



UNIVERSITY OF GOTHENBURG  
SCHOOL OF BUSINESS, ECONOMICS AND LAW

# PROPOSED NEW LEASE STANDARD

Do investors adjust for capitalized operating leases in their  
assessment of market value of equity?

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# ABSTRACT

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**TITLE** PROPOSED NEW LEASE STANDARD - Do investors adjust for capitalized operating leases in their assessment of market value of equity?

**BACKGROUND AND PROBLEM DISCUSSION** Leases are a common way for companies to acquire assets. However, the current lease regulation is criticized and a proposed new lease standard (exposure draft) has been released. The presented changes in the new exposure draft include capitalizing all leases, which will affect companies' financial ratios. These regulation changes may affect the market value for affected companies.

**PURPOSE** The purpose of this paper is to describe and explore the effects and possible consequences capitalizing operating leases has on market value of equity. We want to investigate if investors already adjust for capitalized operating leases in their assessment of market value of equity.

**RESEARCH DESIGN AND METHOD** Our purpose and hypothesis is investigated by capitalizing operating leases. All data is collected from DataStream and processed using a constructive capitalization model. The capitalized data is then tested against our hypothesis using a regression model.

**RESULT AND CONCLUSION** Our results indicate that investors do not adjust current market value of equity for capitalized operating leases.

**SUGGESTION AND FURTHER RESEARCH** An event study for the same companies after the implementation of the new standard would be interesting to see if the new standard in fact has an effect on market value of equity.

**KEY WORDS** Operating leases, new lease standard, capitalization, disclosures, market value of equity

# ABBREVIATIONS

**D/E** - Debt ratio

**DP** - Discussion Paper - is designed to obtain initial views and comments on important issues that the IASB will consider regarding modifying new standards.

**EBIT**- Earnings before Interest & Tax

**EP**- Exposure Draft - A document released by the Financial Accounting Standards Board (FASB) OR International Accounting Standards Board for public discussion prior to the release of a new accounting standard.

**EU** - European Union

**FASB** - Financial Accounting Standards Board

**IASB** - International Accounting Standards Board

**IFRS** - International Financial Reporting Standards

**MLP** - Minimum lease payments

**ROA** - Return on total assets

**ROE** - Return on equity

**SEC** - Securities and Exchange Commission

**US GAAP** - Generally Accepted Accounting Principles - FASB's and the US's counterpart to IASB and IAS/IFRS

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# 1. INTRODUCTION

*The introduction chapter is intended to introduce the reader to the subject by explaining leases as a method to acquire assets and the accounting problem linked to it. Thereafter the problem discussion presents the problem with the current standard. The chapter ends with the aim and the limitations of the thesis.*

## 1.1 BACKGROUND

This thesis will discuss the effects of the proposed change in lease regulation and examine if investors are making adjustments for operating lease in their valuation of companies.

There are several ways for companies to acquire assets. The most fundamental way is to buy the asset. If the company does not have the funds to buy the asset, it can either borrow the funds or lease the asset. To lease an asset means that the company does not own the asset, but has the right to use the asset for a pre-determined time frame.

In accordance with the current accounting standard for leases, IAS 17 by International Accounting Standards Board (IASB), a lease is defined as either a financial or an operating lease. A financial lease is similar to a debt-financed purchase whereas an operating lease is not recognized in the financial statement as an asset only as an expense in the income statement. This problem when accounting leases were illustrated by IASB chairman Sir David Tweedie in a speech hosted by Financial Reporting Council in Australia in 2002.

*“I can guarantee almost all of you here have never flown in a plane that has appeared in the airline's balance sheet. And the reason is they tend not to buy them, they lease them.”*

- Sir David Tweedie, Chairman of IASB.<sup>1</sup>

If a company uses operating leases instead of financial leases, it will experience an improved debt ratio, ROA and book value compared to a company that purchases the asset.<sup>2</sup> In addition to these effects, it is in many cases easier for a company to lease an asset than it is to borrow money to buy the asset. The credit rating needed is lower for leases due to the fact that the ownership is not transferred from the lessor to the lessee. For accounting purposes, companies may want to use operating leases to exclude the asset from their balance sheet, thereby improving key ratios.<sup>3</sup> In order to overcome the current limitations in dividing operating and financing leases, the standard setters have proposed to change the regulations, forcing all operating leases to be reported as an asset and liability on the balance sheet. This way of capitalizing operating leases is based on a recommendation originally proposed by the G4+1 Group of standard setters.<sup>4</sup> The

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<sup>1</sup> Tweedie (2002)

<sup>2</sup> Marton et al. (2013)

<sup>3</sup> Ibid.

<sup>4</sup> McGregor, W. (1996)

global standard setter IASB in cooperation with the American FASB proposes the new lease standard. The two standard setters started a convergence project in 2002 to harmonize American and global regulations. The goal is to minimize differences between the regulations IFRS and US GAAP.<sup>5</sup>

According to previous research, the majority of leases are not reported on the balance sheet. In some companies and industries the off-balance sheet leases can be substantial. In a report made by the US Securities and Exchange Commission (SEC), the estimated US public companies off-balance-sheet commitments are 1, 25 trillion dollars.<sup>6</sup> In Sweden, a majority of the listed companies uses operating leases. Strand and Jonasson conclude in their study that 82, 9 % of all Swedish listed companies uses operating leases.<sup>7</sup> Furthermore, if operating leases were to be capitalized several studies have shown the effects on financial ratios. The studies concluded that return on asset (ROA), gearing and profit margins would be considerably affected.<sup>8</sup> One need to consider that there is a widespread use of operating leases and the impact on financial ratios for certain companies is substantial.

## 1.2 PROBLEM DISCUSSION

Operating leases is a major player in the debt market and the impact on the financial statement if capitalized is substantial. With over 600 comment letters on the current exposure draft (ED Leases 2013), the accounting of leases is a hot subject, both in the academic world and amongst users and preparers.<sup>9</sup> However, the amount of users responding to the comment letter was scarce, and there are increasing concerns that users' views are under-represented regarding today's accounting standards.<sup>10</sup>

Dividing operating and financial leases has been criticized since the implementation of the current standard. In a report made by G4+1 Group of accounting standard setters, which proposed the concept of capitalizing all leases, three major problems with the current lease standard are identified. Assets and liabilities emerging from operating lease contracts are excluded from the balance sheet. Since small contractual changes can change the classification of a lease from financial to operating, this means that similar transactions can be accounted for in different ways and thus the comparability and transparency between companies suffers. Moreover it gives the companies an opportunity to manage their own financial statements and key figures.<sup>11</sup> This is in direct conflict with the Conceptual Framework developed by IASB<sup>12</sup>. Finally, the uncompromising approach to the capitalization of leased assets does not reflect the

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<sup>5</sup> Marton et al. (2013)

<sup>6</sup> Exchange U.S. (2002)

<sup>7</sup> Strand and Jonasson (2011)

<sup>8</sup> Durocher (2008), Fülbier et al. (2008), Imhoff et al. (1991) Branswijck et al. (2011)

<sup>9</sup> Deloitte (2014)

<sup>10</sup> Beattie et al. (2006)

<sup>11</sup>McGregor, W. (1996)

<sup>12</sup> IASB. CF (2010)



complex transactions that happen today.<sup>13</sup> Furthermore, criticism has been arising from users and standard-setters.<sup>14</sup> The former chairman of the U.S SEC has explained that standards of high quality are vital to financial reporting and need to broadcast comparability and transparency.<sup>15</sup> The SFAS 13, similar to the IAS 17 standard, was voted as the worst standard in a survey made by Reithers.<sup>16</sup>

There are conflicting statements made regarding the question whether professional investors adjust for operating leases when valuing companies. Boatsman et al. advocate that the constructive capitalization method is taught in MBA classes and among investment bankers, but they does not say how widely it is used.<sup>17</sup> Breton and Taffler carried out a study among 63 UK stockbroker analysts were not a single one adjusted for operating leases. However credit-rating institutes adjusts for operating leases, but use a simplified multiple model instead of a constructive capitalization.<sup>18</sup> It is known that capitalization could have an impact for investors' decisions regarding credit rating, loan assessments and risk evaluation.<sup>19</sup> Whether the investors are ignorant as to the impact of operating leases or simply lack incentives to account for operating leases is unclear.<sup>20</sup> This is concerning since professional investors recommendations and statements affect private investors' decision making.<sup>21</sup> This means that there is a possibility that a large amount of debt is unrecognized.

The current standard provides investors with ample information to capitalize operating leases. However the information is stated in the footnotes, and not in the financial statements. A capitalization is time consuming and based on assumptions. Due to this we believe that operating leases is not accurately included in market value of equity.

This thesis will contribute to the ongoing research on the subject of the capitalizing operating leases by examining if investors adjust for operating leases. Previous research has focused on financial ratios. In our study we would like to examine if the market value of equity incorporates operating leases similarly to the proposed new lease standard

### **1.3 PURPOSE**

The purpose of this thesis is to examine the effects capitalizing operating leases have on market value of equity. In order to achieve the purpose a statistical analysis will be conducted to test if

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<sup>13</sup> McGregor (1996)

<sup>14</sup> Ibid.

<sup>15</sup> Levitt. (1997)

<sup>16</sup> Reither. (1998)

<sup>17</sup> Boatsman and Dong. (2011)

<sup>18</sup> Berman and Jones. (2007)

<sup>19</sup> Beattie et al. (2006)

<sup>20</sup> Breton and Taffler. (1995)

<sup>21</sup> Chan et al. (1995)

investors adjust for operating leases according to current market value of equity. Our hope is that the thesis will be of interest for investors in order to analyse the possible effects the proposed new lease standard will have on market value of equity.

### **1.3.1 QUESTION OF RESEARCH**

- **Do investors adjust for capitalized operating leases in their assessment of market value of equity?**

### **1.4 LIMITATIONS**

The proposed new lease standard will impact lessees to a greater extent than lessors. This thesis will only investigate the effects on lessees due to operating leases, since most companies are lessees. Furthermore, the thesis focuses on the effects that occur on the balance sheet and on book value of equity.

The sample examined consist of listed companies that follow IFRS in three industry sectors worldwide excluding those who are following local GAAP or other accounting frameworks. The sectors are Transport, Travel and Leisure and General Retail. This choice of industries will be motivated in section 4.4. The selected time period is between 2006 and 2012. We chose the year 2006 to minimize any transformation changes due to the fact that the full implementation of IFRS in EU were made 2005. 2012 is chosen because it was the last year with full financial information when we conducted our thesis. All the data are collected from DataStream provided by Thomson and Reuters. Additional data could be collected from other databases and/or from data collected directly from the annual reports to get a larger sample and increasing the reliability of the empirical results. .

## **1.5 THESIS STRUCTURE**

The following parts of the thesis are structured as follows:

**2. Literature Review** - Theories, previous research and comments regarding the proposed new lease standard and valuation problematic are in this chapter presented and reviewed.

**3. Hypothesis** - In this chapter our hypothesis derived from the theory are presented and motivated.

**4. Research design and Method** - The sample and data selection are here presented and motivated. In addition, the methods of capitalization and regression model are introduced.

**5. Summary statistics and results** - Chapter five present our results from the statically test.

**6. Discussion of results** - In this chapter our results are discussed and compared to the theories presented in the literature review.

**7. Conclusion** - In the final chapter the conclusions answering our research question are presented and discussed. At last, suggestions to further research are presented, as well as our contribution to the field of study.

## 2. LITERATURE REVIEW

*This chapter starts with explaining the existing accounting framework and the proposed new lease standard and its effects on income statement and balance sheet. Further down, we describe our choice of capitalization model and the effects that it will have on financial ratios. Thereafter, comments from professionals are presented on the proposed new lease standard. Finally, the chapter ends with a presentation of P/B and value of disclosures.*

### 2.1 ACCOUNTING FRAMEWORK

IASB (International Accounting Standards Board) is the independent standard setting organization that is in charge of developing and publishing IFRS (International Financial Reporting Standard).<sup>22</sup> IFRS is an accounting framework which regulates the accounting mainly for the listed companies within Europe, but over 100 countries around the world demand or allows its companies to use IFRS.<sup>23</sup> According to a report made to the European commission, 99 % of European listed companies made a reference to IFRS during 2006.<sup>24</sup> Examples of countries outside Europe that use IFRS are: Australia, Hong Kong, New Zealand, South Africa, Canada, Brazil, Chile, Israel and South Korea. Some countries, such as Russia and China implement IFRS, but with local modifications.<sup>25</sup>

The foundation of IFRS is the IASB's conceptual framework. It is first and foremost a manual guidance for the standard setters to apply when they discuss and develop new accounting standards. It also works as a guideline for the users to explain important definitions such as assets and liabilities. This is to harmonize different countries' definitions of these components in the financial statements to ease the stakeholder's comparison between companies from different origins.<sup>26</sup>

IFRS is set to provide information to the companies' main stakeholders, such as investors, employees, creditors, suppliers, customers, governments and society in general.<sup>27</sup> The investors are classified as the most important stakeholder, and therefore the financial information should be given to please their demands. This is in contrast to traditional accounting in continental Europe where large owners have been the dominant stakeholder<sup>28</sup>

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<sup>22</sup> IFRS. (2014)

<sup>23</sup> Marton et al. (2013)

<sup>24</sup> Ineum consulting. (2008)

<sup>25</sup> Marton et al. (2013)

<sup>26</sup> IASB. CF (2010)

<sup>27</sup> IASB. CF (2010)

<sup>28</sup> Marton et al. (2013)

### 2.1.2 IAS 17

The current standard for leases is called IAS 17. IAS 17 defines a lease as “*an agreement whereby the lessor conveys to the lessee in return for a payment or series of payments the right to use an asset for an agreed period of time.*”<sup>29</sup>

The standard then divides a lease into two categories; either a lease is defined as a finance lease or an operating lease. To distinguish between the two it is specified that “*a lease is a finance lease if it transfers all the risk and rewards incidental to ownership*”.<sup>30</sup> In contrast, if the risk and rewards are not substantially transferred, the lease is classified as an operating lease. Note that the standard classifies a lease based on the substance of the transaction, not the legal form of the contract.<sup>31</sup>

### 2.1.3. FINANCE LEASES

A lessee must recognize a financial lease as a liability. The amount should be equal to the fair value of the leased property or, if lower, the present value of the minimum lease payments determined at the inception of the lease.<sup>32</sup>

### 2.1.4. OPERATING LEASES

If the lease is classified as an operating lease, the lease payments shall be recognized as an expense on a straight-line basis over the lease term. However, if there is a more representative time pattern that would benefit the user, this should be used instead.<sup>33</sup> There should be numerous disclosures made for operating leases. The lessees are obliged to disclose the total number of future minimum lease payments over a time period of less than one year, between two and five years and later than five years. There should be a description of the lessee’s significant lease arrangements and all the payments recognized as an expense in the period, divided into minimum lease payments, contingent rents and sublease payment.<sup>34</sup>

The current standard received most criticism from IASB for not representing the fundamental qualitative characteristics within the conceptual framework according to IASB.<sup>35</sup> Therefore, we will give a quick presentation of the necessary information presented in the conceptual framework. The most important fundamental qualitative characteristics are faithful representation and relevance. The financial information from companies should be useful for investors in their decision to buy, keep or sell a share. To live up to these criteria’s it is important that the companies provide relevant financial information to the investors. Marton et al. advocate that the information is relevant if it will affect the investor’s decision of action and that it could

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<sup>29</sup> IASB. IAS17 (2010)

<sup>30</sup> Ibid.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

<sup>33</sup> IASB. IAS 17 (2010)

<sup>34</sup> Ibid.

<sup>35</sup> IASB. ED (2013)

be relevant even if it does not affect all the investors but only some.<sup>36</sup> Furthermore, financial information shall both be used to predict future performance, as well as to confirm past events.<sup>37</sup> Aside from this, financial information should be faithfully represented. It should reveal not only relevant financial data but also present it in a faithful way. IASB clarifies that for financial data to be faithfully represented it has to live up to the following criteria: complete, neutral, and free from error. These criteria's should be seen as targets when a company is computing its data.<sup>38</sup> Since companies today not are forced to present all of their leased assets on the balance sheet, investors and analysts need to adjust the balance sheet for operating leases to get a faithful representation of the financial statement.

In addition to not fulfilling the fundamental qualitative characteristics, the current lease standard also fails to meet four qualitative characteristics that enhance the fundamental characteristics. These are comparability, verifiability, timeliness and understandability, whereas comparability and verifiability are the most important characteristics for leases. Comparability means that information which is reported should be able to be comparable with similar information from another company. It shall also enable identification and understanding of similar information from companies.<sup>39</sup> Today, companies are allowed to arrange lease agreement as either a financial lease or an operating lease even though the leased assets are used the same way within the company. This disrupts the comparability among companies since they can account for the same thing differently.<sup>40</sup> Furthermore, the CF states, "*For information to be comparable like things must look alike and different things must look different.*"(QC26). Verifiability means that information should faithfully represent the underlying economic occurrence that it describes. This is to facilitate the users' understanding and make sure that independent users are able to come to a similar conclusion of the occurred economic happening.<sup>41</sup> This is not the case with the current standard. Simply presenting a lease expense in the income statement will not always reflect the true economic value for the company. This means that an asset which is vital for the production could be presented as an operating cost rather than an asset and liability. Due to the impact on performance ratios for companies, there are incentives for managers to manipulate the lease agreements. Key ratios are a vital basis for bonuses and as a measure of managers' performance.<sup>42</sup>

## **2.2 PROPOSED NEW LEASE STANDARD**

Due to the problems of the current standard the IASB have released two exposure drafts (ED) for a new lease standard. These drafts have been up for discussion and been criticized on numerous

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<sup>36</sup> Marton et al. (2013)

<sup>37</sup> Ibid.

<sup>38</sup> IASB. CF (2010)

<sup>39</sup> IASB. CF (2010)

<sup>40</sup> IFRS. (2013)

<sup>41</sup> IASB. CF (2010)

<sup>42</sup> Goodacre. (2003)

occasions. In the latest ED the main changes from the current standard are that lease assets will be classified as Type A- and B leases instead of financial and operating leases. This will prevent companies from deciding or arranging their lease agreements. With the proposed new standard all leases must be capitalized if the lease agreement is longer than 12 months. The lessee will have to recognize both the liability and the asset for a lease. The liability derives from the obligation to make lease payments and the asset from the companies' right-to-use the asset.<sup>43</sup> When a company classifies a lease agreement as either a Type A or B lease they are not allowed to re-classify later. Type A is the most common lease, it is everything except property with some other exceptions: "the lease term is for an insignificant part of the total *economic life* of the underlying asset or the present value of the *lease payments* is insignificant relative to the fair value of the underlying asset at the commencement date."<sup>44</sup> Type B on the other hand concerns properties and shall be classified thereby unless: "the lease term is for the major part of the remaining economic life of the underlying asset or the present value of the lease payments accounts for substantially all of the fair value of the underlying asset at the commencement date."<sup>45</sup> There are other exceptions from these classifications were the most meaningful is that a leased asset will be classified as a Type A if the lessee have significant economic motive to purchase the asset after the lease agreement has elapsed, often exemplified by some sort of option.<sup>46</sup>

According to the exposure draft, companies will either present an amortization and interest expense for Type A leases, or a single lease expense for Type B leases.<sup>47</sup> For Type A leases, the expense allocation will be front loaded since the asset is amortized on a straight-line basis, whereas the liability is amortized using the effective interest method. However, the presumed effects on the income statement are small compared to the current standard, and the change will mostly be that the allocation of expenses will differ over time. It will be described further in the next section. The impact on the balance sheet due to the proposed new standard only impacts leases that last more than 12 months. These leases will be recognized both as an asset that are derived from the right-to-use (ROU) asset and a liability that derives from the total liability to the lessor.<sup>48</sup> This means that the balance sheet total will increase, which in turn will affect financial ratios and book value since several of these measures correlate with the balance sheet and working capital.

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<sup>43</sup> IASB. ED (2013)

<sup>44</sup> Ibid.

<sup>45</sup> IASB. ED (2013)

<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

<sup>48</sup> Ibid.

## 2.3 EFFECTS DUE TO CAPITALIZATION

Previous studies have shown that capitalizing operating leases will affect key ratios. In the proposed new lease standard operating leases will be treated approximately in the same way as the capitalization method. Therefore, these studies are relevant for our thesis.

Nelson carried out a pioneer research and investigated the effects capitalization had on 11 US companies' key ratios, as well as the comparison between them.<sup>49</sup> The findings were that some key ratios were changed including debt ratio and that inter-firm comparisons were inaccurate without lease capitalization.

Imhoff et al. studied 14 companies based on seven industries with different operating lease structure and did a comparison on the inter-firm comparison on key ratios before and after capitalizing operating leases<sup>50</sup>. They used ROA, Debt/Equity and their findings were that companies with "high leases" decrease their ROA by 34 % and increase their D/E with 191 % in average and the comparing companies with "low leases" decreased their ROA with 10 % and increased their D/E with 47 % in average. Imhoff et al. concluded that operating lease capitalization has a major impact on inter-firm valuation since the results differ depending on the companies lease structure. The seven industries all belonged within retailing and aviation.<sup>51</sup>

In a study made by Beattie et al. on 232 UK companies, they concluded that the unrecorded long-term liability represented 39 % of reported long term debt<sup>52</sup>. The impact on gearing ratios was most significant, where the debt-equity ratio provided a change of 260 %. Beattie<sup>53</sup> et al. used the constructive capitalization method developed by Imhoff et al.<sup>54</sup>

Fülbier et al.'s study on 90 listed German companies reported a median change of 25 % in D/E ratio, 0.3 % on ROE and 0.1 % on ROA<sup>55</sup>. The effect will be greatest in the Retailing and Fashion industry, with an average change of 58 % of debt-to-equity, 20.2 % on profit margin and 15.7 % on ROCE.<sup>56</sup> There are also minor effects on profitability ratios and market multiples used for company valuation. However, the authors indicate that the effects of capitalizing leases should not be overstated and the effect on the company's valuation is minor. The capitalization method was based on the Imhoff capitalization model.

In a report made by PWC and the Rotterdam School of Management including 3000 companies

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<sup>49</sup> Nelson. (1963)

<sup>50</sup> Imhoff et al. (1991)

<sup>51</sup> Ibid.

<sup>52</sup> Beattie et al. (1998)

<sup>53</sup> Ibid.

<sup>54</sup> Imhoff et al. (1991)

<sup>55</sup> Fülbier et al. (2008)

<sup>56</sup> Ibid.



worldwide, the reported interest bearing debt will increase by 58 % for these companies.<sup>57</sup> The most affected industries are Retail and Trade, Professional and Other Services and Transport and Warehousing. In retail and transportation, the debt balances are expected to increase by an average of 213 % and 95 % respectively.

All the above studies show some of the estimated effects on key ratios and the financial statement. However there are further implications of operating leases. Imhoff et al. conducted two studies in 1993 and 1997, in order to research the increased equity risk. The study of 1993 they found out that operating leases had the same equity risk as debt.<sup>59</sup> This means that operating leases should affect the stock return the same way as ordinary debt due to the increased level of equity risk derived from operating lease. In the study of 1997 they concluded that it is necessary for investors to capitalize operating leases before conducting a comparison between companies financial information.<sup>60</sup>

The views of the users and preparers were examined by Beattie et al., which conducted a survey in 2006 basing on answers from 415 finance directors, 400 financial analyst and 72 fund managers on respondents within UK to find out how they reacted to the proposed new lease standard.<sup>61</sup> The study showed that both users and preparers agreed upon several factors. All assets should be shown on the balance sheet. The current lease standard is easy to manipulate and does not reflect the true value of the lease agreement. They also agreed that managers would likely renegotiate existing operating lease agreements to “short-term leases” with a renewal option, to avoid capitalization.<sup>62</sup>

To understand the implications of the proposed new lease standard from a management perspective, Deloitte conducted a study including 138 executives. The study concluded that 71 % of the respondents expect a change on debt-to-equity whereas 40 % expected the Enterprise Value/EBITDA to be materially affected.<sup>63</sup> The transformation of operating leases to finance leases will not only have negative impact for companies since operating cash flow and EBITDA will be higher. This is due to the fact that the operating expense is removed and replaced with an interest and amortization expense.<sup>64</sup> Fülbier et al. believe that the management will change their direction of the company so that the presumed effects of capitalization will be eliminated. This, since they want to keep the company within the same financial and operating risk spread as the case was before the change in lease regulation.<sup>65</sup>

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<sup>57</sup> PWC and Rotterdam School of Management. (2009)

<sup>59</sup> Imhoff et al. (1993)

<sup>60</sup> Imhoff et al. (1997)

<sup>61</sup> Beattie et al. (2006)

<sup>62</sup> Ibid.

<sup>63</sup> Deloitte. (2014)

<sup>64</sup> McConnel. (2010)

<sup>65</sup> Fülbier et al. (2008)

## **2.4 COMMENTS FROM INVESTORS ON THE PROPOSED NEW LEASE STANDARD**

This is an outline from the summary of comments that IASB have collected from over 220 professional investors and analysts during 35 meetings. The majority of the interviewees are working within or towards sectors that are highly affected by the proposed new lease standard, such as the airline, shipping, transport, retailing, hoteliers and the industrial sector. Today, most investors make some adjustments to operating leases from the disclosures with the help of the multiple capitalization model. This model multiplies all operating lease expenses with a factor, usually 8x to derive an asset and a liability. However this method only affects balance sheet total and not book value of equity since the method allocates the same value in the asset as well as the liability. Some investors do not adjust for operating leases at all while analyzing a company. Instead they are frequently using EBITDAR in their calculations of key ratios to avoid effects of operating lease expenses.

Credit analysts are pleased with the changes in the proposed new lease standard regarding the effects on the balance sheet, since they are interested in the level of gearing and capital structure a company have. They also commented that today's information in the disclosures is insufficient for estimating a company's debt especially compared to others, even though the quality of accounting differs among companies.<sup>66</sup> The reaction among equity analysts is equally unified. Several of the interviewees are pleased that current operating leases will be recognized as an asset as well as a liability on the balance sheet. This will help investors to calculate the credit risk and gearing of a company and provide more useful information about its leverage. They also noted that the larger part of the investor community do not adjust for operating leases. Therefore, those who do not adjust for it underestimate the leverage of companies while screening the market for new investments.<sup>67</sup>

The investors did have the following concerns:

- a) Changes in financial reporting will disrupt their trend of information and will most likely force them to re-arrange their analyzing models. Therefore they are pleased with the current financial reporting.
- b) A leased asset should be capitalized the same way as if it was a debt financed purchase by the company, in order to get full comparability between different companies capital employed. For example an aircrafts economic life (i.e. 25 year) could differ from its lease agreement (i.e. 7 years) and therefore the analyst of the aviation sector still would continue capitalizing to get a whole asset figure. One of the transport analyst highlighted a problem with the current way of capitalizing operating leases (8x multiple method) since this would overestimate the asset and liability and be significantly higher than what would occur when purchasing the asset in a different way.

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<sup>66</sup> IFRS. Summary (2013)

<sup>67</sup> Ibid.

c) To conclude, the analysts think that it's consequently important to have more information about the operating leases in the disclosures but they still think that the proposed new lease standard with recognition of both the asset and the liability is an improvement.<sup>68</sup>

Although the current way of accounting for operating leases is in many ways flawed, many of the users do not believe a change is necessary. Not surprisingly, it is lessees with high amount of operating leases and lessors, which are most negative to the proposal, fearing the infelicitous economic effects. Advocates of the current standard believe that it provides companies with a solution to gain access to assets, without exposing itself for a high amount of risk.<sup>69</sup> Furthermore, some users proclaim that leases will be seen as a less attractive way of financing. The proposed new lease standard will require additional disclosures from the companies. Companies proclaim that the disclosures should become less extensive and strenuous due to the fact that all leases are recognized on the balance sheet, yet the proposed standard requires additional disclosures.<sup>70</sup> Critics and users claim that the proposed new lease standard will not improve the financial reporting enough to motivate the costs and administrative resources that would be needed to implement it.<sup>71</sup>

## **2.5 VALUE OF DISCLOSURES**

In this segment we will highlight the problematic aspect of disclosures and its relationship to market value of equity. Reviewing earlier studies regarding the question whether investors analyse footnote disclosures and financial statement figures differently, the results are inconsistent. Wilkins and Zimmer concluded that the users did treat operating leases and finance leases as debt regardless of its financing. However they did see a difference in how investors interpret operating lease depending on if it were visible in the disclosures or fully capitalized in the balance sheet. Investors that based their valuation on disclosures were of different opinion regarding the value of the investigated companies whilst the investors that based their valuation on fully capitalized operating leases were in agreement.<sup>72</sup>

Hartman and Sami conducted a study with focus on how creditors would determine the interest rate based on the level of operating lease in the disclosures and they concluded that the company with a higher amount of operating leases were given a higher interest rate. This indicates that users are misled by the accounting presentation.<sup>73</sup>

Bretton and Taffler concluded that stockbroker's are not interested in disclosures since they

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<sup>68</sup> IFRS. Summary (2013)

<sup>69</sup> Ibid.

<sup>70</sup> EFRAG. (2013)

<sup>71</sup> KPMG. (2013)

<sup>72</sup> Wilkins and Zimmer (1983)

<sup>73</sup> Hartman and Sami (1989)

mostly present forecasted earnings in which the operating lease expenses are included in the income statement. So even if they are misled they do not necessarily need to adjust for operating lease.<sup>74</sup>

Research conducted when FASB changed its lease regulation to Statement 13, similar to IASB's IAS 17, showed that stock prices declined after the change in regulation. Mainly companies with a high amount of operating leases were affected by this decline. The decline was to a large degree a reaction to the change in gearing and key ratios that affected the debt covenants for the concerned companies. Also, financing which lead to higher cost of capital and therefore the stock price also fell.<sup>75</sup> Other market reactions towards Statement 13 are not documented so the reaction from the market on a stock price due to change in regulations are expected to be minor.

Previous research on market reactions due to financial information, depending on which accounting method used, further highlights the problems in estimating the effects of chosen accounting method and its impact on market value of equity. In a study by Barth et al. market value of equity always reflects true value of equity and thereby the accounting method.<sup>76</sup> On the other hand Kothari did a similar study conducted solely on earnings and not on full financial information and stated that regardless of accounting method the market value will be the same.<sup>77</sup>

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<sup>74</sup> Breton, G. and R. Taffler. (1995)

<sup>75</sup> El-Gazzar. (1993)

<sup>76</sup> Barth et al. (2001)

<sup>77</sup> Kothari. (2001)

### 3. HYPOTHESIS

*This chapter will present the thesis hypothesis which is based on the presented literature through the thesis.*

After presenting the research concerning leasing, the proposed new lease standard and disclosures we can draw the conclusion that the results are inconsistent. There is a high probability that performance measures and debt covenants will affect companies with a significant share of operating leases when the proposed new lease standard will be introduced. These changes may already be adjusted in investors' current assessment of market value of equity.

According to several presented studies, there is a difference in the treatment of footnote disclosures and financial statement figures.<sup>78</sup> This could indicate that operating leases in fact is unaccounted for. Studies have also shown that operating leases is highly correlated to debt, which means it should be accounted for as debt.<sup>79</sup> In order to answer some of these inconsistencies we will examine if the market incorporates capitalized operating leases. We find it most appropriate to do this by analysing if investors adjust for operating leases in market value of equity. Since we want to test if investors fail to capitalize operating leases, our statistically testable hypothesis will be formulated as follows:

**$H_0$**  = There is no relationship between market value of equity and capitalized operating leases.

**$H_1$**  = There is a relationship between market value of equity and capitalized operating leases.

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<sup>78</sup> Hartman and Sami. (1989)

<sup>79</sup> Imhoff et al. (1993)

## 4. RESEARCH DESIGN AND METHOD

*In the research design and method chapter we begin by explaining how we gathered information for the literature Review and our research design is explained. Then our calculations and assumptions for the capitalization model are explained and we motivate our industry sample and how our data is collected. Finally our statistical analysis method is outlined.*

We have throughout our thesis used secondary and primary sources of information to critically present previous research within the field of study and which parameters are important for our research question. We have mainly used Summon provided by Gothenburg University Library and Business Source Premier (BSP) to search for relevant articles and literature. Following keywords were used: “Capitalizing operating leases”, “Constructive capitalization model”, “Book value”, Price to book valuation”, “lease accounting”, “new lease standard”, “criticism IAS 17” regression analysis book value” “IAS 17 problems” “disclosure valuation”, “lease disclosure”, “IASB Lease standard” and “exposure draft lease”. These keywords were used while filtering for search results within “Student thesis”, “Journal”, “Book/E-book”, “Academic papers”, “Government documents” and “Web resources”. We have also searched for information on IASB: s official webpage on “new lease standard”, “lease accounting”, “exposure draft” and “comments on lease”.<sup>80</sup> Thereafter we sorted and selected the articles, studies and literature that we perceive as high quality and are relevant for our thesis.

### 4.1 RESEARCH DESIGN

We are conducting a deductive research with a positivistic approach based on quantitative data. The thesis is built on presented theories which are the foundation of our hypothesis that later on will be tested against our results.<sup>81</sup> We will examine our collected data using a multivariate analysis since the model is based on multiple independent variables.

### 4.2 CONSTRUCTIVE CAPITALIZATION MODEL

In order to achieve our aim of capitalizing operating leases an effective method is needed. Imhoff et al.’s. constructive capitalization method will be presented and analysed, which is used with some modifications in all research papers we have examined regarding capitalizing leases. The method converts operating leases to finance leases with public information.<sup>82</sup>

To estimate the off-balance-sheet liability, Imhoff et al. suggest calculating the value of the future minimum lease payments (MLP), by using the required disclosures. These MLP’s are then discounted using an estimated discount rate and an estimated remaining lease life of the leased asset. The most appropriate discount rate from a conceptual point, according to Imhoff, is the firm-specific weighted average implicit interest rate of operating leases, which is the weighted

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<sup>80</sup> [www.ifrs.org](http://www.ifrs.org)

<sup>81</sup> Collis and Hussey (2009)

<sup>82</sup> Imhoff et al. (1991)

average of the marginal interest rates when the leases were originally signed. This rate is rarely publicly disclosed, thus, assumptions are needed.<sup>83</sup> The asset is then calculated assuming it's 100 % financed with debt. Additional assumptions are then needed to calculate the remaining and total lease life. Due to these estimations the unrecorded asset is more difficult to measure and results in a higher error margin (5 %). In summary, Imhoff et al. describe three underlying assumptions necessary in order to calculate the book value of the off-balance sheet asset<sup>84</sup>

1. The capitalized assets are depreciated using a straight-line method
2. The asset and liability are equal to the present value of the future minimum lease payments at the commencement of the lease term
3. At the end of the lease term, the book value of both the asset and liability are zero.<sup>85</sup>

In additions to these, Fülbier et al. outline that both the lease liability and the imputed interest are calculated using the effective interest method, and payments of the lease are constant during the lease term.<sup>86</sup> Since there are different disclosure requirements for American and European companies, further adjustments are needed to the capitalization method. Companies following IFRS need to disclose the future minimum lease payments for one year, for the year's two to five and the years following the fifth. Companies following US regulations are required to disclose the MLP for each year separately up to the fifth year. To adjust for these discrepancies between the two regulating frameworks, the method used will follow the assumptions made by Branswijck, which have modified the model to suit IFRS regulation<sup>87</sup>

Even though the effects on net income will be trivial, we will explain some of the effects that will occur for a greater understanding on the subject. Imhoff et al. argue that the biggest change will be that the allocation of expenses will differ during the period.<sup>88</sup> Using the constructive capitalization method, the operating lease cost is removed from the income statement and replaced with an interest and depreciation expenses. As seen in Figure 1 the operating lease expense is constant during the lease term, whereas the capital lease expenses decrease over time due to the effective interest method is front loaded. Thus, at the beginning of the lease term the capital lease expenses will exceed operating lease expenses. However, around halfway through the lease term, capital lease expenses drop below operating lease costs, producing a positive effect on net income. Since the income effect is small and incorporated as the difference between book value between two years, it will not be discussed further in our thesis. Furthermore, researching any difference in stock market reaction due to income changes would be difficult.

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<sup>83</sup> Imhoff et al. (1991)

<sup>84</sup> Ibid.

<sup>85</sup> Ibid.

<sup>86</sup> Fülbier et al. (2008)

<sup>87</sup> Ibid.

<sup>88</sup> Imhoff et al. (1997)

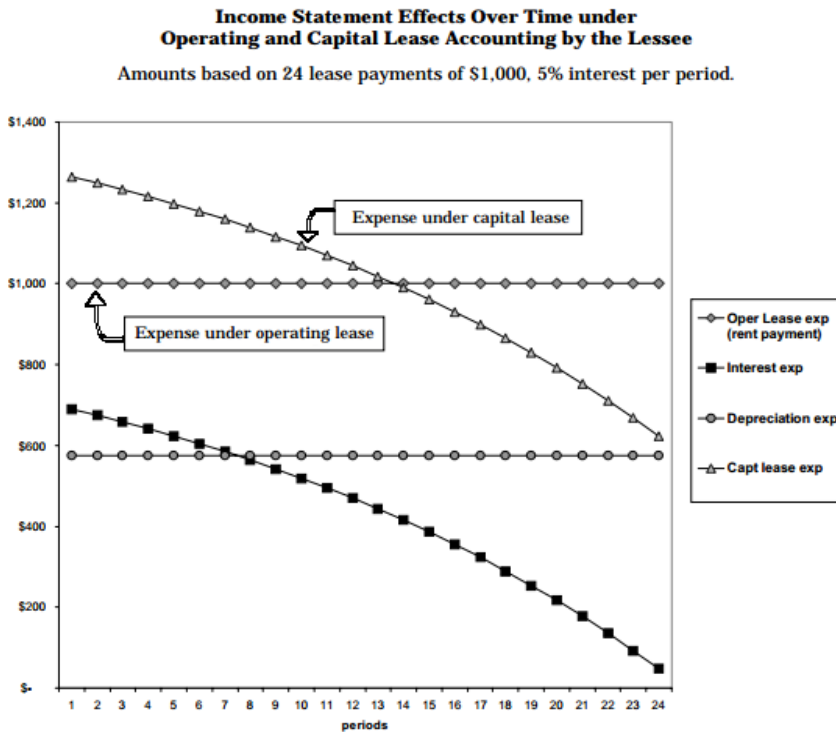


Figure 1. Describes the earnings effect of capital versus operating leases.<sup>89</sup>

### 4.3 CAPITALIZATION ESTIMATES

In this section we will go through the approximations and assumptions needed to calculate the capitalization of operating leases. We will aim to motivate our decisions and review previous research.

The most frequently used method for capitalizing operating leases is the constructive capitalization method developed by Imhoff, Lipe and Wright.<sup>90</sup> It is used with some variations by almost all of the papers we have researched. The constructive capitalization method treats operating leases as finance leases from inception. This is in contrast to the simplified factor methods, which do not take into account the effect on equity or net income.<sup>91</sup> The calculations are also heavily simplified. Due to these limitations we do not find those methods appropriate for our study.

In our study we are only able to use information publicly disclosed. In order to examine and fully implement the regulation proposed in the exposure draft, we would need information not publicly disclosed. Thus, our capitalization method will not be without fault. For example, present value of the unrecorded liability depends heavily on assumptions made for interest rate

<sup>89</sup> Lipe. (2001)

<sup>90</sup> Imhoff et al. (1991)

<sup>91</sup> Houlihan and Ashwinpaul (1984)



and remaining lease life, whereas the present value of the unrecorded asset is based on assumptions made for depreciation and total lease life.

Nevertheless, the biggest change in the proposed new lease standard is the capitalization of operating leases and this is what we estimate. The constructive capitalization method treats operating leases similar to today's finance leases and as described, both Type A leases and the capitalization method employ an effective interest-method and recognize an asset and a liability on the balance sheet. Thus we find that the constructive capitalization method introduced by Imhoff et al. is ample for our study.

In order to estimate the unrecorded liability we need to estimate the duration of future cash flows. We do this by taking the sum of cash payments for all disclosed time periods and dividing it with the cash payment of the first year. This is a slight deviation from Imhoff et al. presented by Branswijck et al.<sup>92</sup> we make this adjustment due to the fact that there are not enough disclosures presented by the companies in our study to use the original model suggested by Imhoff et al.

$$N_{\text{Duration}} = (MLP_{(5+)} + MLP_{(2-5)} + MLP_{(1)} / MLP_1 )$$

It is not possible to exactly determine the annual cash flows after year five, but following the assumption made by Imhoff et al., we expect the cash flows to be reduced the same way as the cash flows for year one.

Since all companies are not required to disclose lease commitments for each year, we will also have to estimate the average time period for 2-5 year leases. We do this by assuming, similarly to the duration of cash flows, that the leases between years 2-5 will decrease the same way as the year 1 payments.

$$N_{2-5} = (MLP_{(2-5)} / MLP_1)$$

For both of the above calculations of time periods we will round up to the nearest full year so it represents a yearly payment.

The next step is to estimate the unrecorded liability. We do this by calculating the sum of present value for each of the three time periods for *MLP*. To determine the present value factor we need to estimate our time periods as well as the discount rate. The liability is calculated by calculating the present value of minimum payments during each period.

$$PV \text{ Liability} = \frac{MLP_1}{(1+r)^1} + \frac{MLP_{2-5}}{(1+r)^{2-5}} + \frac{MLP_{5+}}{(1+r)^{5+}}$$

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<sup>92</sup> Branswijck et al. (2011)

The asset is calculated by taking the correlation between the present value of asset and present value of the liability at the end of the year 2006 to 2012.

$$\frac{PV_{\text{Asset}}}{PV_{\text{Liability}}} = \frac{RL}{TL} * \frac{PV\Sigma MLP_{TL}}{PV\Sigma MLP_{RL}}$$

Where, RL is remaining lease life and TL is the total lease life. PVΣMLP is the present value of the sum of total *MLP* at the end of the year 2006 to 2012. For the present value calculation we use the firm-specific interest rate and as discounting period total-lease life and remaining-lease life respectively.

TL is calculated with the following formula:

$$TL = 2 * RL$$

In accordance with previous research, we make the assumption that remaining-lease life is half of the total-lease life. The required disclosures do not provide enough information to accurately calculate total lease life. Previous studies which made this assumption are Branswijck et al. al., Fülbier et al. and Durocher.<sup>93</sup>

RL is calculated with the following formula:

$$RL = (N_{2-5} + N_{\text{Duration}})$$

This is the remaining-lease life of the existing lease agreement which is derived from our previous estimates of the duration of cash flows. We are not taking into consideration of the actual lease life of the leased asset.

We derive the asset by using our calculated ratio *PV Asset/PV Liability*.

$$PV_{\text{Asset}} = \frac{PV_{\text{Asset}}}{PV_{\text{Liability}}} * PV_{\text{Liability}}$$

The most appropriate interest rate from a conceptual point, according to Imhoff is the firm specific-weighted average implicit interest rate of operating leases, which is the weighted average of the marginal interest rates when the leases were originally signed.

Due to the large scope needed in our study we cannot calculate an interest rate based on disclosures in the selected companies annual reports. This would take a considerable amount of time. However DataStream provides us with a long-term interest rate that we consider will supply us with sufficient information. According to both Imhoff and White et al. a discount rate based on long-term debt yields a reasonable estimate.

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<sup>93</sup> Durocher. (2008), Fülbier.(2008), Branswijck.(2011),

Imhoff et al.<sup>94</sup> and Beattie<sup>95</sup> et al. use a fixed discount rate for all companies. However their studies were conducted in just one market. We find that an industry specific discount rate is essential for our study due to the fact that our selected companies vary from different markets and contexts. DataStream provided us with a 5 year average interest rate for long-term debt, which we found most suitable for us. By using this interest rate we take in account the fact that interest rates can fluctuate substantially in various countries and markets. In addition, we chose the 5 year average interest rate to include the effects of leases produced at different time periods. In order to manage the data we received from DataStream we did a control to replace unrealistic values. We did this by excluding values in the 95 and 5 percentile. Values in these percentiles were defined as unrealistic. Along with the missing values these are replaced with the sector mean interest rate.

Similar to our chosen discount rate, we have chosen an industry specific tax rate. This is due to the fact that all companies in all industries will not be similarly affected. Our tax rate is calculated as Paid income tax / Pre-tax income for each company. To adjust for the fact that DataStream could provide inaccurate values and in some cases missing values, we replaced all tax rates that are either over the global highest maximum tax rate and below the lowest global tax rate (with exception of countries with zero tax) with the sector average tax rate.

Since we want to examine the effect on book value we need to estimate the effect of capitalization on book value. We will do this by calculating the difference between the estimated present value of asset and liability and subtract the tax.

$$BVeffect = (PV Asset - PV Liability) * (1 - T)$$

In order to give our reader a greater understanding of our assumptions and calculations, we present an example of a constructive capitalization below.

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<sup>94</sup> Imhoff et al. (1991)

<sup>95</sup> Beattie et al. (1998)

#### 4.4 EXAMPLE OF OPERATING LEASE CAPITALIZATION

A.P. MOLLER MAERSK YEAR 2006

##### COLLECTED DATA IN EUR

A.P. MOLLER-MAERSK	2006
LEASE COMMITMENTS - YEAR 1	3178970
LEASE COMMITMENTS - YEAR 2	5472837
LEASE COMMITMENTS OVER 5 YEARS	2975860
INTEREST RATE - 5 YR AVG + 1	1,0508
TOTAL ASSETS	41511486
MARKET PRICE CLOSE 2007-02-28	1558,765
TAX RATE	50.8 %

##### STEP 1 - ESTIMATION OF TIME PERIODS

Year 1 is already given as 1 of course.

$$\text{Year 2-5 are calculated as } N_{2-5} = (MLP_{(2-5)} / MLP_1) = \frac{5472837}{3178970} \approx 2$$

$$\text{The total duration of cash flows is calculated as } N_{\text{Duration}} = (MLP_{(5+)} + MLP_{(2-5)} + MLP_1 / MLP_1) = 2975860 + 5472837 + 3178970 / 3178970 \approx 4$$

##### STEP 2 - CALCULATE LEASE LIABILITY

This is done with help of the Interest rate that are company specific and the lease commitments as well as the calculate lease time periods.

$$\text{PV Liability} = \frac{MLP}{(1+r)^1} + \frac{MLP_{2-5}}{(1+r)^{2-5}} + \frac{MLP_{5+}}{(1+r)^{5+}} = \frac{3178970}{1,0508} + \frac{5472837}{1,0508^2} + \frac{2975860}{1,0508^4} = 10422555$$

##### STEP 3 - TOTAL LEASE LENGTH AND REMAINING LEASE LENGTH

RL is simply calculated by taking  $N_{\text{Duration}} = 4$

TL is calculated by taking  $TL = 2 * RL = 2 * 4 = 8$

##### STEP 4 - PRESENT VALUE OF MLP (TL and RL)

PV of MLP is calculated as  $1/\text{interest}^{\text{RL or TL}} * \text{RL or TL}$  given the present value factor of

$$\text{RL and TL PVMLP}_{\text{TL}} = \frac{1}{(1+r)^{\text{TL}}} * \text{TL} = \frac{1}{1,0508^8} * 8 = 5,38$$

$$\text{PVMLP}_{\text{RL}} = \frac{1}{(1+r)^{\text{RL}}} * \text{RL} = \frac{1}{1,0508^4} * 4 = 3,28$$

##### STEP 5 - CALCULATE THE ASSET/LIABILITY RATIO

To be able to calculate the asset deriving from the operating lease we calculate this ratio.

$$\frac{\text{PVAsset}}{\text{PVLiability}} = \frac{\text{RL}}{\text{TL}} * \frac{\text{PV}\Sigma\text{MLP}_{\text{TL}}}{\text{PV}\Sigma\text{MLP}_{\text{RL}}} = \frac{4}{8} * \frac{5,38}{3,28} = 0,82$$

This number says that the Leased assets are approximately 80 % of the calculated lease liability.

#### **STEP 6 - CALCULATE THE LEASE ASSET**

$$\text{Simply taking } PV_{\text{Asset}} = \frac{PV_{\text{Asset}}}{PV_{\text{Liability}}} * PV_{\text{Liability}} = 0,82 * 10422555 = 8546495$$

#### **STEP 7 - CALCULATE THE BOOK VALUE EFFECT**

$$\begin{aligned} BV_{\text{effect}} &= (PV_{\text{Asset}} - PV_{\text{Liability}}) * (1 - T) = (10422555 - 8546495) * (1 - 0.508) \\ &= 923021 \end{aligned}$$

Now we know how much the book value of equity will be affected.

### **4.5 PRICE TO BOOK AS A VALUATION METHOD**

Using “price to book” as a valuation method is common among investors especially while screening the market for new investments or comparing different companies within the same industry. Many investing methods use price to book as at least one of the dependent parameters while screening. For example the value investing method developed by Benjamin Graham.<sup>96</sup> One of the advantages of using price to book is that companies with an industry low price to book is more likely to yield a higher return.<sup>97</sup> Furthermore, price to book (P/B) is found to be the most accurate benchmark parameter while valuing different companies within the same industry. For example price per earnings (P/E) are an insufficient measure since one can't use it on a company with a deficit.<sup>98</sup> Other studies have concluded that P/B is a measurement that indicates what level of productive efficiency the company has, which explains how well the company are using their assets.<sup>99</sup> Therefore, not capitalizing operating leases indicates that a company with a high amount of operating leases is more efficient than its peers while it, in fact, could be less effective. Bernard argues that P/B differences between companies within the same industry reflect its future profitability and the companies risk and are therefore a good benchmark measurement among peers.<sup>100</sup> Cheng and McNamara conclude that valuation accuracy for the price to book parameter increase as the size of the company grow and the number of companies investigated within the same industry increases.<sup>101</sup>

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<sup>96</sup> Auxier. (1994)

<sup>97</sup> Piskora. (2009)

<sup>98</sup> Cheng and McNamara. (2000)

<sup>99</sup> Chan and Chen. (1991)

<sup>100</sup> Bernard. (1994)

<sup>101</sup> Cheng and McNamara. (2000)

#### **4.6 INDUSTRY SELECTION**

According to several earlier studies there are significant differences among industries regarding to what extent operating leases is used. Industries with the highest share of operating leases, and which is expected to experience the greatest impact due to capitalization is the service industries, including airlines, shipping/transport companies, retailers, restaurateurs, hotels and industrial companies.<sup>102</sup> To foresee any significant changes in valuation in our study it is imperative that we use industries which are known to have a high share of operating leases. Since we are using DataStream to collect our data our selection is based on the industry classification presented by the software. The industries presented by DataStream and that we have chosen for our sample is General Retail, Transportation and Travel and Leisure. We deem these industries to include most of the companies with the expected highest share of operating leases. All of our selected companies are listed in appendix 1.

#### **4.7 DATA COLLECTION**

All data collected is secondary data, besides being of high quality, this type of data saves time and makes it is easy to recreate for future comparing studies.

The data needed for future minimum lease payments (MLP), tax and discount rate is presented in the disclosures in the annual reports by companies. However, since a large amount of observations is essential for a good regression outcome, going through numerous annual reports would be time consuming. Instead we choose to use DataStream, which provides us with this information more accessible.

Our selection only includes companies following IFRS. Accounting Standards Followed was used to ensure that only companies following IFRS were considered in our thesis. All companies selected are active and listed. This is necessary because market value of equity is used in our regression model.

When collecting the data for capitalizing operating leases, DataStream provides several variables explaining each year lease commitments. However the data were not consistently presented. Therefore a lot of time was needed to organize the data to suit our calculations. Since the stock price is per share, our other variables need to be divided by the total number of outstanding common shares. DataStream provided us with this variable. In order to ensure we received the correct number of shares, we did random checks in a few companies comparing the number of shares presented in the annual reports. We also calculated the number of shares by dividing price by market capitalization which indicated approximately the same number of common shares presented by DataStream.

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<sup>102</sup> IFRS. Summary (2013)

<sup>102</sup> Beattie et al. (1998)

Our selected interest rate is calculated as interest expense of debt divided by long and short term debt. The average is calculated as the mean of the last 5 years interest rates.

Finally, we retrieved the effective tax rate, defined as income taxes divided by pre-tax income.

The data collected from DataStream could in some cases provide us with inaccurate data which could have an impact on our results. To minimize the possibility of inaccurate observations, we winsorized our variables. This is a way of limiting the effect of extreme values without excluding any observations. Our data was investigated on a scatter plot and we concluded that a winsorization of 1 % was appropriate<sup>103</sup>

#### 4.8 VARIABLES

We have chosen market value of equity (MVE) as our dependent variable. MVE is defined as market price multiplied with the number of shares outstanding.<sup>104</sup>

$$\text{MVE} = \text{Price} * \text{Common shares outstanding}$$

In order to compare the market value of equity and book value of equity, all variables need to be calculated per share or multiplied by total number of outstanding shares. For easier use we found it best to use stock price.

Our independent variable is book value of equity (BVE). Since we are going to investigate changes within different industries we deem price to book as a good valuation measure to use.

Book value is generally defined as total assets less total liabilities, intangibles and preferred stock.<sup>105</sup>

$$\text{BV} = \frac{\text{Total Assets} - \text{Total debt} - \text{Intangibles} - \text{Preferred stock}}{\text{Common shares outstanding}}$$

The capitalization of operating leases is incorporated using book value effect. This formula is calculated as:

$$\text{BVeffect} = \frac{(\text{PV Asset} - \text{PV Liability}) * (1 - T)}{\text{Common shares outstanding}}$$

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<sup>103</sup> By Winsorizing, you replace the data below the Xth percentile with the Xth, For example a 1% winsorization replaces the data below the 1st percentile with the 1st percentile data.

<sup>104</sup> Nasdaq. (2014)

<sup>105</sup> Nasdaq. (2014)

#### 4.9 REGRESSION DIAGNOSTICS

In order to test our hypothesis, we have chosen an OLS-regression model. The OLS-regression concerns the relationship between a dependent and a series of independent variables. This model controls for several factors affecting a dependent variable.

And in order to control our data for heteroscedasticity we performed the Breusch-Pagan / Cook Weisberg test. The test indicated that our data had heteroscedasticity, consequently we need to adjust our model for this. We did this by applying HC3 standard errors. This is an approximation of the White standard errors proposed by Davidson and McKinney<sup>106</sup> These standard errors are advocated by Cribari-Neto et al. as well as Cai and Hayes to provide better results when heteroscedasticity is present.<sup>107</sup>

#### 4.10 REGRESSION MODEL

Our statistical analysis method used to answer our hypothesis will be a regression analysis. The regression is based on a formula developed by Ohlson and simplified by Kenner and Collins et al.<sup>108</sup>

$$P_t = \alpha_t + \alpha BV_t + \alpha BVeffect_t + \gamma IndustryT\&L + \gamma IndustryGR + \gamma FC + \varepsilon_t$$

$P_t$  is market price calculated as market value of equity per common share 3 months after the fiscal year end 2006-2012. This delay is incorporated so that the disclosures regarding operating leases have been presented for most of our selected companies.

$BV_t$  represents the reported book value of equity per share calculated at the end of fiscal year 2006-2012.

$BVeffect_t$  is the effect on book value calculated between the years 2006-2012.

IndustryT&L represents a dummy variable for the Travel and Leisure industry.

IndustryGR is a dummy variable for the General retail industry.

FC is a financial crisis dummy variable which takes the value 1 if year 2008 and 0 otherwise

$\varepsilon_t$  is other value relevant information.

In order to test our null hypothesis that investors do not adjust for operating leases we will examine how well BVeffect predicts market value of equity  $P_t$ .

To test for this we will see if the beta value for BVeffect differs significantly from zero. If it does not differ significantly from zero, this means that BVeffect is not a good predictor for market value of equity, and thus failing to reject the null hypothesis. The null hypothesis is rejected if

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<sup>106</sup> White, H. (1980) and Davidson and MacKinnon.(1993).

<sup>107</sup> Hayes and Cai. (2007)

<sup>107</sup> Cribari-Neto et al. (2005).

<sup>108</sup> Collins et al. (1997)

<sup>108</sup> Keener. (2011)



the value is significant from zero, which means that BVEffect has a significant impact on market value of equity.

We have included control variables for Industry and financial crisis. The industry dummy variable we show if there are any significant changes in our industries. We have selected transportation as our reference industry. The financial crisis variable is included as a control to expand the analysis. Our chosen significance level is 5 %.

## **4.11 CREDIBILITY OF THESIS**

### **RELIABILITY**

For the thesis to be reliable it should be replicable, meaning that other researchers should be able to conduct the same study and come up to the similar results.<sup>109</sup> This criterion is met since we are open and clear of how we have conducted our capitalization and have used secondary data. A risk in the reliability of the study are eventual errors conducted when processing our data, however these potential errors should be minimal since we have used the same formulas and methods throw out the whole process. Overall our opinion is that the reliability of our thesis is good.

### **VALIDITY**

For the thesis to be valid it must accurately reflect the researched phenomenon. This means that our test must measure what we want it to measure<sup>110</sup>. In our case, it means that it is important that our method to capitalize operating leases is based on accepted assumptions, in order to reflect the proposed new lease standard as accurately as possible. Our capitalization model is based on similar assumptions made by previous research, which increases the validity of our study. We cannot investigate how the proposed new lease standard will affect the market price since it is to us impossible to forecast market price due to change in regulation, this may affect the validity. Overall our opinion is that the validity of our thesis is acceptable during the circumstances.

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<sup>109</sup> Collis and Hussey. (2009)

<sup>110</sup> Collis and Hussey. (2009)

## 5. SUMMARY STATISTICS AND RESULTS

*This chapter presents summary statistics of our data and the results from our quantitative study are presented and explained.*

### 5.1 SUMMARY STATISTICS OF DATA

Table I illustrates the aggregated summary statistics for our dependent and independent variables. As shown the mean for *Price* is 24.96 whereas *BV* has a mean of 14,1 and *BVeffect* has -13.81.

*Table I*

<b>VARIABLES</b>	<b>N</b>	<b>Mean</b>	<b>S.D</b>	<b>Min</b>	<b>Max</b>
BV	1,898	14.10	104.0	-32.95	1,098
BVeffect	1,691	-13.81	60.74	-609.8	-0.000197
Price	1,846	24.96	139.3	0.0210	1,439

### 5.2 RESULTS

Table II

<b>VARIABLES</b>	<b>(1)</b>
<b>BV</b>	1.291*** (21.504)
<b>BVeffect</b>	0.046 (0.791)
<b>IndustryT&amp;L</b>	0.881 (0.359)
<b>IndustryGL</b>	0.507 (0.166)
<b>FC</b>	-5.282 (-1.556)
Observations	1,648
R-squared	0.939

t-statistics in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

As presented in Table II the regression stipulates that *BV* is the only significant variable. This means that book value has a significant impact on market price, further enhancing previous studies regarding book value as a good estimate of market value of equity. On the contrary, *BVeffect* does not have a significant value from zero, which means that the variable does not have a significant impact on *Price*. The financial crisis *FC* variable is insignificant at a 5 % level but does indicate a negative impact on *price* during the financial crisis. The industry dummy

variables *IndustryGL* and *IndustryT&L* are also insignificant, which means that there were no significant differences between the industries.

The coefficient for *BV*, 1,291 indicates that an increase of 1 unit of book value will result in an increase of 1,291 on price.

Our R2 variable is almost 94 %, meaning that 94 % of the variances of the dependent *Price* variable can be explained by the independent variables.

The result fails to reject the null hypothesis, which means that *BV* effect does not have an impact on market value of equity. The variable was not significant from zero at a 5 % significance level. The results indicate that book value is a reasonable estimate for market price whereas book value effect is not.

**There is no relationship between market value of equity and capitalized operating leases.**

## 6. DISCUSSION OF RESULTS

*In this chapter we will discuss and analyse our results using the theories presented in the literature review chapter. And from this discussion we will finally connect our problem with the results and analyse those.*

When analyzing our results we can draw the conclusion that there were no relationship between a company's market value of equity and the capitalized book value of equity. These findings correlate with the results from Hartman and Sami<sup>111</sup>, which could be explained by that users to some degree are misled by the accounting presentation. Although one cannot be sure as to why investors fail to capitalize operating leases. It could be because investors lack incentive to adjust for operating leases. However, this would be strange since operating leases have in several studies been associated with its similarities to debt, and debt is associated with shareholder risk.<sup>112</sup> If users are misled by the current lease accounting, the proposed new lease standard could provide users with further information regarding the companies lease contracts. This means that it could simplify for investors to make accurate valuation decisions, and better incorporate the information in market value of equity.

One of the goals with the new exposure draft is to increase the comparability among companies. Since our results showed that investors do not already adjust for capitalized operating leases, the comparability is more likely to increase which in turn could increase the quality of accounting.<sup>113</sup> The increase is primarily due to the fact that companies no longer will account for similar leases differently and thereby not excluding operating leases from their balance sheet. The comments from investors on the proposed new lease standard indicated that many investors did not adjust for operating leases using a constructive capitalization model, which is in line with our results. This indicates that the implementation of new lease accounting regulations could improve the usefulness for the most important stakeholder according to IFRS, the investors. Even if the current regulation provides users with sufficient information to capitalize operating leases, the assumptions needed is time consuming and will differ among investors. Furthermore, some of the information needed is not publicly displayed. If the new exposure draft is released it will be easier for investors to assess the market value of equity since operating leases is already capitalized. Ensuring that the lease information is moved from disclosures to the financial statement will increase the usefulness for the user by preventing that the capitalized value of operating leases is unrecognized.

Furthermore IASB wants to increase the relevance in lease accounting. As indicated by Marton et al., information is relevant if it affects the investor's decision making.<sup>114</sup> Our results indicate that investors do not adjust for operating leases which could mean that the change in key ratios

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<sup>111</sup> Hartman and Sami. (1989)

<sup>112</sup> Imhoff et al. (1993) and Beattie et al. (2000)

<sup>113</sup> Imhoff et al. (1997) and Beattie et al. (2006)

<sup>114</sup> Marton et al. (2013)

relating to book value is not accounted for. Since the new lease standard is expected to have an impact on financial ratios that means that accounting relevance possible could increase.

Investors may adjust for operating leases today using the multiple capitalization model, however this model does not adjust for the effects on equity, only for the effects balance sheet total.<sup>115</sup> Our results only measure that users do not adjust for operating leases effect on book value of equity which is in line with the proposed new lease standard. If investors use the multiple capitalization model they are not adjusting for operating leases according to the proposed new lease standard. This could be explained by a numerous reasons e.g. the users may not gain enough value compared to the time it takes to do a full constructive capitalization. Some users does not consider operating leases as a risk for the company and therefore they reason that it should not be adjusted for<sup>116</sup>, however this is contradicting since research shows that capitalized operating leases can be associated by debt and affect the equity risk.<sup>117</sup> The proposed new lease standard will most likely help investors to avoid these kinds of subjective choices and provide more accurate financial information.

The current lease standard does not require all leases to be capitalized. If the proposed new lease standard is implemented, this is about to change. Almost all studies investigating the impact on balance sheet and financial ratios have indicated a substantial impact for companies with a high share of operating leases. Since our results indicate that investors do not adjust for operating leases, it is likely that companies within these sectors will be affected by the new proposed lease standard.

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<sup>115</sup> IFRS. Summary (2013)

<sup>116</sup> Ibid.

<sup>117</sup> El-Gazzar. (1993)

## 7. CONCLUSION

*In the final chapter we present the conclusions that can be drawn from our results and discussion, in line with our research question. Finally, our contribution to research is concluded, together with suggestions for further research.*

The purpose of this paper was to examine the effects capitalizing operating leases have on market value of equity. In order to achieve our purpose we statistically analyzed if investors adjusted for operating leases according to current market value of equity.

### 7.1 REVISIT THE RESEARCH QUESTION

As our results showed, we failed to reject the null hypothesis. Indicating that investors do not adjust for capitalized operating leases in the current market valuation. As stated in the beginning our research question were:

- Do investors adjust for capitalized operating leases in their assessment of market value of equity?

No, investors do not adjust for capitalized operating leases in their assessment of market value equity according to our results. Since our results determined that investors do not incorporate capitalization of operating leases in their assessment of market value of equity. There is a high probability that the proposed new lease standard will have an impact on companies' financial ratios and also affect the market value of equity.

We cannot forecast the impact of the proposed new lease standard on market value of equity. However since a large amount of operating leases remain non-capitalized, important financial ratios will be affected. The exact consequence of the new standard will depend on the outline of the new regulation and could derive in many side effects on the market price that are hard to forecast, however one can conclude that some companies will be more affected than others, most likely the ones with a high amount of operating leases.

To conclude, in the case of capitalizing operating leases, current market value of equity is not affected by capitalized operating leases and the impact for companies of to the proposed new lease standard is determined by investors when it is implemented.

These results could be useful for investors trying to estimate the impact of the proposed new lease regulation.

## **7.2 CONTRIBUTION**

We have extended previous research about the proposed new lease standard and the effects of capitalized operating leases with focus on market value of equity. By investigating if the investors do adjust for capitalization effects in their assessment of market value of equity this thesis contributes with a wider understanding to the possible effects a new lease standard could have on market value of equity.

## **7.3 FURTHER RESEARCH**

It would be interesting to do an event study after the implementation to measure the impacts on market value of equity as well as financial ratios, preferably with the same sample as we had in our study. According to our research it also indicates that disclosures not are as important to investors when assessing the market value of equity as the information in the financial statement. Therefore, it would be interesting to conduct a study investigating if this depends on the disclosures or on something else.

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## **8. APPENDIX**

### **8.1 SELECTED COMPANIES**

#### **8.1.1 TRANSPORTATION**

A.P. MOLLER-MAERSK  
ASCIANO  
ASIAN TERMINALS INC.  
BBA AVIATION  
BEIJING CAP INTN'L  
BELSHIPS ASA  
BOLLORE  
BRAEMAR SHIPPING  
BREMER LAGERHAUS  
CAPITAL LEASE  
CLARKSON PLC  
COMPAGNIE MARITIME  
CTI LOGISTICS LTD  
DEUTSCHE POST AG  
DFDS A/S  
DP WORLD LTD  
DSV A/S  
EITZEN CHEMICAL ASA  
EURONAV NV  
EXMAR NV  
FINNLINES OYJ  
JAMES FISHER & SONS  
FLUGHAFEN WIEN AG  
FRAPORT AG  
GRINDROD LTD  
HAMBURGER HAFEN  
IMPERIAL HOLDINGS  
INFRATIL LTD  
INTERBULK  
K & S CORPORATION  
KAPSCH TRAFFICOM AG  
KROMI LOGISTIK AG  
KUEHNE & NAGEL  
LOGWIN AG  
LYTTELTON PORT CO  
MAINFREIGHT LIMITED  
MERMAID MARINE AUS

N. DENTRESSANGLE  
NORTHLAND PORT  
JSC NOVOROSSIYSK  
OCEAN WILSONS  
OSTERREICHISCHE  
PANALPINA WEL  
PANOCEAN  
PORT OF TAURANGA  
POSTNL  
SALALAH PORT  
SCOTT CORP LTD  
SINOTRANS LTD  
STOBART GROUP LTD  
SUPER GROUP LIMITED  
SUTTON HARBOUR  
SYDNEY AIRPORT  
TNT EXPRESS NV  
TOLL HOLDINGS LTD  
TORM A/S  
TRANSCONTAINER  
TRANSURBAN CITY LINK  
TRENCOR LIMITED  
UK MAIL GROUP  
KONINKLIJKE VOPAK NV  
VTG AG  
WINCANTON PLC

8.1.2 GENERAL RETAIL  
ADLER MODEMA  
ADVTECH LTD  
A P EAGERS  
ARB CORPORATION LTD  
ARIADNE AUSTRALIA  
LAURA ASHLEY  
ASOS PLC  
AUTOMOTIVE  
BEALE  
BEATE UHSE AG  
BETER BED HOLDING  
BILIA AB  
BRISCOE GROUP LTD

N BROWN GROUP PLC  
CAFFYNS PLC  
CARPETRIGHT PLC  
CASH CONVERTERS  
CASHBUILD LIMITED  
CENTRO ESCOLAR  
CEWE STIFTUNG  
CHARLES VOGT  
COMBINED MOTOR LTD  
CVS GROUP PLC  
D'IETEREN S.A.  
DARTY PLC  
DAVID JONES LIMITED  
DEBENHAMS PLC  
DIGNITY PLC  
DIXONS RETAIL PLC  
DUNELM GROUP PLC  
EMPIK MEDIA  
ESPRIT HOLDINGS LTD  
ETAM DEVELOPPEMENT  
FINDEL PLC  
FRENCH CONNECTION GR  
GOME ELECTRICAL  
GROUPE GO SPORT  
HALFORDS GROUP PLC  
HALLENSTEIN GLASSON  
HAMASHBIR 365  
HARVEY NORMAN HLDGS  
HENNES & MAURITZ AB  
HOME RETAIL GROUP  
HORNBAACH-BAUMARKT-AG  
H.R. OWEN PLC  
INCHCAPE PLC  
INDITEX  
INVOCARE LTD  
ITALTILE LIMITED  
JARDINE CYCLE  
JB HI-FI LTD  
JD SPORTS FASHION  
KERING  
KINGFISHER PLC

L'OCCITANE  
LOOKERS PLC  
MACINTOSH RETAIL GRP  
MAJESTIC WINE PLC  
MALLET PLC  
MAOYE INTERNATIONAL  
MARKS & SPENCER  
MASSMART HOLDING  
MICHAEL HILL INTL  
MOSS BROS GROUP PLC  
MOTHERCARE PLC  
MR. PRICE GROUP  
NAVITAS LIM  
NEXT PLC  
NICK SCALI LTD  
OMAN OIL MARKET  
OROTONGROUP LTD  
PENDRAGON PLC  
PORTS DESIGN LTD  
PUMPKIN PATCH LTD  
RALLYE SA  
RNB RETAIL  
SHIRBLE DEPARTMENT  
SPECIALTY FASHION  
SPORTS DIRECT INTER  
TAKKT AG  
FOSCHINI GROUP  
THE REJECT SHOP LTD  
TOPPS TILES PLC  
TRUWORTHS INT'L LTD  
UNITED CARPETS GRP  
VITA GROUP LTD  
WAREHOUSE GROUP LTD  
WESFARMERS LIMITED  
WH SMITH PLC  
WOOLWORTHS  
XINHUA WINSHARE

#### 8.1.3 TRAVEL AND LEISURE

888 HOLDINGS PLC  
ABU DHABI NATIONAL



ADA SA  
AEGEAN AIRLINES S.A.  
AER LINGUS  
AIR ARABIA P.J.S.C.  
AIR CHINA LIMITED  
AIR FRANCE - KLM  
AIR NEW ZEALAND LTD  
AIR PARTNER PLC  
ALIA - THE ROYAL  
ALL LEISURE  
AMALGAMATED HOLDINGS  
ANEK LINES SHIPPING  
ARISTOCRAT LEISURE  
AUTOGRILL SPA  
SA DES BAINS DE MER  
BETFAIR GROUP  
BORUSSIA DORTMUND  
BRISBANE BRONCOS  
BWIN.PARTY DIGI  
CELTIC PLC  
CHINA EASTERN AIRLIN  
CHINA SOUTHERN AIR  
GLOBAL CITY HOLDINGS  
CINEWORLD GROUP PLC  
CITY LODGE HOTELS  
CLUB MEDITERRANEE SA  
COMAIR LIMITED  
COMPAGNIE DES ALPES  
COMPASS GROUP PLC  
CROWN RESORTS LTD  
DART GROUP PLC  
DEAG DEUTSCHE  
DEUTSCHE LUFTHANSA  
DO & CO AG  
DOMINO'S PIZZA  
DOMINO'S PIZZA GR  
EASYJET PLC  
EBET LTD  
ENTERPRISE INNS PLC  
ESSENDEN PLC  
EUMUNDI GROUP LTD

FIRSTGROUP PLC  
FLIGHT CENTRE  
FLYBE GROUP PLC  
FORTUNA ENTERTAIN  
FULLER, SMITH  
GENTING SINGAPORE  
GO-AHEAD GROUP PLC  
GRAND PLAZA HOTEL  
GREENE KING PLC  
GROUPE PARTOUCHE SA  
GTECH SPA  
GUOCOLEISURE LIMITED  
HELLOWORLD  
ICELANDAIR GRP HLDGS  
INTERCONTINENTAL  
IFA HOTEL & TOURIST.  
INTRALOT S.A.  
IRISH CONTINENTAL GR  
JUMBO INTER  
KENYA AIR  
KENYA AIR  
KUONI REISEN HLD AG  
LADBROKES PLC  
MANDARIN ORIENTAL  
MGM CHINA  
MILLENNIUM  
MITCHELLS & BUTLERS  
MILLENNIUM & COP  
NATIONAL EXPRESS GRP  
NET ENTERTAINMENT  
NEW MAURITIUS HOTEL  
OL GROUPE  
OLYMPIC ENTERT  
OPAP S.A.  
ORBIS S.A.  
PADDY POWER PLC  
PHILWEB CORP  
PHUMELELA GAMING  
PIERRE ET VACANCES  
PPHE HOTEL  
PREZZO PLC

PUNCH TAVERNS PLC  
QANTAS AIRWAYS LTD  
REGIONAL EXP HLDG  
RESTAURANT BRANDS  
RESTAURANT GROUP PLC  
REZIDOR HOTEL GROUP  
RICHOUX GROUP PLC  
ROOTALA PLC  
RYANAIR HOLDINGS PLC  
SANDS CHINA LTD  
SAS AB  
STE FERM CAS MUN CAN  
SKISTAR AB  
SKY CITY ENTER  
SPUR CORP  
STAGECOACH GROUP PLC  
SUN INTERNATIONAL  
TABCORP HOLDINGS LTD  
TASTY PLC  
TATTS GROUP LIMITED  
THOMAS COOK GROUP  
TIPP24 AG  
TOURISM HOLDINGS LTD  
TRANSMETRO CORP LTD  
TUI AG  
TUI TRAVEL PLC  
UESTRA HANNOVER  
UNIBET GROUP PLC  
VIKING LINE ABP  
VIRGIN AUSTRALIA  
WATERFRONT PHILIPPIN  
WETHERSPOON (J.D.)  
WHITBREAD PLC  
WILLIAM HILL PLC  
WOTIF.COM HLDGS  
WYNN MACAU  
XIAO NAN GUO  
YOUNG & CO'S BREWERY