beattie et al. (1998) did not consider this benchmark applicable for all companies in the sample and instead used the 10% mean 3-month London deposit rate from 1988 to 1994. Bennett and Bradbury (2003) used 9.4% which was the average rate on secured long-term debts for the sample firms, while Goodacre (2003) used the average 10-year UK government bond rate between 1984 and 1999 of 8.5%. Lanfranconi and Wiedman (2000) used the Bank of Canada prime business loan rate plus 200 basis points which was also 8.5%. The weighted average interest rate for finance leases is estimated as a proxy for the discount rate by Branswijck et al. (2011). Although it is not explicitly explained, Fülbier et al. (2008) individually applied discount rates between 4.5% and 7.7%. All of the above modifications for the setting of the discount rate are more logical than setting it based on an individual company.

The length of the lease terms have been estimated using various techniques. Imhoff et al. (1991) estimated the unexpired lease term as 50% of the total lease term. This estimation is accepted by Bennett and Bradbury (2003), Duke and Hsieh (2006), Duke, Hsieh and Su (2009) and Duke, Franz and Hsieh (2012). However, many others consider firm-specific factors to calculate the weighted, average, remaining lease term and total lease term (Beattie et al. 1998, Goodacre 2003,

Lückerath-Rovers & de Bos 2005). In addition, Durocher (2008) assumes no difference in the nature of the leased and owned assets and determines the percentage by referring to the gross amount of property, plant and equipment and the accumulated depreciation[2].

The present value of unrecorded leased assets has been estimated at various amounts. Some assume the present value of unrecorded leased assets as a percentage of the present value of unrecorded lease liabilities and that it is constant for all companies in the sample. Imhoff et al. (1991) used 70% and later used 75% (Imhoff et al. 1997). Others followed Imhoff et al. (1991) with 70% (Duke et al. 2012, Duke et al. 2009, Duke & Hsieh 2006), while Bennett and Bradbury (2003) used 81%. However, the present value of unrecorded leased assets can be specified with more accuracy for each company as long as three elements (present value of lease commitments, total lease term and unexpired lease term) are determined. This method is applied by Beattie et al. (1998), Durocher (2008), and Fülbier et al. (2008).

The three elements, present value of lease commitments, total lease term and unexpired lease term, are important for capitalising operating leases. All are significantly affected by how the lease commitments are organised in future years, especially the lease commitments after the fifth year. Imhoff et al. (1991) assume the lease payments after the fifth year equally. The unexpired lease term is determined when the calculated average lease commitments after the fifth year is less than the lease commitments in year five. This estimation method is based on an analysis of one company (McDonald's) and then employed for all companies in the sample. Therefore, without strict testing in different industries and jurisdictions, applying this assumption could potentially result in unnecessary bias. In addition, setting the lease commitments after the fifth year equally is inconsistent with previously disclosed lease commitments which are reduced in the period from year one to year five. It would be less reliable to estimate the unrecognised lease liabilities as the present value of cash flows. However, this assumption is generally used by previous studies (Beattie et al. 1998, Bennett & Bradbury 2003, Duke et al. 2012, Durocher 2008, Fülbier et al. 2008).

The findings in previous studies support the substantial effect on the balance sheet elements and measures, such as total assets, liabilities, debts and gearing ratios (Beattie et al. 1998, Duke et al. 2009, Duke & Hsieh 2006, Durocher 2008, Fülbier et al. 2008, Goodacre 2003, Lanfranconi & Wiedman 2000). However, for profitability measures, the results are mixed. The findings in Beattie et al. (1998), Lanfranconi and Wiedman (2000) and Duke and Hsieh (2006) are significant. Instead, minor effects are found by Durocher (2008) and Fülbier et al. (2008). So far, there is little evidence of the impact of capitalising operating leases on financial statements in the Australian market.

3.2 Value relevance studies of capitalising operating leases

Only one research paper was found which addresses the effect of capitalising operating leases on market relevance. Cheng and Hsieh (2000) assume that the market is efficient and reflects the impact of capitalising operating leases, that is, the market realises the effect and responds to the information prior to the formal adoption of new standards. They focus on the earnings in the year before SFAS13[3] was adopted and estimate the earnings impact by comparing reported earnings and restated earnings resulting from the assumed adoption of SFAS13 in that year. By using a traditional linear return-earnings model, the test result indicates that there are no significant findings

[2] Durocher (2008) utilizes the straight line method for depreciation since this method is widely adopted in Canada. Given that the straight line method is also widely adopted in Australia and most of the firms in our sample have adopted it, we follow this depreciation method.

[3] SFAS13: Statements of Financial Accounting Standards in the US for leases.

on value relevance of the earnings impact derived from SFAS13. However, non-linear models provide evidence of value relevance but only when the earnings impact is large. Imhoff et al. (1991) suggests the effect of capitalising operating leases on capital markets needs to be further investigated.

4. Hypotheses Development

Financial reporting is subject to providing useful information to investors for their decision making. We consider the impact of AASB 16 on the decision making process. We test if operating leases capitalised according to AASB 16 affect the financial position or not. If the accounting figures are not significantly changed by capitalising operating leases, we propose that AASB 16 provides little extra information content for investors. Therefore, this leads to our first hypothesis: H1: Capitalising operating leases in compliance with AASB 16 has a significant impact on financial statements.

However, the statistical significance does not unconditionally imply the significance of economics. Analysts and investors could have largely contemplated the impact of disclosure for off-balance-sheet financing activities on earnings forecasts. If the potential change of accounting earnings from AASB 16 rarely results in change of market price, the information provided from AASB 16 designates noise to users, at least to investors who make the decision on equity valuation. Therefore, this value relevance study can provide an indirect measure to reflect the reaction of market price and investigate whether the effect is of significance to economics. This leads to our second hypothesis: H2: Capitalising operating leases in compliance with AASB 16 has a significant impact on value relevance. For testing the second hypothesis, both the residual income model and the return-earning model are employed, which are specified in section 5.

5. Research design

5.1 Sample description

To explore the potential impact of AASB 16 in the current Australian capital market, this study uses a large sample consisting of the top 200 listed companies, sorted by total assets in the year 2012. The companies with no disclosure of future operating lease commitments in the annual reports are excluded from the sample. In addition, due to the nature of business operations and industry regulations, companies in the banking and diversified financial sectors are also excluded. The final sample consists of 165 listed companies. Sample selection and industry breakdown of the sample are presented in Table 1. The accounting information and key financial ratios are sourced from Worldscope and Thomson Reuters databases, while the market value and return index are collected from the DataStream database.

[INSERT Table 1]

5.2 Refined method to capitalise operating leases

Given that there is limited information about operating leases disclosed under AASB117, Imhoff et al.'s (1991) constructive method is modified to capitalise operating leases. The constructive method is explained below.

Under AASB117, the total future lease commitments are disclosed in three separate periods: 1) up to one year; 2) two to five years; and 3) more than five years. The lease commitments are not estimated equally after the fifth year. In many studies the lease commitments are assumed to be reduced periodically (Beattie et al. 1998, Bennett & Bradbury 2003, Durocher 2008, Fülbier et al. 2008), while Fülbier et al. (2008) assume the lease commitments are reduced yearly by (1+ i%), which is adopted in this study. The yearly reduction is calculated using trial and error by changing 'i' to determine the lease commitments for years two to five. The unexpired lease term (n-k) at the end of the financial year 2012 is estimated as five years plus the number obtained by calculating the total lease commitments later than the fifth year, divided by the lease payment of the fifth year. The number obtained represents the average residual lease term after the fifth year, which is rounded to the next whole year.[4]

When the lease commitments for year five and the unexpired lease term are determined, the same process is followed with the unexpired lease term starting from year five. Therefore, the yearly lease commitments for the residual period (after the fifth year) are obtained. Although it is based on the assumption that the average lease payments decline periodically, it is theoretically more logical compared to the method in past studies that recognise the lease commitments equally after the fifth year. The unrecognised lease liabilities can be obtained as the present value of the lease commitments in the unexpired lease term (Imhoff et al. 1991), which satisfies the requirement of AASB 16.

The leased assets recognised under the 'right-of-use' method are assumed to be amortised the same as the company's owned property, plant and equipment. Therefore, Durocher's (2008) method to assess the total lease term is utilised. The expired lease term over the total lease term is assumed to be equal to the percentage of accumulated depreciation divided by the gross amount of property, plant and equipment (PPE). Thus, the unexpired lease term over the total lease term is equal to one, minus the above calculated percentage.

AASB 16 describes the discount rate for the present value of lease commitments as the rate the lessor charges the lessee. Since there is no unified discount rate for every lease contract and often the discount rate is not readily disclosed, the incremental borrowing rate can be implied by the lessee (AASB 16, para. 26). As such, the interest expense in 2012 divided by the interest bearing debts in 2011 is used as a proxy for the discount rate. Following the method utilised by Beattie et al. (1998) with the above estimation of key parameters, the unrecognised leased assets are obtained. Although Imhoff et al.'s (1991) method is modified in this study the underlying assumptions made are similar[5].

5.3 Testing the impact of capitalising operating leases on financial statements

The balance sheet is adjusted to conform to AASB 16 to recognise 'right-of-use' assets and lease liabilities with tax effects considered. This study adjusts the equities in the balance sheet for year

[4] For example, assume that the disclosed lease commitments for year 1 are \$300, for year 2 to year 5 are \$1,000, and the years after 5 are \$800 in total. If the lease commitments are reduced by (1+i) from year 1 onwards, then the equation is established as: $\sum_{t=1}^{4} \frac{300}{(1+i)^t} = 1{,}000$. By trial and error, the discount rate *i* is 7.6%. Using the discount rate of 7.6%, we can compute the commitment at the end of 5th year as $\frac{300}{(1+7.6\%)^4} = \$224$. Therefore, the estimated lease term after the 5th year equals to \$800/\$224 = 3.6 years. Then the residual lease term after the fifth year is rounded to 4 years.

[5] The underlying assumptions are: (1) amortisation is calculated using the straight line method; (2) lease payments are made in arrears; (3) no residual value guaranteed and contingent rental are considered; (4) at the inception of the lease, the book value of the leased assets are equal to the value of the lease liabilities; and (5) the tax rate is 30%.

2011 and 2012 to determine the effect of capitalising operating leases on net income in 2012. Furthermore, the influence on earnings before interest and tax (EBIT) is also considered by summing the recognised lease expense and deducting the amortisation expense for the unrecognised leased assets.

Seven financial ratios are selected to test the impact of capitalising operating leases. These ratios (Table 2) reflect the financial strength and operational performance and have been widely used in previous research (Beattie et al. 1998, Duke et al. 2009).

[INSERT Table 2]

This study uses two different approaches to test the impact of AASB 16 on financial statements; the t-test and non-parametric tests including the two-tailed sign test and the Wilcoxon signed ranks test. Hypothesis one is tested by comparing the means, medians and relative rankings of the pre and post-adjusted figures for significant change. The focus is on the change of positions (assets, liabilities and interest bearing debts) and financial ratios. Right-tailed t-tests are used to test for significant increase in assets and liabilities, while two-tailed tests are employed for key financial ratios.

5.4 Testing the impact of capitalising operating leases on value relevance

Value relevance testing is focused on abnormal earnings in the residual income model. Return-earnings models are also employed to test value relevance in respect of earnings. In this study, it is expected that the more assets controlled by the firms, the more operating lease contracts they will have. Therefore the reported total assets in 2012 are preferred as a deflator to mitigate the scale effect in both residual income models and returns-earnings models.

Ohlson's (1995) residual income model has been widely used for value relevance studies. The residual income model mainly benefits two types of value relevance studies (Barth, Beaver & Landsman 2001). Firstly, the residual income model can be used to capture the incremental value effect on the assets which have no active market and are not separate from other assets in the firms. Secondly, the residual income model can be employed to explain the difference between market value and book value of equity resulting from accounting conservatism. These two types can be overlapped when it comes to value relevance studies of unrecognised assets. However, Ohlson's (1995) residual income model has rarely been used for value relevance studies on unrecognised leased assets.

Based on Ohlson's (1995) model, the market value of equity can be estimated by three elements: (1) current book value of equity; (2) current abnormal earnings; and (3) non-accounting information. Also, the abnormal earnings are equal to the difference between current comprehensive income and required return, based on the previous book value of equity, which is shown below as:

$$P_t = \beta_1 \times BV_t + \beta_2 \times AE_t + v_t \quad (1)$$

$$AE_t = X_t - r \times BV_{t-1} \quad (2)$$

Where:

P_t = Market value of the firm's equity at the end of year t;

BV_t = Book value of the firm at the end of year t;
AE_t = Abnormal earnings at the end of year t;
v_t = Earnings derived from other non-accounting information at the end of year t;
X_t = Comprehensive earnings at the end of year t; and
r = Required return on equity.

Assuming v_t is correlated with neither BV_t nor AE_t, the above model can be formed as:

$$P_t = \beta_0 + \beta_1 \times BV_t + \beta_2 \times AE_t + \varepsilon_t \quad (3)$$

Where:
P_t = Market value of the firm's equity at the end of year t;
BV_t, = Book value of the firm at the end of year t; and
AE_t = Abnormal earnings at the end of year t.

The abnormal earnings focused on in this study are separated as two components: one is driven by capitalised operating leases (AE_t^{col}); the other is the abnormal earnings caused by factors other than capitalised operating leases (AE_t^{others}).
Hence,

$$AE_t = X_t - r \times BV_{t-1} = AE_t^{col} + AE_t^{others} \quad (4)$$

Where:
AE_t = Abnormal earnings at the end of year t;
X_t = Comprehensive earnings at the end of year t;
r = Required return on equity;
BV_{t-1} = Book value of the firm at the end of year t-1;
AE_t^{col} =Abnormal earnings driven by capitalising operating leases at the end of year t; and
AE_t^{others} = Abnormal earnings sourced from others at the end of year t.

Assuming the market is efficient, the required return on equity (r) is not affected by capitalising operating leases (Kohlbeck & Warfield 2002). With regard to the impact of capitalising operating leases on the elements in the balance sheet and income statement, both X_t and BV_{t-1} are affected. Therefore, the total abnormal earnings after capitalisation are adjusted to be AE_t^a. The new equation is formed as follows:

$AE_t^a = X_t^a - r \times BV_t^a$, then

$$AE_t^a - AE_t = \Delta AE_t = (X_t^a - X_t) - r \times (BV_{t-1}^a - BV_{t-1})$$

$$= \Delta NI_t - r \times \Delta BV_{t-1} \quad (5)$$

Where:
AE_t^a = Adjusted abnormal earnings at the end of year t;
AE_t = Abnormal earnings at the end of year t;
ΔAE_t = Change of abnormal earnings at the end of year t;

BV_t^a = Adjusted book value of equity at the end of year t;
BV_{t-1} = Book value of equity at the end of year t-1;
ΔBV_{t-1} = Change of book value of equity at the end of year t-1;
X_t^a = Adjusted comprehensive income at the end of year t;
Xt = Comprehensive income at the end of year t;
r = Required return on equity; and
ΔNI_t = Change of net income at the end of year t.

The abnormal earnings after capitalising operating leases are considered as the abnormal earnings sourced from other factors(AE_t^{others}), that is:

$$AE_t^{others} = AE_t^a. \quad (6)$$

Therefore, considering equation (4), (5) and (6),

$$AE_t^{col} = AE_t - AE_t^a = -\Delta AE_t. \quad (7)$$

Where:
AE_t^{col} = Abnormal earnings driven by capitalising operating leases; and
AE_t^{others} = Abnormal earnings sourced from others.

In the Ohlson (1995) model, the required return on equity (r) is simplified as the risk-free rate. However, in this study, the required return on equity is estimated using the CAPM[6]. The second hypothesis is tested by using both residual income and return-earnings models. With reference to the residual income model there are three models, and four tests are conducted to examine the value implication of AASB 16. The value relevance of abnormal earnings driven by capitalising operating leases under AASB 16 cannot be proven unless the first three tests are all rejected. The last test is employed to determine whether the value relevance of abnormal earnings driven by capitalising operating leases is different from the others.

Model 1:

$$P_t = \beta_0 + \beta_1 \times BV_t + \beta_2 \times AE_t + \varepsilon_t \quad (8)$$

According to model 1, whether the market value of equity (P_t) is significantly affected by both book value of equity (BV_t) and the abnormal earnings (AE_t) is tested first. The t-statistic is used to test the significance of p-value for coefficients of both BV_t and AE_t. Although the market value is not only determined by both BV_t and AE_t, the explanatory power of book value of equity and abnormal earnings proven by test results is expected to validate Ohlson's (1995) model. This is considered as a basis for the following tests.

Model 2:

[6] CAPM is the abbreviation of Capital Assets Pricing Model, which is widely used to estimate the required rate of return on equity. The formula is: Re = Rf + β (Rm-Rf), where: Re is required return on equity; Rf is risk free rate; β is a parameter describing the correlated volatility; Rm-Rf represents the market risk premium (Lo & Lys 2000).

$$AE_t = \alpha_0 + \alpha_1 \times AE_t^{col} + \epsilon_t \quad (9)$$

Based on model 2, the two-tailed t-statistic is utilised for testing whether the abnormal earnings driven by capitalising operating leases (AE_t^{col}) is a significant part of total abnormal earnings (AE_t). If the p-value of α_1 is significant, it indicates a substantial impact of capitalising operating leases on residual value, i.e., the capitalising operating leases are a significant component of the source of abnormal earnings.

However, the association between market value and accounting numbers are not tested explicitly. The above test results hardly provide evidence of the explanatory power on market value of the equity. Therefore the third model and two more tests follow.

Model 3:

$$P_t = \varphi_0 + \varphi_1 \times BV_t + \varphi_2 \times AE_t^{col} + \varphi_3 AE_t^{others} + \mu_t \quad (10)$$

The t-statistic is utilised again to test the significance of φ_2 and φ_3. The adjusted R^2 from model 1 and 3 are compared. If model three has an increased adjusted R^2 with significant p-value of φ_2, the results explain the value relevance of the information derived from recognising operating leases under AASB 16. Hence, abnormal earnings driven by capitalising operating leases (AE_t^{col}) have a significant relation to market value (P_t). The Wald Test[7] on model 3 is utilised to test whether AE_t^{col} and AE_t^{others} have equal effects on explaining the market value.

The return-earnings models are used in the value relevance study to verify the above results. Two more tests are involved. Basic linear regressions are employed to explore the relationship between market returns and accounting earnings. The earnings levels are regarded as independent variables in the regressions.

Model 4a:

$$R_t = \gamma_0 + \gamma_1 \times E_t + \tau_t \quad (11)$$

Model 4b:

$$R_t = \delta_0 + \delta_1 \times E_t + \delta_2 \times \Delta E_t + \omega_t \quad (12)$$

Where:
R_t = Total yearly return in the financial year t,
E_t = Reported accounting earnings in the financial year t; and
ΔE_t = Change of earnings in the financial year t.

The coefficients of earnings in the above two models reflect the value relevance relationship with market returns. In model 4b, if the p-value of δ_2 is significant and the adjusted R^2 for model 4b is increased compared with the adjusted R^2 in model 4a, the results indicate the explanatory power embedded in the earnings, driven by capitalising operating leases under AASB 16 . The equality tests of the coefficients for E_t and E_t^{col} are also employed to test whether the different

[7] The Wald test is a statistical analysis for equality test.

levels of value relevance exist. All variables in above models are deflated by total assets (Cohlbeck & Warfield, 2007; Hung & Subramanyam, 2007) at the end of financial year 2012 to mitigate the scale effect as more operating leases are expected to be employed by larger firms.

6. Empirical analyses and results

6.1 Impact of capitalising operating leases on financial statements

Paired sample t-tests are utilised to examine the impact on the changes of financial position and key ratios, which are shown in Table 3. Although the changes in total assets and total liabilities are only 4.20% and 8.82% respectively, both the tests are significant at the 1% level. The interest bearing debts increase by more than 20%. The test results for the changes of financial position are consistent with previous research (Beattie et al. 1998, Bennett & Bradbury 2003, Duke et al. 2009, Duke & Hsieh 2006, Goodacre 2003). However, the changes are relatively small, especially for the changes of total assets and total liabilities. Regarding to the key financial ratios, the balance sheet measures change significantly after capitalisation. The debt to equity gearing ratio increases by 41.87%, and the asset turnover ratio is reduced by nearly 9%. These can be explained as a result of the growth of assets and liabilities after capitalising operating leases. Furthermore, the impacts on the income statement measures are shown differently. After capitalising operating leases, the recognised lease expenses are converted to interest expense and depreciation expense. As claimed by Imhoff et al. (1991), for a firm with a stable portfolio of leases, the total expense recognised by capitalising operating leases is greater than the off-balance-sheet lease expense incurred in the early periods of the lease terms. However, given that the interest charged for lease liabilities is reduced, the effect on the income statement will be reversed in later periods. Nevertheless, the interest expense recognised under AASB 16 is less than the total lease expenses recorded under AASB117. Therefore, both the earnings before interest and tax (EBIT) and the interest expense increases after capitalising operating leases.

[INSERT Table 3]

The significantly decreased interest cover ratio indicates that the interest expenses are more affected than EBIT by capitalising operating leases. Both ratios of return on assets (ROA) and return on capital employed (ROC) increase significantly. Therefore the change in current liabilities by capitalising operating leases does not affect the signs and the significance of related profitability measures. The majority of tests above are significant. However, the return on equity ratio (ROE) is not significantly affected by capitalising operating leases.

The paired sample t-tests report the significance of the impact of capitalising operating leases on the balance sheet measures and some of the income statement measures. However, performance relative to other firms also needs to be highlighted because financial ratios are a dominant factor affecting investment decisions (Goodacre 2003, Lev & Sunder 1979). Therefore, two non-parametric tests (related sample sign tests and Wilcoxon signed rank tests) are conducted. Since the non-parametric tests relax the assumption of normal distribution of financial ratios, they provide further evidence for the robustness of the results. As shown in Table 3, with the exception of ROE, the changes of medians of financial ratios are all statistically significant at the 1% level. The Wilcoxon signed rank test indicates that the ranking of the firms on ROE does not suffer a

major change after the capitalisation of operating leases. The results of both the sign tests and the Wilcoxon signed rank tests are consistent. Each of the above tests consistently supports the first hypothesis, therefore H1 is not rejected.

The impact of capitalised operating leases may be materially different across different industries. Therefore, we particularly investigate the impact to the firms sub-grouped by industries based on 2-digit Global Industry Classification Standard (GICS). Considering the limited number of observations, we present our industry analysis in three groups. The first group comprises firms in the industry sectors of industrial and consumer discretionary (GICS 20 & 25). The second group contains all the mining companies (GICS 10 & 15), and the last group includes firms in other industry sectors. The statistical significance of testing results shown in Table 4 for sub-groups are consistent with the results for full sample testing presented in Table 3. Moreover, comparing the testing results among panels in Table 4, the impact of capitalising operating leases on the changes in position and key financial ratios is most remarkable for the firms in industrial and consumer discretionary sectors. However, the capitalised operating leases have least impact on the firms in the mining industry relative to the firms in other industry sectors. This indicates that, compared to other industries, mining firms did not heavily enter into operating leases transactions. Finance leases maybe preferable for mining firms.

[INSERT Table 4]

6.2 Impact of capitalising operating leases on value relevance

As mentioned above, both residual income and returns-earnings models are utilised to examine the value relevance of operating lease capitalisation. The results from both models are presented below.

Seven variables are used in the residual income models for testing value relevance. The Pearson bivariate correlations for variables in the residual income models are shown in Table 5. There are also two higher correlation coefficients (more than 80%). However, these variables are not employed in the same regression models and therefore, multi-collinearity is not a substantive issue because of the modest correlation between the variables.

[INSERT Table 5]

The test results for the residual income models are shown in Table 6. In model one, the coefficients of the constant and all independent variables are significant at the 1% level with positive signs. The significant coefficients cannot prove the current book value of equity and current abnormal earnings as determinants of the firm's market value. However, the results of this test validate the residual income model. The test results indicate that the market value of equity is significantly affected by both the book value of equity and abnormal earnings. Thus, the book value of equity and abnormal earnings are value relevant with market value.

The testing of model 2 examines the association between total abnormal earnings and the abnormal earnings only driven by capitalising operating leases. The positive coefficient on AE_t^{col} is documented with significance at the 5% level (α_1= 8.2561, p-value = 0.0310). These findings provide evidence that abnormal earnings driven by capitalising operating leases are a significant part of total abnormal earnings. Hence, capitalising operating leases under AASB 16 is an indispensable source of abnormal earnings.

[INSERT Table 6]

A conclusion regarding value relevance derived from capitalising operating leases can hardly be drawn, and if it is, only if it is proven as above as a material source of abnormal earnings. Model 3 is employed for further testing. In model 3, the test results indicate that the coefficient of both BV_t and AE_t^{others} are significantly positive. The coefficient on AE_t^{col} is negative (-40.7315). The p-value of φ_2 is 0.0255 which is significant at the 5% level. When comparing model 3 and 1, the adjusted R^2 increases from 0.1776 to 0.1999. Combined with the significant coefficient on AE_t^{col} and increased adjusted R^2, the test results indicate that the abnormal earnings driven by the capitalised operating leases have an explanatory power on the market value. Equality tests are conducted to examine whether the value relevance of AE_t^{col} differs from others. Using the Wald test, the p-value is 0.0190, which is significant at 5%. Therefore, the test results provide evidence that abnormal earnings driven by capitalising operating leases have different value-relevance from the abnormal earnings under the superseded standard AASB 117.

As shown in Table 6, the coefficient of AE_t^{col} in the model 3 is negative. The explanation for this relies on a new model. In this model, the dependent variable is market value which is unchanged from model 3. The independent variable of AE_t^{col} is decomposed as a) ΔNI_t, and b) $r \times \Delta BV_{t-1}$ according to the theory[8]. Therefore, the new model is formed as follows:

Model 3a:

$$P_t = \varphi_0 + \varphi_1 \times BV_t + \varphi_2 AE_t^{others} + \varphi_3 \times r \times \Delta BV_{t-1} + \varphi_4 \times \Delta NI_t + \mu_t \quad (24)$$

Where:
Pt = Market value at the end of year t;
BVt = Book value of equity at the end of year t;
AE_t^{others} = Abnormal earnings resulting from other sources at the end of year t;
r×ΔBVt-1 = Change of required returns on equity at the end of year t; and
ΔNit = Change of earnings at the end of year t.

Table 7 presents the test results. All of the regression coefficients are significant (5% sig. for the variable $r \times \Delta BV_{t-1}$, others are sig. at 1%) except for ΔNI_t which has a p-value of 0.3865. Therefore, according to the test, the change of net income derived from capitalising operating leases does not affect the market value significantly. Furthermore, the signs of coefficients of variables are all positive except for the variable $r \times \Delta BV_{t-1}$. The findings highlight the fact that the change of required return of equity ($r \times \Delta BV_{t-1}$) has a significant, negative influence on the market value. The higher return expected by the market because of capitalising operating leases, the lower the firm's market value will be. The changes in required return of equity ($r \times \Delta BV_{t-1}$), instead of the changes in net income (ΔNI_t), are heavily weighted on the effect of AE_t^{col}. As such, the sign of the coefficient of AE_t^{col} is negative.

[INSERT Table 7]

[8] $AE_t^{col} = -\Delta AE = r \times \Delta BV_{t-1} - \Delta NI_t$ which is introduced in equation (5), (6) & (7).

Based on all of the above test results, the residual income model provides evidence for the value relevance of abnormal earnings derived from capitalising operating leases under AASB 16. However, we do not find the earnings change is an explainable factor to the market value.

In residual income models, the abnormal earnings are focused on testing value relevance. The CAPM model is employed to estimate the required return on equity (r) which is the essential step to value the variables such as AE_t, AE_t^{col}, and AE_t^{others}. Therefore, β in CAPM is the key factor affecting the test results. The above analysis is based on β which is determined by utilising 104 weekly market returns. Considering the potential sensitivity of the test results on β, 52 weekly returns are employed to enhance robustness. Considering the number of shares is also widely utilized in literature to mitigate the scale effects, all variables in the above residual income model are deflated by the number of shares at the end of financial year 2012 as well. The unreported test results are consistent with existing findings.

The simple linear return-earnings models are employed in this study. There are only three variables involved in running the regressions. Since the financial statements are restated for only one year (2012), the levels of earnings, instead of changes of earnings are regarded as independent variables. The Pearson bivariate correlation is also tested for the variables in the return-earnings models. The correlation between R_t and E_t is 0.2814 (Table 8). Although the value is not relatively low, the correlation does not appear large enough to adversely affect the regression results.

[INSERT Table 8]

Return-earnings models are employed to test value relevance from the perspective of earnings. The test results are reported in Table 9.

[INSERT Table 9]

In model 4a, the coefficients of the earnings in 2012 (E_t) are significant at 1%. In model 4b, the significance of the coefficient of E_t remains the same, although the change in earnings due to capitalising operating leases (ΔE_t) is added as an explanatory variable. However, the coefficient of ΔE_t in model 4b is insignificant (p-value = 0.3771). Moreover, compared with model 4a, the adjusted R^2 in model 4b is almost unchanged at 0.0896. Combined with the test results for coefficient and adjusted R^2 above, the earnings driven by capitalising operating leases are not positively associated with market returns. Hence, no evidence is found to support the significant, positive relationship between earnings driven by capitalising operating leases and the market value. In addition, the earnings derived from capitalising operating leases have no different value-relevance from earnings under AASB 117, which is proven by the insignificant result of the Wald Test (p-value 0.3218). Return-earnings models do not provide evidence for the value relevance of earnings driven by capitalising operating leases under AASB 16.

In summary, the return-earnings models and residual income models are employed to test for value relevance as above. In the residual income model, both the book value of equity and the comprehensive earnings contribute to the effects on abnormal earnings. The analysis focusing on abnormal earnings reports a significant association between market value and the abnormal earnings driven by capitalising operating leases. When abnormal earnings driven by capitalising operating leases are decomposed, the impact of earnings change on market value is not significant. The value

relevance of capitalising operating leases mainly results from the effect on the balance sheet, i.e. the change in book value of equity rather than the change of earnings in the income statement (see above explanation on model 3 and model 3a.) In return-earnings models, the findings do not provide persuasive evidence to support the value relevance of capitalising operating leases. The explanatory power of earnings arising from the impact of AASB 16 on market returns is not materially different from the earnings under AASB 117.

7. Conclusion

This study examines the impact of capitalising operating leases on financial statements and the value relevance of capitalised operating leases. By refining the constructive method (Imhoff et al., 1991), we convert the ASX200's financial statements to reflect the new requirements of AASB 16 Leases. With the exception of ROE, the findings indicate that the adoption of AASB 16 significantly affects the assets, liabilities, interest bearing debts and all key financial ratios. In particular, the impact of AASB 16 has stronger economic significance for the firms in the industrial and consumer discretionary sectors. Furthermore, the change on book value of equity as a result of capitalising operating leases is value relevant. However, the changes of earnings (earnings) do not materially affect the market value (returns).

From the perspective of enhancing information transparency for investment decisions, our study provides the first Australian evidence on the impact of adopting the new AASB 16 Leases standard. We believe the right-of-use method applied in AASB 16 is consistent with the present financial reporting conceptual framework and it ensures that operating lease transactions are faithfully incorporated into financial statements. It enhances the transparency of accounting practices by reducing the ability to use complex lease agreements to shift material information from financial statements.

However, there are several limitations to our study. Due to the limited disclosure of operating leases in current annual financial reports, we capitalise all operating leases. Nonetheless, short term leases and leases of low value assets are exempted from the right-of-use method (AASB 16). In addition, our sample size is relatively small as our focus is on hand-collecting data for firms in the ASX 200. Future studies could consider a larger sample size, especially in industries that may be heavily affected by AASB 16. Also, it will be interesting to investigate the impact of AASB 16 on debt covenant violation and executive compensation.

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Table 1: Sample Selection

Panel A:

	Total
Initial sample	200
Less: Companies in banking sector	-9
Less: Companies in diversified financial sector	-8
Less: Companies with no disclosure of operating leases	-18
Final sample: Number of companies with operating lease disclosure	165

Panel B:

Global Industry Classification Standard (GICS) Industry Groups	Operating Leases Disclosed				Total	
	Yes		No		No.	%
	No.	%	No.	%		
Capital Goods	18	9.84%	0	0.00%	18	9.84%
Commercial & Professional Services	12	6.56%	0	0.00%	12	6.56%
Customer Services	10	5.46%	0	0.00%	10	5.46%
Energy	14	7.65%	1	0.55%	15	8.20%
Food & Staples Retailing	3	1.64%	0	0.00%	3	1.64%
Food Beverage & Tobacco	6	3.28%	0	0.00%	6	3.28%
Health Care Equipment & Services	6	3.28%	1	0.55%	7	3.83%
Insurance	5	2.73%	0	0.00%	5	2.73%
Materials	32	17.49%	5	2.73%	37	20.22%
Media	7	3.83%	0	0.00%	7	3.83%
Pharmaceuticals, Biotechnology & Life Sciences	2	1.09%	0	0.00%	2	1.09%
Real Estate	21	11.48%	6	3.28%	27	14.75%
Retailing	9	4.92%	0	0.00%	9	4.92%
Telecommunication Services and Software	4	2.19%	1	0.55%	5	2.73%
Transportation	8	4.37%	2	1.09%	10	5.46%
Utilities	8	4.37%	2	1.09%	10	5.46%
Total	165	90.16%	18	9.84%	183	100.00%

Table 2: Definition of Key Financial Ratios

Financial Ratio	Formula
Profit Margin	EBIT[#] / Sales
Return on Equity (ROE)	Net Income / Total Equity
Return on Assets (ROA)	EBIT[#] / Total Assets
Return on Capital (ROC)	EBIT[#] / (Total Liability + Total Equity - Current Liability)
Asset Turnover	Sales / (Total Liability + Total Equity - Current Liability)
Interest Cover	EBIT[#] / Interest
Gearing	Total Debt / Equity

[#]EBIT: Earnings before Interest and Taxes

Table 3: Paired Sample T-tests and Non-parametric Tests for Financial Position and Ratios for Total Sample

Changes of Financial Position	Before	After	Change	Change (relative)		Sign Test	WSR[##]
	A	B	B-A	(B-A)/A	t-test sig.		Test
Total Assets	6072.81	6327.89	255.08	4.20%	0.0010***	0.0000***	0.0000***
Total Liabilities	3590.21	3906.83	316.62	8.82%	0.0000***	0.0000***	0.0000***
Total IBDs[#]	1506.69	1841.47	334.78	22.22%	0.0000***	0.0000***	0.0000***
ROE	6.28%	6.32%	0.04%	0.62%	0.4910	0.1190	0.7160
ROA	7.81%	8.47%	0.66%	8.42%	0.0000***	0.0000***	0.0000***
ROC	10.13%	11.12%	0.99%	9.74%	0.0000***	0.0000***	0.0000***
Asset Turnover	110.21%	100.45%	-9.76%	-8.85%	0.0000***	0.0000***	0.0000***
Interest Cover	773.19%	594.29%	-178.89%	-23.14%	0.0000***	0.0000***	0.0000***
Gearing	54.13%	76.80%	22.66%	41.87%	0.0000***	0.0000***	0.0000***
Profit margin	20.43%	22.78%	2.36%	11.53%	0.0000***	0.0000***	0.0000***

*** Indicates statistical significance at the 0.01 level. ** Indicates statistical significance at the 0.05 level. * Indicates statistical significance at the 0.10 level. [#]IBDs = interest bearing debts. [##]WSR = Wilcoxon Signed Rank. Two-tailed Sign test and Wilcoxon signed ranks test for the change in median are used for non-parametric tests. Return on equity (ROE) = Net Income / Total Equity; Return on assets (ROA) = EBIT / Total Assets; Return on capital (ROC) = EBIT / (Total Liabilities + Total Equity – Current Liabilities); Asset Turnover = Sales / (Total Liabilities + Total Equity – Current Liabilities); Interest Cover = EBIT / Interest expense; Gearing = Total Debts / Total Equity; Profit Margin = EBIT / Sales. 5% Winsorisation has been applied to all variables.

Table 4: Paired Sample T-tests and Non-Parametric Tests for Financial Position and Ratios

Panel A: Firms in Industrials Sector (GICS code = 20) and Consumer Discretionary Sector (GICS code = 25)

Changes of Financial Position	Before	After	Change	Change (relative)		Sign Test	WSR[#]
	A	B	B-A	(B-A)/A	t-test sig.		Test
Total Assets	2835.82	3046.70	210.88	7.44%	0.0001***	0.0000***	0.0000***
Total Liabilities	1599.15	1870.04	270.89	16.94%	0.0000***	0.0000***	0.0000***
Total IBDs#	810.90	1081.79	270.89	33.41%	0.0000***	0.0000***	0.0000***
ROE	6.88%	6.99%	0.11%	1.59%	0.2712	0.9007	0.1789
ROA	8.75%	9.98%	1.23%	14.04%	0.0000***	0.0000***	0.0000***
ROC	11.98%	13.58%	1.60%	13.33%	0.0000***	0.0000***	0.0000***
Asset Turnover	156.53%	143.54%	-12.99%	-8.30%	0.0000***	0.0000***	0.0000***
Interest Cover	734.33%	544.00%	-190.33%	-25.92%	0.0209**	0.0000***	0.0000***
Gearing	54.34%	85.40%	31.06%	57.15%	0.0000***	0.0000***	0.0000***
Profit margin	12.55%	15.45%	2.90%	23.13%	0.0000***	0.0000***	0.0000***

Panel B: Firms in Energy Sector (GICS code = 10) and Materials Sector (GICS code = 15)

Changes of Financial Position	Before	After	Change	Change (relative)		Sign Test	WSR[#]
	A	B	B-A	(B-A)/A	(B-A)/A	Test	Test
Total Assets	7027.95	7112.81	84.87	1.21%	0.0000***	0.0000***	0.0000***
Total Liabilities	3977.87	4093.65	115.79	2.91%	0.0001***	0.0000***	0.0000***
Total IBDs#	1674.00	1855.91	181.91	10.87%	0.0026***	0.0000***	0.0000***
ROE	4.98%	5.04%	0.06%	1.21%	0.1534	0.0541	0.5227
ROA	7.18%	7.64%	0.46%	6.37%	0.0000***	0.0000***	0.0000***
ROC	8.81%	9.34%	0.53%	5.97%	0.0000***	0.0000***	0.0000***
Asset Turnover	73.36%	70.31%	-3.05%	-4.16%	0.0375**	0.0000***	0.0000***
Interest Cover	1206.23%	1009.55%	-196.67%	-16.30%	0.0003***	0.0000***	0.0000***
Gearing	33.52%	38.33%	4.81%	14.36%	0.0007***	0.0000***	0.0000***
Profit margin	14.21%	15.10%	0.89%	6.23%	0.0000***	0.0000***	0.0000***

Panel C: Firms in Other GICS Sectors

Changes of Financial Position	Before	After	Change	Change (relative)		Sign Test	WSR#
	A	B	B-A	(B-A)/A	(B-A)/A	Test	Test
Total Assets	9039.97	9489.50	449.53	4.97%	0.0436**	0.0000***	0.0000***
Total Liabilities	5582.27	6119.41	537.13	9.62%	0.0324**	0.0000***	0.0000***
Total IBDs#	2176.36	2713.27	536.91	24.67%	0.0248**	0.0000***	0.0000***
ROE	6.19%	6.14%	-0.05%	-0.76%	0.7015	0.2806	0.7822
ROA	7.06%	7.34%	0.28%	3.98%	0.0397**	0.0000***	0.0000***
ROC	9.25%	9.62%	0.36%	3.91%	0.0743*	0.0000***	0.0001***
Asset Turnover	87.02%	78.11%	-8.91%	-10.24%	0.0131**	0.0000***	0.0000***
Interest Cover	574.74%	474.30%	-100.44%	-17.48%	0.0054***	0.0127**	0.0001***
Gearing	70.97%	98.94%	27.97%	39.40%	0.0000***	0.0000***	0.0000***
Profit margin	32.33%	35.41%	3.08%	9.52%	0.0594*	0.0000***	0.0000***

*** Indicates statistical significance at the 0.01 level. ** Indicates statistical significance at the 0.05 level. * Indicates statistical significance at the 0.10 level. #IBDs = interest bearing debts. WSR# = Wilcoxon Signed Rank. Two-tailed Sign test and Wilcoxon signed ranks test for the change in median are used for non-parametric tests. Firms are grouped by GICS 2-digit codes. Return on equity (ROE) = Net Income / Total Equity; Return on assets (ROA) = EBIT / Total Assets; Return on capital (ROC) = EBIT / (Total Liabilities + Total Equity – Current Liabilities); Asset Turnover = Sales / (Total Liabilities + Total Equity – Current Liabilities); Interest Cover = EBIT / Interest expense; Gearing = Total Debts / Total Equity; Profit Margin = EBIT / Sales. 5% Winsorisation has been applied to all variables.

Table 5: Correlations of the Variables in Residual Income Models

	P_t	BV_t	AE_t	AE_t^{col}	AE_t^{other}	ΔNI_t	$r\Delta BV_{t-1}$
P_t	1.000						
BV_t	0.199	1.000					
AE_t	0.320	-0.259	1.000				
AE_t^{col}	-0.058	0.127	0.167	1.000			
AE_t^{other}	0.322	-0.264	0.993	0.137	1.000		
ΔNI_t	-0.013	0.064	-0.153	-0.164	-0.140	1.000	
$r \times \Delta BV_{t-1}$	-0.059	0.126	0.089	0.883	0.064	0.231	1.000

P_t is the market value at the financial reporting date lagged by three months; BV_t represents the book value at the end of the reporting date (year 2012); AE_t means the total abnormal earnings in year t (year 2012); AE_t^{col} indicates the abnormal earnings driven by capitalising operating leases in year t; AE_t^{other} means the abnormal earnings derived from others, other than capitalised operating leases in year t; ΔNI_t is the change of net income from capitalising operating leases in year t; $r \times \Delta BV_{t-1}$ is the required return on equity multiplied by the change of book value of the equity resulting from capitalising operating leases at the end of year t-1. The total assets in 2012 are used as a deflator to control the scale effects for the variables with absolute values. As suggested in Brenan (1995), the lags are considered for market variables. Both market values (Kohlbeck & Warfield, 2002) in the residual income model and returns (Cheng & Hsieh, 2000) in the return-earnings model are lagged by three months after the financial reporting dates

Table 6: Test Results of Residual Income Models

Model 1: $P_t = \beta_0 + \beta_1 \times BV_t + \beta_2 \times AE_t + \varepsilon_t$					
	β_0	β_1	β_2		Adj. R^2
Coefficients	0.4194***	0.9226***	2.0588***		0.1776
P-values	0.0003	0.0001	0.0000		

Model 2: $AE_t = \alpha_0 + \alpha_1 \times AE_t^{col} + \epsilon_t$					
	α_0	α_1			Adj. R^2
Coefficients	-0.0501***	8.2561**			0.0219
P-values	0.0000	0.0310			

Model 3: $P_t = \varphi_0 + \varphi_1 \times BV_t + \varphi_2 \times AE_t^{col} + \varphi_3 AE_t^{others} + \mu_t$					
	φ_0	φ_1	φ_2	φ_3	Adj. R^2
Coefficients	0.3424 ***	1.0179***	-40.7315**	2.2559***	0.1999
P-values	0.0035	0.0000	0.0255	0.0000	

*** Indicates statistical significance at the 0.01 level. ** Indicates statistical significance at the 0.05 level. * Indicates statistical significance at the 0.10 level. P_t = market value at the end of the financial year 2012 lagged by three months; BV_t = Book value of equity in 2012; AE_t = Abnormal earnings in 2012; AE_t^{col} = Abnormal earnings in 2012 derived from capitalising operating leases; AE_t^{others} = Abnormal earnings in 2012 resulting from other sources. All variables are deflated by total assets in 2012. 5% Winsorisation has been applied to all variables.

Table 7: Test Results for Model 3a

Model 3a: $P_t = \varphi_0 + \varphi_1 \times BV_t + \varphi_2 AE_t^{others} + \varphi_3 \times r \times \Delta BV_{t-1} + \varphi_4 \times \Delta NI_t + \mu_t$						
	φ_0	φ_1	φ_2	φ_3	φ_4	Adj. R^2
Coefficients	0.3336***	1.0282***	2.2450***	-37.0992**	19.0951	0.1943
P-values	0.0061	0.0000	0.0000	0.0292	0.3865	

*** Indicates statistical significance at the 0.01 level. ** Indicates statistical significance at the 0.05 level. * Indicates statistical significance at the 0.10 level. P_t: Market value at the end of the financial year 2012 lagged by three months; BV_t: Book value of equity in 2012; AE_t^{others}: Abnormal earnings in 2012 resulting from other sources; $r \times \Delta BV_{t-1}$: Change of required returns on equity in 2012; ΔNI_t: Change of earnings. All variables are deflated by total assets in 2012. 5% Winsorisation has been applied to all variables.

Table 8: Correlations of the Variables in Return-Earnings Models

	R_t	E_t	ΔE_t
R_t	1		
E_t	0.2814	1	
ΔE_t	-0.1008	-0.0897	1

R_t is the yearly returns in the financial year t lagged by three months; E_t represents the reported accounting earnings in the financial year t; ΔE_t means the changes of earnings derived from capitalising operating leases in the financial year t. All independent variables in this table are deflated by total assets in 2012.

Table 9: Test Results for Return-Earnings Models

Model 4a: $R_t = \gamma_0 + \gamma_1 \times E_t + \tau_t$				
	γ_0	γ_1		Adj. R^2
Coefficients	0.0453*	1.5418***		0.0908
P-values	0.0970	0.0000		

Model 4b: $R_t = \delta_0 + \delta_1 \times E_t + \delta_2 \times \Delta Et + \omega_t$				
	δ_0	δ_1	δ_2	Adj. R^2
Coefficients	0.0368	1.5179***	-12.6136	0.0896
P-values	0.2023	0.0001	0.3771	

*** Indicates statistical significance at the 0.01 level. ** Indicates statistical significance at the 0.05 level. * Indicates statistical significance at the 0.10 level. R_t: total yearly return in year 2012 lagged by three months; E_t: reported earnings in 2012; ΔE_t: changes of earnings in 2012 resulting from capitalising operating leases. Earnings (E_t) and change of earnings (ΔE_t) are deflated by total assets in 2012. 5% Winsorisation has been applied to all variables.