

The logo for Erasmus University, featuring the word "Erasmus" in a stylized, cursive script.

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**Bachelor Thesis**

## **A matter of Substance over Form**

### **Abstract**

Lease accounting has been a highly debated topic amongst standard setters for almost 50 years. This is due to the fact that a substantial part of lease agreements are classified as operating leases, which entails an off-balance sheet financing. On January 13, 2016, the International Accounting Standard Board (IASB) published IFRS 16, the new leasing standard. IFRS 16 is expected to pioneer lease-accounting through a transition while bringing back most of lease agreements in the balance sheet. The aim of this paper is to illustrate the magnitude of effects that IFRS 16's publication had on firms and speculate on the impacts of lease capitalization. An event study methodology was adopted to investigate the effects of the new regulation on stock prices while elaborating on the factors that impact abnormal returns around the announcement date. The findings suggest that the market was susceptible to IFRS 16's publication and that the effect was different across firms, industries and countries.

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## **1. Introduction**

Aristotle once said that “wealth does not lie in the ownership, but in the use of things”. Clearly, many companies follow the phrase, as they lease a substantial part of their assets and avoid recognizing them in the balance sheet. This off-balance sheet lease financing has been a sensitive topic, especially since its enormous increase in 1970s (Picker, et al., 2016). Concerned with its significance, both international and national standard setters started working on a standard that would primarily focus on the economic substance of leasing (Picker, et al., 2016). They adopted similar accounting treatments to enhance the mandatory recognition of assets and liabilities related to leases in the balance sheet. As a result, the International Accounting Standard (IAS) 17 was established and two arguments to enhance the recognition of asset and liabilities were put forth (IFRS, 2018):

-- “In case of financial leasing, the substance and the financial reality are that the lessee bears the economic benefits of the leased asset for the major part of its economic life with an obligation to pay an amount approximating the fair value of the asset, even though the legal form of the leased agreement may not state a transfer of ownership”

-- “thus, if such transactions are not presented in the statement of financial position, assets and liabilities will be understated, which would result in a distortion of financial ratios.”

The first argument relates to the substance over form doctrine, a major concept in accounting standards. According to Hopwood (1990), this doctrine, disregards the written legal form of the transaction if the economic substance of it is of higher importance. In lease accounting this concept applies in distinguishing operational lease from a financial one. We will establish these classifications later in this paper.

The second argument, on the other hand, illustrates the impact that off-balance-sheet lease financing has on the financial statements. It demonstrates that if a lease agreement is not treated as a financial one, then assets and liabilities will be understated, thus influencing financial ratios (Picker et al., 2016).

Alas, the aftermath of IAS 17 shows that the standard was unable to address the problems. Facing a state where more than 1.3 trillion dollars in debt are “forgotten”, IASB and FASB added into their agendas the commencement of work for a new leasing standard. The new standard, will not mandate but will strongly favor, emphasize and enhance the recognition of the major part of leases as financial ones (Picker, et al., 2016). IFRS 16- Lease Accounting, will be applicable from January 2019 and will have major implications for many industries (IFRS, 2018).

## **2. Research objective**

Leasing is the fastest growing form of capital investments (Kieso et al., 2014). Facing a situation where they have to decide between borrowing to purchase an asset or leasing it, companies usually choose the latter one. The reason is as simple as it can get. Leasing presents the tremendous advantage of hiding long term debt from the balance sheet.

IAS 17, the current standard, fails to address the issues related to leasing. Knubley (2010), states that the problems mainly arise from the need to categorize leases as either financial or operating. He distinguishes the importance of further restrictions on the classification. While classifying a lease as a financial one presumes the recognition of an asset and an obligation in the statement of financial position (Knubley, 2010), the classification as operating presumes nothing more than just a periodical expense. This in turn will affect the financial ratios which may consequently affect the investors perspective on a certain company.

The main motivation behind the research lies on the significant importance of the topic and the implementation of the new standard which will enhance the capitalization of leases. With a quick analysis of the current market situation, one indicates that more than 1.3 trillion dollars will be brought into the statement of financial position, if the new rules are adopted (Kieso et al., 2014). In the table below we show how different industries will be affected. It is important to notice the outstanding magnitude of negative effects that lease capitalization presents.

**Table 2.1**

<b>Lease Expense Impacts by Industry Sector</b>			
<b>Sector</b>	<b>Typical Lease Term (Years)</b>	<b>First-Year % Increase Prompted by New Rules</b>	<b>Cumulative % Increase Through Peak Year</b>
Airline	17	26%	128%
Banking	10	21%	64%
Equipment Manufacturers	5	11%	17%
Rail	22	26%	200%
Real Estate	10	21%	64%

*Source: Equipment Leasing and Finance Association, 2009.*

IFRS-16, Lease Accounting, was published on 13 January 2016. Although it will be applicable from January 2019 onwards, we speculate that the date of the publication had an impact on investors as we find a wide media-coverage surrounding the event from sources such as The Economist, Bloomberg and Financial Times. The intention of our analysis is to study the publication effect and attempt to conclude on the effects that lease capitalization will have after its mandatory adoption.

Based on the aforementioned problems and the impact of the new standard, our analysis will study the outcome of IFRS-16's publication. While investigating across firms, industries and countries, we will answer the following research question:

**“How will the market react to a transition from off to on-balance sheet lease financing (IFRS 16)?”**

### **3. What is lease accounting?**

According to Picker et al. (2016), a lease agreement is a bilateral contract between two parties known as the lessee and the lessor. The lessee receives the leased asset and agrees to periodic payments for the duration of the lease. Consequently, the lessor is the party which conveys the asset in return to periodic payments (Picker et al., 2016). It is crucial to distinguish that under a lease agreement the lessee buys the right to use the asset and not the asset itself (Picker et al., 2016).

A lease has two important classification, namely finance and operational lease. Under a finance lease, the lessee recognizes an asset and a liability in the balance sheet. The contract is capitalized at the fair value of the asset. On the other side, the lessor transfers the asset while recognizing a receivable in the statement of financial position.

In contrast, if the lease agreement is being classified as an operating lease the lessor remains in the ownership of the asset (in substance as well as in legal form) and only the profit/loss statement is affected by this transaction. In the same line, the lessee records no assets nor liabilities. They make periodic payments which only affect an expense account. It is simple to see that a wrongful classification would significantly affect the financial statements of the lessee and the lessor. Subsequently, it may lead investors to wrongful directions by subordinating their decisions.

In the literature review part of the paper we will go through several aspects of lease accounting. We will first introduce the new standard while analyzing its most important features. Secondly, we will analyze the impact of IFRS adoption through prior studies made on this field. Finally, we will discuss the

implications of lease capitalization (LC) on the financial statements and financial ratios, across industries and countries.

#### **4. IFRS 16 - The new standard**

Issued in 2016, International Financial Reporting Standards (IFRS) 16 is the new leasing standard which will be effective from January 2019 onwards (IFRS, 2018). The objective of IFRS 16 is to create the principle grounds for the recognition, measurement, presentation and disclosure of lease accounting (IFRS, 2018). The rationale for the new standard was triggered by the growing concern of lease accounting. IFRS 16 aims to assure that all the relevant information is being provided and that is being faithfully represented. It intends to favor the recognition of leases as financial instead of operational.

IFRS 16, is comprised with two elements which separate its fundamentals from the old standard. First of all, in one way or another it “violates” the principle-based aspect that distinguishes IFRS from its conglomerate, U.S. GAAP. It does so by introducing a mandatory threshold (rule) on classifying a lease as a financial one. Unless the asset that is being leased has a relatively low value, ‘all agreements that surpass a 12-month period are classified as financial leases’ (IFRS, 2018).

In addition, in order to reduce the degree of off-balance sheet lease financing, the standard identifies the importance in the definition of assets and liabilities (as follows), two key components of the IASB conceptual framework.

--“An asset is a resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity.”

--“A liability is a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits (Conceptual Framework, paragraph 49).”

When leasing an asset, the company obtains the right to use it and simultaneously has an obligation to pay for the length of the leasing contract (IFRS, 2018). Consequently, the right to use the leased item implies the recognition of an asset while the obligation to pay implies a liability. Thus, conforming to the aforementioned definitions, the standard implies that there is no rationale to avoid the classification of a lease as a financial one.

As we previously mentioned in this paper, there are two perspectives on both standards: the lessee and the lessor. IFRS 16 addresses lessee accounting heavily by imposing restriction on mandatory lease capitalization (Picker et al., 2016). Lessor accounting on the other hand, will have no major changes. This view is confirmed by the study made by Bauman & Francis (2011). Their study is based on what they like to call “the forgotten half of the standard: the lessor”

## **5. Literature review**

### **5.1. Impact of IFRS adoption**

Before 2005, many European countries were still reporting under the domestic accounting standards. Hence, the mandatory adoption of IFRS was a fundamental policy change that generated debates amongst firms and respective governments (Armstrong et al., 2010). The two-widest discussed topics were on the costs and benefits of adoption and the convergence of IFRS with global standards (Armstrong et al., 2010).

Although at a first glance, a new IFRS adoption might seem as a good step, it is generally surrounded by ambiguity. The investor’s reactions are quite obscure (Armstrong et al., 2010). On the one hand, there might be an optimistic behavior of investors, if IFRS application would yield greater quality of reporting, reduce information asymmetry or enhance similarities with other global standards (which would reduce the costs of comparing firms, thus the cost of capital) such as U.S. GAAP. This view is supported by Barth et al. (2008) who find evidence that IAS adoption enhanced reporting quality. In addition, Karamanou & Nishiotis (2005) findings, show positive reactions to voluntarily application of IAS. Furthermore, Chen et al. (2013) provide evidence that the IFRS adoption improves quality of financial statements and leads to higher quality in investor’s decision making. Other articles such as Barth et al. (2013) or Leuz and Verrecchia (2000) find correlation between increased reporting quality and lower cost of capital.

On the other hand, if the aforementioned virtuous of IFRS adoption are not present, the reaction will be, without any doubts, pessimistic. In addition, if the introduction of IFRS presents a negative change in the cash flows of firms, the investors might not be “as enthusiastic” about it.

Therefore, albeit surrounded by ambiguity, we contemplate that based on the effect that IFRS adoption has, IFRS-16’s publication affected investors. Thus, we formulate our first hypothesis.

*H1: “IFRS 16’s publication had an impact across markets and investors.”*

## **5.2. Lease capitalization - Impact on financial statements**

The fact that lease capitalization has an impact on the financial statements is of no doubt. These effects have been reported by several studies introduced in this section.

The first article we will discuss in this section is the research made by Beattie et al. (1998) which examines different industrial and commercial U.K. listed companies. Their study is based on the constructive LC method introduced by Imhoff et al. (1991). Although it may seem hard to encounter what this method really implies, it simply counts the things that would change for the company if operating leases are treated as financial ones. This is done by estimating the amount of assets and liabilities associated with the case of capitalizing operating leases (Imhoff et al., 1991).

What Beattie et al. (1998) suggest, is that capitalizing leases will yield an increase in both total assets and total liabilities. These findings are supported by several other works which implemented a similar method in conducting the research. Bennett & Bradbury (2003) studied 38 listed companies in New Zealand Stock Exchange. In the same line with Beattie et al. (1998) they find an increase in total debts with 22.9% and an increase in total assets with 8.8%. In addition, Kilpatrick & Wilburn (2006) found out that during the time span 1987-2004 the percentage of unrecorded lease liabilities to total liabilities and unrecorded lease assets to total assets had increased but with a greater magnitude on the liabilities side. This finding is a result of greater recorded expenses in the early stages of lease term with financial leases due to the magnitude of depreciation expense.

## **5.3. Lease capitalization - Impact on financial ratios**

Branswijck et al. (2011) distinguish financial ratios as core elements in influencing decision making. Ratio analysis is frequently used by stakeholders such as lenders and investors to evaluate a company's performance (Heikal et al., 2014). They identify leverage ratios as crucial in this aspect. In our analysis, we depict two leverage (gearing) ratios such as debt to equity (D/E) and debt to assets ratio (D/A). They are central in understanding the liquidity and the financing method of a company (Welch, 2011).

Imhoff et al. (1991), examine 7 industries in the U.S. and find significant evidence of increasing D/E ratio up to 191% for heavy lessees. Furthermore, Kilpatrick & Wilburn (2006) which investigate a different time period, although for the same industries, support the results of the aforementioned article. In addition, Beattie et al. (1998) extend the analysis to U.K. companies. They inspect three different gearing ratios (net



debt to total equity, long-term debt to capital employed and debt to equity) and show a significant increase in all of them. Their findings are also backed-up by earlier papers such as Nelson (1963).

Moreover, Imhoff et al. (1993) examine D/A ratio for two heavy lease user industry sectors (airline and groceries). They find evidence of increasing debt to assets ratio. Their work is supported by other articles such as Bennett and Bradbury (2003).

Undoubtedly, LC has a negative impact on the financial statements and financial ratios. Given the importance of these ratios on investment decision making we believe that firm specific variables affected the impact across firms.

*“H2: IFRS 16’s publication had different effects across companies.”*

#### **5.4. Cross-industry comparison**

As stated earlier in this paper, the magnitude of effects in different industries will be different. Kieso et al. (2014) analyze various reports on lease accounting. They build upon these reports and give insights on the consequences that the new leasing standard will have across industry. As example is the airline industry. Many airline companies such as British Airways or Lufthansa, lease the most part of their plane due to the favorable accounting treatment it represents (Kieso et al., 2014). In average these companies purchase only 70 % of their aircrafts while leasing the reaming part.

Imhoff et al. (1991, 1993) and Kilpatrick & Wilburn (2006) conduct similar research and find that the effect of LC across industries is various. In addition, Kieso et al. (2014), while collecting data from company reports of 2012 and 2013, indicate that other industries such as retail and financial sector, employ heavy leasing in their course of business. They show that these industries will undoubtedly be affected in the same manner. In table 2.1, in the research objective section, we have shown the lease expense impacts across various industries. Albeit, throughout the lease term, the magnitude of cumulative expenses is significant on all sectors, evidently, airline and rail sectors are the most affected ones. On average lease expenses will increase by 21 % for a 10-year lease (Kieso et al., 2014). Thus, based on previous work made on industry comparison, we build up our third hypothesis:

*“H3: IFRS 16’s publication had different effects across different industries.”*

## 5.5. Cross-country comparison

Finally, along firm and industry specific factor comparison, we will implement a macroeconomic view in our research as well. On their paper, Onali & Ginesti (2014) study the pre-adoption market reactions of IFRS 9-Financial Instruments and distinguish several country-specific factors that might influence the degree of market reactions. They depict the “Rule of Law” suggested from Kaufmann et al. (2001), as a variable which captures the degree to which agents trust the rules of society and speculate whether countries with higher rule of law will have higher abnormal returns (a higher rule of law implies higher authority). The same methodology was previously used by Armstrong et al. (2010) as well. They implement the same variable when measuring the degree of market reactions to IFRS adoption across countries. They find positive results which conforms their speculations.

Following Kaufmann et al. (2001), Armstrong et al. (2010), and Onali & Ginesti (2014), this paper incorporated a variable such as rule of law as well. The rationale behind it, was that we conducted a cross-country event study, and hence, we wanted to examine whether markets in different countries faced different reactions. Speculating on the importance of such factors in IFRS-16 adoption, we formulated our last hypothesis.

*“H4: IFRS 16’s publication had different magnitude of effects across countries.”*

## **6. Data**

In order to conduct our research cross-sectional and time series data were extracted from WRDS database, Thomson Reuters DataStream and EIKON DataStream.

Time-series data contained daily stock price observations from 171 days prior to the event were used. In addition, as the date of the event was 13 January 2016, cross-sectional data contained static observations of several variables for the year ending in 2015. Following Fama & French (1993) and Sharif et al. (2014) firm specific variables such as market value, earnings per share, dividends per share and CAPM’s beta (a variable which captures the stock’s relative risk to the market) were included in the analysis. In addition, as already illustrated in the literature review section, lease capitalization significantly impacts gearing ratios. Hence, debt to equity and debt to asset ratios were incorporated in the same manner.

Moreover, 620 firms were divided per industry as table 10.1 in the Appendix suggests. Finally, the rule of law variable, which captures the government authority across countries, was used to analyze the last hypothesis. The descriptive statistics of these variables can be seen in the table below.

**Table 6.1**

Variable	Observations	Mean	Standard Deviation
Market Value	620	31447.80	161818.20
Earnings Per Share	620	10.79	77.85
Dividends Per Share	620	6.94	73.43
Beta	620	0.35	0.55
Debt to Equity Ratio	620	0.34	4.93
Debt to Asset Ratio	620	0.29	0.21
Rule of Law	620	1.37	0.62

## **7. Methodology**

The intention of our analysis was to properly estimate the effect that the publication of IFRS-16 had across firms, industries and countries. This was achieved through an event study. To answer our first hypothesis, we quantified the impact while implementing market adjusted returns estimated by the Capital Market Asset Pricing (CAPM) model:

$$R_{it} = \alpha + \beta_i(R_{mt}) + e_{it}$$

In order to perform this methodology, we regressed the firm's daily returns with the market index returns derived from STOXX Europe 600, which represents the market returns for the largest firms in Europe (DJ STOXX LARGE). The alpha and the beta coefficients were estimated for a period of [-171, -71] relative to the announcement date. The results of the CAPM returns were then compared with the observed returns on time span of [-10, +10] around the event. The findings were later assessed for statistical significance.

Subsequently to determining the significance, we computed the cumulative abnormal returns (CAR), (using the formula below) to test the latter hypothesis. The CAR approach was necessary to compare the vulnerability of the abnormal returns.

$$CAR_{it} = \sum_{t=q}^{t=s} AR_{it}$$

The next step of the study was to properly estimate a model consistent with the five assumptions of linear regression. In order to be able to use a regression analysis, the variables should have a linear relationship with each other, multivariate normality, no or little multicollinearity, no auto-correlation and homoscedasticity.

Auto-correlation in this paper did not require testing as the data contains only static observations (Stock & Watson, 2015). The three other assumptions were conformed through an indirect approach. According to Stock and Watson (2015), if variables have no multicollinearity and the residuals of the linear regression follow a normal distribution and experience no heteroskedasticity then one can presume linear relationship and multivariate normality.

To estimate the model we first transformed all the cross-sectional data with the natural logarithm. While applying this method we removed outliers and gave data a distribution closer to a normal one. These variables were subsequently regressed with CAR as shown in table 10.2 in the Appendix. Using a variance inflation factor (VIF) test, we investigated whether or variables experience multicollinearity. The results are shown in table 10.3 in the Appendix. The rationale to adopt this approach lies on the fact that multicollinearity biases the t-statistics as it inflates the size of confidence intervals. A rule of thumb implies that the standard errors should not be inflated more than twice their basic size. Hence, in table 10.3 we looked at VIF which surpasses the threshold of 4 (as the standard error is the square root of variance). The logarithm of earnings per share and the logarithm of debt to asset ratio were excluded. The model was estimated a second time with only four variables (table 10.4 in the appendix). The VIF test this time showed consistency with the assumptions of multicollinearity (table 10.5 in the Appendix).

The next steps were to test homoskedasticity and multivariate distribution assumptions. Subsequently to estimating the model, we evaluated homoscedasticity while using the Cook-Weissenberg test. The test (table 10.6 in the Appendix) showed a p-value approximately to 0.8 which suggested that residuals experience constant variance (homoskedasticity). The plotted fitted values against residuals can be found on figure 10.1 in the Appendix.

Finally, we predicted the residuals of the regression and evaluated their normal distribution with the Kolmogorov-Smirnov test against theoretical distribution. The p-value of approximately 0.13 (table 10.7 in the Appendix) suggested that we cannot reject the null hypothesis which states that the residuals follow a normal distribution. The residual's estimated histogram can be found on figure 10.2 in the Appendix.

Given that the regression reconciled with all the assumptions we established that the following equations would be used to answer our hypothesis (where  $i$  stands for different companies).

$$-- CAR_i = \beta_{0i} + \ln MV_i + \ln DPS_i + \ln Beta_i + \ln D/E_i + \varepsilon_i$$

$$-- CAR_i = \beta_{0i} + \ln MV_i + \ln DPS_i + \ln Beta_i + \ln D/E_i + IndDummy_i + \varepsilon_i$$

$$-- CAR_i = \beta_{0i} + \ln MV_i + \ln DPS_i + \ln Beta_i + \ln D/E_i + ROL_i + \varepsilon_i$$

The second hypothesis was studied through industry dummies ( $IndDummy_i$ ). Each industry was regressed alone with firm specific variables (which now control for the variations not attributable to the industry effect). The results were compared relatively to each other. The final hypothesis was studied in the same manner while regressing firm specific variables and rule of law against CAR.

## **8. Results, Interpretation and Discussion**

### **8.1. Main Findings**

As previously stated in the methodology section, in order to evaluate our first hypothesis, we performed a t-test on whether the market model adjusted returns are significantly different from 0. These findings, concerning the 620 companies in our sample, can be found through tables 10.8 - 10.28 in the Appendix. They were evaluated within a 95 % confidence interval. Any t-statistics which is higher than 1.96 or lower than -1.96 is significant within the interval.

While testing a window of [-10, +10] days around the event date, we inferred that the abnormal returns were various. Albeit we found consistent significant results throughout different days, we investigated CAR only on the continuous, symmetric significant period of [-3, +3] days around the event. In table 8.1.1 we have shown the mean abnormal returns of this interval.

There are three interesting phenomena that need to be noticed. First, on the day of the event we found non-significant results. This might have been due to the fact that there was an event uncertainty and investors experienced a news recognition lag (Agrawal & Kamakura, 1995). Secondly, the abnormal returns were generally negative, complying with the negative impact LC has throughout firms. In addition, these returns, were more negative after the publication was made, as investors realized the significant negative impact the new standard has. Finally, on day -3, and several other days prior this time period, we found positive abnormal returns. This can be explained by the positive expectations investors generally have on IFRS adoption as depicted by Chen et al. (2013).

**Table 8.1.1**

Significant Interval	Mean
Market Model Adjusted Return (Day -3)	0.0041
Market Model Adjusted Return (Day -2)	-0.0061
Market Model Adjusted Return (Day -1)	-0.0042
Market Model Adjusted Return (Day 0)	-0.0001
Market Model Adjusted Return (Day +1)	-0.0054
Market Model Adjusted Return (Day +2)	-0.0070
Market Model Adjusted Return (Day +3)	-0.0143

## 8.2. Comparing firms

To evaluate our second hypothesis on whether IFRS 16's publication effect was different across firms, we regressed all the firm specific variables against CAR. As shown in the methodology section, we looked through different regressions to estimate one that complies with all the assumptions of the linear regression. The results of this regression can be found on table 10.4 in the Appendix or in a simplified version in table 8.2.1 below. The stars show the statistical significance as follows: (i) \* - significant in a 90 % confidence interval (i.e. the absolute value of t-statistics higher than 1.64 or p-value lower than 0.1), (ii) \*\* - significant in a 95 % confidence interval (i.e. the absolute value of t-statistics higher than 1.96 or p-value lower than 0.05), \*\*\* - significant in a 99% confidence interval (i.e. the absolute value of t-statistics higher than 2.58 or p-value lower than 0.01).

The results suggested non-significant coefficients for all variables besides dividends per share logarithm. It is important to notice that a linear-log regression alters the interpretation of coefficients. Transforming the independent variables with natural logarithm makes simple linear explanation implausible. For example, the results in table 8.2.1 conveyed that one percent increase in the market value was associated with 0.01 percentage points (pp) decrease in CAR. This implies that firms with higher market value generally had more negative abnormal returns on the publication date. These results are in accordance with Malkiel and Fama (1970). Companies with greater market value, operate in deeper markets where investors have information advantage (Malkiel & Fama, 1970). As so, they were better able to contemplate the negative effect of lease capitalization on the financial statements. However, these results are insignificant.

Furthermore, dividend per share logarithm had a positive correlation with CAR. In particular, a one percent increase in dividends per share was accompanied with 0.34 pp increase in abnormal returns. The positive relationship is attributable to the fact that a high dividend yield is associated with a decrease in the stock price. Hence, associated with greater negative stock price movements. This entails that firms with higher dividends per share generally had less negative abnormal returns as most of the negative AR was captured by the value of dividends per share.

The logarithm of control beta, on the other hand, produced negative relationship against CAR, although insignificant. This is due to the fact that firms with higher beta experience greater movements relative to the market (Fama & French, 1993). A one percent increase in beta was associated with 0.2 pp decrease in abnormal returns.

Last but not least, debt to equity ratio logarithm, had negative correlation with CAR. In the literature review section, we depicted two crucial leverage ratios such as debt to asset and debt to equity. We argued that while many leased contacts are not represented in the balance sheet, these ratios are undervalued. Thus, we speculated that firms with gearing ratios will have greater negative abnormal returns. The results suggest the same. A one percent increase in debt to equity ratio was accompanied with a 0.03 pp decrease in CAR.

**Table 8.2.1**

CAR Regression on Firm Specific Variables	
Variables	Coefficient
Market Value Logarithm	-0.0001
Dividends Per Share Logarithm	0.0034 **
Control Beta Logarithm	-0.0020
Debt to Equity Ratio Logarithm	-0.0003
Constant	-0.0278 **

### 8.3. Comparing Industries

In this section we evaluate our third hypothesis. Previously in the literature review section, we investigated several articles which speculated on the effect across industries. To test whether our sample contained similar results, dummy variables per each industry were created. In total there were eight

different industries. These dummies and all firm specific variables (which control for potential abnormal returns not-distributable to industries) were regressed against CAR. The results are shown on table 8.3.1, while more detailed through tables 10.29 – 10.36 in the Appendix.

As illustrated, only three regressions show significant results. In order to elaborate on our hypothesis, we depict four crucial interpretations on these findings. First, it is interesting to note that in the miscellaneous industry we found significantly different results relatively to the sample's CAR. This industry is a combination of different sectors which employ a heavy use of leased assets such as ship building, hotel and motel chains, wholesalers and medical services. As illustrated, companies that operate under this industry, had 2.39 pp greater negative returns.

Secondly, the AR results for the construction, oil, gas and coal, recreation, retail and utility industries are insignificantly different from the sample's CAR. Although we acknowledge the fact that in some industries the market might not be as efficient as in others, some of these results are surprising. Besides recreation industry (where there is no existing literature review on lease capitalization effect), all the other industries are expected to have significant changes after January 2019. Hence, IFRS 16's publication should have had an impact in their returns relative to the sample's.

Thirdly, the investors in the financial industry perceive the new standard as more of a positive news relatively to investors in other industries. This can be inferred from the positive dummy coefficient. Companies that fall under the financial industry experienced a 1.54 pp increase in CAR. This implies that the information amongst firms in this industry was associated with less negative abnormal returns. Commercial banks or insurance companies, which fall under this industry, rely on valuations every day. These valuations are crucial in collateral, credit and premium determination. Hence, a new standard which increases faithful representation and quality of reporting must be perceived as relatively good news amongst investors in these firms (Chen et al., 2013) (Armstrong et al., 2010).

Lastly but most importantly, the coefficient associated with the transportation industry suggests a vital finding. The transportation industry is a combination of the most affected sectors (airline and rail). As it can be seen, firms within this industry, realized a 2.96 pp decrease in CAR. This entails that firms that fall under this industry experienced greater negative results on the publication date. This is indeed what was speculated by Kieso et al. (2014).



**Table 8.3.1**

CAR Regression on Industries													
Variables	C	F	M	OGC	R	RET	T	U					
MVL	-0.0001	0.0002	-0.0007	-0.0001	-0.0001	-0.0001	0.0002	-0.0001					
DPSL	0.0032 *	0.0036 **	0.0055 ***	0.0034 **	0.0033 **	0.0037 **	0.0032 **	0.0034 **					
CBL	-0.0023	-0.0020	-0.0009	-0.0019	-0.0020	-0.0021	-0.0020	-0.0020					
DEL	-0.0001	0.0000	-0.0003	-0.0003	-0.0002	-0.0002	-0.0007	-0.0003					
C	-0.0140												
F		0.0154 ***											
M			-0.0239 **										
OGC				0.0033									
R					-0.0013								
RET						0.0079							
T							-0.0296 ***						
U								0.0010					

MVL – Market Value Logarithm

DPSL – Dividends Per Share Logarithm

CBL – Control Beta Logarithm

DEL – Debt to Equity Ratio Logarithm

C – Construction Industry

F – Financial Industry

M – Miscellaneous Industry

OGC – Oil, Gas, Coal Industry

R – Recreation Industry

RET – Retail Industry

T – Transportation Industry

U – Utility Industry

CON – Constant variable of Regression

#### 8.4. Comparing countries

Finally, to evaluate our fourth and last hypothesis, we examined the effect that government authority and influence had on CAR. We conducted a similar methodology to the previously used one in comparing industries. While controlling for firm specific factors, we investigated whether a higher rule of law entailed greater negative returns. The results can be found on the table below (refer to table 10.37 in the Appendix for more detailed results).

Alas, our results are insignificant. The coefficient estimated by the regression, implies that an increase by one in the rule of law, decreases CAR by 0.2 pp. The results follow the expectations of Armstong et al. (2010) but contradict the results of Onali and Ginesti (2014). They suggest that companies that operate under countries where the government has greater authority and influence, yielded greater negative abnormal returns. Although, it is necessary to note that there might be divergence between a country's national standards and IFRS especially in IFRS 16, which is hard to measure. If the divergence is high, then our results are up to a certain degree biased. However, the coefficient was nevertheless insignificant.

**Figure 8.4.1**

CAR Regression on Countries	
Variables	Coefficient
Logarithm of Market Value	-0.0001
Logarithm of Dividends Per Share	0.0037 **
Logarithm of Control Beta	-0.0019
Logarithm of Debt to Equity Ratio	-0.0002
Rule of Law	-0.0021
Constant	-0.0241

## **9. Conclusion and Limitations**

The main motivation of this paper was the new leasing standard and its effect. IFRS 16 – Lease Accounting, was published in 13 January 2016 and will be applicable from January 2019. The standard will introduce further restrictions in order to enhance the recognition of leases substantially in the financial statements. A global market analysis indicates that more than 1.3 trillion dollars which are currently “forgotten” (represented only in the disclosures as operating leases) will be brought back to the balance sheet. Comprehending the considerable magnitude of impacts the standard entails, this paper investigated the probable lease capitalization effects, through a pre-adoption event study across firms, industries and countries.

**Impact.** To analyze whether the publication date had an effect in the market we followed an event study methodology approach. We estimated the returns based on the market model and compared them to the realized returns in the interval [-10, +10] around the event date. We found significant abnormal returns in the time-span [-3; +3]. Conforming to the predictions of Imhoff et al. (1991) and Beattie et al. (1998), the impact was generally negative, especially after the publication date. Thus, the first hypothesis was accepted.

**Companies.** After investigating several articles such as Nelson (1963), Beattie et al. (1998), Bennett & Bradbury (2003) and Imhoff et al. (1993) who studied the effect of lease capitalization on financial statements and financial ratios, we contemplated that firm specific factors would impact the negative returns. Our findings followed the expectations, albeit the results were mainly insignificant. Hence, the second hypothesis was not entirely accepted.

**Industries.** Following Kieso et al. (2014) who suggested that the effect of the new standard would be various across industries, Imhoff et al. (1991, 1993) and Kilpatrick & Wilburn (2006) who studied the different impact in several sectors, we speculated that the same phenomena would be present in our sample as well. A crucial result suggested by our findings was that the transportation industry, which include the airline and rail sector, was the most impacted. Firms in this industry experienced on average 2.96 pp greater negative returns. Given the significant difference among industries, the third hypothesis was accepted.

**Countries.** Lastly, we analyzed the impact across countries. Based on Armstrong et al. (2010) and Onali and Ginesti (2014), who examined the impact of government authority over stock prices we tested whether the negative abnormal returns were vulnerable to the degree of this authority. The results

showed that countries with higher rule of law had greater negative returns. However, as the results were insignificant, the last hypothesis was rejected.

**Central research question.** It should be carefully noticed, however, that the standard faces an important trade-off between quality of reporting and transaction's substance. On the one hand, the quality of reporting will increase as the standard will faithfully represent a lease transaction. This was shown in the returns of financial industry. The industry experienced greater positive abnormal returns relatively to others as the new standard eases their work on valuations. On the other hand, the substance of the transaction will bring back assets and liabilities in the balance sheet. This will negatively impact financial statements and financial ratios as our findings strongly suggested. Based on the results of our sample, we believe that the trade-off weights more on the substantive part. Thus, as a conclusion, this paper advocates that lease capitalization will generally be accompanied with negative impacts across firms and investors should be carefully adapted.

**Limitations.** Even though this research was attentively prepared, it counts with certain limitations. Despite the fact that the results are truly consistent with previous literature on the new leasing standard, there are several factors that can be altered for future analysis. Nevertheless, a research of this kind was never conducted before.

First, due to time constraints this paper was only focused on one event date. More specifically, the date when the IFRS 16 was published. Though, there are several other events which can be distinguished in the topic, such as the publications made by IASB and EFRAG prior to 13 January 2016. As these publications either increased or decreased the possibility of implementation of the standard, one can analyze these events, and speculate their effect on the stock prices.

Secondly, we established only six control variables in this research. Undoubtedly, there are several other variables which influence the variations in abnormal returns. Incorporating these variables in the regression may alter the results conforming to omitted variable bias assumption. In addition, adding firm-specific variables of interest, such as operating lease amount, may produce different conclusions. Although, it has to be noticed, that the extraction of these variables is not intuitively straightforward.

Furthermore, the methodology used to conduct the cross-industry analysis can be adjusted. Rather than comparing industries with each other, one may compare the impact of industries relative to a threshold. This would relax the obstacles in interpretations and conclusions. Nevertheless, as previous work on this type of research is rare the threshold is difficult to estimate.

Finally, as previously illustrated it is crucial for the cross-country analysis to include a variable which estimates divergence between IFRS and national accounting standards. However, publications on this proxy are rare, old and hence not relevant. Much less, in order to make this variable trustworthy, the estimation should be based exclusively on the divergence between leasing standards.

## **10. Appendix**

Table 10.1 (firms divided per industry)

Industries	Number of firms
Construction	21
Financial	269
Miscellaneous	72
Oil, Gas, Coal and Related Services	74
Recreation	42
Retailers	59
Transportation	39
Utilities	44

Table 10.2 (regression of firm specific variables against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	0.0005	0.0015	0.3100	0.7570
Earnings Per Share Logarithm	-0.0073	0.0039	-1.8600	0.0650
Dividends Per Share Logarithm	0.0089	0.0040	2.2300	0.0270
Control Beta Logarithm	-0.0038	0.0030	-1.2400	0.2170
Debt to Equity Ratio Logarithm	0.0368	0.0181	2.0300	0.0430
Debt to Asset Ratio Logarithm	-0.0306	0.0154	-1.9900	0.0480
Constant	-0.0104	0.0193	-0.5400	0.5900

Table 10.3 (first variance inflated factor test for multicollinearity)

Variable	VIF
Debt to Equity Ratio Logarithm	56.8700
Debt to Asset Ratio Logarithm	56.8300
Dividends Per Share Logarithm	5.9000
Earnings Per Share Logarithm	5.8700
Market Value Logarithm	1.6700
Control Beta Logarithm	1.6200
Mean VIF	21.4600

Table 10.4 (regression of firm specific variables against CAR, after omitting multicollinearity issues)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	-0.0001	0.0013	-0.0400	0.9640
Dividends Per Share Logarithm	0.0034	0.0016	2.1000	0.0360
Control Beta Logarithm	-0.0020	0.0028	-0.7100	0.4800
Debt to Equity Ratio Logarithm	-0.0003	0.0020	-0.1300	0.8960
Constant	-0.0278	0.0132	-2.1000	0.0370

Table 10.5 (second variance inflated factor test for multicollinearity)

Variable	VIF
Market Value Logarithm	1.5400
Control Beta Logarithm	1.4700
Dividends Per Share Logarithm	1.1200
Debt to Equity Ratio Logarithm	1.0200
Mean VIF	1.2900

Table 10.6 (Cook-Weissenberg test for heteroskedasticity)

chi2(i)	0.0900
Prob > chi2	0.7699

Table 10.7 (Kolmogorov-Smirnov test against theoretical distribution)

Smaller Group	D	P-value
Residuals	0.0562	0.1280
Cumulative	-0.0650	0.0640
Combined K-S	0.0650	0.1280

Table 10.8 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -10)	620	0.0030	1.7000

Table 10.9 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -9)	620	0.0032	3.3666

Table 10.10 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -8)	620	-0.0003	-1.6054



Table 10.11 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -7)	620	0.0059	3.3228

Table 10.12 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -6)	620	0.0018	1.5144

Table 10.13 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -5)	620	0.0004	0.3953

Table 10.14 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -4)	620	-0.0047	-2.6710

Table 10.15 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -3)	620	0.0041	3.5284

Table 10.16 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -2)	620	-0.0061	-4.0076

Table 10.17 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day -1)	620	-0.0042	-2.1539

Table 10.18 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day 0)	620	-0.0001	-0.0231

Table 10.19 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +1)	620	-0.0054	-3.7644

Table 10.20 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +2)	620	-0.0070	-5.8208

Table 10.21 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +3)	620	-0.0143	-10.1727

Table 10.22 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +4)	620	0.0002	0.1275

Table 10.23 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +5)	620	-0.01257	-9.4689

Table 10.24 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +6)	620	0.0014	0.7826

Table 10.25 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +7)	620	0.0070	3.6695

Table 10.26 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +8)	620	0.0019	1.6836

Table 10.27 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +9)	620	0.0009	0.2864

Table 10.28 (t-test on the significance of abnormal returns)

Variable	Observations	Mean	T-Statistics
Market Model Adjusted Return (Day +10)	620	0.0014	0.9228

Table 10.29 (regression of construction industry against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	-0.0001	0.0013	-0.0800	0.9380
Dividends Per Share Logarithm	0.0032	0.0016	1.9600	0.0510
Control Beta Logarithm	-0.0023	0.0029	-0.8000	0.4220
Debt to Equity Ratio Logarithm	-0.0001	0.0020	-0.0700	0.9450
Construction Industry	-0.0140	0.0126	-1.1100	0.2670
Constant	-0.0269	0.0133	-2.0300	0.0430

Table 10.30 (regression of financial industry against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	0.0002	0.0013	0.1600	0.8760
Dividends Per Share Logarithm	0.0036	0.0016	2.2600	0.0240
Control Beta Logarithm	-0.0020	0.0028	-0.7300	0.4690
Debt to Equity Ratio Logarithm	0.0000	0.0020	0.0100	0.9920
Financial Industry	0.0154	0.0055	2.7900	0.0060
Constant	-0.0365	0.0135	-2.7100	0.0070

Table 10.31 (regression of miscellaneous industry against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	-0.0007	0.0014	-0.5500	0.5840
Dividends Per Share Logarithm	0.0055	0.0018	3.0800	0.0020
Control Beta Logarithm	-0.0009	0.0029	-0.3300	0.7430
Debt to Equity Ratio Logarithm	-0.0003	0.0020	-0.1600	0.8750
Miscellaneous Industry	-0.0239	0.0092	-2.6000	0.0100
Constant	-0.0185	0.0136	-1.3600	0.1740

Table 10.32 (regression of oil, gas and coal industry against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	-0.0001	0.0014	-0.1000	0.9200
Dividends Per Share Logarithm	0.0034	0.0016	2.0800	0.0380
Control Beta Logarithm	-0.0019	0.0029	-0.6400	0.5200
Debt to Equity Ratio Logarithm	-0.0003	0.0020	-0.1300	0.9000
Oil, Gas and Coal Industry	0.0033	0.0116	0.2800	0.7790
Constant	-0.0272	0.0134	-2.0200	0.0440

Table 10.33 (regression of recreation industry against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	-0.0001	0.0013	-0.0500	0.9610
Dividends Per Share Logarithm	0.0033	0.0017	2.0200	0.0450
Control Beta Logarithm	-0.0020	0.0029	-0.7000	0.4870
Debt to Equity Ratio Logarithm	-0.0002	0.0020	-0.1200	0.9050
Recreation Industry	-0.0013	0.0118	-0.1100	0.9140
Constant	-0.0276	0.0134	-2.0600	0.0400

Table 10.34 (regression of retail industry against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	-0.0001	0.0013	-0.0700	0.9440
Dividends Per Share Logarithm	0.0037	0.0017	2.2400	0.0260
Control Beta Logarithm	-0.0021	0.0029	-0.7500	0.4560
Debt to Equity Ratio Logarithm	-0.0002	0.0020	-0.0800	0.9390
Retail Industry	0.0079	0.0094	0.8400	0.4000
Constant	-0.0284	0.0133	-2.1400	0.0330

Table 10.35 (regression of transportation industry against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	0.0002	0.0013	0.1600	0.8740
Dividends Per Share Logarithm	0.0032	0.0016	2.0000	0.0470
Control Beta Logarithm	-0.0020	0.0028	-0.7100	0.4800
Debt to Equity Ratio Logarithm	-0.0007	0.0020	-0.3500	0.7290
Transportation Industry	-0.0296	0.0109	-2.7100	0.0070
Constant	-0.0283	0.0131	-2.1600	0.0310

Table 10.36 (regression of utility industry against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	-0.0001	0.0014	-0.0600	0.9550
Dividends Per Share Logarithm	0.0034	0.0016	2.0900	0.0380
Control Beta Logarithm	-0.0020	0.0029	-0.7000	0.4850
Debt to Equity Ratio Logarithm	-0.0003	0.0020	-0.1400	0.8870
Utility Industry	0.0010	0.0108	0.1000	0.9230
Constant	-0.0277	0.0133	-2.0900	0.0370

Table 10.37 (regression of rule of law against CAR)

Variables	Coefficient	Standard Error	T-statistics	P-value
Market Value Logarithm	-0.0001	0.0014	-0.1000	0.9180
Dividends Per Share Logarithm	0.0037	0.0017	2.0900	0.0370
Control Beta Logarithm	-0.0019	0.0029	-0.6700	0.5040
Debt to Equity Ratio Logarithm	-0.0002	0.0020	-0.1200	0.9080
Rule of Law	-0.0021	0.0051	-0.4000	0.6880
Constant	-0.0241	0.0161	-1.4900	0.1370

Figure 10.1

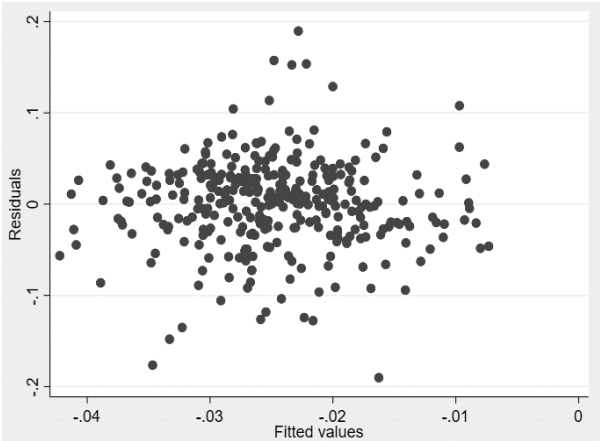
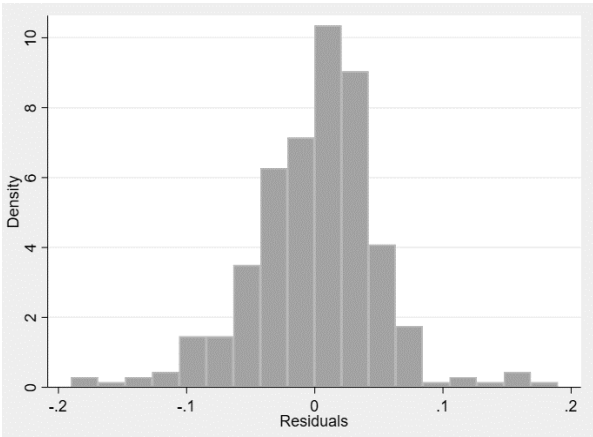


Figure 10.2



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